

# Risk-Taking Behavior and Entrepreneurship Intention in Indonesia

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**Abstract**—The linkage between risk behavior and entrepreneurship has long been discussed, but there are limited empirical evidences examined in developing country contexts. In order to fill the gap, this study examines the linkage between risk behavior and entrepreneurship based on population data from Indonesia. The data were drawn from the Indonesia Family Life Survey (IFLS) which collected information from 36,376 adults aged 15 or older. The results of logistic regression show that risk taking behavior increases likelihood of entrepreneurship behavior at 1.01 time. (OR = 1.01, *p value* < 0.05). The results were robust against social demographic characteristics; including income, education, religion, social networks, religion and big five personalities factors. The findings indicate the significance of risk taking behavior in the development of entrepreneurship in Indonesia.

**Keywords**—*risk taking behavior, entrepreneurship intention, Indonesia*

## I. INTRODUCTION

The strategic roles of entrepreneurship in economy development have long been acknowledged by scholars and policy makers. Entrepreneurship creates a significant numbers of job opportunities, boosts creativity and innovation, and also enhances competitiveness of the firms, regions and nations. Regarding to the importance of entrepreneurship, studies attempt to identify driving factors of entrepreneurship. One types of study have been extensively performed by scholars are psychology-based studies. This type of studies identify several personal traits as a driving factors of entrepreneurship [1-4]. Munir et al., found that personality traits (risk-taking propensity, proactive personality and internal locus of control) play as a antecedents to Theory of Planned Behavior (TPB) and TPB has positive and significant impact on entrepreneurship [2]. Şahin et al., [3] add that level of entrepreneurial intention is determined by the big five personality traits and entrepreneurial self-efficacy (ESE), while Munir et al. [2].

The correlation of between the big five personalities and entrepreneurship has long been acknowledged by scholars, however none of them explain how these personalities contribute to the entrepreneurship, except Sujarwoto [4]. His study found that the correlation between big five personalities

and entrepreneurship are mixed. Openness, extraversion and agreeableness were positively related to entrepreneurship, while neuroticism and conscientiousness were negatively associated with entrepreneurship.

In addition, Singh and DeNoble [5] explained conscientious individuals are responsible, and they exhibit the qualities that are attributed to good workers. Individuals with conscientious personalities usually demonstrate low levels of risk taking even though risk-taking behavior is one of the characteristics of successful entrepreneurs. Several studies found that risk taking behavior can predict entrepreneurial intention. For example, Douglas and Shepherd [6] found that individuals who want to pursue an entrepreneurial career are higher risk-taking than those who want to find a secure employment with an existing company, while Zhao et al. [7] meta-analytic review identifies association personality trait involving pursuing risks with entrepreneurial intention in.

Although several studies concluded that there is relationship between risk-taking behavior and entrepreneurship, the contradictory empirical results of studies exploring relationships between risk-taking behavior and entrepreneurial intentions are exists. To fill the gap of previous studies, this recent study tries to explore the relationship between risk taking behavior and the entrepreneurship intention and to examine the relationship between several demographic characteristics and entrepreneurship intention.

## II. REVIEW OF THE RELATED LITERATURE

### A. *Entrepreneurship Intention*

There are no perfect variable represents entrepreneurship in the literature but it seems that entrepreneurship intension becomes the one focal variable under studied intensively. There are three factors underly the importance of entrepreneurship intensions in the entrepreneurship studies; intentions are the single best predictor of any planned behavior, including entrepreneurship, personal and situational variables typically have an indirect influence on entrepreneurship through influencing key attitudes and general motivation to act, and the versatility and robustness of intention models support the

broader use of comprehensive, theory-driven, testable process models in entrepreneurship research [8][9].

The intention of individuals to set up new businesses has proven to be frequently used construct in research on entrepreneurship. Entrepreneurial intent has been used as a dependent or independent variable in numerous studies. However, there is lack of common approach to defining and measuring entrepreneurial intention [10]. Several scholars used nascent entrepreneurs, outlook on self-employment or desire to own a business [5,11], while others have used simpler measures of entrepreneurship, such as self-employed status to measure individuals' levels of entrepreneurship [4,12]. This study employs the latter entrepreneurship measure because it represents the entrepreneurship characteristics in Indonesia context.

Entrepreneurship intention is determined by exogenous and endogenous factors. The former factors may be in the forms of social, economy, culture value; formal institutions, entrepreneurship ecosystem, or education, while the latter may be in the form of, knowledge and skill, motivation, need for achievement, self-efficacy or personal traits [1-4]. In regard to the exogenous factors, Estrin et al. [13] identified several demographic characteristics, such as age, gender, education, income, and religion may differ the entrepreneurship in developing countries from developed countries. While, Ajzen [14] and Shapero and Sokol [15] proposed model explaining endogenous factors contributing to the entrepreneurship. Ajzen [14] proposed Theory of Planned Behavior (TPB) which identifies entrepreneurship intention as a product of an individual's attitudes, perceived behavioral control, and perceived social. The entrepreneurial intention, then, is a planned behavior shaped by an individual's attitude toward venturing, perceptions of abilities to operate their new venture and perceptions of social norms about venturing. In different terms, Shapero and Sokol [15] proposed model of the entrepreneurial event (SEE). They argued that entrepreneurial intentions depend on perceptions of personal desirability, feasibility, and propensity to act.

### *B. Risk-taking behaviour*

Not every individual aspires to be an entrepreneur. Those who do start entrepreneurial endeavors seem to have a higher tolerance for risk so risk-taking behavior becomes one of the characteristics of successful entrepreneurs [5,16] and differ entrepreneurs from others. Trimpop [17] defined risk taking behavior as any consciously or non-consciously controlled behavior with a perceived uncertainty about its outcome, and/or about its possible benefits or costs for the physical, economic or psycho-social well-being of oneself or others. Kerr et al. [18] added that risk taking behavior would answer the question of whether something in an individual's personality affects them to take on the risky conditions of entrepreneurship and the impact of this personality trait on outcomes.

Some studies indicate that risk-taking behavior associates with entrepreneurship. For example, Douglas and Shepherd [6] found that individuals who want to pursue an entrepreneurial

career are higher risk-taking than those who want to find a secure employment with an existing company, while Zhao et al. [7] meta-analytic review identifies association personality trait involving pursuing risks with entrepreneurial intention. Brown et al. [19] underscored a systematic relationship between employment contract type and risk preference. They indicate self-employed workers being more (less) likely to engage in the consumption of "risky" (financial security) products. This result is supported by Ahn [20] which found positive and statistically significant effect of risk tolerance on the probability of entering self-employment.

Some studies also acknowledged the tendency of taking-risks or to avoid risks (risk aversion) among individuals is rather consistent, and term the consistency risk propensity [21]. Risk propensity is also a constant and enduring personality trait that has a direct relationship with decision-making behavior [22]. That is, an individual who is risk averse is likely to demonstrate this behavior consistently across activities. For example, when analyzing entrepreneurial intention, researchers found that individual's risk-taking attitude holds a direct and significant explanation power [23].

Regarding to the previous review of empirical studies, it could be hypothesized that risk-taking behavior increase entrepreneurial intention and some demographic characteristics also contribute to the entrepreneurship level.

### III. RESEARCH METHODS

The 2014 wave of the Indonesian Family Life Survey (IFLS) was used by researchers to test the two hypotheses elaborated above. The IFLS is a multi-purpose longitudinal survey that collects data from more than 30,000 individuals from 12,000 households across 258 districts in Indonesia. The data was designed to represent about 83% of the entire population of Indonesia. The IFLS was first started by the RAND Corporation in 1993, and since then four waves of follow-up data collection have been fielded, in 1997, 2000, 2007 and 2014. Before their interviews, respondents were informed of the reasons for the importance of their participation in the study and were provided with "examples of policies that have been affected by the study" [24]. Confidentiality and anonymity were ensured [24]. The dataset is in the public domain and is accessible via the RAND Labor and Population website. The sample was restricted to respondents aged 15 years and older who reported having worked in the previous 12 months and for whom there was complete information on risk taking behavior measure as well as complete information on their employment. The sample included 36,376 persons, which corresponds to approximately 85% of the IFLS 2014 sample included in the job and employment module [24].

#### *A. Variables*

The dependent variable is entrepreneurship. There are no perfect measures of entrepreneurship in the literature [12,25]. However, with a meaningful working definition of

entrepreneurship and suitable datasets available on which to draw, we hoped to obtain a reasonably reliable view of the concept to capture Indonesia's context. In the IFLS, the enumerators asked each respondent: "Which category best describes your job in the last 12 months?" Each respondent was to select one of the following choices: unpaid family worker, self-employed, self-employed with unpaid family workers/temporary workers, self-employed with permanent workers, government worker, casual worker, and private industry worker. In this study, we defined entrepreneurship as a dummy variable indicating that the respondent was self-employed with permanent workers (1 = entrepreneur; 0 = other).

The independent variable is risk-taking behaviors were measured with 22 items used in the Health Retirement Survey [26]. A higher score indicates greater risk-taking behavior on the part of the respondent. Statistical analysis Logistic regression was used because the dependent variable (entrepreneurship) was a binary variable. Odds ratios were presented to measure the association between the risk taking behavior and entrepreneurship [27].

Researchers included socio-demographic factors that may associate to entrepreneurship. Age was treated as a continuous variable. Sex was coded as a dummy variable (1 = female; 0 = male). Marital status was measured using a dummy variable (1 = married; 0 = single, widowed or divorced). Educational status was divided into five categories based on completion of the levels of Indonesia's education system (no formal schooling, elementary school, junior secondary school, high school and university). Household size was treated as a continuous variable indicating the number of individuals within the household. Income was logged to make distribution more symmetrical and to reduce the effect of outliers. Social networks were measured by the sum of respondents' participation in various community activities, including business-based activities. Residence area and religion were treated as dummy variables (1 = urban; 0 = rural; 1 = Muslim, 0 = other religion).

#### IV. RESULTS AND DISCUSSION

Table 1 presents respondent characteristics. Only 7.5% of respondents who intend to open new business. The average score of risk taking behavior is quite small at 2.6 (range 0-11). Most of respondents are young adult age 38 years old and married (71%). Most of them were educated from primary and high school. Only small percentages (13%) those are educated from university. Most of respondents live in urban area (60%) and Muslim (90%). Respondents report at least they involved in 2 community activities. The mean of household expenditure was at 1.1 million rupiah or around 78 USD.

Table 2 and 3 presents logistic regression. In unadjusted model (2), risk taking behavior increases likelihood of entrepreneurship behavior at 1.01 time. This association maintains after controlling for other socio demographic and personality factors. Other confounding factors also show

association with entrepreneurship intention. The likelihood of entrepreneurship intention decreases with age. Older individuals have less intention to open new business than younger individuals. Likewise, female individuals also have less intention to open new business than their counterparts.

TABLE I. RESPONDENT CHARACTERISTICS (N=36.376)

Variables	Mean	S.D	Min	Max
Entrepreneurship intention	7.5%		0	1
Risk taking behavior	2.6		0	11
Age	38.4	15.9	14	96
Female	52%		0	1
Married	71%		0	1
Primary school	32%		0	1
Junior secondary school	18%		0	1
High school	30%		0	1
University	13%		0	1
Household size	4	2	1	17
Monthly expenditure	13.7	0.6	11.2	16.9
Social networks	2.0	1.762	0	12
Urban	60%		0	1
Muslim	90%		0	1
Openness	3.7	0.7	1	5
Consciousness	3.8	0.6	1	5
Extraversion	3.4	0.7	1	5
Agreeableness	3.9	0.5	1	5
Neurotic	2.7	0.7	1	5

The likelihood of entrepreneurship intention increases with education. The odds of entrepreneurship intention of individuals who graduated from high school and university are 2.16 and 2.78 times respectively higher than individuals who do not attend school.

Richer families also have higher likelihood to open new business than poor families. Likewise, individuals who have more networks likely to open new business. Muslim also likely have entrepreneurship intention than non-Muslim. Entrepreneurship intention is shown in openness, consciousness and extraversion individuals, but it does not exist in neurotic individuals. Accordingly, agreeableness individuals have less intention to open new business.

**TABLE II. LOGISTIC REGRESSION RISK TAKING BEHAVIOR AND ENTREPRENEURSHIP INTENTION (N=36.376)**

	Model A			
	OR	SE	p-value	95% CI
Risk taking behavior	1.01	0.00	0.00	1.06-1.10
Age				
Female				
Married				
Primary school				
Junior secondary school				
High school				
University				
Household size				
Monthly expenditure				
Social networks				
Urban				
Muslim				
Openness				
Consciousness				
Extraversion				
Agreeableness				
Neurotic				
Constant	0.07	0.00	0.00	0.06-0.07

**TABLE III. REGRESSION RISK TAKING BEHAVIOR AND ENTREPRENEURSHIP INTENTION (N=36.376)**

	Model B			
	OR	SE	p-value	95% CI
Risk taking behavior	1.02	0.01	0.01	1.00-1.04
Age	0.99	0.00	0.00	0.98-0.98
Female	0.60	0.03	0.00	0.55-0.65
Married	1.45	0.08	0.00	1.30-1.61
Primary school	1.29	0.18	0.06	.098-1.69
Junior secondary school	1.65	0.24	0.00	1.24-2.18
High school	2.16	0.31	0.00	1.63-2.84
University	2.78	0.41	0.00	2.08-3.70
Household size	1.12	0.01	0.00	1.09-1.15
Monthly expenditure	1.44	0.05	0.00	1.34-1.54
Social networks	1.08	0.01	0.00	1.05-1.10
Urban	0.97	0.02	0.16	0.93-1.01
Muslim	1.46	0.13	0.00	1.22-1.74
Openness	1.39	0.05	0.00	1.29-1.49
Consciousness	1.08	0.05	0.06	0.99-1.17
Extraversion	1.09	0.03	0.01	1.02-1.15
Agreeableness	0.88	0.03	0.00	0.80-0.95
Neurotic	1.03	0.03	0.40	0.96-1.09
Constant	0.00	0.00	0.00	0.00-0.00

Table 4 describes regression results of determinants associated with risk taking behavior. Younger individuals, male and single take more risks than older, female and married individuals. Individuals who are educated from university are also willing to take more risks than no schooling individuals. However, individuals with primary, junior and high education less to take a risk than no schooling individuals. Richer individuals are also willing to take more risks than poor individuals. Those who are living in rural areas and non-Muslim are also willing to take more risks than those who live in urban and Muslim. Social networks seem encourage individuals to take more risks. Risk taking behavior is found on openness, agreeableness and neurotic individuals but it is not

found in extraversion individuals. Consciousness person seem have less courage to take risks.

**TABLE IV. REGRESSION DETERMINANTS OF RISK TAKING BEHAVIOR (N=36.376)**

	Coef.	SE	p-value	95% CI	
Age	-0.01	0.00	0.00	-0.01	-0.01
Female	-0.22	0.02	0.00	-0.26	-0.18
Married	-0.12	0.03	0.00	-0.17	-0.07
Primary school	-0.32	0.04	0.00	-0.41	-0.23
Junior secondary school	-0.41	0.05	0.00	-0.51	-0.31
High school	-0.23	0.05	0.00	-0.33	-0.13
University	0.04	0.06	0.47	-0.07	0.15
Household size	0.01	0.01	0.03	0.00	0.03
Monthly expenditure	0.14	0.02	0.00	0.10	0.17
Social networks	0.03	0.01	0.00	0.01	0.04
Urban	-0.04	0.01	0.00	-0.07	-0.02
Muslim	-0.15	0.04	0.00	-0.23	-0.06
Openness	0.12	0.02	0.00	0.09	0.16
Consciousness	-0.05	0.02	0.02	-0.09	-0.01
Extraversion	0.00	0.02	0.90	-0.03	0.03
Agreeableness	0.06	0.02	0.01	0.02	0.10
Neurotic	0.06	0.02	0.00	0.03	0.09
Constant	0.90	0.29	0.00	0.32	1.47

This study examined the relationship between the risk-taking behavior and entrepreneurship in Indonesia. The main findings show that Indonesia’s entrepreneurs exhibit risk taking behavior increases likelihood of entrepreneurship behavior at 1.01 time. (OR = 1.01, p value < 0.05). This finding supports the previous meta-analysis and studies that identified association between taking-risk behavior with entrepreneurial intention [6,7,19,20]. Brown et al. [19] recognized positive association between willingness to take financial risk with future self-employment while Ahn [20] found that relative risk tolerance has a large, positive, and statistically significant effect on the probability of entering self-employment.

The result is robust against social demographic characteristics; including income, education, religion, social networks, religion and big five personalities factors. In regard with demographic characteristics, this study shows the likelihood of entrepreneurship intention decreases with age, female individuals also have less intention to open new business than their counterparts and entrepreneurship intention increases with education.

Age differences probably reflect changing opportunity costs and life circumstances [28,29], age-related changes in preferences [30], and declines in certain cognitive abilities in older age [31]. While women are less likely to start businesses than men probably due to a variety of reasons; personal characteristics, human capital, and barriers related to prejudice concerning access to resources. In terms of personal characteristics, women tend to exhibit lower entrepreneurial self-efficacy and higher fear of failure, both closely associated with business creation [32]. Women especially in emerging economies often have lower levels of human capital (education) and there are more constraints for them in

accessing financial capital [33]. Finally, entrepreneurship is often depicted as a stereotypically male career [34,35].

In regard with finding of entrepreneurship increase with education, it is supported by a meta-analytic review of research across emerging economies performed by van der Sluis, van Praag, and Vijverberg [36]. They found that more educated individuals typically chose wage employment over self-employment. However, if they engage in entrepreneurship, then more educated individuals are likely to engage in non-farm or higher-quality human capital feeds more often into entrepreneurship in developed than emerging economies; more highly educated individuals in emerging economies are more likely to seek wage employment over entrepreneurship, compared with those less educated. entrepreneurship.

Last but not the least, the facts of richer families and individuals who have more networks have higher likelihood to open new business and muslim also likely have entrepreneurship intention than non-Muslim are relevant to the study of Idris and Hijrah Hati [37]. They explained that Muslim country such as Indonesia provides the greater opportunities for Muslims to work in the public sector than for non-Muslims due to religious sentiments.

The study also indicates that entrepreneurship intention is shown in openness, conscientiousness and extraversion individuals, but it does not exist in neurotic individuals. Accordingly, agreeableness individuals have less intention to open new business. These findings are consistent with previous meta-analyses and empirical studies in developed and developing countries that found openness, extraversion and agreeableness to have an important relationship to entrepreneurship [4,25,38].

## V. CONCLUSION

The study shows that risk taking behavior has significant correlation to the entrepreneurship development in Indonesia. The result is also robust against social demographic characteristics; including income, education, religion, social networks, religion and big five personality factors. Other significant findings indicate the significance of risk taking behavior in the development of entrepreneurship in Indonesia. Other interesting findings regard the socio-demographic characteristics of Indonesian entrepreneurs. This study found that Indonesian entrepreneurs tend to be older, male, married, and educated at the elementary or junior high school level, from large and wealthier families, members of larger social networks, urban and Muslim.

The findings of this study have prospects for future research. Given the linkage between risk-taking behavior and entrepreneurship in Indonesia, it may be valuable to use an alternative parameter of entrepreneurship.

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