The Mediating Role of Entrepreneurial Orientation: The Impact of Knowledge Entrepreneurship on Entrepreneurial Intention

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Abstract.
Students in Indonesia still have poor entrepreneurial intents, and their attitude after gradu ation is to hunt for work rather than create their own businesses. This research tries to examine the role of entrepreneurial knowledge on entrepreneurial orientation and entrepreneurial intentions as well as the mediating role of entrepreneurial orientation. This quantitative research used an online survey of 261 students at the Faculty of Economics, Universitas Negeri Medan. Smart-PLS was used to test the hypothesis and the Mann-Whitney test measures differences in entrepreneurial intentions and orientation among gender, educational background, experience and parental occupation. Research findings showed that entrepreneurial knowledge has a positive and significant role in entrepreneurial intentions. Entrepreneurial orientation has been proven to mediate the influence of entrepreneurial knowledge on entrepreneurial intentions. There were no differences in entrepreneurial intentions and orientations between genders and educational backgrounds, however there were differences between students with or without experience and parental employment.

Keywords: Entrepreneurial Intention, Entrepreneurial Knowledge, Entrepreneurial Orientation.

1 Introduction

Indonesia's global entrepreneurship index in 2019 ranked 75th out of 137 countries, lagging behind Singapore ranked 27th, Malaysia 43rd, Brunei Darussalam 48th, Thailand 54th and Vietnam 73rd [1]. This illustrates that the Indonesian people's interest in entrepreneurship is still lower than in several Southeast Asian countries. College graduates as the younger generation are expected to contribute to overcoming this. Because the role of young people in developing countries in entrepreneurship is considered an important asset [2].

A person's readiness to become an entrepreneur is determined by their intentions and perceptions of entrepreneurship. Perceptions of entrepreneurship are influenced by the

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knowledge and experience they have regarding entrepreneurship. Entrepreneurial knowledge includes functional-oriented knowledge and strategic management function-oriented knowledge [3]. Entrepreneurship researchers in various parts of the world try to study what factors can influence entrepreneurial intentions. However, the role of human capital has not been widely explored. Human capital is a collection of aspects of knowledge, expertise and skills which make a human being an asset in an organization. In this context, entrepreneurship education is able to provide entrepreneurial knowledge about how to form or plan, run and develop a business as well as the character that an entrepreneur needs. This can be conceptualized as entrepreneurial knowledge. Entrepreneurship education and previous experience can increase perceptions and shape a person's entrepreneurial motivation [4]. Furthermore, entrepreneurship education has a positive effect on entrepreneurial decision making and entrepreneurial intentions [5]. The contribution of entrepreneurial knowledge is increasingly important, because individuals have a strong intention to have a business, when they feel capable of running the business, and there is a desire for them to carry out the business activity (desirable) [6]. The level of knowledge possessed will determine a person's intention to become an entrepreneur. There are three types of knowledge that are considered important for new businesses, namely: (1) The business's competitive position; (2) The type of business approach being implemented, and, (3) Creating, building and harvesting new businesses [7].

There has been a lot of research examining the relationship between entrepreneurship education and intention. Among other things, the findings state that entrepreneurship education influences mindset, knowledge and entrepreneurial intentions [8]. Furthermore, entrepreneurial knowledge influences students' intentions to become entrepreneurs [8]. However, the link between entrepreneurial knowledge and entrepreneurial orientation still needs to be established. Entrepreneurial orientation is a concept that describes a person's attitude or behavior that is driven by the desire to start a business or business. Students' entrepreneurial knowledge can be measured using indicators; knowledge of marketing, sales, behavior, strategy, business development, opportunity analysis, accounting and finance, creativity, and business planning [9]. All the indicators above are the knowledge needed by an entrepreneur.

This research generally looks at the influence of entrepreneurial orientation on entrepreneurial knowledge. However, this research tries to test the opposite effect of entrepreneurial knowledge on entrepreneurial orientation with the rationale that the knowledge one has about entrepreneurship will influence a person's perception and perspective on entrepreneurship. The influence of entrepreneurial knowledge on entrepreneurial intentions was also tested as well as the mediating role of entrepreneurial orientation on the relationship between entrepreneurial knowledge and entrepreneurial intentions. This research also tested the differences between gender, background knowledge, experience and parental occupation.

1.1. Entrepreneurship Knowledge, Orientation and Entrepreneurial Intentions

Entrepreneurial knowledge as a transversal competency that applies to all areas of life; starting from personal development efforts, actively participating in society, entering the job market as an employee or entrepreneur and also starting a new business[10]. Entrepreneurial competency is defined as a set of knowledge, skills and attitudes. Furthermore, entrepreneurial competence is an entrepreneurial attribute which includes attitudes, beliefs, knowledge, skills,

abilities, personality, skills and behavioral tendencies needed to maintain and succeed in business [11]. Entrepreneurial knowledge equips individuals to be ready to manage a business and its improvement makes individuals more competent in running a business. Increasing entrepreneurial competence can be done through entrepreneurship education and significantly influences the willingness to start a business [12]. Furthermore, performance improvement can also be done through increasing entrepreneurial competence [13]. Entrepreneurial knowledge is divided into 4 types; market knowledge, network knowledge, socio-cultural knowledge, and entrepreneurial knowledge [14]. Companies need to be proficient in the use of their entrepreneurial knowledge because it strengthens entrepreneurial behavior towards greater profitability [15]. Based on the knowledge spillover theory of entrepreneurship (KSTE), Asian countries need to develop research related to rapid urbanization to create entrepreneurial knowledge spillovers that encourage company creation [16]. This theory explains that urbanization will create knowledge spillovers that encourage economic progress through the emergence of new businesses.

Research results generally discuss the impact of entrepreneurial orientation on entrepreneurial knowledge and it is still rare to look at it in the opposite direction. Entrepreneurial orientation is related to perceptions of opportunities and use of resources. Perceptions of entrepreneurship are influenced by previous experience and knowledge. Entrepreneurial orientation can be explained through learning and contextual elements [17]. This research tries to look at the entrepreneurial knowledge side which has an impact on entrepreneurial orientation. Below is presented the research hypothesis.

H1; Entrepreneurial knowledge has a positive and significant effect on entrepreneurial orientation.

H2: Entrepreneurial knowledge has a positive and significant effect on entrepreneurial intentions

1.2 Entrepreneurial Orientation, Entrepreneurial Intentions, and mediation

Some experts argue that there are two approaches (one-dimensional and multidimensional) that are most commonly discussed in the literature related to Entrepreneurial Orientation [18], [19]. Entrepreneurial orientation is defined as the process of increasing entrepreneurial knowledge, awareness and understanding and providing a mental picture of entrepreneurship [20], [21]. Entrepreneurial orientation is an individual's tendency to act innovatively and dare to take risks. As knowledge of entrepreneurial orientation has grown, researchers have become interested in issues related to its evolution, potential contributions, and future research trajectories [22]. The concept of entrepreneurial orientation (EO) consists of three dimensions, namely innovativeness, proactiveness and risk taking [23]. The original dimensions of EO consist of competitive aggressiveness and autonomy [24]. Then the indicators measuring individual entrepreneurial orientation consist of 7 dimensions, namely; autonomy orientation, competitive aggressiveness, learning orientation, personal initiative, risk taking, achievement orientation, and innovation [25],[26],[27].

Much research has been conducted on EO mediation, for example EO mediation on the relationship between entrepreneurial education and entrepreneurial intentions [28], family entrepreneurial orientation on the relationship between entrepreneurial education and intentions [29], EO mediation on social capital and intentions [30]. This research tries to test

the mediation of EO on the basis of the consideration that entrepreneurship education has been proven to significantly influence entrepreneurial knowledge [31], [32]. Meanwhile, a lot of research has proven that entrepreneurship education is related to entrepreneurial intentions. In this article, the concept of entrepreneurial orientation is measured using a multidimensional approach adopted from this opinion.

H3: Entrepreneurial orientation has a positive and significant effect on entrepreneurial intentions

H4: Entrepreneurial orientation mediates the influence of entrepreneurial knowledge and entrepreneurial intention.

2 Method

2.1 Research design, sample, instrument

2.1.1 Research design

This research used a quantitative approach with a survey research design. The survey research design used was a cross-sectional survey design, where data was collected at one point in time [33]. Survey research designs are usually used in quantitative research to collect information about attitudes, opinions, behavior, or characteristics of a sample or entire population [33]

2.1.2 Instrumentation and data collection

The instruments used for data collection have been validated by previous researchers. The entrepreneurial intention questionnaire was developed from [34], [35]. The entrepreneurial orientation indicator was adopted from [27], while entrepreneurial knowledge was adopted from [36]. The three variables in this study were measured using a seven-point scale, ranging from 1 (not very precise) to 7 (very precise). The variables of entrepreneurial orientation and entrepreneurial intention were seen to differ based on gender, field of science, entrepreneurial experience and parent's occupation. Detailed information regarding the variables and their related indicators can be found in Table 1.

2.1.3 Research sample and data analysis

Information regarding the research sample was 261 people. The sample was categorized based on gender, educational background, experience, and parental occupation. More than half of the participants were women, 81.36%), while 18.64% of the participants were men. There was not much difference between students who have entrepreneurial experience and those who do not, 48.66% who have experience and 51.34% who do not. Regarding educational background, those with educational backgrounds were 64.37 and the remaining 35.63% were non-educated. Based on parental occupation, more parents do not work as entrepreneurs at 63.22% and as entrepreneurs at 36.78%.

The PLS-SEM analysis method was used to test the relationship between variables and was considered capable of estimating complex models with many constructs, indicators and structural paths without imposing strict distribution assumptions on the data [37]. The analysis goes through two main steps: measurement model evaluation and structural model evaluation

[38]. Furthermore, to test differences between gender, field of science, experience and employment of parents, the authors used the Mann–Whitney U test to analyze the data. The Mann–Whitney U test was a non-parametric statistical test used to compare two independent groups because the data obtained was not normally distributed and was not homogeneous. This is especially appropriate when the assumptions of a parametric test, such as a t test, were not met. By using the Mann–Whitney U test, the authors can test whether there were significant differences between gender and parent's field of knowledge, experience and occupation in the variables of interest.

Table 1. Variables and Indicators

Variable	Indicator
Entrepreneurial Intention (scale 1 -7)	• Readiness to become an entrepreneur • Efforts to start and run a business • Determination to start a business
Entrepreneurial Orientation is developed from (scale 1 - 7)	• Autonomy orientation • Learning orientation • Performance • Take risks • Innovation
Entrepreneurship Knowledge adopted from	• Business requirements • Financial resources • Marketing • Business management
Gender	• Male • Female
Entrepreneurial Experience	• No entrepreneurial experience • Have entrepreneurial experience
Parents; Occupation	• Entrepreneur • Not Entrepreneur

3. Results and Discussion

3.1. Evaluation of measurement models

The measurement model was evaluated based on three aspects: convergent validity, internal consistency, and discriminant validity. Convergent validity tests the extent to which a measurement correlates with other measures of the same construct [38]. In this study, bootstrapping of 1000 subsamples were carried out to assess convergent validity. The factor loadings and Average Variance Extracted (AVE) for each construct exceeded the minimum threshold of 0.5, indicating satisfactory convergent validity (Table 2). Internal consistency reliability measures the consistency of results across items within the same construct, indicating the similarity of items measuring a construct. Composite reliability and Cronbach's Alpha were used to evaluate internal consistency. Table 2 showed that all constructs meet the minimum requirement of 0.6 for composite reliability and Cronbach's Alpha, indicating adequate internal consistency reliability. Discriminant validity assesses the distinctiveness of one construct from another, namely using the Fornell-Larcker criteria, cross-loading, and

Heterotrait-Monotrait ratio (HT MT). The results of all three met the measurement requirements and were satisfactory (Table 2).

Tabel 2. Results for convergent validity and internal consistency reliability

Latent Variable	Convergent Validity				Internal consistency reliability			
	Indicators	Standard deviations	Mean	Loadings	AVE	Composite Reliability	Cronbach's Alpha	Discriminant Validity
					>0.50	0.60-0.90	0.60-0.90	HTMT confidence interval does not include 1
Entrepreneurial Intentti on	EI1	0.030	0.778	0.780	0,588	0,927	0,912	Ya
	EI 2	0.031	0.753	0.756				
	EI 3	0.043	0.624	0.624				
	EI 4	0.033	0.738	0.738				
	EI 5	0.037	0.730	0.731				
	EI 6	0.027	0.793	0.793				
	EI 7	0.021	0.847	0.847				
	EI 8	0.032	0.794	0.794				
	EI 9	0.022	0.817	0.817				
Entrepreneurial Orientation	EO1	0.041	0.687	0.687	0,501	0,875	0,832	Ya
	EO2	0.047	0.654	0.656				
	EO3	0.038	0.733	0.734				
	EO4	0.026	0.803	0.802				
	EO7	0.046	0.672	0.672				
	EO8	0.031	0.771	0.772				
Entrepreneurial knowledge	EK1	0.029	0.799	0.799	0,759	0,950	0,936	Ya
	EK 2	0.020	0.852	0.853				
	EK 3	0.014	0.901	0.902				
	EK 4	0.013	0.894	0.894				
	EK 5	0.014	0.886	0.886				
	EK6	0.015	0.890	0.890				
	EK9	0.051	0.610	0.611				

3.2 Evaluation of structural model and hypothesis testing

After reliability and construct validity were met, the next step was to evaluate the structural model. Four criteria were used to assess the structural model in PLS-SEM: R2 value, f2 effect size, predictive relevance (Q2), and SRMR [39]. The coefficient of determination (R2 value) explains the variance of the endogenous construct explained by all the exogenous constructs studied and ranges from 0 to 1 [39]. An R2 value of 0.2 was considered adequate. The qualitative R square criterion of 0.19 meant low influence, 0.33 moderate influence, and 0.66 high influence. Table 3 showed that the R2 coefficient was 0.542, which indicated that the

exogenous construct explained 54.2% of the variance in the endogenous construct, a moderate to high category. Next, the f2 coefficient was used to evaluate the effect size. Guidelines where the f2 value was 0.02 for small effects, 0.15 for moderate effects, and 0.35 for high effects [40]. From Table 3, we can conclude that entrepreneurial knowledge on entrepreneurial intentions has a low effect coefficient of 0.073, and on entrepreneurial orientation 0.294 has a medium effect, and entrepreneurial orientation has a high effect of 0.638. The next criterion for evaluating a structural model was predictive relevance (Q2). It measures the predictive power of external variables on endogenous variables. Table 3 explained that the predictive power of entrepreneurial knowledge and entrepreneurial orientation on entrepreneurial intentions was 0.312, and the predictive power of entrepreneurial orientation was 0.111. Using the criterion value $Q2 < 0$, or $Q2 > 0$. Variables and data cannot predict the model well if $Q2 < 0$, but if $Q2 > 0$, variables and data can predict the model well. The final measurement model was SRMR. SRMR assessed the root mean square difference between the observed and implied correlations in the model, with a value of zero indicating a perfect fit [39]. Following a conservative approach, values below 0.09 indicate a good fit. Table 3 showed that the SRMR coefficient showed a good fit, with a value of 0.065.

Evaluating the path relationships between variables for hypothesis testing, Table 4 presented the results. Based on three direct influence hypotheses, all three are positive and significant. The main path, first was entrepreneurial knowledge to entrepreneurial intention. The path coefficient was significant, with $\beta = 0.500$, $p = 0.000$, indicating a positive and significant effect. Entrepreneurial knowledge on entrepreneurial orientation also showed a positive and significant effect with $\beta = 0.477$, $p = 0.000$. Hypothesis 2 was confirmed. Furthermore, entrepreneurial orientation has a positive and significant effect on entrepreneurial intention, with $\beta = 0.615$, $p = 0.000$. All three hypotheses of direct relationships were confirmed in support. The final main pathway was the mediation of entrepreneurial orientation. The results showed that entrepreneurial orientation mediates the relationship between entrepreneurial knowledge and entrepreneurial intention, with $\beta = 0.293$, $p = 0.000$. Therefore, hypothesis 4 was also supported. Next, to find out the magnitude of the influence of the mediating variable, it can be done with Upsilon V. The effect size of the entrepreneurial orientation mediation wass 0.086. If 0.01 was low influence, 0.075 was medium mediation influence, 0.175 was high mediation influence [41]. So the mediating effect of entrepreneurial orientation on the influence of entrepreneurial knowledge on entrepreneurial intentions was in the high category.

Table 3. Result for structural model evaluation

Aspect	Coefficient
R square	
Entrepreneurial Intention	0.542
Entrepreneurship Orientation	0,227
F square:	
Entrepreneurial knowledge -> Entrepreneurial Intention	0,073
Entrepreneurial knowledge -> Entrepreneurship Orientation	0,294
Entrepreneurship Orientation -> Entrepreneurial Intention	0,638
Q^2_predict	
Entrepreneurial Intention	0.312
Entrepreneurship Orientation	0.111

SRMR	**0,065**
Upsilon V	
Entrepreneurial knowledge -> Entrepreneurship Orientation -> Entrepreneurial Intention	0,086

Table 4. Hypothesis testing and main path coefficient

	coefficient	T values	P Values	Significance ($p < .05$)
Entrepreneurial Knowledge -> Entrepreneurial Intention	0.500	9.076	0.000	support
Entrepreneurial Knowledge -> Entrepreneurship Orientation	0.477	9.874	0.000	support
Entrepreneurship Orientation -> Entrepreneurial Intention	0.615	13.740	0.000	support
Entrepreneurial Knowledge -> Entrepreneurship Orientation -> Entrepreneurial Intention	0.293	9.142	0.000	support

Table 5. Differences in Entrepreneurial Orientation and Entrepreneurial Intentions Based on Gender, Experience, Education and Parental Occupation

Category		N	Mean Rank	Sum of Ranks	Mann-Whitney U	Wilcoxon W	Z	Asymp. Sig. (2-tailed)
Entreprreneurial intention	Female	220	130,75	28764,50	4454,500	28764,500	-,125	0,900
	Male	41	132,35	5426,50				
Entreprreneurial intention	Don't have entrepreneurial experience	133	228,77	114,32	6273,500	15318,500	-3.689	0,001
	Have entrepreneurial experience	128	247,22	148,60				
Entreprreneurial intention	Non-education	93	142,25	13229,50	16005,00	20961,500	-1,803	0,071
	Education	168	124,77	20961,50				
Entreprreneurial intention	Non-Entrepreneur	165	122,48	20210,00	6515,000	20210,000	-2,404	0,016
	Entrepreneur	96	145,64	13981,00				
Entrepreneurial Orientation	Non-Education	93	126,31	11746,50	7375,500	11746,500	-751	0,453
	Education	168	133,60	22444,50				
Entrepreneurial Orientation	Female	220	133,90	55854,00	3871,500	4732,500	-1,446	0,148
	Male	41	115,43	56247,00				
Entrepreneurial Orientation	Non-Entrepreneur	165	123,36	93106,50	6659,500	20354,500	-2,154	0,031
	Entrepreneur	96	144,13	18994,50				
Entrepreneurial Orientation	Don't have entrepreneurial experience	133	117,97	15690,50	6779,500	15690,500	-2,856	0,004

Have entrepreneurial experience	128	144,54	18500,50

For further analysis, differences in entrepreneurial intentions and entrepreneurial orientation were seen based on gender, entrepreneurial experience, educational and non-educational fields of study, and parental occupation. For this, the Mann–Whitney U test was carried out because the data did not meet the requirements for normality and homogeneity. Table 5 showed that there was no significant difference between men and women for the entrepreneurial intention and entrepreneurial orientation variables because $p > 0.05$. There was also no difference in entrepreneurial orientation between education and non-education study program students. Significant differences exist in the entrepreneurial intention variable based on students' entrepreneurial experience, and whether their parents were entrepreneurial or not entrepreneurial. Furthermore, there were significant differences in the entrepreneurial orientation variable based on whether there was entrepreneurial experience or not.

3.3 The role of Entrepreneurial Knowledge in entrepreneurial orientation and entrepreneurial intention

In Table 4 it was illustrated that entrepreneurial knowledge has a positive and significant impact on entrepreneurial orientation. The resulting coefficient $ß = 0.477$, $p < 0.05$, meaning that entrepreneurial knowledge can explain variations in entrepreneurial orientation by 47.7%. For the context of Indonesian students, entrepreneurial knowledge can give students direction for an entrepreneurial career. This finding strengthens previous research which states that there was a significant positive relationship between knowledge and entrepreneurial orientation; [42],[43]. The scope of entrepreneurial knowledge includes how to start a new business, enter the market. A prospective entrepreneur must have that knowledge. Uniquely, in Francis, the entrepreneurial knowledge they obtained gave them a negative direction, in fact this knowledge created obstacles because they considered the entrepreneurial profession as a risky career choice [44]. This research succeeded in proving the relationship between entrepreneurial knowledge variables and entrepreneurial orientation which can be interchanged. Research generally looks at the effects of entrepreneurial orientation on entrepreneurial knowledge.

Table 4 also showed that entrepreneurial knowledge has a positive impact on entrepreneurial intentions, and entrepreneurial knowledge ability explains entrepreneurial intentions by 0.500. This was greater than previous research where the coefficient was 0.212.[45]. The higher the entrepreneurial knowledge, the higher the impact on students' entrepreneurial intentions [46]. The role of entrepreneurial knowledge was increasingly important in influencing students' entrepreneurial intentions. These findings highlighted the importance of organizing entrepreneurship education in educational institutions.

3.4 The effect of entrepreneurial orientation on entrepreneurial intentions, and its mediating role

The research findings on the role of entrepreneurial orientation and its mediation on entrepreneurial intentions are presented in Table 4. Entrepreneurial orientation has a positive and significant influence on entrepreneurial intentions. A coefficient of 0.615 or 61.5% of the variation in entrepreneurial intentions is explained by entrepreneurial orientation. This has a bigger influence than entrepreneurial knowledge which is only 50%. Previous research has

proven that entrepreneurial orientation has a strong relationship with entrepreneurial intentions and was an important factor in realizing students' entrepreneurial intentions [47], [21], [48]. This study provides valuable insights into the role of entrepreneurial orientation in shaping entrepreneurial intentions among college students.

The results of the mediation test proved positive and significant that entrepreneurial orientation was able to mediate the influence of entrepreneurial knowledge on entrepreneurial intentions (Table 4). The coefficient was 0.293, meaning that the presence of orientation mediation can increase students' desire to become entrepreneurs by 29.3%. The effect size of the mediating entrepreneurial orientation was 0.086. The mediating effect size of entrepreneurial orientation was in the high category [41]. These findings further strengthened the importance of building an entrepreneurial orientation in students so that their desire to build their own business becomes higher. As well as enriching the literature discussing the mediation of entrepreneurial orientation.

3.5 Differences in student entrepreneurial orientation and intentions

Further analysis was carried out looking at differences in students' entrepreneurial orientation and entrepreneurial intentions based on gender, entrepreneurial experience, educational background and parents' occupation. In Table 5, the results showed that there were no differences in entrepreneurial intentions based on gender and educational background (educational and non-educational). The results of this research confirmed previous research which stated that there were no differences in entrepreneurial intentions between genders and educational backgrounds [28]. In other research, although men's entrepreneurial intentions were higher, there was no difference in motivation in starting a business [49]. At Francis female students were known to have low extroversion, and males showed high extroversion, this helped them build and maintain external networks that can influence their entrepreneurial intentions. [50]. Furthermore, there were differences in intentions based on entrepreneurial experience and parental employment. Students who have entrepreneurial experience have a higher interest in entrepreneurship than those who do not [51]. Then, parents of students who work as entrepreneurs encourage their children's interest scores in entrepreneurship to be higher than those who were not entrepreneurs, although the difference was not significant [52], [53].

When looking at the entrepreneurial orientation variable, there was no significant difference between educational background and gender. Significant differences were obtained based on entrepreneurial experience and parental employment. These findings confirmed that the occupation of entrepreneurial parents has a positive impact on the entrepreneurial orientation of their children [54]

4. Conclusion

This research can prove that entrepreneurial knowledge has a positive and significant effect on entrepreneurial orientation. The most important finding was that the entrepreneurial knowledge variable can have an effect on increasing entrepreneurial orientation, while in general existing research looked at the effect of entrepreneurial orientation on entrepreneurial knowledge. Entrepreneurial knowledge has also been proven to have a positive and significant

effect on entrepreneurial intentions. Furthermore, entrepreneurial orientation acted as a mediating variable on the influence of entrepreneurial knowledge on entrepreneurial intentions. The mediation effect provided was in the high category. There was no difference in entrepreneurial intention between gender and scientific background. The differences exist in the entrepreneurial experience of students and their parents' jobs. Then, entrepreneurial orientation was also consistent with entrepreneurial intentions, there were no differences between gender and fields of science. The difference lied in the entrepreneurial experience and the occupation of entrepreneurial or non-entrepreneurial parents. This research provided a theoretical basis for the development of entrepreneurship education where the entrepreneurial knowledge of the younger generation needs to be increased so that they have a positive view of entrepreneurship.

References

[1] Z. J. Acs, L. Szerb, E. Lafuente, and G. Markus, “Global Entrepreneurship Index 2019. The Global Entrepreneurship and Development Institute, 14, 64p,” Glob. Entrep. Dev. Inst., 2020.

[2] V. K. Gupta, D. B. Turban, S. A. Wasti, and A. Sikdar, “The role of gender stereotypes in perceptions of entrepreneurs and intentions to become an entrepreneur,” Entrep. Theory Pract., vol. 33, no. 2, pp. 397–417, 2009, doi: 10.1111/j.1540-6520.2009.00296.x.

[3] B. G. Roxas, R. Cayoca-Panizales, and R. de Jesus, “Entrepreneurial knowledge and its effects on entrepreneurial intentions: development of a conceptual framework,” Asia-Pacific Soc. Sci. Rev., vol. 8, no. 2, pp. 61–77, 2008.

[4] M. Pham, A. T. T. Nguyen, D. T. Tran, T. T. Mai, and V. T. Nguyen, “The impact of entrepreneurship knowledge on students’e-entrepreneurial intention formation and the moderating role of technological innovativeness,” J. Innov. Entrep., vol. 12, no. 1, p. 80, 2023.

[5] H. Mei, C.-H. Lee, and Y. Xiang, “Entrepreneurship education and students’ entrepreneurial intention in higher education,” Educ. Sci., vol. 10, no. 9, p. 257, 2020.

[6] R. D. Hisrich, M. P. Peters, and D. A. Shepherd, “Entrepreneurship. 9th international ed.” New York, USA: McGraw-Hill, 2013.

[7] G. P. West and T. W. Noel, “The impact of knowledge resources on new venture performance,” J. small Bus. Manag., vol. 47, no. 1, pp. 1–22, 2009.

[8] R. P. D. Karyaningsih, “Does entrepreneurial knowledge influence vocational students’ intention? Lessons from Indonesia,” Entrep. Bus. Econ. Rev., vol. 8, no. 4, pp. 138–155, 2020.

[9] K. Hindle, “Teaching entrepreneurship at university : from the wrong building to the right philosophy,” Handb. Res. Entrep. Educ. a Gen. Perspect., no. September, pp. 104–126, 2007, doi: 10.4337/9781847205377.00013.

[10] C. Nwachukwu, H. Chládková, and P. Žufan, “the Relationship Between Entrepreneurial Orientation , Entrepreneurial Competencies , Entrepreneurial Leadership , and Firm Performance : a Proposed Model,” vol. 7, no. 1, pp. 3–16, 2017.

[11] M. N. Kiggundu, “Entrepreneurs and entrepreneurship in Africa: What is known and what needs to be done,” J. Dev. Entrep., vol. 7, no. 3, p. 239, 2002.

[12] Y. T. Kim, “The effects of entrepreneurship education, entrepreneurial competence and attitude on undergraduate entrepreneurial intention,” Asia-Pacific J. Bus. Ventur. Entrep., vol. 12, no. 2, pp. 13–20, 2017.

[13] S. Aisyah, C. I. Musa, and A. Ramli, “Effect of characteristics and entrepreneurial orientation towards entrepreneurship competence and crafts and arts smes business performance in Makassar,” Int. Rev. Manag. Mark., vol. 7, no. 2, pp. 166–173, 2017.
[14] K. Wach, A. Głodowska, and M. Maciejewski, “Entrepreneurial orientation, knowledge utilization and internationalization of firms,” Sustainability, vol. 10, no. 12, p. 4711, 2018.
[15] M. Hughes, P. Hughes, I. Hodgkinson, Y.-Y. Chang, and C.-Y. Chang, “Knowledge-based theory, entrepreneurial orientation, stakeholder engagement, and firm performance,” Strateg. Entrep. J., vol. 16, no. 3, pp. 633–665, 2022.
[16] M. N. Iftikhar, J. B. Justice, and D. B. Audretsch, “The knowledge spillover theory of entrepreneurship: An Asian perspective,” Small Bus. Econ., pp. 1–26, 2022.
[17] J. G. Covin and G. T. Lumpkin, “Entrepreneurial orientation theory and research: Reflections on a needed construct,” Entrep. theory Pract., vol. 35, no. 5, pp. 855–872, 2011.
[18] J. G. Covin and W. J. Wales, “The measurement of entrepreneurial orientation,” Entrep. theory Pract., vol. 36, no. 4, pp. 677–702, 2012.
[19] C. D. P. Martens, F. M. Lacerda, A. C. Belfort, and H. M. R. de Freitas, “Research on entrepreneurial orientation: current status and future agenda,” Int. J. Entrep. Behav. \& Res., vol. 22, no. 4, pp. 556–583, 2016.
[20] O. C. Ikpesu, “University-industry linkages as determinant of students’ entrepreneurial orientation in rivers state public universities,” Adv. Soc. Sci. Res. J., vol. 3, no. 13, 2016.
[21] A. Hassan, I. Anwar, I. Saleem, K. M. B. Islam, and S. A. Hussain, “Individual entrepreneurial orientation, entrepreneurship education and entrepreneurial intention: The mediating role of entrepreneurial motivations,” Ind. High. Educ., vol. 35, no. 4, pp. 403–418, 2021.
[22] A.-H. A. Al-Suraihi, N. Ab Wahab, and W. A. Al-Suraihi, “The Effect of Entrepreneurship Orientation on Entrepreneurial Intention among Undergraduate Students in Malaysia,” Asian J. Entrep., vol. 1, no. 3, pp. 14–25, 2020.
[23] D. Miller, “The correlates of entrepreneurship in three types of firms,” Manage. Sci., vol. 29, no. 7, pp. 770–791, 1983.
[24] G. T. Lumpkin and G. G. Dess, “Clarifying the entrepreneurial orientation construct and linking it to performance,” Acad. Manag. Rev., vol. 21, no. 1, pp. 135–172, 1996.
[25] S. I. Krauss, M. Frese, C. Friedrich, and J. M. Unger, “Entrepreneurial orientation: A psychological model of success among southern African small business owners,” Eur. J. Work Organ. Psychol., vol. 14, no. 3, pp. 315–344, 2005.
[26] A. H. F. Salwa, A. M. Azahari, and B. J. Tamkin, “Success Factors of Successful Microcredit Entrepreneurs : Empirical Evidence from Malaysia,” Int. J. Bus. Soc. Sci., vol. 4, no. 5, pp. 153–159, 2013.
[27] T. Fatima and A. R. Bilal, “Achieving SME performance through individual entrepreneurial orientation: An active social networking perspective,” J. Entrep. Emerg. Econ., vol. 12, no. 3, pp. 399–411, 2020.
[28] S. Hutasuhut, R. Aditia, and Thamrin, “The mediating role of entrepreneurial orientation: the impact of entrepreneurship education and patriarchal culture on entrepreneurial intention among Indonesian university students,” Cogent Bus. \& Manag., vol. 11, no. 1, p. 2369156, 2024.
[29] R. A. M. Sahputri, M. K. Mawardi, and T. Yumarni, “Entrepreneurship education, family entrepreneurial orientation and entrepreneurial intention among students in Indonesia,” J. Int. Educ. Bus., vol. 16, no. 3, pp. 295–311, 2023.
[30] M. B. Triyono, F. Mutohhar, N. Kholifah, M. Nurtanto, H. Subakti, and K. H. Prasetya, “Examining the mediating-moderating role of entrepreneurial orientation and digital competence on

entrepreneurial intention In vocational education," J. Tech. Educ. Train., vol. 15, no. 1, pp. 116–127, 2023.
[31] K. Sholihah, A. Wibowo, and K. Dianta, "The Influence of Entrepreneurship Education, Entrepreneurial Knowledge and Entrepreneurial Inspiration on Generation Z's Entrepreneurial Intention," J. USAHA, vol. 4, no. 1, pp. 1–19, 2023.
[32] J. E. Edokpolor, P. O. Imeokparia, and K. Osifo, "Entrepreneurship Education and Student Intention to Launch a Business: Does Entrepreneurial Knowledge and Skills Acquisition Act as a Mediator?," J. Technol. Manag. Bus., vol. 10, no. 1, pp. 43–52, 2023.
[33] J. W. Creswell, "Educational research: planning," Conduct. Eval., vol. 260, no. 1, pp. 375–382, 2012.
[34] F. Liñán and Y. W. Chen, "Development and cross-cultural application of a specific instrument to measure entrepreneurial intentions," Entrep. Theory Pract., vol. 33, no. 3, pp. 593–617, 2009, doi: 10.1111/j.1540-6520.2009.00318.x.
[35] F. Liñán, J. C. Rodríguez-Cohard, and J. M. Rueda-Cantuche, "Factors affecting entrepreneurial intention levels: A role for education," Int. Entrep. Manag. J., vol. 7, no. 2, pp. 195–218, 2011, doi: 10.1007/s11365-010-0154-z.
[36] B. Roxas, "Effects of entrepreneurial knowledge on entrepreneurial intentions: A longitudinal study of selected South-east Asian business students," J. Educ. Work, vol. 27, no. 4, pp. 432–453, 2014, doi: 10.1080/13639080.2012.760191.
[37] J. F. Hair, J. J. Risher, M. Sarstedt, and C. M. Ringle, "When to use and how to report the results of PLS-SEM," Eur. Bus. Rev., vol. 31, no. 1, pp. 2–24, 2019.
[38] M. Sarstedt, C. M. Ringle, and J. F. Hair, "Partial least squares structural equation modeling," in Handbook of market research, Springer, 2021, pp. 587–632.
[39] J. F. Hair Jr, G. T. M. Hult, C. M. Ringle, M. Sarstedt, N. P. Danks, and S. Ray, Partial least squares structural equation modeling (PLS-SEM) using R: A workbook. Springer Nature, 2021.
[40] J. Cohen, Statistical power analysis for the behavioral sciences. routledge, 2013.
[41] S. Ogbeibu, J. Emelifeonwu, A. Senadjki, J. Gaskin, and J. Kaivo-oja, "Technological turbulence and greening of team creativity, product innovation, and human resource management: Implications for sustainability," J. Clean. Prod., vol. 244, p. 118703, 2020.
[42] Q. Yu, S. Aslam, M. Murad, W. Jiatong, and N. Syed, "The impact of knowledge management process and intellectual capital on entrepreneurial orientation and innovation," Front. Psychol., vol. 13, p. 772668, 2022.
[43] U. Arzubiaga, J. Kotlar, A. De Massis, A. Maseda, and T. Iturralde, "Entrepreneurial orientation and innovation in family SMEs: Unveiling the (actual) impact of the Board of Directors," J. Bus. Ventur., vol. 33, no. 4, pp. 455–469, 2018.
[44] T. Alkhalaf, O. Durrah, D. Almohammad, and F. Ahmed, "Can entrepreneurial knowledge boost the entrepreneurial intent of French students? The mediation role of behavioral antecedents," Manag. Res. Rev., vol. 45, no. 12, pp. 1545–1571, 2022.
[45] S. Hutasuhut, "The roles of entrepreneurship knowledge, self-efficacy, family, education, and gender on entrepreneurial intention," Din. Pendidik., vol. 13, no. 1, pp. 90–105, 2018.
[46] S. Hutasuhut, A. Rahmadsyah, R. Aditia, and others, "Impact of business models canvas learning on improving learning achievement and entrepreneurial intention," Cakrawala Pendidik., vol. 39, no. 1, pp. 168–182, 2020.
[47] N. Ibrahim and A. Mas'ud, "Moderating role of entrepreneurial orientation on the relationship between entrepreneurial skills, environmental factors and entrepreneurial intention: A PLS approach," Manag. Sci. Lett., vol. 6, no. 3, pp. 225–236, 2016.

[48] S. Kumar, Z. A. Paray, and A. K. Dwivedi, “Student’s entrepreneurial orientation and intentions: A study across gender, academic background, and regions,” High. Educ. Ski. Work. Learn., vol. 11, no. 1, pp. 78–91, 2021.
[49] I. Haus, H. Steinmetz, R. Isidor, and R. Kabst, “Gender effects on entrepreneurial intention: a meta-analytical structural equation model,” Int. J. Gend. Entrep., vol. 5, no. 2, pp. 130–156, 2013.
[50] R. Laouiti, M. Y. Haddoud, W. A. Nakara, and A.-K. E. Onjewu, “A gender-based approach to the influence of personality traits on entrepreneurial intention,” J. Bus. Res., vol. 142, pp. 819–829, 2022.
[51] J. Li, S. M. Nair, and W. Wider, “Effects of Family Background and Entrepreneurship Competition on Students’ Entrepreneurial Intention in China,” Humanit. Soc. Sci. Lett., vol. 10, no. 4, pp. 557–568, 2022.
[52] C. Nguyen, “Demographic factors, family background and prior self-employment on entrepreneurial intention-Vietnamese business students are different: why?,” J. Glob. Entrep. Res., vol. 8, no. 1, pp. 1–17, 2018.
[53] S. Hutasuhut and others, “MONOGRAF PERAN ENTREPRENEURIAL SELF-EFFICACY PADA INTENSI KEWIRAUSAHAAN.” CV. Sarnu Untung, 2023.
[54] C. S. E. Marques, G. Santos, A. Galvão, C. Mascarenhas, and E. Justino, “Entrepreneurship education, gender and family background as antecedents on the entrepreneurial orientation of university students,” Int. J. Innov. Sci., 2018.