

# UNIVERSITY STUDENTS' ENTREPRENEURIAL CHARACTERISTICS FROM VARIOUS VARIABLES

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## ABSTRACT

*The development of entrepreneurial characteristics of university students in Indonesia has become an important instrument to strengthen the competitiveness of graduates. Therefore, one objective of this study is to analyse those characteristics from various variables, such as: gender, field of study, GPA (Grade Point Average), and entrepreneurial intention. The sample of the study includes 310 students, which were selected using cluster random sampling based on science and technology field of study and social science and humanities field of study. Data collection instruments used five-point Likert-type scale of five entrepreneurial characteristics (need for achievement, risk-taking propensity, innovativeness, internal locus of control, and pro-activeness). The data were analysed using comparative analysis which was preceded by analysis' requirement tests. The result shows that male students are better in taking risks and being innovative, while female students are better in matters related to internal locus of control and being proactive. Innovativeness, pro-activeness, and the needs for achievement are stronger in science and technology student group. Almost all entrepreneurial characteristics are possessed by the group of students with high GPA. However, there is no difference between students with high level and low level of entrepreneurial intention when it comes to innovativeness and pro-activeness characteristics. Thus, it is suggested that those variables are to be considered in the teaching and learning, as well as in the researches of students' entrepreneurship-related problems.*

**Keywords:** University Students', Entrepreneurial Characteristics.

## INTRODUCTION

It is a policy of Indonesian government to place entrepreneurship as one of the obligatory classes that students must take in universities. One aim of this class is to generate the students' entrepreneurial characters, especially innovation (Sukardi, 2017) beside creativity (Sukardi, 2016). Theoretically, entrepreneurial characteristics according Karimi et al., (2011) encompass: risk-taking propensity, the need for achievement and independence, innovativeness, and self-efficacy. In contrast to Karimi et al., (2011) and Murwani (2016) does not include the need for independence and self-efficacy, but rather, internal locus of control and pro-activeness. These entrepreneurial characteristics, especially innovation, are an interesting strategy for the policy makers to create job opportunities (Komarkova et al., 2015). In addition, a study conducted by Fini et al., (2009) proves that entrepreneurial characteristics play an important role in influencing students' decisions to become entrepreneurs.

Nevertheless, not all entrepreneurial characteristics are relevant for every group of students (Karimi et al., 2011). Gurol & Atsan (2006) therefore suggest the importance of

identifying characteristics that are relevant to each student. Empirical evidence shows that the characteristic of students in the field of Business Administration tends to be more entrepreneurial than that of those in the fields of Applied Informatics, Psychology, and Educational Sciences (Holiienka et al., 2015). The results of the study by Soleimanpour et al. (2014) also emphasized that the higher the achievement index is, the stronger the entrepreneurial characteristics will be and this includes perseverance, needs for achievement, creativity, and locus of control. In addition, students with high entrepreneurial intentions have strong characteristics in terms of optimism, innovativeness, risk-taking propensity, and high level of competitiveness (Ozaralli & Rivenburgh, 2016). In Indonesia, there haven't been any studies that specifically examine university students' characteristic tendency, particularly in terms of their field of study, GPA, and entrepreneurial intentions. Research conducted by Deveci & Çepni (2015) focused on students majoring science-related field of study with variables: grades, genders, work experience, and awards received in all fields.

Apart from that, there was also a study emphasizing on entrepreneurial intentions, because it is a reasonable basic parameter to understand the students who will become entrepreneurs (Choo & Wong, 2006). Empirical evidence shows that students who have high entrepreneurial intentions are related to entrepreneurial characteristics, such as perceived desirability and proactive behavior tendencies (Alhaj et al., 2011). Meanwhile, entrepreneurial intentions have positive impacts on business performance (Radipere & Ladzani, 2014). Entrepreneurial intention thus serves as a strong predictor of business performance, which is observed from revenue, profit, market share, return on investment, the number of employees, and product lines (Radipere & Ladzani, 2014). Therefore, an understanding of the entrepreneurial characteristics is crucial in figuring out the forms of interventions for entrepreneurship education and entrepreneurial studies for students at universities.

## LITERATURE REVIEW

### Entrepreneurial Characteristics

A lot of researchers have studied and identified entrepreneurial characteristics, even though they differ in opinion. Scarborough et al., (2008) wrote down 14 entrepreneurial characteristics, including: the desire to be responsible, taking risk, future orientation, believes in success, desire for feedback, high level of energy, value of achievement over money, commitment level, and tolerance for ambiguity, flexibility, and resilience. Meanwhile, Tajeddini & Mueller (2009) suggest 7 (seven) attributes of entrepreneurial characteristics, including: risk-taking propensity, need for achievement, locus of control, tolerance of ambiguity, self-confidence, innovativeness, and need for autonomy. Furthermore, a simpler version of these characteristics are mentioned by Huber et al., (2014), that which includes the needs for achievement, risk-taking propensities, innovativeness, internal locus of control, and pro-activeness.

Meanwhile, it seems that the prevalence of entrepreneurial characteristics also differs from country to country (for instance, Roland, 2004; Tajeddini & Mueller, 2009). The findings of Tajeddini & Mueller (2009) reveal that characteristics such as autonomy, risk taking propensity, and locus of control are higher in the UK, while characteristics such as need for achievement, tolerance for ambiguity, innovation, and self-confidence are higher in Switzerland. In Indonesia, a number of researchers also mentioned different characteristics. Kusmintarti et al., (2016), mentions 6 (six), namely: internal locus of control, need for achievement, risk taking

propensity, creativity, social networking, and tolerance for ambiguity. Meanwhile, Murwani (2016) only covers the need for achievement, risk-taking propensities, innovativeness, internal locus of control, and pro-activeness.

In this study, 5 (five) characteristics serve as the focus of the study, namely: the needs for achievement, risk-taking propensity, innovativeness, internal locus of control, and pro-activeness. These characteristics were chosen because they are most frequently cited in entrepreneurship literature as having an impact on an individual's choice to become entrepreneurs. In addition, the target group for the study is students in Indonesia. Thus, it is relevant to the five said characteristics (Murwani, 2016).

**First, the Needs for Achievement:** The needs for achievement are very important because, according to McClelland (1961), entrepreneurs are motivated by the need to achieve something. Sagie & Elizur (1999) states that if the need for achievement is strengthened, the individual will be able to do tough jobs, face uncertainty, and would be responsible for all of his actions, including his performance.

**Second, Risk Taking Propensity:** This indicator also plays an important role because an entrepreneur must be able to make decisions in all kinds of situations (Kusmintarti et al., 2016). Mill (Tajeddini & Mueller, 2009) argues that the courage to take a risk is a key factor in differentiating entrepreneurs from managers.

**Third is Innovativeness:** Innovative characteristic is one characteristic that must be present in an entrepreneur. Thomas & Mueller (2000) emphasize that innovation is one of the eternal characteristics of every entrepreneur, as well as the focal point of entrepreneurship. Kılıçer & Odabaşı (2010) stated that the innovation serves as umbrella characteristic for the other characteristics such taking risk, being creative, and possessing leadership ideas.

**Fourth is Internal Locus of Control:** Internal locus of control is often referred to as one of the characters of an entrepreneur. It is important that entrepreneurs possess this characteristics because their actions affect their success (Kusmintarti et al., 2016). Internal locus of control is an individual's general expectation of the outcome of an event within his personal control and understanding (Thomas & Mueller, 2000).

**Fifth is Pro-activeness:** According to Murwani (2016), pro-activeness is a tendency to initiate and maintain an action by emphasizing problem anticipation and prevention. Pro-activeness has a prospective which looks into the future, thinks of the future and continues to seek opportunities for the future (Dess & Lumpkin, 2005).

Understanding the students' entrepreneurial characteristics is very crucial, so that the form of interventions needed for entrepreneurship education can be identified. Therefore, someone's entrepreneurial characteristics should be viewed from various variables. This is because the results of the study show that age, gender, and work experience serve as business success and failure predictors (Coleman, 2000; Lussier & Pfeifer, 2001; Mathews & Moser, 1995). However, these variables show inconsistent results and thus confirmation from further studies is needed.

A study by Matthews and Moser (1995) reported that men have a higher preference for becoming entrepreneurs than women. Women have lower preferences (Verheul et al., 2012), a higher level of fear of failure and locus of control (Mersha & Sriram, 2019), and are less able to become entrepreneurs because their environment is less suitable for entrepreneurial activities (Gupta et al., 2009). Men have a stronger need for autonomy than women (Saral & Alpkan, 2019), and male entrepreneurial characteristics are more prominent in relation to self-confidence level (Nonato et al., 2014). Thus, entrepreneurship is considered a male domain (Soria-Barreto et

al., 2017). However, different result comes from a study conducted by Akyol et al., (2019), which discovered that women have higher tendencies to be entrepreneurs than men if they are supported by a good environment.

Observed from their fields of study, a study by Franke & Lüthje (2004) discovered that students of Massachusetts Institute of Technology (MIT) had higher entrepreneurial characteristics than those at Vienna University of Economics and Business and University of Munich. This is due to a less prominent entrepreneurial education, environments, and different levels of support for entrepreneurship (Franke & Lüthje, 2004). Therefore, technology-oriented students seem to be more inspired in undertaking entrepreneurship because they observe high-tech companies that are growing rapidly in the 21st century (Kakouris & Georgiadis, 2016). This is different from Aksel & Bağci (2016), who concluded that there is no difference in students' entrepreneurial tendencies in relation to fields of study/majors.

In relation to age, a study by Zhao et al., (2021) discovered that age has positive effects on subjective success, size of business, and entrepreneurial or financial success, but has no effect on business growth-and this applies to all age groups: young, middle-aged, and old. A study by Nonato et al., (2014) discover that the older a person is, the higher his level of entrepreneurial characteristics will be, such as: the needs for achievement, the needs for planning, and the needs for power. This finding differ from that of Aksel & Bağci (2016), which discovered that students in 24-26 year old age group have higher entrepreneurial tendencies and sense of new business creation compared to the other age groups. This means that the younger someone is, the higher his innovativeness will be. Ages tend to only possess significant effects on confidence and innovativeness dimensions, but not on the needs for success, locus of control, risk taking, and tolerance for uncertainty (Korkmaz, 2012; Gurol & Atsan, 2006).

Work experience is also a predictor of business success and failure. A study by Rasheed & Rasheed (2003) found that education and work experience influence entrepreneurial characteristics; such case is a greater personal control among youth in America. In contrast to these findings, a study by Zhao et al., (2021) found that young people's work experience in dependent jobs causes them to lose interest in starting their own business in the future. Thus, work experience will become an obstacle that causes people to lose the enthusiasm of becoming one's own boss of the future (Soria-Barreto et al., 2017). Meanwhile, personal, experiential, and other contextual understanding factors are categorized as demographic characteristics that have strong entrepreneurial tendencies (Zhao et al., 2021).

Based on theoretical frameworks and empirical evidences above, the study thus hypothesizes that the students' entrepreneurial characteristics tend to be different in relation to gender, fields of study, and student achievement index variables.

## **Entrepreneurial Intention**

According to Fini et al., (2009), entrepreneurial intention is interpreted as cognitive representation of an action to start a new, independent business, or to generate new value. Meanwhile, Katz & Gartner (1988) interpret it as a process of searching and discovering information that is used as inspiration to seize opportunities (Delmar & Shane, 2003). A person with entrepreneurial intentions is usually more prepared to become an entrepreneur. He also has motivation to build a business, and tends to have strong entrepreneurial characteristics. Krueger & Carsrud (1993) stated that intention has been empirically tested to be a predictor of

entrepreneurial behavior. Thus, knowing someone's entrepreneurial intentions means understanding future entrepreneurs (Choo & Wong, 2006).

Choosing a business path rather than working for other people, choosing a career as an entrepreneur, and planning to start a business are indicators of entrepreneurial intentions (Wijaya, 2008). Meanwhile, Indarti & Rostiani (2008) state that the indicators encompass: choosing a career as an entrepreneur and becoming an entrepreneur rather than becoming an employee in a company/organization. These parameters are also in line with those developed by Turker & Selcuk (2009). According to Turker & Selcuk (2009), entrepreneurial intention is reflected in the action of choosing a business career in the future. Meanwhile, Schwarz et al., (2009) states that the dimensions of intention include: interest in building/starting a business, building a new business in the next 2 years, and building a new business in the next 5 years.

In many studies, entrepreneurial intention serves as dependent variable with a number of predictors, such as: personality, environment, demographics (Indarti & Rostiani, 2008), entrepreneurship education (Birdthistle et al., 2007). Furthermore, risk-taking propensity and the need for achievement, including entrepreneurial families, are positive predictors for entrepreneurial intentions (Nabi et al., 2011). Thus, intentions are not only constructed through education, and therefore, the level of entrepreneurial intention can serve as an instrument to understand student entrepreneurial characteristic tendencies.

Empirical evidence discovered that entrepreneurial intentions are influenced by proactiveness and social supports from families who own businesses (Xanthopoulou & Megalooikonomou, 2020). The study of Saral & Alpkan (2019) also found that the needs for achievement, independence, innovativeness, and the courage to take risks have a positive relationship with entrepreneurial intentions. There is a positive correlation between the needs for achievement, locus of control, awareness, self-efficacy and entrepreneurial intentions (Atiya et al., 2019; Karabulut, 2016; Owoseni, 2014; Çalis, 2012). Alhaj et al., (2011) report that students who possess high entrepreneurial intentions are related to entrepreneurial characteristics, especially perceived desirability and proactive behavior tendency. Likewise, the study by Sun et al., (2020) also explains that risk taking and creativity are important predictors of entrepreneurial intentions. From these theoretical framework and empirical evidence, this study thus proposes the next hypothesis, namely: students who have higher entrepreneurial intentions tend to have stronger entrepreneurial characteristics.

## RESEARCH METHODS

### Types of Research

This study is part of an experimental study of RBV—resource-based view—based experiential learning models. The experiment was preceded by a preliminary study on the students' characteristics using survey method. The identification of the characteristics was intended to determine the characteristic tendencies of each group of students based on their gender, field of study, Grade Point Average, and entrepreneurial intentions. From this identification, a form of entrepreneurship education intervention is obtained using experiential learning models.

## Population and Sampling

The population of this study is all active regular students of University of Mataram who take entrepreneurship class in the even semester of 2018/2019, with the total of 5.580 people (Universitas Mataram, 2018) that are divided into science and technology group and social science and humanities group. Out of that number, a sample of 310 people was selected using cluster random sampling. Four classes of science and technology field of study (152 students) and four classes of social science and humanities (158 students) were chosen. In addition, the classes were selected randomly.

## Research Instrument

Entrepreneurial characteristics in this study refer to the characteristics stated by Huber et al., (2014) and Murwani (2016), which encompass: the need for achievement, tendency to take risk (risk-taking propensity), innovativeness, internal locus of control, and pro-activeness. The entrepreneurial intention refers to the dimensions developed by Schwarz et al., (2009), which include: an interest to start a business, an opportunity to create a new business in 2 years, and an opportunity to create a new business in 5 years. Data on entrepreneurial characteristics and intentions were taken using questionnaires in the form of a 5-point Likert Scale, which encompass: strongly agree (score 5), agree (score 4), slightly disagree (score 3), disagree (score 2), and strongly disagree (score 1). One example of entrepreneurial characteristics instrument is "I can make my own decisions without depending on others", while the example of an entrepreneurial intention instrument is "I am interested in starting my own business". The data on Students' GPA were retrieved using a document review, based on the students' GPA administered by University of Mataram's Technology and Information Centre.

## Technical Analysis

The data were analyzed quantitatively through comparative analysis, using different sample t test formulations. The statistical analysis would be accompanied by Levene test for homogeneity. All calculations for the comparative analysis, including the homogeneity test, use computer program SPSS version 22.00 for Windows.

## RESULTS

Based on alpha Cronbach's test value,  $\alpha$  value obtained for the need for achievement is 0.71; whereas  $\alpha$  value for risk taking propensity is 0.73, innovativeness 0.71, internal locus of control 0.79, and pro-activeness 0.75. As for all aspects of entrepreneurial intention, their alpha Cronbach's  $\alpha$  value is 0.79. Thus, the instruments have fulfilled validity and reliability based on the criteria suggested by Nunnally (1994), that is, above 0.70.

Furthermore, the results of homogeneity test using test of homogeneity of variance, showed levene statistical value of 2.815 with probability value of  $0.036 > 0.05$  for entrepreneurial characteristics, which means the data is not homogenous. As for entrepreneurial intentions, the levene statistic value obtained is 2.058 with a probability value of  $0.055 > 0.05$ , which means that the data is homogenous. In addition is the result of Kolmogorov Smirnov normality test, in which a value of 4.749 was obtained for the needs for achievement dimension; 4.5594 for the dimension of risk-taking propensity; 5.165 for innovativeness; 6.275 for internal locus of control;

and 5.183 for pro-activeness. The test of significance results in probability value of less than 0.05 for all dimensions. Due to these results, it can be concluded that the data is also not normally distributed.

The results of the comparative test using test-Mann-Whitney U for gender variable show that female students have stronger interpreneurial characteristics in internal locus of control and proactiveness (Table 1). The results of the study showed that there was no difference in the need for achievement of male and female students’.

Dimension	Group	z-value	Sig	Description
The needs for achievement	Male	-0.068	0.946	Of no difference
	Female			
Risk-taking propensity	Male	-2.109	0.035	Male
	Female			
Innovativeness	Male	-2.526	0.012	Male
	Female			
Internal Locus of Control	Male	-2.307	0.021	Female
	Female			
Proactiveness	Male	-2.119	0.034	Female
	Female			

*Source: Primary Data Processing*

Next is test-Mann-Whitney U result for field of study variable. It shows that students of Science and Technology fields have stronger entrepreneurial characteristics for the need for achievement, innovativeness, and pro-activeness dimensions (Table 2).

Dimension	Group	z-value	Sig	Description
The needs for achievement	Science and technology	-15.708	0.000	Science and technology
	Social science and humanities			
Risk-taking propensity	Science and technology	-2.142	0.032	Social science and humanities
	Social science and humanities			
Innovativeness	Science and technology	-2.011	0.044	Science and technology
	Social science and humanities			
Internal Locus of Control	Science and technology	-2.059	0.040	Social science and humanities
	Social science and humanities			
Proactiveness	Science and technology	-2.024	0.043	Science and technology
	Social science and humanities			

*Source: Primary Data Processing*

As for entrepreneurial intention variable, students with high entrepreneurial intention are stronger in all dimensions of entrepreneurial characteristics, except for innovativeness and proactiveness dimension. Interpreneurial intention becomes an important parameter in measuring students’ tendency to become entrepreneurs (Table 3).

<b>Dimension</b>	<b>Group</b>	<b>z-value</b>	<b>Sig</b>	<b>Description</b>
The need for achievement	High	-2.035	0.042	High
	Low			
Risk Taking Propensity	High	-2.155	0.031	High
	Low			
Innovativeness	High	-0.351	0.725	Of no difference
	Low			
Internal Locus of Control	High	-2.091	0.037	High
	Low			
Proactiveness	High	-0.800	0.424	Of no difference
	Low			

*Source: Primary Data Processing*

Lastly, for students' GPA variable, the students that possess higher GPA have stronger entrepreneurial characteristics (Table 4). This means that for students with higher GPA, there is a tendency that their entrepreneurial characteristics are also stronger.

<b>Dimensions</b>	<b>Group</b>	<b>z-value</b>	<b>Sig</b>	<b>Description</b>
The need for achievement	High	-2.076	0.035	High
	Low			
Risk taking propensity	High	-2.040	0.039	High
	Low			
Inovatiness	High	-2.019	0.043	High
	Low			
Internal Locus of Control	High	-2.152	0.030	High
	Low			
Proactiveness	High	-2.530	0.011	High
	Low			

*Source: Primary Data Processing*

## DISCUSSION

Based on these findings, the understanding of the entrepreneurial characteristics of students from various variables becomes an important factor before the implementation of entrepreneurship education. Male students' tendency to take risk and to be innovative is stronger due to the higher level of self-confidence in men. This is in line with the finding of Deveci & Çepni (2015) because it is closely related to male students' self-confidence. In addition, men's flexibility and willingness to change their characteristics can contribute to more innovation (Deveci & Çepni, 2015; Çalış, 2012; Luksyte et al., 2018). This finding also confirms the findings of Negiz et al., (2009) and Akman & Bektaş (2015) that male students are more innovative and are more willing to take risks. Men are also more daring to take higher risks than women (Yordanova & Alexandrova-Boshnakova, 2011) and are more confident in making entrepreneurial innovations (Nonato et al., 2014). The entrepreneurial characteristics of women are still low in these aspects (Verheul et al., 2012), and women even tend to be pusillanimous because of their higher level of fear of failure (Mersha & Sriram, 2019). The findings of Saral & Alpan (2019) discover that women are still weak in terms of the need for autonomy when compared to men. Confirmation of these findings ratifies that entrepreneurship seems to be an



area for male entrepreneurs, even though women have stronger entrepreneurial characteristics in certain dimensions. This implies that in entrepreneurship education, one must pay attention to each prospective entrepreneurs' (students) strength based on his/her gender so that entrepreneurial characteristics can be increasingly useful in creating jobs and or developing businesses.

Furthermore, students in the Science and Technology fields are stronger in the need for achievement, innovativeness, and pro-activeness dimensions. This finding is interesting, because on the one hand, the field of science deals with new knowledges and new sciences, while on the other hand, entrepreneurship deals with how to create and add value to a product. As a matter of fact, technological advances, demands for needs, and development opportunities in the fields of science and natural resources have generated various innovations, such as biotechnology and the like. A lot of science and technology students tend to have started undertaking entrepreneurship (Kakouris & Georgiadis, 2016). In practice, they study living things and products from these living things to produce goods and services. The application of food biotechnology in Indonesia, for example, has placed many graduates in various entrepreneurial professions. This finding is in line with the study of Bikse & Riemere (2013), who reported that Science and Technology field groups tend to expect entrepreneurship content that leads to the strengthening of creativity, skills for independent learning, as well as analyzing failure and success. Another research that also supports this claim was carried out by Van der Lingen & Van Niekerk (2015). The research states that students in the field of Science have higher needs for achievement and innovativeness than those in the Social field. This implies that entrepreneurship education must pay attention to the strengths of each student based on their field of science. Intervention for entrepreneurship teaching approaches, methods, and materials should be adjusted according to the students' fields of science wherever possible, so that the students' entrepreneurial characteristics are stronger. Thus, constructivist theory and virtual learning-oriented learning models become very relevant in the learning, as the study of Adekantari et al., (2020) found.

In addition, this study also proves that a higher GPA and entrepreneurial intention will result in stronger entrepreneurial characteristics. That is, the higher the students' GPA and entrepreneurial intention are, the stronger the entrepreneurial characteristics of the students will be. Achievement index reflects the academic quality achievements obtained by the students as a result of their learning. Suryana (2006) states that ideally, high achievers are people who possess entrepreneurial spirit. The study of Soleimanpour et al., (2014) proved how strong students who have high achievement indexes' entrepreneurial characteristics are. In addition to the achievement index, students who have high entrepreneurial intentions also have stronger entrepreneurial spirit or characteristics. High intention reflects a person's strong desire to choose doing business instead of being a job seeker. This empirical evidence confirms that strong entrepreneurial intentions are highly correlated with entrepreneurial characteristics (Atiya et al., 2019; Karabulut, 2016). Nabi et al., (2011) proves that the need for achievement and the courage to take risks are positive predictors of entrepreneurial intentions. Ang & Hong (2000) also discovered that personality characteristic factor is a predictor of entrepreneurial intentions. Entrepreneurial intention represents an individual's commitment to starting a new business and is the first step towards entrepreneurial behavior (Soria-Barreto et al., 2017). Thus, these variables become an important factor in strengthening entrepreneurship education's relevance in order to produce competitive graduates with characters, as advised by Sukardi et al., (2019).

## CONCLUSION AND IMPLICATIONS

The students' tendency of entrepreneurial characteristics differs based on gender, field of study, interpreneurial intention level, and GPA. All of these variables make up important factors in intervening the entrepreneurship education's content and teaching and learning process. For instance, for students of science and technology, the content and the teaching and learning process emphasize more on strengthening their need for achievement, innovativeness, and proactiveness, whereas the courage to take risk as well as internal locus of control aspects remains the references for students of social science and humanities. The implication of this finding is that it is important that they are to be considered in the teaching and learning process, as well as in the researches that are conducted that are related to students' entrepreneurship.

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## REFERENCES

- Adekantari, P., Su'ud, & Sukardi. (2020). The Influence of Instagram-Assisted Project Based Learning Model on Critical Thinking Skills. *Journal of Educational and Social Research*, 10(6), 315-315.
- Akman, S.U., & Bektaş, H. (2015). Üniversite öğrencilerinin girişimci özelliklerinin incelenmesi. *Marmara Üniversitesi İktisadi ve İdari Bilimler Dergisi*, 37(1), 217-232.
- Aksel, İ., & Bağcı, Z. (2016). Girişimcilik Eğilimi; Bir Kamu Üniversitesinin İİBF'sinde Öğrenim Gören Son Sınıf Öğrencilerinde Bir Araştırma. *İtobiad: Journal of the Human & Social Science Researches*, 5(7).
- Akyol, C., Zengin, B., Akkaşoğlu, S., & Ulama, Ş. (2019). Önlisans öğrencilerinin girişimcilik eğitimleri ve eğilimleri üzerine bir araştırma. *Electronic Turkish Studies*, 14(4).
- Alhaj, B.K., Yusof, M.Z., & Edama, N. (2011). Entrepreneurial Intention: An Empirical Study of Community College Students in Malaysia. *Malaysian Journal on Student Advancement*, 14.
- Ang, S.H., & Hong, D.G. (2000). Entrepreneurial spirit among east Asian Chinese. *Thunderbird International Business Review*, 42(3), 285-309.
- Atiya, T.M.S., Bilal, Z.O., Abulhamid, M., & Shoaib, S.A. (2019). The impact of entrepreneurial characteristics on entrepreneurial intention of Sudanese and Omani university students. *European Scientific Journal*, 15(4), 1857-7881.
- Bikse, V., & Riemere, I. (2013). The development of entrepreneurial competences for students of mathematics and the science subjects: The Latvian experience. *Procedia-Social and Behavioral Sciences*, 82, 511-519.
- Birdthistle, N., Hynes, B., & Fleming, P. (2007). Enterprise education programmes in secondary schools in Ireland. *Education+ Training*, 49(4), 265-276.
- Çalis, N. (2012). Üniversite öğrencilerinin girişimcilik eğilimleri üzerine bir araştırma: bandırma iibf işletme bölümü örneği. *Süleyman Demirel Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi*, 17(2), 423-435.
- Choo, S., & Wong, M. (2006). Entrepreneurial intention: Triggers and barriers to new venture creations in Singapore. *Singapore Management Review*, 28(2), 47-64.
- Coleman, S. (2000). Access to capital and terms of credit: A comparison of men-and women-owned small businesses. *Journal of Small Business Management*, 38(3), 37.
- Delmar, F., & Shane, S. (2003). Does business planning facilitate the development of new ventures? *Strategic Management Journal*, 24(12), 1165-1185.
- Dess, G.G., & Lumpkin, G.T. (2005). The role of entrepreneurial orientation in stimulating effective corporate entrepreneurship. *Academy of Management Perspectives*, 19(1), 147-156.
- Deveci, İ., & Çepni, S. (2015). Examining Science Teacher Candidates' Entrepreneurial Characteristics According to Some Variables. *International Online Journal of Educational Sciences*, 7(3).
- Fini, R., Grimaldi, R., & Sobrero, M. (2009). Factors fostering academics to start up new ventures: an assessment of Italian founders' incentives. *The Journal of Technology Transfer*, 34(4), 380-402.

- Fini, R., Grimaldi, R., Marzocci, G.L., & Sobrera, M. (2009). The Foundation of Entrepreneurial Intention. Paper presented at *The Summer Conference On Copenhagen Business School, Denmark*, 17-19. Retrieved from: [https://www.scirp.org/\(S\(351jmbntvnsjt1aakpozsjje\)\)/reference/ReferencesPapers.aspx?ReferenceID=2019131](https://www.scirp.org/(S(351jmbntvnsjt1aakpozsjje))/reference/ReferencesPapers.aspx?ReferenceID=2019131)
- Franke, N., & Lüthje, C. (2004). Entrepreneurial intentions of business students-A benchmarking study. *International Journal of Innovation and Technology Management*, 1(03), 269-288.
- Gupta, V.K., Turban, D.B., Wasti, S.A., & Sikdar, A. (2009). The role of gender stereotypes in perceptions of entrepreneurs and intentions to become an entrepreneur. *Entrepreneurship Theory and Practice*, 33(2), 397-417.
- Gurool, Y., & Atsan, N. (2006). Entrepreneurial characteristics amongst university students: Some insights for entrepreneurship education and training in Turkey”, *Education and Training*, 48(1), 25-38.
- Holienka, M., Holienková, J., & Gál, P. (2015). Entrepreneurial characteristics of students in different fields of study: A view from entrepreneurship education perspective. *Acta Universitatis Agriculturae et Silviculturae Mendelianae Brunensis*, 63(6), 1879-1889.
- Huber, L.R., Sloof, R., & Van Praag, M. (2014). The effect of early entrepreneurship education: Evidence from a field experiment. *European Economic Review*, 72, 76-97.
- Indarti, N., & Rostiani, R. (2008). Intensi kewirausahaan mahasiswa: Studi perbandingan antara Indonesia, Jepang dan Norwegia. *Jurnal Ekonomika Dan Bisnis Indonesia*, 23(4), 1-27.
- Kakouris, A., & Georgiadis, P. (2016). Analysing entrepreneurship education: A bibliometric survey pattern. *Journal of Global Entrepreneurship Research*, 6(1), 1-18.
- Karabulut, A.T. (2016). Personality traits on entrepreneurial intention. *Procedia-Social and Behavioral Sciences*, 229, 12-21.
- Karimi, S., Biemans, H.J., Lans, T., Arasti, Z., Chizari, M., & Mulder, M. (2011). Application of structural equation modelling to assess the effect of entrepreneurial characteristics on students’ entrepreneurial intentions. *Proceedings of ECIE*, 954-967.
- Katz, J., & Gartner, W.B. (1988). Properties of emerging organizations. *Academy of Management Review*, 13(3), 429-441.
- Kılıçer, K., & Odabaşı, H.F. (2010). Individual innovativeness scale (is): The study of adaptation to Turkish, *Validity and Reliability*. 38, 150-164.
- Komarkova, I., Gagliardi, D., Conrads, J., & Collado, A. (2015). Entrepreneurship Competence: An Overview of Existing Concepts, Policies and Initiatives â€œFinal report. *JRC Working Papers*, (JRC96531).
- Korkmaz, O. (2012). Üniversite öğrencilerinin girişimcilik eğilimlerini belirlemeye yönelik bir araştırma: Bülent ecevit üniversitesi örneği. Afyon Kocatepe Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi. *Journal of Economics & Administrative Sciences/Afyon Kocatepe Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi*, 14(2), 209-226.
- Krueger, N.F., & Carsrud, A.L. (1993). Entrepreneurial intentions: Applying the theory of planned behaviour. *Entrepreneurship & Regional Development*, 5(4), 315-330.
- Kusmintarti, A., Thoyib, A., Maskie, G., & Ashar, K. (2016). Entrepreneurial characteristics as a mediation of entrepreneurial education influence on entrepreneurial intention. *Editorial Review Board*, 19(1), 24.
- Luksyte, A., Unsworth, K.L., & Avery, D.R. (2018). Innovative work behavior and sex-based stereotypes: Examining sex differences in perceptions and evaluations of innovative work behavior. *Journal of Organizational Behavior*, 39(3), 292-305.
- Lussier, R.N., & Pfeifer, S. (2001). A cross national prediction model for business success. *Journal of Small Business Management*, 39(3), 228-239.
- Mathews, C.H., & Moser, S.B. (1995). Family background and gender: Implications for interest in small firm ownership. *Entrepreneurship & Regional Development*, 7(4), 365-378.
- McClelland, D.C. (1961). *The achieving society*. Princeton. VanNostrand.
- Mersha, T., & Sriram, V. (2019). Gender, entrepreneurial characteristics, and success: Evidence from Ethiopia. *Thunderbird International Business Review*, 61(2), 157-167.
- Murwani, F.D. (2016). Model pendidikan entrepreneurship di perguruan tinggi: Upaya menumbuhkan entrepreneur dan intrapreneur dalam wadah entrepreneurial university. Pidato Pengukuhan Guru Besar pada Fakultas Ekonomi Universitas Negeri Malang. *Malang: Fakultas Ekonomi Universitas Negeri Malang*.
- Nabi, G., Liñán, F., Ertuna, Z. Í., & Gurel, E. (2011). The moderating role of higher education on entrepreneurship. *Education+ training*, 53 (5), 387-402.
- Negiz, N., Özdaşlı, K., Özkul, G., & Alparslan, A.M. (2009). Girişimcilik özellikleri ve tipleri açısından cinsiyet farklılıkları: SDÜ-İİBF araştırması. *Uluslararası-Disiplinlerarası Kadın Çalışmaları Kongresi*, 05-07.

- Nonato, L.F.R., Leal, B.A., & Rocha, A.R.J. (2014). The Influence of age and gender on entrepreneurial behaviour characteristics of students and professionals of business administration. *African Journal of Business Management*, 8(21), 1019-1028.
- Nunnally, J.C. (1994). *Psychometric theory 3E*. Tata McGraw-hill education.
- Owoseni, O.O. (2014). The influence of some personality factors on entrepreneurial intentions. *International Journal of Business and Social Science*, 5(1).
- Ozaralli, N., & Rivenburgh, N. K. (2016). Entrepreneurial intention: Antecedents to entrepreneurial behavior in the USA and Turkey. *Journal of Global Entrepreneurship Research*, 6(1), 1-32.
- Radipere, N. S., & Ladzani, W. (2014). The effects of entrepreneurial intention on business performance. *Journal of Governance and Regulation*, 3(4).
- Rasheed, H.S., & Rasheed, B.Y. (2003). Developing entrepreneurial characteristics in minority youth: The effects of education and enterprise experience. In *Ethnic entrepreneurship: Structure and process*. Emerald Group Publishing Limited.
- Roland, G. (2004). Law and economics workshop: Entrepreneurship: First results from Russia. *University of California, Berkeley*.
- Sagie, A., & Elizur, D. (1999). Achievement motive and entrepreneurial orientation: a structural analysis. *Journal of Organizational Behavior: The International Journal of Industrial, Occupational and Organizational Psychology and Behavior*, 20(3), 375-387.
- Saral, H., & Alpkın, L. (2019). Differences in Entrepreneurial Intention and Characteristics according to Demographics and Other Factors. *The European Proceedings of Social & Behavioural Sciences (EpSBS)*.
- Scarborough, N.M., Zimmerer, T., & Wilson, D. (2008). *Essentials of entrepreneurship and small business management: Instructor's manual with test item file & video guide*. Pearson Prentice Hall.
- Schwarz, E.J., Wdowiak, M.A., Almer-Jarz, D.A., & Breitenecker, R.J. (2009). The effects of attitudes and perceived environment conditions on students' entrepreneurial intent. *Education+ Training*, 51 (4): 272-291.
- Soleimanpour, M.R., Hosseini, S.J.F., & Farzam, M. (2014). Study of the relationship between entrepreneurial characteristics and students'academic achievement (Case study: Islamic Azad University, Varamin-Pishva Branch). *Indian Journal of Fundamental and Applied Life Sciences*, 4, 1058-1062.
- Soria-Barreto, K., Honores-Marin, G., Gutiérrez-Zepeda, P., & Gutiérrez-Rodríguez, J. (2017). Prior exposure and educational environment towards entrepreneurial intention. *Journal of Technology Management & Innovation*, 12(2), 45-58.
- Sukardi, S. (2016). Desain Model Prakarya dan Kewirausahaan Berbasis Ekonomi Kreatif Berdimensi Industri Keunggulan Lokal. *Jurnal Cakrawala Pendidikan*, 35(1).
- Sukardi, S. (2017). Efektivitas Model Prakarya dan Kewirausahaan Berbasis Ekonomi Kreatif Berdimensi Industri Keunggulan Lokal terhadap Keinovatifan Siswa. *Cakrawala Pendidikan*, (2), 96061.
- Sukardi, S., Rusdiawan, R., & Wardana, L. (2019). The Competitiveness of Master of Education Graduates: Porter's Diamond Analysis. *International Journal of Emerging Technologies in Learning (iJET)*, 14(19), 179-187.
- Sun, H., Pofoura, A.K., Mensah, I.A., Li, L., & Mohsin, M. (2020). The role of environmental entrepreneurship for sustainable development: evidence from 35 countries in Sub-Saharan Africa. *Science of the Total Environment*, 741, 140132.
- Suryana, D., & Si, M. (2006). Kewirausahaan: Pedoman Praktis (Kiat dan proses menuju sukses). *Jakarta: Salemba Empat*.
- Tajeddini, K., & Mueller, S.L. (2009). Entrepreneurial characteristics in Switzerland and the UK: A comparative study of techno-entrepreneurs. *Journal of International Entrepreneurship*, 7(1), 1-25.
- Thomas, A.S., & Mueller, S.L. (2000). A case for comparative entrepreneurship: Assessing the relevance of culture. *Journal of International Business Studies*, 31(2), 287-301.
- Turker, D., & Selcuk, S.S. (2009). Which factors affect entrepreneurial intention of university students? *Journal of European Industrial Training*, 33(2), 142-159.
- Universitas Mataram. (2018). Mahasiswa aktif program reguler Universitas Mataram yang melakukan registrasi. Mataram: Bagian Registrasi Universitas Mataram.
- Van der Lingen, E., & Van Niekerk, G. (2015). Entrepreneurship traits of Science, Engineering and Technology (SET) students. *The Southern African Journal of Entrepreneurship and Small Business Management*, 7(1), 117-144.

- Verheul, I., Thurik, R., Grilo, I., & Van der Zwan, P. (2012). Explaining preferences and actual involvement in self-employment: Gender and the entrepreneurial personality. *Journal of Economic Psychology*, 33(2), 325-341.
- Wijaya, T. (2008). Kajian model empiris perilaku berwirausaha UKM DIY dan Jawa Tengah. *Jurnal manajemen dan kewirausahaan*, 10(2), 93-104.
- Xanthopoulou, P. & Megalooikonomou, I. (2020). Determinants of entrepreneurial intention among university students: the impact of entrepreneurship education on entrepreneurial intention at Greek universities students and their contribution to the development of students' entrepreneurial mindset. *International Journal of Science and Research*, 9(9).
- Yordanova, D.I., & Alexandrova-Boshnakova, M.I. (2011). Gender effects on risk-taking of entrepreneurs: Evidence from Bulgaria. *International Journal of Entrepreneurial Behavior & Research*.
- Zhao, H., O'Connor, G., Wu, J., & Lumpkin, G.T. (2020). Age and entrepreneurial career success: A review and a meta-analysis. *Journal of Business Venturing*, 36(1), 106007.