



## The influence between proactive personality, basic psychological needs, and entrepreneurial motivation: An empirical study of students majoring in entrepreneurship management in Hong Kong

Chen Sheng<sup>1\*</sup>  
Yun Li Hong<sup>2</sup>  
Kong Xiao Wei<sup>3</sup>

<sup>1,2,3</sup>Hong Kong Chu Hai College, Hong Kong.

<sup>1</sup>Email: [schen@chuhai.edu.hk](mailto:schen@chuhai.edu.hk)

<sup>2</sup>Email: [lhyun@chuhai.edu.hk](mailto:lhyun@chuhai.edu.hk)

<sup>3</sup>Email: [vxiankong@chuhai.edu.hk](mailto:vxiankong@chuhai.edu.hk)

### Abstract

Entrepreneurs are central to economic innovation and growth, yet complex interactions between personality traits and psychological needs shape their motivations. This study investigates the relationship between proactive personality, basic psychological needs, and entrepreneurial motivation among postgraduate students majoring in entrepreneurship management in Hong Kong. Using survey data from 163 students (138 valid responses), multiple regression analysis was conducted to examine causal links between these variables. Results reveal significant associations, underscoring the importance of proactive personality and psychological needs in fostering entrepreneurial motivation. These findings provide valuable implications for educators and policymakers seeking to cultivate entrepreneurial potential and strengthen the entrepreneurial ecosystem.

#### Keywords:

*Basic psychological needs  
Entrepreneurial motivation  
Potential entrepreneurs  
Proactive personality.*

#### Copyright:

© 2026 by the authors. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>)

#### Publisher:

*Scientific Publishing Institute*

**Received:** 16 March 2026

**Revised:** 9 May 2026

**Accepted:** 15 May 2026

**Published:** 21 May 2026

(<sup>\*</sup> Corresponding Author)

**Funding:** This study received no specific financial support.

**Institutional Review Board Statement:** This study was approved by the Institutional Review Board of Hong Kong Chu Hai College, Hong Kong, under protocol number 20260501, dated 15 May 2026. Informed verbal consent was obtained from all participants, and all data were anonymized to protect participant confidentiality.

**Transparency:** The author confirms that the manuscript is an honest, accurate, and transparent account of the study; that no vital features of the study have been omitted; and that any discrepancies from the study as planned have been explained. This study followed all ethical practices during writing.

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

**Authors' Contributions:** All authors contributed equally to the conception and design of the study. All authors have read and agreed to the published version of the manuscript.

## 1. Introduction

Scholars have long emphasized the importance of individual differences in shaping the entrepreneurial journey (Shane, Locke, & Collins, 2003). Entrepreneurial motivation, in particular, plays a decisive role in influencing the decision to initiate business ventures (Nicholls et al., 2012). For potential entrepreneurs, a deeper understanding of the drivers of entrepreneurial motivation is essential to advancing both theoretical inquiry and practical application in this field.

This study introduces three central variables. First, proactive personality: a stable behavioral tendency characterized by initiative, problem-solving, and risk-taking. Entrepreneurs frequently display high levels of proactivity, enabling them to identify opportunities and act decisively in uncertain environments. Second, basic psychological needs: grounded in Self-Determination Theory (SDT), these needs bridge external conditions with intrinsic personality. Autonomy, competence, and relatedness serve as fundamental elements shaping motivation and behavior (Deci & Ryan, 2002; Deci & Ryan, 2000). Third, entrepreneurial motivation: widely recognized as a prerequisite for entrepreneurial activity, it has been shown to exert a pivotal influence on entrepreneurial success (Nicholls et al., 2012).

The purpose of this study is to examine the intricate relationships among these three variables. By focusing on postgraduate learners specializing in entrepreneurial management, the research seeks to generate insights that contribute to theoretical development while offering practical guidance for fostering entrepreneurial potential.

## **2. Literature Review**

### *2.1. Proactive Personality*

The concept of proactive personality was first introduced by Bateman and Crant (1993) referring to a stable individual tendency to initiate actions that shape and influence one's environment. In recent years, proactive personality has emerged as a significant perspective in organizational behavior research, distinguished by its consistency as a personality trait. Empirical studies have demonstrated its impact on psychological processes and behavioral outcomes (Liang, 2021). Individuals with high levels of proactivity are less constrained by external circumstances; instead, they actively initiate constructive actions to effect change and improve their surroundings (Bateman & Crant, 1993). Such individuals excel at identifying opportunities for self-improvement and are adept at seizing them to drive meaningful transformation (Seibert, Crant, & Kraimer, 1999).

Proactive personality has been shown to exert a substantial influence on entrepreneurial intentions. It plays a pivotal role in shaping both micro-level intrinsic characteristics and macro-level extrinsic factors (Xie, Zhang, & Gao, 2013). Crant (1996) identified a positive correlation between proactive personality and entrepreneurial intention, underscoring its importance in the decision to embark on business ventures. Subsequent research further confirms that proactive personality constitutes a crucial variable in the entrepreneurial process, enabling individuals to recognize opportunities, overcome barriers, and pursue entrepreneurial activities with determination (Liu et al., 2011).

### *2.2. Basic Psychological Needs*

The study of psychological needs has significantly advanced our understanding of human behavior. Early work by Tolman and Honzik (1930) introduced expectancy theory, which posited that behavior is purposeful and goal-directed, shaped by anticipated outcomes. For example, when individuals expect a positive result such as a promotion, they are more likely to engage in behaviors that increase the likelihood of achieving that outcome (Dailey, 1990).

Building on this foundation, Maslow (1943) proposed a hierarchy of needs, outlining five progressive levels: physiological, safety, belonging, self-esteem, and self-actualization. Alderfer (1969) later refined this framework into three dimensions—material and physiological needs, social and interpersonal needs, and personal development/self-actualization. McClelland (1958) and McClelland (1961) further contributed by identifying three fundamental needs: achievement, power, and belonging. These perspectives collectively underscore the universality of psychological needs across age, gender, race, and culture, shaping individual motivation and behavior.

Self-Determination Theory (SDT), advanced by Deci, Eghrari, Patrick, and Leone (1994) and Deci and Ryan (2000) represents a pivotal development in this field. Rooted in cognitive evaluation theory, SDT emphasizes the role of the environment in influencing human behavior and motivation. Within SDT, the Basic Psychological Needs Theory (BPNT) identifies three essential dimensions: autonomy, reflecting the desire for self-direction and control over one's actions (Broeck, Vansteenkiste, De Witte, Soenens, & Lens, 2010; Meyer & Maltin, 2010) competence, emphasizing the need to feel effective and affirmed in one's activities (Broeck et al., 2010) and relatedness, highlighting the importance of respect, care, and meaningful social connections (Deci et al., 2001). These needs are regarded as fundamental and universal, forming the basis of psychological growth, development, and maturity (Zhao, Zhang, Liu, & Ding, 2016).

The satisfaction of these needs has been shown to significantly enhance self-motivation and self-determination (Edward L Deci & Ryan, 2000). When fulfilled, individuals exhibit positive attitudes and behaviors (Zhang, Zhang, & Deci, 2012) whereas unmet needs may hinder personal growth and well-being. Collectively, these theories illuminate the innate human drive for autonomy, competence, and belonging. Fulfilment of basic psychological needs enables individuals to recognize their self-worth and unlock their potential, offering valuable insights into motivation, aspirations, and overall life satisfaction.

### *2.3. Entrepreneurial Motivation*

Motivation, broadly defined as the psychological processes that guide, inspire, and sustain action, plays a pivotal role in entrepreneurial endeavors. [Olson and Bosserman \(1984\)](#) emphasize that entrepreneurial motivation functions as the driving force behind entrepreneurial activity, compelling individuals with entrepreneurial potential and favorable conditions to initiate business ventures and thereby distinguishing them from non-entrepreneurs. [Baum, Locke, and Smith \(2001\)](#) further characterize entrepreneurial motivation as an intrinsic impetus that develops within the minds of entrepreneurs during their pursuit of achievement. Understanding this intrinsic dimension is crucial for explaining the diversity of entrepreneurial behaviors ([Carsrud & Brännback, 2011](#)).

Scholars have proposed multiple classifications of entrepreneurial motivation. [Hay, Cox, and Reynolds \(2009\)](#) distinguish between necessity-driven and opportunity-driven motivations, while [Shane et al. \(2003\)](#) differentiate between general and task-specific motivations. These frameworks encompass a range of motivational factors, including achievement, control, vision, independence, passion, drive, goal setting, and self-efficacy. [Gilad and Levine \(1986\)](#) introduced the “push” and “pull” theories, which explain how individuals are either compelled into entrepreneurship by external pressures or attracted by opportunities. [Ashley-Cotleur, King, and Solomon \(2009\)](#) simplify entrepreneurial motivation into two fundamental dimensions: extrinsic motivation, driven by external rewards such as financial gain, and intrinsic motivation, rooted in personal interest, enjoyment, and fulfilment. Extrinsic motivation often manifests in the pursuit of wealth and material success ([Amabile, 1998](#)) whereas intrinsic motivation reflects the satisfaction derived from engaging in challenging and innovative tasks ([Chen & Francesco, 2003; Ryan & Deci, 2000](#)).

Measurement models have also been developed to capture these dimensions. [Kuratko, Hornsby, and Naffziger \(1997\)](#) and [Robichaud, McGraw, and Alain \(2001\)](#) proposed frameworks incorporating four categories: extrinsic rewards, independence/autonomy, intrinsic rewards, and family security. These models align with [Bruce and Ireland \(2016\)](#) conclusion that entrepreneurial motivation is consistently expressed through the desire to “be one’s own boss,” “pursue ideals,” and “seek financial rewards.” Distilled into three core dimensions: independence/autonomy, intrinsic rewards, and extrinsic rewards, providing a concise yet comprehensive framework for understanding the motivational drivers of entrepreneurship.

## **3. Research Methods**

This study employed an empirical research design, implemented through several key stages. First, a comprehensive literature review was conducted to synthesize relevant concepts and classify research topics. Second, questionnaires were administered to the selected participants. Based on the sampling results, hypotheses concerning entrepreneurship were formulated. Third, the collected data underwent statistical analysis, with quantitative methods applied to test the established hypotheses. Finally, the findings were summarized and discussed, and recommendations for future research were proposed.

The research sample consisted of postgraduate students enrolled in a master’s program in entrepreneurship in Hong Kong. This group was selected due to the distinctiveness of the program, which attracts students actively seeking entrepreneurial knowledge and engaging in proactive entrepreneurial behavior to enhance their prospects of future entrepreneurship. Analysis of population characteristics revealed that these students exhibited entrepreneurial psychological needs and possessed proactive personality traits, aligning with the study’s focus on potential entrepreneurs. The survey included participants from diverse regions of China, ensuring regional representativeness. The sample demonstrated a balanced distribution in terms of gender, age, and educational background.

Three questionnaires were employed to examine the relationship between entrepreneurial motivation, basic psychological needs, and proactive personality. A total of 163 questionnaires were distributed, of which 138 valid anonymous responses were retained for statistical analysis. The Basic Psychological Needs scale was adapted from [Deci et al. \(1994\)](#) comprising three subsets: autonomy, competence, and relatedness. The Proactive Personality scale was based on [Bateman and Crant \(1993\)](#) and [Seibert et al. \(1999\)](#) with two subsets utilized in this study. Entrepreneurial motivation was measured using scales developed by [Kuratko et al. \(1997\)](#) and [Robichaud et al. \(2001\)](#) incorporating three subsets aligned with the dimensions of extrinsic rewards, independence/autonomy, and intrinsic rewards. Reliability and validity analyses were conducted to ensure the robustness of the instruments. To examine the relationships between independent and dependent variables, multiple regression analysis was employed.

### *3.1. Descriptive Sample Analysis*

Among the 138 valid questionnaires, the following descriptive statistical analysis was conducted.

**Table 1.** Sample descriptive statistics.

Demographic characteristics	Sample distribution	Number of samples	Percentage
Gender	Male	55	40.0
	Female	83	60.0
Age	20-30	16	11.6
	30-40	69	50.0
	40-50	51	37.0
	Above 50	2	1.4
Education background	Business	81	58.7
	Engineering	16	11.6
	Science	12	8.7
	Arts	14	10.1
	Medical	4	2.9
	Others	11	8.0
Local distribution	Eastern in China	28	20.3
	Western in China	10	7.2
	South in China	63	45.7
	North in China	20	14.5
	Central in China	17	12.3

Source: SPSS23 Research Summary.

The demographic characteristics of the 138 valid respondents provide important insights into the composition of the sample.

**Gender:** Previous research has suggested that women are generally less likely to engage in entrepreneurial activity (Reynolds & Curtin, 2008; Verheul, Thurik, Hessels, & Van der Zwan, 2010). However, the survey results reveal a higher proportion of women considering entrepreneurship in the present study. This finding suggests that female participation in entrepreneurial activities may increase in the future, reflecting evolving social and economic dynamics.

**Age:** The majority of respondents fall within the 30–40 age group, accounting for 50% of the sample. This distribution indicates that entrepreneurial interest is particularly strong among individuals in early to mid-career stages, a period often associated with professional transition and opportunity seeking.

**Educational Background:** The data show that individuals with a business education comprise 58% of the sample, suggesting that those with formal training in business are more inclined toward entrepreneurship compared to respondents from other academic disciplines. This finding underscores the relevance of business education in shaping entrepreneurial aspirations.

**Geographic Distribution:** Participants were drawn from diverse regions of China, ensuring regional representativeness. The results indicate that entrepreneurial activity is more prevalent in coastal regions (Eastern and Southern China) than in inland areas (Western and Central China), reflecting broader national trends in economic development and opportunity concentration.

To validate the representativeness of the sample, data were collected twice and tested for non-response bias across four indicators: gender, age, educational background, and regional distribution. The results revealed no significant differences between the two samples at the 0.05 significance level, confirming the reliability and representativeness of the dataset

### 3.2. Research Measurements

#### 3.2.1. Independent Variable

Proactive personality was measured using the scale originally developed by Bateman and Crant (1993) and later shortened to a 10-item version by Seibert et al. (1999). However, when applied in the entrepreneurial context, the factor structure of the 10-item scale proved ambiguous, with several items exhibiting cross-loadings. To enhance measurement validity, items were removed based on commonality and factor loading values, resulting in a refined 6-item scale with strong psychometric properties.

Basic psychological needs were assessed using the framework proposed by Deci et al. (1994) encompassing three dimensions: Competence, autonomy, and relatedness. Given that respondents were enrolled in entrepreneurship education, 11 items were specifically designed to reflect the characteristics of this learning environment. All items were measured using a five-point Likert scale, ranging from low to high agreement.

#### 3.2.2. Dependent Variable

Entrepreneurial motivation was measured using scales adapted from Kuratko et al. (1997) and Robichaud et al. (2001) with modifications to align with the characteristics of potential entrepreneurs. Drawing on prior research (Bruce & Ireland, 2016 ) the construct was operationalized into three dimensions: extrinsic rewards,

independence/autonomy, and intrinsic rewards. Each dimension was measured through multiple items on a five-point Likert scale, ensuring consistency with established motivational frameworks.

Table 2. The projects in the questionnaire of the study.

Variable	Project	Variable	Project
Basic Psychological Needs	Psy01: In my future work, I am willing to decide how to carry out my work.	Proactive Personality Inventory	Init05: If I firmly believe in something, no matter the probability of success, I will try my best to do it well.
	Psy02: If I engage in R&D and design work in the future, I don't think I need to completely obey the leadership's instructions.		Init06: Even if others object, I will stick to my ideas
	Psy03: I want to work in my way. If necessary, I may consider not following the leadership's instructions.	Entrepreneurial Motivation	Mov01: I think the main purpose of starting a business is to increase income
	Psy04: I don't like to do certain things, so I will complain to the teacher about the reasons why I don't do them.		Mov02: If I start a business, I will attach great importance to the increase in current profits.
	Psy05: I will focus on strengthening the relationship with my classmates.		Mov03: I believe that success in starting a business will make my future "material life" richer and better.
	Psy06: In my current study, I feel like I am a part of the learning team		Mov04: Entrepreneurship will help me improve the reliability and quality of life
	Psy07: If the atmosphere among my classmates is more harmonious, it will be conducive to my innovative thinking.		Mov05: I started a business because of the freedom of life without the constraints of a boss
	Psy08: The competitive atmosphere will help me learn more		Mov06: Starting a business and working for myself is my main pursuit
	Psy09: The competitive atmosphere will enhance my self-confidence		Mov07: I would rather make my own decisions than rely on others
	Psy10: The competitive atmosphere will make me better at studying		Mov08: I am satisfied with being my boss
	Psy11: The competitive atmosphere will help me overcome the most difficult tasks at work		Mov09: Compared with profits, I pay more attention to the long-term growth of the company in the future.
Proactive Personality Inventory	Init01: I am always exploring new ways to improve my future life	Mov10: I expect that my entrepreneurial value can be recognized by others	
	Init02: I am a powerful force for constructive change wherever I am	Mov11: I am willing to accept new challenges	
	Init03: Nothing excites me more than seeing my ideas come to life.	Mov12: I think starting a business will promote my personal growth	
	Init04: If I see something I don't like, I will change it	Mov13: I hope others can respect my future as an entrepreneur	

Source: Research summary.

### 3.3. Assumptions on Variable Relationships

This study draws upon the fundamental framework of *belief–attitude–intention–behavior* to examine the development of intentional actions in individuals. Within the entrepreneurial process, proactive personality is expected to enhance entrepreneurial intention (Liu et al., 2011). In other words, individuals with proactive tendencies are more likely to translate their disposition into entrepreneurial motivation. However, not all

proactive individuals necessarily generate entrepreneurial motivation; the fulfillment of basic psychological needs is a prerequisite. Without satisfaction of these needs, entrepreneurial motivation may fail to materialize. Accordingly, this study emphasizes the importance of examining whether basic psychological needs mediate the relationship between proactive personality and entrepreneurial motivation. To illustrate these interconnections, the following hypotheses were proposed:

*H<sub>1</sub>: Proactive personality has a significant positive influence on basic psychological needs.*

*H<sub>2</sub>: Proactive personality has a significant positive influence on entrepreneurial motivation.*

*H<sub>3</sub>: Basic psychological needs have a significant positive influence on entrepreneurial motivation.*

These hypotheses form the conceptual model of the study, integrating proactive personality, basic psychological needs, and entrepreneurial motivation into a unified framework for empirical testing.

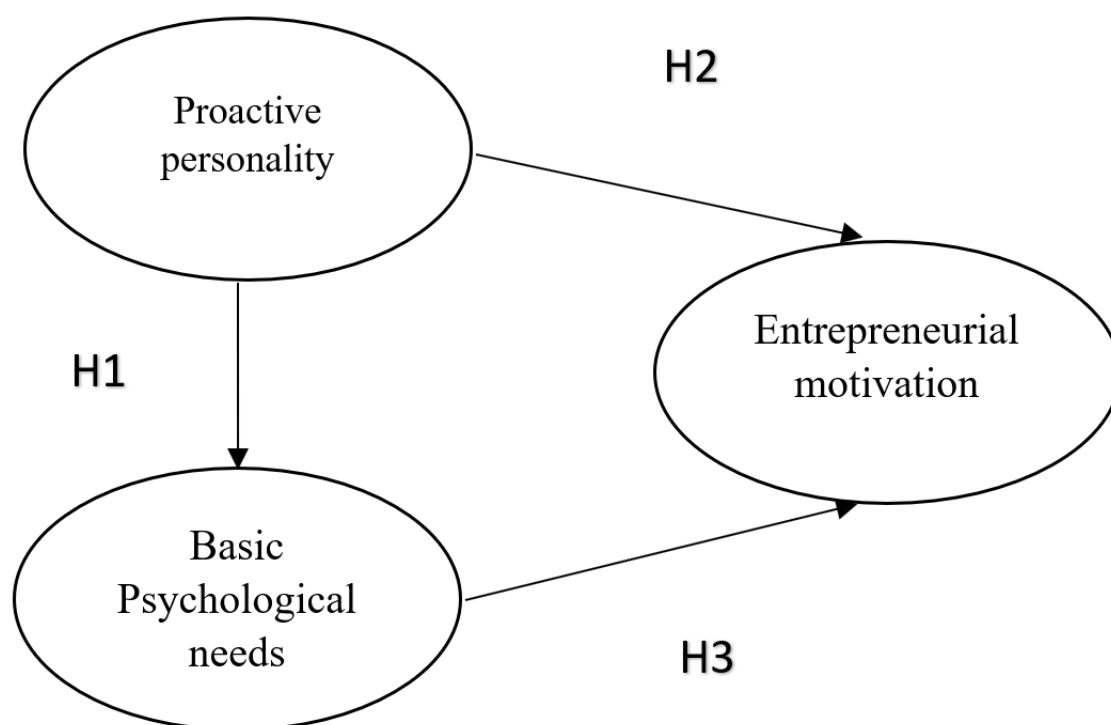


Figure 1. Conceptual model of the study.

### 3.4. Analysis of Validity and Reliability

To verify the structural validity of the questionnaire, factor analysis was conducted using SPSS 23. The Kaiser–Meyer–Olkin (KMO) measure of sampling adequacy and Bartlett’s test of sphericity were employed to assess suitability for factor analysis. A KMO value greater than 0.50 and a significant Bartlett’s test ( $p < 0.05$ ) were considered minimum standards for proceeding with the analysis.

#### 3.4.1. Factor Analysis of Proactive Personality

For the proactive personality scale, the KMO value was 0.656, exceeding the minimum threshold of 0.50 (Fred, 2005; Kaiser, 1974). Bartlett (1950) test yielded a significance level below 0.05, confirming the appropriateness of factor analysis (Qiu et al., 2005). The total eigenvalues of the two extracted factors explained 58.93% of the variance, indicating satisfactory construct validity.

Table 3. Factor analysis test of proactive personality.

Project	Element	
	1	2
Init 01	0.076	<b>0.835</b>
Init 02	0.018	<b>0.751</b>
Init 03	0.386	<b>0.589</b>
Init 04	<b>0.549</b>	0.142
Init 05	<b>0.854</b>	0.151
Init 06	<b>0.836</b>	-0.005

Source: SPSS23 Research summary.

### 3.4.2. Factor Analysis of Basic Psychological Needs

For the basic psychological needs scale, the Kaiser–Meyer–Olkin (KMO) value was 0.733, exceeding the minimum threshold of 0.50 (Fred, 2005; Kaiser, 1974). Bartlett (1950) test of sphericity produced a significance level below 0.05, confirming the appropriateness of factor analysis (Qiu et al., 2005). The total eigenvalues of the three extracted factors explained 61.70% of the variance, indicating satisfactory construct validity. These results demonstrate that the scale effectively captures the three dimensions of basic psychological needs—autonomy, competence, and relatedness—within the entrepreneurial learning context.

**Table 4.** Factor analysis test of basic psychological needs.

Project	Element		
	1	2	3
Psy 01	-0.001	<b>0.619</b>	0.141
Psy 02	0.109	<b>0.698</b>	0.022
Psy 03	0.047	<b>0.741</b>	-0.090
Psy 04	0.253	<b>0.679</b>	0.013
Psy 05	-0.024	0.009	<b>0.768</b>
Psy 06	0.035	0.160	<b>0.728</b>
Psy 07	0.042	-0.083	<b>0.807</b>
Psy 08	<b>0.861</b>	0.056	0.135
Psy 09	<b>0.904</b>	0.110	-0.025
Psy 10	<b>0.877</b>	0.069	-0.034
Psy 11	<b>0.765</b>	0.193	-0.003

Source: SPSS23 Research summary

### 3.4.3. Factor Analysis of Entrepreneurial Motivation

For the entrepreneurial motivation scale, the Kaiser–Meyer–Olkin (KMO) value was 0.758, exceeding the minimum threshold of 0.50 (Fred, 2005; Kaiser, 1974). Bartlett (1950) test of sphericity yielded a significance level below 0.05, confirming the suitability of the data for factor analysis (Qiu et al., 2005). The total eigenvalues of the three extracted factors explained 62.60% of the variance, indicating satisfactory construct validity. These results demonstrate that the scale effectively captures the multidimensional nature of entrepreneurial motivation, encompassing extrinsic rewards, independence/autonomy, and intrinsic rewards.

**Table 5.** Factor analysis test of entrepreneurial motivation.

Project	Element		
	1	2	3
Mov 01	0.096	<b>0.811</b>	0.111
Mov 02	0.062	<b>0.789</b>	0.191
Mov 03	0.314	<b>0.590</b>	0.086
Mov 04	0.328	<b>0.546</b>	0.341
Mov 05	0.056	0.394	<b>0.776</b>
Mov 06	-0.004	0.118	<b>0.804</b>
Mov 07	0.392	-0.021	<b>0.689</b>
Mov 08	0.430	0.210	<b>0.529</b>
Mov 09	<b>0.636</b>	-0.076	0.255
Mov 10	<b>0.704</b>	0.212	0.021
Mov 11	<b>0.792</b>	0.136	0.139
Mov 12	<b>0.789</b>	0.202	0.206
Mov 13	<b>0.604</b>	0.368	0.136

Source: SPSS23 Research summary

### 3.4.4. Reliability Test

Reliability refers to the overall consistency of a measurement instrument. In this study, reliability testing was conducted to ensure that the items used to measure different constructs produced stable and consistent results. Cronbach's Alpha was employed as the primary indicator of internal consistency. A higher Cronbach's Alpha value reflects stronger reliability, while values above 0.60 are generally considered acceptable for newly developed scales (Nunnally, 1978).

The analysis examined whether removing individual items would increase the overall reliability of each construct. If Cronbach's Alpha increased upon deletion, the item was considered weaker; if the effect was negligible, the item was retained. Results indicated that all scales achieved acceptable reliability, with Cronbach's Alpha coefficients ranging from 0.606 to 0.883 across the constructs. Importantly, the reliability

coefficients after item deletion were consistently lower than those obtained when all items were retained, confirming that each item contributed meaningfully to the measurement.

These findings demonstrate that the questionnaire items exhibit satisfactory internal consistency and can be reliably used to assess proactive personality, basic psychological needs, and entrepreneurial motivation among the surveyed population.

**Table 6.** Reliability statistical test.

Variable	Project	Cronbach's Alpha if item deleted	Cronbach's Alpha
Exploratory Personality	Init 01	0.353	0.606
	Init 02	0.577	
	Init 03	0.543	
Persistent Personality	Init 04	0.735	0.755
	Init 05	0.389	
	Init 06	0.505	
Autonomous Needs	Psy 01	0.619	0.644
	Psy 02	0.556	
	Psy 03	0.540	
	Psy 04	0.556	
Relatedness Needs	Psy 05	0.545	0.661
	Psy 06	0.603	
	Psy 07	0.540	
Competence Needs	Psy 08	0.847	0.883
	Psy 09	0.821	
	Psy 10	0.842	
	Psy 11	0.846	
Extrinsic Motivation	Mov 01	0.561	0.678
	Mov 02	0.601	
	Mov 03	0.625	
	Mov 04	0.651	
Independent Motivation	Mov 05	0.576	0.682
	Mov 06	0.569	
	Mov 07	0.631	
	Mov 08	0.676	
Intrinsic Motivation	Mov 09	0.757	0.771
	Mov 10	0.713	
	Mov 11	0.693	
	Mov 12	0.691	
	Mov 13	0.747	

Source: SPSS23 Research summary.

According to the results obtained, Cronbach's Alpha coefficients fall within the acceptable range of reliability. Analysis of the sum of statistical items shows that the reliability coefficient after deleting a certain evaluation item is smaller than the reliability coefficient after including all items. This means that researchers should keep all these items in the questionnaire.

### 3.4.5. Analysis of Test Results

Following the validity and reliability testing of the three scales, the characteristics and statistical outcomes of each construct were examined.

**Proactive Personality:** The analysis revealed two distinct dimensions: *Exploratory personality* and *persistent personality*. Exploratory personality is characterized by a tendency to seek new opportunities, pursue innovative approaches, and initiate constructive change. In contrast, persistent personality reflects a strong adherence to personal ideas, resistance to external influence, and unwillingness to accept suggestions that conflict with one's own views. Together, these dimensions capture the proactive disposition of potential entrepreneurs.

**Basic Psychological Needs:** The results were fully consistent with the three subsets identified by [Deci et al. \(1994\)](#): Competence, autonomy, and relatedness. Competence needs were expressed through the desire for positive competition and self-confidence. Autonomy needs reflected a preference for self-determination in work and a reluctance to be constrained by others. Relatedness needs emphasized the importance of harmonious social relationships as a foundation for psychological well-being.

**Entrepreneurial Motivation:** The findings aligned with the simplified typology proposed by [Bruce and Ireland \(2016\)](#) confirming three dimensions: extrinsic motivation, independent motivation, and intrinsic

motivation. Extrinsic motivation was manifested in the pursuit of wealth and material interests. Independent motivation reflected the desire to work autonomously and avoid reliance on others. Intrinsic motivation emphasized personal growth, the enjoyment of challenges, and the pursuit of values.

Taken together, these results validate the measurement structure of the study and provide empirical support for the proposed hypotheses. The constructs of proactive personality, basic psychological needs, and entrepreneurial motivation were consistently captured by the scales, thereby establishing a robust foundation for subsequent regression analysis.

*H<sub>1</sub>: Proactive personality has a significant positive influence on basic psychological needs.*

*H<sub>1a</sub>: Exploratory personality has a significant positive influence on autonomous needs.*

*H<sub>1b</sub>: Persistent personality has a significant positive influence on autonomous needs.*

*H<sub>1c</sub>: Exploratory personality has a significant positive influence on relatedness needs.*

*H<sub>1d</sub>: Persistent personality has a significant positive influence on relatedness needs.*

*H<sub>1e</sub>: Exploratory personality has a significant positive influence on competence needs.*

*H<sub>1f</sub>: Persistent personality has a significant positive influence on competence needs.*

*H<sub>2</sub>: Proactive personality has a significant positive influence on entrepreneurial motivation.*

*H<sub>2a</sub>: Exploratory personality has a significant positive influence on extrinsic motivation.*

*H<sub>2b</sub>: Persistent personality has a significant positive influence on extrinsic motivation.*

*H<sub>2c</sub>: Exploratory personality has a significant positive influence on independent motivation.*

*H<sub>2d</sub>: Persistent personality has a significant positive influence on independence motivation.*

*H<sub>2e</sub>: Exploratory personality has a significant positive influence on intrinsic motivation.*

*H<sub>2f</sub>: Persistent personality has a significant positive influence on intrinsic motivation.*

*H<sub>3</sub>: Basic psychological needs have a significant positive influence on entrepreneurial motivation.*

*H<sub>3a</sub>: Autonomous needs have a significant positive influence on extrinsic motivation.*

*H<sub>3b</sub>: Relatedness needs have a significant positive influence on extrinsic motivation.*

*H<sub>3c</sub>: Competence needs have a significant positive influence on extrinsic motivation.*

*H<sub>3d</sub>: Autonomous needs have a significant positive influence on independent motivation.*

*H<sub>3e</sub>: Relatedness needs have a significantly positive influence on independent motivation.*

*H<sub>3f</sub>: Competence needs have a significantly positive influence on independent motivation.*

*H<sub>3g</sub>: Autonomous needs have a significant positive influence on intrinsic motivation.*

*H<sub>3h</sub>: Relatedness needs have a significant positive influence on intrinsic motivation.*

*H<sub>3i</sub>: Competence needs have a significant positive influence on intrinsic motivation.*

#### **4. Regression-Based Statistical Research**

To examine the relationships among proactive personality, basic psychological needs, and entrepreneurial motivation, the study employed multi-level linear regression analysis using the 138 valid questionnaires. Correlation coefficients were interpreted according to [Wu \(2012\)](#) values equal to or greater than 0.80 indicate a high correlation, values between 0.40 and 0.80 indicate a moderate correlation, and values less than or equal to 0.40 indicate a low correlation. The regression models incorporated multiple explanatory variables to reveal the linear relationships between the dependent and independent variables.

##### *4.1. Regression Analysis of Proactive Personality and Basic Psychological Needs*

The first regression model investigated the effect of proactive personality on basic psychological needs. Results demonstrated that proactive personality significantly influenced autonomy needs, competence needs, and relatedness needs. Specifically, individuals with higher levels of proactive personality reported stronger autonomy needs, reflecting a desire for self-direction and independence in entrepreneurial activities. Competence needs were also positively associated, suggesting that proactive individuals derive confidence and self-worth from competitive and achievement-oriented contexts. Relatedness needs showed a moderate correlation, indicating that proactive individuals value harmonious social relationships, though to a lesser extent than autonomy and competence.

Table 7. Multiple regression analysis of the autonomous needs (1).

Variable Types	Autonomous Needs		
	Model 1	Model 2	Model 3
Constant	3.593	2.267	2.924
Gender	0.038	0.055	0.027
Age	0.060	0.066	0.054
Education background	-0.055	-0.068	-0.062
Local distribution	-0.508	-0.048	-0.055
Exploratory personality		0.271**	
Persistent personality			0.196*
R	0.105	0.299**	0.193*
R Square	0.011	0.09	0.037
Adjust R Square	-0.019	0.069	0.030
Sig F Change	0.830	0.006	0.023

Note: \*\*\* represents  $p < 0.001$ , \*\* represents  $p < 0.01$ , \* represents  $p < 0.05$ .

The multiple regression analysis examined the influence of proactive personality on autonomy needs, producing three models.

- Model 1: No significant correlation or causal relationship was found between demographic variables (gender, age, educational background, and regional distribution) and autonomy needs. This suggests that autonomy needs are not shaped by demographic characteristics within the surveyed population.
- Model 2: A significant positive correlation was identified between *exploratory personality* and autonomy needs ( $p < 0.05$ ). The correlation coefficient ( $R = 0.299$ ) indicates a moderate positive relationship, with exploratory personality explaining approximately 9% of the variance in autonomy needs. This supports H1a, confirming that individuals with exploratory tendencies are more likely to seek autonomy in entrepreneurial contexts.
- Model 3: A significant positive correlation was also observed between *persistent personality* and autonomy needs ( $p < 0.05$ ). The correlation coefficient ( $R = 0.193$ ) indicates a weaker positive relationship, with persistent personality explaining 3.7% of the variance in autonomy needs. This supports H1b, suggesting that persistence contributes to autonomy needs, albeit to a lesser extent than exploratory personality.

Together, these findings demonstrate that both exploratory and persistent dimensions of proactive personality positively influence autonomy needs, reinforcing the role of proactive traits in fostering self-determination among potential entrepreneurs.

The study further conducted multi-level regression analysis to investigate how proactive personality influences relatedness needs. Preliminary results indicate that proactive personality traits are positively associated with the desire for harmonious social relationships. Exploratory personality contributes to the establishment of new social connections, while persistent personality reflects consistency in maintaining interpersonal bonds. Both dimensions highlight the importance of proactive traits in shaping relatedness needs, though the strength of correlation varies across the two personality types.

Table 8. Multiple regression analysis of relatedness needs (1).

Variable Types	Relatedness needs		
	Model 4	Model 5	Model 6
Constant	3.996	3.313	3.942
Gender	0.039	0.048	0.038
Age	0.051	0.054	0.051
Education background	-0.147	-0.153	-0.147
Local distribution	0.087	0.085	0.086
Exploratory personality		0.139	
Persistent personality			0.016
R	0.169	0.242*	0.091
R Square	0.029	0.058	0.008
Adjust R Square	-0.001	0.037	-0.014
Sig F Change	0.422	0.044	0.773

Note: \*\*\* represents  $p < 0.001$ , \*\* represents  $p < 0.01$ , \* represents  $p < 0.05$ .

The multiple regression analysis examined the influence of proactive personality on relatedness needs, producing three models.

- Model 4: No significant correlation was found between demographic variables (gender, age, educational background, and regional distribution) and relatedness needs. This suggests that relatedness needs are not shaped by demographic characteristics within the surveyed population.
- Model 5: A significant positive correlation was identified between *exploratory personality* and relatedness needs ( $p < 0.05$ ). The correlation coefficient ( $R = 0.242$ ) indicates a modest positive relationship, with exploratory personality explaining approximately 5.8% of the variance in relatedness needs. This supports H1c, confirming that individuals with exploratory tendencies are more likely to value and pursue meaningful social connections in entrepreneurial contexts.
- Model 6: No significant correlation was observed between *persistent personality* and relatedness needs ( $p > 0.05$ ). This indicates that persistence does not significantly contribute to the development of relatedness needs, and H1d is therefore not supported.

Together, these findings suggest that exploratory personality plays a more critical role than persistence in shaping relatedness needs, highlighting the importance of openness and adaptability in fostering social bonds among potential entrepreneurs.

The study conducted a multi-level regression analysis to investigate how the proactive personality of potential entrepreneurs affects their competence needs:

**Table 9.** Multiple regression analysis of competence needs (1).

<i>Variable Types</i>	<i>Competence needs</i>		
	<b>Model 7</b>	<b>Model 8</b>	<b>Model 9</b>
Constant	3.494	2.206	2.670
Gender	0.006	0.020	-0.006
Age	0.039	0.044	0.033
Education background	0.082	0.072	0.075
Local distribution	0.062	0.060	0.052
Exploratory personality		0.222**	
Persistent personality			0.204*
R	0.120	0.279**	0.211*
R Square	0.014	0.078	0.045
Adjust R Square	-0.015	0.057	0.038
Sig F Change	0.744	0.010	0.013

Note: \*\*\* represents  $p < 0.001$ , \*\* represents  $p < 0.01$ , \* represents  $p < 0.05$ .

The multiple regression analysis examined the influence of proactive personality on competence needs, producing three models.

- Model 7: No significant correlation was found between demographic variables (gender, age, educational background, and regional distribution) and competence needs. This indicates that competence needs are not shaped by demographic characteristics within the surveyed population.
- Model 8: A significant positive correlation was identified between *exploratory personality* and competence needs ( $p < 0.05$ ). The correlation coefficient ( $R = 0.279$ ) suggests a moderate positive relationship, with exploratory personality explaining approximately 7.8% of the variance in competence needs. This supports H1e, confirming that individuals with exploratory tendencies are more likely to pursue self-confidence, competitive awareness, and effectiveness in entrepreneurial activities.
- Model 9: A significant positive correlation was also observed between *persistent personality* and competence needs ( $p < 0.05$ ). The correlation coefficient ( $R = 0.211$ ) indicates a weaker positive relationship, with persistent personality explaining 4.5% of the variance in competence needs. This supports H1f, suggesting that persistence contributes to competence needs, though to a lesser extent than exploratory personality.

Together, these findings demonstrate that both exploratory and persistent dimensions of proactive personality positively influence competence needs. Exploratory personality appears to play a stronger role in fostering competence through openness to new challenges, while persistence reinforces determination in maintaining performance standards.

#### *4.2. Regression Analysis of Proactive Personality on Entrepreneurial Motivation*

The study performed a multi-level regression analysis to explore how the proactive personality of potential entrepreneurs influences their extrinsic motivation.

Table 10. Multiple regression analysis of extrinsic entrepreneurial motivation (1).

Variable type	Extrinsic Motivation		
	Model 10	Model 11	Model 12
Constant	3.974	2.887	3.654
Gender	0.005	0.019	-0.001
Age	-0.106	-0.102	-0.109
Education background	-0.122	-0.133	-0.126
Local distribution	0.085	-0.082	0.080
Exploratory personality		0.232**	
Persistent personality			0.098
R	0.179	0.228**	0.113
R Square	0.032	0.052	0.013
Adjust R Square	0.003	0.045	-0.009
Sig F Change	0.356	0.007	0.631

Note: \*\*\* represents  $p < 0.001$ , \*\* represents  $p < 0.01$ , \* represents  $p < 0.05$ .

The multiple regression analysis examined the impact of proactive personality on extrinsic motivation, producing three models.

- Model 10: No significant correlation was found between demographic variables (gender, age, educational background, and regional distribution) and extrinsic motivation. This suggests that extrinsic motivation is not influenced by demographic characteristics within the surveyed population.
- Model 11: A significant positive correlation was identified between *exploratory personality* and extrinsic motivation ( $p < 0.05$ ). The correlation coefficient ( $R = 0.228$ ) indicates a modest positive relationship, with exploratory personality explaining approximately 5.2% of the variance in extrinsic motivation. This supports H2a, confirming that individuals with exploratory tendencies are more likely to pursue financial rewards and material interests in entrepreneurial contexts.
- Model 12: No significant correlation was observed between *persistent personality* and extrinsic motivation ( $p > 0.05$ ). This indicates that persistence does not significantly contribute to extrinsic motivation, and H2b is therefore not supported.

The study performed a multi-level regression analysis to explore how the proactive personality influences their independent motivation to start their own business.

Table 11. Multiple regression analysis of independent entrepreneurial motivation (1).

Variable Types	Independent Motivation		
	Model 13	Model 14	Model 15
Constant	3.408	1.971	2.978
Gender	0.166	0.184	0.159
Age	-0.069	-0.063	-0.073
Education background	-0.008	-0.022	-0.013
Local distribution	-0.021	-0.024	0.027
Exploratory personality		0.286**	
Persistent personality			0.123
R	0.174	0.274**	0.137
R Square	0.030	0.075	0.019
Adjust R Square	0.001	0.068	-0.003
Sig F Change	0.393	0.001	0.470

Note: \*\*\* represents  $p < 0.001$ , \*\* represents  $p < 0.01$ , \* represents  $p < 0.05$ .

The multiple regression analysis examined the impact of proactive personality on independent motivation, producing three models.

- Model 13: No significant correlation was found between demographic variables (gender, age, educational background, and regional distribution) and independent motivation. This suggests that independent motivation is not influenced by demographic characteristics within the surveyed population.
- Model 14: A significant positive correlation was identified between *exploratory personality* and independent motivation ( $p < 0.05$ ). The correlation coefficient ( $R = 0.274$ ) indicates a moderate positive relationship, with exploratory personality explaining approximately 7.5% of the variance in independent motivation. This supports H2c, confirming that individuals with exploratory tendencies

are more likely to pursue entrepreneurship as a means of working autonomously and avoiding reliance on others.

- Model 15: No significant correlation was observed between *persistent personality* and independent motivation ( $p > 0.05$ ). This indicates that persistence does not significantly contribute to independent motivation, and H2d is therefore not supported.

Taken together, these findings suggest that exploratory personality plays a more critical role than persistence in shaping independent motivation. Exploratory individuals appear more inclined to value autonomy and self-reliance in entrepreneurial contexts, while persistence does not significantly drive independent motivational orientation.

The study performed a multi-level regression analysis to explore how the proactive personality of potential entrepreneurs influences their intrinsic motivation:

**Table 12.** Multiple regression analysis of intrinsic entrepreneurial motivation (1).

Variable Types	Intrinsic Motivation		
	Model 16	Model 17	Model 18
Constant	5.010	2.814	3.918
Gender	0.015	0.042	-0.003
Age	0.010	0.019	0.001
Education background	0.030	0.010	0.019
Local distribution	0.122	0.117	0.107
Exploratory personality		0.430***	
Persistent personality			0.307***
R	0.134	0.429***	0.352***
R Square	0.018	0.184	0.124
Adjust R Square	-0.012	0.166	0.104
Sig F Change	0.659	0.000	0.000

Note: \*\*\* represents  $p < 0.001$ , \*\* represents  $p < 0.01$ , \* represents  $p < 0.05$ .

The multiple regression analysis examined the impact of proactive personality on intrinsic motivation, producing three models.

- Model 16: No significant correlation was found between demographic variables (gender, age, educational background, and regional distribution) and intrinsic motivation. This suggests that intrinsic motivation is not influenced by demographic characteristics within the surveyed population.
- Model 17: A significant positive correlation was identified between *exploratory personality* and intrinsic motivation ( $p < 0.05$ ). The correlation coefficient ( $R = 0.429$ ) indicates a strong positive relationship, with exploratory personality explaining approximately 18.4% of the variance in intrinsic motivation. This supports H2e, confirming that individuals with exploratory tendencies are more likely to pursue entrepreneurship for personal growth, enjoyment of challenges, and value realization.
- Model 18: A significant positive correlation was also observed between *persistent personality* and intrinsic motivation ( $p < 0.05$ ). The correlation coefficient ( $R = 0.352$ ) indicates a moderate positive relationship, with persistent personality explaining 12.4% of the variance in intrinsic motivation. This supports H2f, suggesting that persistence contributes meaningfully to intrinsic motivation, reinforcing determination and resilience in the pursuit of entrepreneurial goals.

Taken together, these findings demonstrate that both exploratory and persistent dimensions of proactive personality positively influence intrinsic motivation. Exploratory personality exerts a stronger effect, highlighting the importance of openness and adaptability in fostering personal growth and value-driven entrepreneurship, while persistence strengthens intrinsic motivation through determination and sustained effort.

#### 4.3. Regression Analysis of Basic Psychological Needs on Entrepreneurial Motivation

The study performed a multi-level regression analysis to explore how the basic psychological needs of potential entrepreneurs influence their extrinsic motivation.

**Table 13.** Multiple regression analysis of extrinsic entrepreneurial motivation (2).

<i>Variable Types</i>	<i>Extrinsic Motivation</i>		
	<b>Model 19</b>	<b>Model 20</b>	<b>Model 21</b>
Constant	3.496	3.222	3.439
Gender	-0.001	-0.003	0.003
Age	-0.115	-0.117	-0.114
Education background	-0.114	-0.093	-0.138
Local distribution	0.091	-0.067	0.073
Autonomous needs	0.131		
Relatedness needs		0.197*	
Competence needs			0.190*
R	0.205	0.243*	0.177*
R Square	0.042	0.059	0.031
Adjust R Square	0.013	0.038	0.024
Sig F Change	0.216	0.042	0.037

Note: \*\*\* represents  $p < 0.001$ , \*\* represents  $p < 0.01$ , \* represents  $p < 0.05$ .

The multiple regression analysis examined the influence of basic psychological needs on extrinsic motivation, producing three models.

- Model 19: No significant correlation was found between *autonomy needs* and extrinsic motivation ( $p > 0.05$ ). This indicates that autonomy needs do not significantly drive the pursuit of financial rewards or material interests in entrepreneurial contexts. Consequently, H3a is not supported.
- Model 20: A significant positive correlation was identified between *relatedness needs* and extrinsic motivation ( $p < 0.05$ ). The correlation coefficient ( $R = 0.243$ ) suggests a modest positive relationship, with relatedness needs explaining approximately 5.9% of the variance in extrinsic motivation. This supports H3b, confirming that individuals who value harmonious social relationships are more likely to pursue entrepreneurship for extrinsic rewards, such as wealth and status.
- Model 21: A significant positive correlation was observed between *competence needs* and extrinsic motivation ( $p < 0.05$ ). The correlation coefficient ( $R = 0.177$ ) indicates a weaker positive relationship, with competence needs explaining 3.1% of the variance in extrinsic motivation. This supports H3c, suggesting that individuals who emphasize self-confidence and competitive awareness are modestly motivated by extrinsic rewards.

Taken together, these findings demonstrate that relatedness and competence needs positively influence extrinsic motivation, while autonomy needs do not. This highlights the role of social relationships and confidence in driving material and financial pursuits among potential entrepreneurs.

The study performed a multi-level regression analysis to explore how the basic psychological needs of potential entrepreneurs influence their independent motivation.

**Table 14.** Multiple regression analysis of independent entrepreneurial motivation (2).

<i>Variable type</i>	<i>Independent Motivation</i>		
	<b>Model 22</b>	<b>Model 23</b>	<b>Model 24</b>
Constant	2.295	3.144	2.378
Gender	0.155	0.164	0.164
Age	-0.087	-0.072	-0.082
Education background	0.008	0.001	-0.097
Local distribution	-0.007	-0.026	-0.042
Autonomous needs	0.302***		
Relatedness needs		0.064	
Competence needs			0.340***
R	0.308***	0.079	0.355***
R Square	0.095	0.006	0.126
Adjust R Square	0.068	-0.016	0.100
Sig F Change	0.010	0.839	0.001

Note: \*\*\* represents  $p < 0.001$ , \*\* represents  $p < 0.01$ , \* represents  $p < 0.05$ .

The multiple regression analysis examined the influence of basic psychological needs on independent motivation, producing three models.

- Model 22: A significant positive correlation was identified between *autonomy needs* and independent motivation ( $p < 0.05$ ). The correlation coefficient ( $R = 0.308$ ) indicates a moderate positive relationship, with autonomy needs explaining approximately 9.5% of the variance in independent

motivation. This supports H3d, confirming that individuals who value self-determination and freedom from external constraints are more likely to pursue entrepreneurship as a means of working independently.

- Model 23: No significant correlation was found between *relatedness needs* and independent motivation ( $p > 0.05$ ). This suggests that the desire for harmonious social relationships does not significantly drive independent motivation, and H3e is therefore not supported.
- Model 24: A significant positive correlation was observed between *competence needs* and independent motivation ( $p < 0.05$ ). The correlation coefficient ( $R = 0.355$ ) indicates a moderate positive relationship, with competence needs explaining 12.6% of the variance in independent motivation. This supports H3f, suggesting that individuals who emphasize self-confidence and competitive awareness are strongly motivated to pursue entrepreneurship as a means of working autonomously and demonstrating their capabilities.

Taken together, these findings highlight that autonomy and competence needs are key drivers of independent motivation, while relatedness needs play little role. This underscores the importance of self-determination and confidence in shaping entrepreneurial independence.

The study performed a multi-level regression analysis to explore how the basic psychological needs of potential entrepreneurs influence their intrinsic motivation:

**Table 15.** Multiple regression analysis of intrinsic entrepreneurial motivation (2).

Variable Types	Intrinsic Motivation		
	Model 25	Model 26	Model 27
Constant	4.395	4.128	4.410
Gender	0.008	0.006	0.013
Age	0.000	-0.001	0.002
Education background	0.039	0.061	0.014
Local distribution	0.129	0.104	0.110
Autonomous needs	0.164*		
Relatedness needs		0.212*	
Competence needs			0.195*
R	0.273*	0.211*	0.205*
R Square	0.074	0.044	0.042
Adjust R Square	0.047	0.037	0.035
Sig F Change	0.035	0.013	0.016

Note: \*\*\* represents  $p < 0.001$ , \*\* represents  $p < 0.01$ , \* represents  $p < 0.05$ .

The study summarizes the multiple regression analysis of the influence of basic psychological needs on intrinsic motivation and produces three results in total:

- Model 25: A significant positive correlation was observed between autonomous needs and intrinsic motivation.  $P < 0.05$  indicates a statistically significant correlation between the two variables.  $R=0.273$  implies a positive correlation between the psychological needs for autonomy and intrinsic motivation, with autonomy needs explaining 7.4% of the variance in intrinsic motivation. Hypothesis H3g is accepted.
- Model 26: A significant positive correlation was observed between relatedness needs and intrinsic motivation.  $P < 0.05$  indicates a significant correlation between these two variables, and  $R = 0.211$  implies a positive correlation between relatedness needs and intrinsic motivation, with relatedness needs explaining 4.4% of the variance in intrinsic motivation. Hypothesis H3h is accepted.
- Model 27: A significant positive correlation was observed between competence needs and intrinsic motivation.  $P < 0.05$  indicates a significant correlation between the two variables, and  $R = 0.205$  implies a positive correlation between the competence needs and intrinsic motivation, with the competence needs explaining 4.2% of the variance in intrinsic motivation. Hypothesis H3i is accepted.

## 5. Conclusions from the Research

Through multiple regression analyses examining the basic psychological needs generated by proactive personality traits among potential entrepreneurs, and the influence of these variables on entrepreneurial motivation. A summary of the research model and accepted hypotheses as follow:

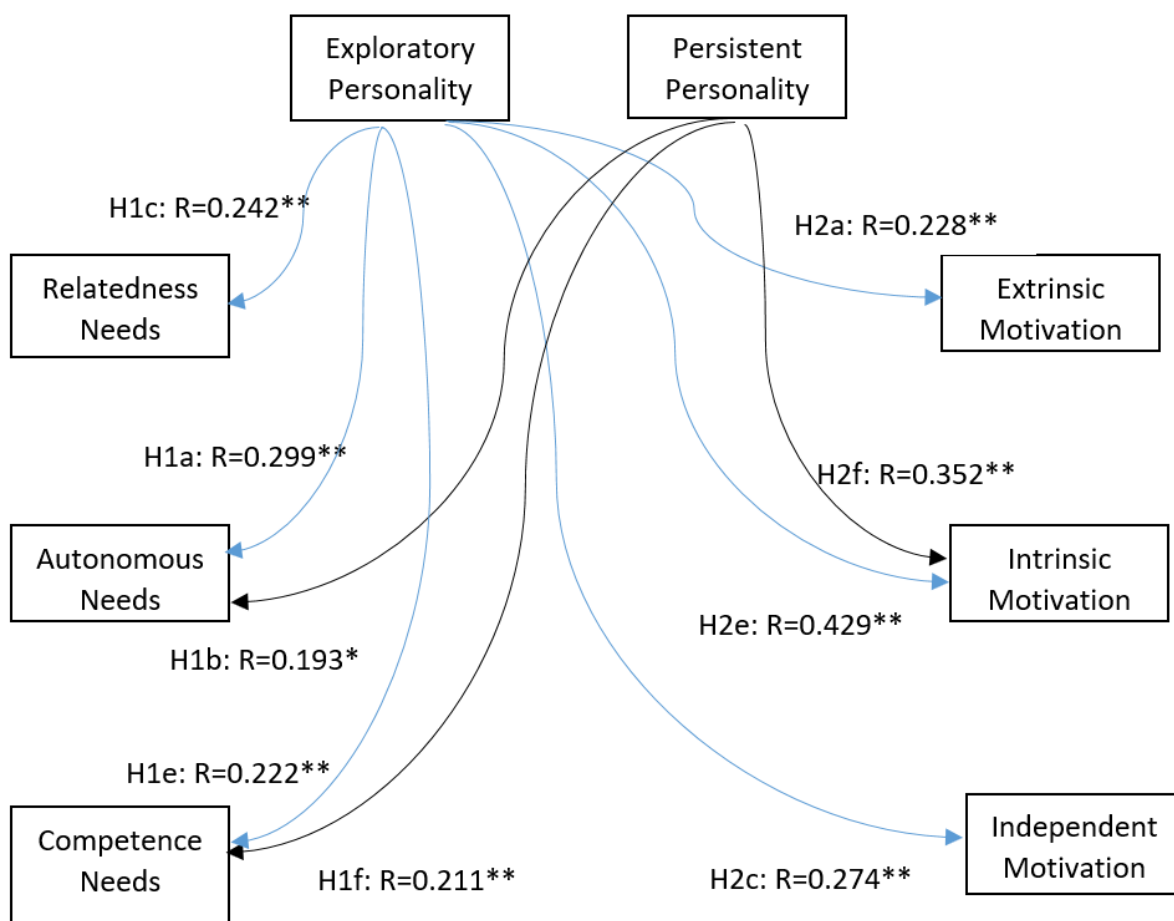


Figure 2. Conclusion of hypotheses in the research model (1).

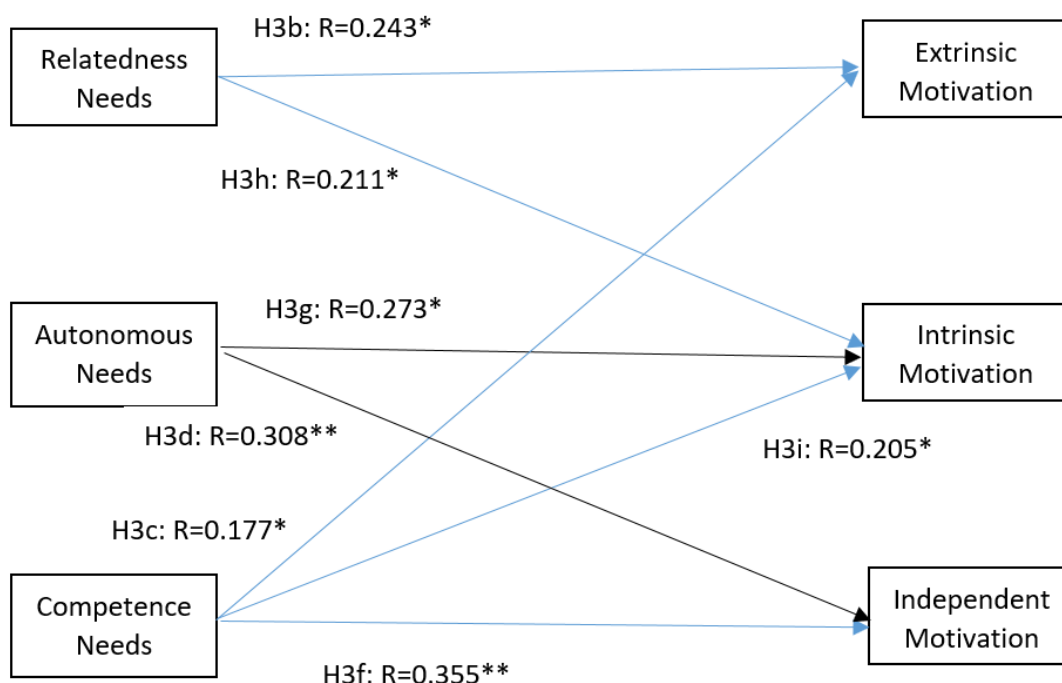


Figure 3. Conclusion of hypotheses in the research model (2).

The following conclusions can be drawn:

1. As evidenced in Models 2, 5, and 8, potential entrepreneurs with an exploratory personality demonstrate a more comprehensive set of basic psychological needs for entrepreneurship. This is reflected in the positive correlations between exploratory personality and autonomy needs ( $R = 0.299$ ), relatedness needs ( $R = 0.242$ ), and competence needs ( $R = 0.279$ ). Individuals with this

personality type are more inclined to independently determine their values, aspirations, and decisions, while simultaneously cultivating broader social relationships. They also exhibit eagerness to compete and a strong belief in their social competitiveness, suggesting that exploratory personality fosters both self-direction and outward engagement in entrepreneurial contexts.

2. As demonstrated in Models 11, 14, and 17, potential entrepreneurs with exploratory personalities exhibit stronger initial entrepreneurial motivations. This is reflected in the positive correlations between exploratory personality and the three motivational dimensions: extrinsic motivation ( $R = 0.228$ ), independent motivation ( $R = 0.274$ ), and intrinsic motivation ( $R = 0.429$ ). Among these, the correlation with intrinsic motivation is the most prominent, indicating that exploratory individuals are particularly driven by personal growth, challenges, and value creation. At the same time, their entrepreneurial pursuits also encompass the goals of obtaining wealth and independence. This highlights the multifaceted nature of exploratory personality, which simultaneously supports value-driven innovation and practical reward orientation
3. As evidenced in Models 3 and 9, potential entrepreneurs with a *persistent personality* are more inclined to exhibit autonomy needs ( $R = 0.193$ ) and competence needs ( $R = 0.211$ ). This suggests that individuals with this personality type are eager to determine their own future and are willing to engage in competitive work and activities. However, as evidenced in Model 6, persistent personality does not significantly correlate with relatedness needs. This indicates that such individuals may pay less attention to cultivating social relationships, leading them to consider entrepreneurial decisions primarily from a subjective perspective while potentially overlooking the relational factors that influence entrepreneurial success.
4. As demonstrated in Model 18, potential entrepreneurs with a persistent personality show a significant positive correlation only with intrinsic motivation ( $R = 0.352$ ). This suggests that individuals with such proactive traits derive their entrepreneurial drive primarily from internal sources, such as personal satisfaction, resilience, and value realization. Since persistent individuals tend to overlook social relationships (as noted in Conclusion 3), they may lack sufficient information from the social environment and are less likely to express extrinsically oriented pursuits such as wealth accumulation or independence. Their entrepreneurial motivation is therefore more inward-focused, emphasizing subjective feelings and intrinsic rewards.
5. Autonomy needs, as evidenced in Models 22 and 25, play a pivotal role in fostering both independent ( $R = 0.308$ ) and intrinsic ( $R = 0.273$ ) entrepreneurial motivation. For individuals with strong autonomous tendencies, the pursuit of independence constitutes a central aspiration prior to engaging in entrepreneurial activity. Their psychological disposition is marked by resistance to managerial control and external constraints, a trait reflected in the positive correlation between autonomy needs and independent motivation. Model 25 further reveals a moderate relationship between autonomy and intrinsic motivation, suggesting that autonomous individuals are also driven by internalized incentives to realize their ideals. By contrast, Model 19 shows no significant correlation between autonomy needs and extrinsic motivation. This absence indicates that autonomy functions primarily as a driver of independence and internalized rewards rather than material gain. Taken together, these findings underscore the distinctive motivational pathway of autonomy needs, highlighting their unique contribution to entrepreneurial independence while distinguishing them from other motivational domains.
6. Relatedness needs, as evidenced in Models 20 and 26, emphasize the importance of cultivating social relationships, which in turn foster both extrinsic and intrinsic entrepreneurial motivation ( $R = 0.243, 0.211$ ). Social relationships provide a foundational context for entrepreneurs to pursue wealth and other material objectives, while simultaneously exerting extrinsic influences on subjective entrepreneurial decisions. For instance, the presence of entrepreneurial role models can readily inspire potential entrepreneurs to seek the realization of self-worth through entrepreneurial activity. These findings suggest that relatedness needs exert a dual positive correlation with intrinsic and extrinsic motivations, reinforcing both material aspirations and personal fulfilment. By contrast, Model 23 reveals no significant correlation between relatedness needs and independent motivation. This absence can be explained by the inherent dependence of relatedness needs on social interaction, which limits the capacity for autonomous, independent motivation. Taken together, these results highlight the relational dimension of entrepreneurial motivation, underscoring the role of social ties in shaping both external incentives and internal drives.
7. Competence needs, as evidenced in Models 21, 24, and 27, highlight the central role of self-confidence and competitiveness. These psychological characteristics are widely recognized as prerequisites for entrepreneurial behavior. Regardless of the specific entrepreneurial motivation, self-confidence and competitiveness remain indispensable. The empirical findings reveal that competence needs are positively correlated with extrinsic motivation, independent motivation, and intrinsic motivation ( $R = 0.177, 0.355, 0.205$ , respectively). Among these, the correlation with independent motivation is particularly pronounced ( $R = 0.355$ ), suggesting that individuals perceive their competence as a

means of escaping managerial control and attaining autonomy as their own boss. This finding underscores the motivational significance of competence in fostering entrepreneurial independence. Moreover, the pursuit of self-worth and wealth emerges as a complementary objective, serving both as an expression of confidence and as a demonstration of competence. Taken together, these results highlight the dual function of competence needs: they not only reinforce entrepreneurial self-belief but also channel aspirations toward autonomy and material achievement.

## 6. Limitations of the Research

This study analyzed in detail the impact of different types of proactive personality possessed by potential entrepreneurs on individual basic psychological needs. Proactive personality and basic psychological needs may lead to different types of entrepreneurial motivations. However, the research still has the following limitations.

1. **Sample Characteristics and Educational Background:** The subjects were students engaged in entrepreneurial studies in Hong Kong. They enrolled in entrepreneurship education due to their needs, desires, and enthusiasm for entrepreneurship, making it reasonable to define them as potential entrepreneurs. Although the 138 valid respondents came from diverse regions in China and different professional backgrounds, they shared similar pre-entry requirements (a minimum bachelor's degree). This homogeneity in academic background limits the breadth of multi-level educational diversity among the research subjects. Future studies should include potential entrepreneurs with varied educational backgrounds to enhance representativeness.
2. **Age Distribution:** The sample included only 16 respondents aged 20–30 and 2 respondents over 50, with the majority aged 30–50. This uneven distribution reduces confidence in generalizing findings to younger potential entrepreneurs (20–30) and older potential entrepreneurs (50+). A more balanced age structure would strengthen the reliability of age-related conclusions.
3. **Neglect of Macroeconomic Factors:** While the study focused on individual proactive personality traits and psychological needs, it did not incorporate broader macroeconomic influences. Factors such as economic trends, policies, business conditions, regional differentiation, and market competition were not considered, even though they significantly affect entrepreneurial behavior. Future research should integrate these external environmental variables to provide a more comprehensive understanding of entrepreneurial motivation.
4. **Influence of Entrepreneurship Education:** All participants were enrolled in entrepreneurship education programs, yet the study did not examine how such education might influence proactive personality, psychological needs, or entrepreneurial motivation. Nor did it explore whether the execution of entrepreneurship education could alter initial traits and motivations, thereby affecting entrepreneurial actions and outcomes. Future research should consider entrepreneurship education as a moderating variable to assess its impact on personality development, psychological needs, and motivational changes.

## References

- Amabile, T. M. (1998). *How to kill creativity*. Boston, MA: Harvard Business School Publishing.
- Ashley-Cotleur, C., King, S., & Solomon, G. (2009). *Parental and gender influences on entrepreneurial intentions, motivations and attitudes*. Paper presented at the USASBE 2003 Proceedings.
- Bartlett, M. S. (1950). Tests of significance in factor analysis. *British Journal of Psychology*, *3*(2), 77-85.
- Bateman, T. S., & Crant, J. M. (1993). The proactive component of organizational behavior: A measure and correlates. *Journal of Organizational Behavior*, *14*(2), 103-118. <https://doi.org/10.1002/job.4030140202>
- Baum, J. R., Locke, E., & Smith, K. G. (2001). A multidimensional model of venture growth. *Academy of Management Journal*, *44*, 292-303.
- Broeck, V. d. A., Vansteenkiste, M., De Witte, H., Soenens, B., & Lens, W. (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.
- Bruce, R. B., & Ireland, R. D. (2016). *Entrepreneurship successfully launching new ventures*. Boston, US: Pearson Global Edition.
- Carsrud, A., & Brännback, M. (2011). Entrepreneurial motivations: What do we still need to know? *Journal of Small Business Management*, *49*(1), 9-26.
- Chen, Z. X., & Francesco, A. M. (2003). The relationship between the three components of commitment and employee performance in China. *Journal of Vocational Behavior*, *62*(3), 490-510.
- Crant, J. M. (1996). The proactive personality scale as a predictor of entrepreneurial intentions. *Management*, *29*(3), 62-74.
- Dailey, R. (1990). *Organizational behaviour*. Edinburgh: Business School, Heriot-Watt University Publications.
- Deci, E., & Ryan, R. M. (2002). *Handbook of self-determination research*. Rochester, NY: University Rochester Press.
- Deci, E. L., Eghrari, H., Patrick, B. C., & Leone, D. R. (1994). Facilitating internalization: The self-determination theory perspective. *Journal of Personality*, *62*(1), 119-142.
- Deci, E. L., & Ryan, R. M. (2000). The "what" and "why" of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry*, *11*(4), 227-268.

- Deci, E. L., Ryan, R. M., Gagné, M., Leone, D. R., Usunov, J., & Kornazheva, B. P. (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. <https://doi.org/10.1177/0146167201278002>
- Fred, P. (2005). *Evaluating research in academic journals: A practical guide to realistic evaluation*. Glendale, CA: Pyrecek Publishing.
- Gilad, B., & Levine, P. (1986). A behavioral model of entrepreneurial supply. *Journal of Small Business Management, 24*(4), 45-53.
- Hay, M., Cox, L. W., & Reynolds, P. D. (2009). Global entrepreneurship monitor (GEM)-2002 executive report. Social Science Electronic Publishing, *3*(1), 66-70.
- Kaiser, H. F. (1974). An index of factorial simplicity. *psychometrika, 39*(1), 31-36. <https://doi.org/10.1007/BF02291575>
- Kuratko, D. F., Hornsby, J. S., & Naffziger, D. W. (1997). An examination of owner's goals in sustaining entrepreneurship. *Journal of Small Business Management, 35*(1), 24.
- Liang, Q. Q. (2021). The relationship between proactive personality, job satisfaction and work-family balance of knowledge workers. *Enterprise Economics, 2021*(4), 45-54.
- Liu, Z., Qin, W., Beck Jr, L. H., Zeng, C., Chen, Z., Li, S., . . . Salant, D. J. (2011). Anti-phospholipase A2 receptor antibody in membranous nephropathy. *Journal of the American Society of Nephrology, 22*(6), 1137-1143.
- Maslow, A. H. (1943). A theory of human motivation. *Psychological Review, 50*(4), 370.
- McClelland, D. C. (1958). *Methods of measuring human motivation*. In J.W. Atkinson (Ed.), *Motives in fantasy, action, and society*. Princeton, NJ: D. Van Nostrand Company.
- McClelland, D. C. (1961). *The achieving society*. New York: The Free Press.
- Meyer, J. P., & Maltin, E. R. (2010). Employee commitment and well-being: A critical review, theoretical framework and research agenda. *Journal of Vocational Behavior, 77*(2), 323-337.
- Nicholls, E., Lehan, T., Plaza, S. L. O., Deng, X., Romero, J. L. P., Pizarro, J. A. A., & Carlos Arango-Lasprilla, J. (2012). Factors influencing acceptance of disability in individuals with spinal cord injury in Neiva, Colombia, South America. *Disability and Rehabilitation, 34*(13), 1082-1088.
- Nunnally, J. (1978). *Psychometric theory*. New York: McGraw-Hill.
- Olson, P. D., & Bosserman, D. A. (1984). Attributes of the entrepreneurial type. *Business Horizons, 27*(3), 53-56. [https://doi.org/10.1016/0007-6813\(84\)90027-2](https://doi.org/10.1016/0007-6813(84)90027-2)
- Qiu, Y.-L., Dombrovska, O., Lee, J., Li, L., Whitlock, B. A., Bernasconi-Quadroni, F., . . . Hilu, K. W. (2005). Phylogenetic analyses of basal angiosperms based on nine plastid, mitochondrial, and nuclear genes. *International Journal of Plant Sciences, 166*(5), 815-842.
- Reynolds, P. D., & Curtin, R. T. (2008). Business creation in the United States: Panel study of entrepreneurial dynamics II initial assessment. *Foundations and Trends in Entrepreneurship, 4*(3), 155-307. <https://doi.org/10.1561/03000000022>
- Robichaud, Y., McGraw, E., & Alain, R. (2001). Toward the development of a measuring instrument for entrepreneurial motivation. *Journal of Developmental Entrepreneurship, 6*(2), 189.
- Ryan, R. M., & Deci, E. L. (2000). Intrinsic and extrinsic motivations: Classic definitions and new directions. *Contemporary Educational Psychology, 25*(1), 54-67. <https://doi.org/10.1006/ceps.1999.1020>
- Seibert, S. E., Crant, J. M., & Kraimer, M. L. (1999). Proactive personality and career success. *Journal of Applied Psychology, 84*(3), 416. <https://psycnet.apa.org/doi/10.1037/0021-9010.84.3.416>
- Shane, S., Locke, E. A., & Collins, C. J. (2003). Entrepreneurial motivation. *Human resource management review, 13*(2), 257-279. [https://doi.org/10.1016/S1053-4822\(03\)00017-2](https://doi.org/10.1016/S1053-4822(03)00017-2)
- Tolman, E. C., & Honzik, C. H. (1930). *Insight in rats*. Berkeley: University of California Press.
- Verheul, I., Thurik, R., Hessels, J., & Van der Zwan, P. (2010). *Factors influencing the entrepreneurial engagement of opportunity and necessity entrepreneurs*. Retrieved from Research Report H201011 Zoetermeer, the Netherlands: EIM Business and Policy Research:
- Wu, M. L. (2012). *SPSS statistical applications*. China: Da Lian: Dongbei University of Finance and Economic Press.
- Xie, Y. H., Zhang, Y. C., & Gao, M. M. (2013). Who will become an entrepreneur? The impact of proactive personality and social capital on entrepreneurial intention. *Journal of Nanjing University Philosophy, Humanities and Social Sciences Edition, 2*, 148-156.
- Zhang, J., Zhang, W., & Deci, E. L. (2012). Basic psychological needs and job satisfaction: Which is the better to predict work performance? *Management Review, 24*(6), 100-106.
- Zhao, Y., Zhang, Z., Liu, N., & Ding, M. (2016). Theory of development of self-actualization: A critical review. *Journal of Management Science, 13*(7), 1095-1104.