Factors affecting students’ entrepreneurial intentions and their differences based on gender, tribe, and parents’ occupation: a cross-sectional study [version 1; peer review: awaiting peer review]

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**Abstract**

**Background:** This study examines the impact of entrepreneurial knowledge and self-efficacy in increasing students' entrepreneurial intentions and their self-efficacy. Differences were analyzed in entrepreneurial intentions based on gender, tribe, and parents' occupation.

**Methods:** The data used in this research was collected from a survey, done by distributing questionnaires electronically to students of the Economics Education Study Program, Faculty of Economics, State University of Medan in the semesters 3, 5, and 7, (n = 307), with a response from 260 individuals. The analytical test used was the PLS-SEM and nonparametric Mann-Whitney and Kruskal Wallis tests.

**Results:** Entrepreneurial knowledge and self-efficacy positively and significantly increased entrepreneurial intentions. Self-efficacy was not proven to act as a moderating variable, and there was no difference in entrepreneurial intentions between genders, tribes and parents' occupations.

**Conclusions:** There is a need to enhance the role of the family, so that women's entrepreneurial intentions will not fall lower than men's. It should be noted, however, the role of the family was not discussed in this study. This research implies that it is necessary to embrace innovative entrepreneurship education, so as to increase the entrepreneurial intentions of women and reduce gender inequality in entrepreneurial activities. Further research needs to be conducted on the role of culture-based families in preparing their sons and daughters to become entrepreneurs.

**Keywords**

Entrepreneurial intentions, Gender, Parents' job, Self-efficacy, Tribe
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**Introduction**

The prevailing patriarchal culture in Indonesia positions men as the bread winners of their families, while women are relegated to taking care of the household. This fact is very obvious from the Gender Empowerment Index in Indonesia in 2019, which is 75.24. Thus, one can say that the Indonesian patriarchal culture places obstacles on the pathways of women that hinder them from entering into the business world. Over the last three decades, entrepreneurship has emerged as an economic power in the world, and it has become an essential element for the economic growth and development of European countries. However, for developing countries, attention should be paid to factors that can influence an individual's intention to start a new business.

Currently, the number of female students in Indonesia is 51.18%, which is higher than male students at 48.82% (PDDikti.go.id). Therefore, this presents an excellent opportunity to increase the role of women in entrepreneurship through higher education. The readiness to enter the business world depends on the entrepreneurial intentions of those involved, and previous research has shown that there are differences in entrepreneurial intentions between men and women, showing that entrepreneurial intentions of men are higher than women. In particular, fear of failure has been highlighted as a barrier for women who are non-entrepreneurs to release their entrepreneurial intentions.

In recent years, there has been an increasing interest in the roles of cognitive approach and self-efficacy, since there is a direct relationship between educational background, knowledge through behavioral characteristics, and entrepreneurial intentions. Entrepreneurship education is essential because it significantly increases entrepreneurial knowledge, including forming, planning, running, or developing a business, which are skill that an entrepreneur needs. In addition, moderating the influence of gender on individual entrepreneurial orientation is required, and Sajjad & Dad have found a cultural connection to entrepreneurial intentions. Another factor that determines entrepreneurial intention is the level of self-efficacy. Self-efficacy is a belief that encourages individuals to do and achieve something. Self-efficacy can make someone have the desire to do something because they have the knowledge, skills, and ability to face various problems. Also, it is known that self-efficacy has a positive and significant effect on entrepreneurial intentions.

Generally, parents expect their children to continue in the line of their professions, especially when they retire. Haq & Setiyani explained that entrepreneur parents influence their children's intention to become entrepreneurs, and a family of entrepreneurs has a significant impact on entrepreneurial intentions in college graduates. These families provide positive experiences that impact on their children's intention to become entrepreneurs.

This study examined the predictor variables, which are related to students' interest in becoming entrepreneurs, in order to see if there are differences in entrepreneurial knowledge, self-efficacy, and entrepreneurial intentions between gender, parent's occupation, and tribe.

**Methods**

**Study design**

Research design in this study is correlational design. In correlational research design, researchers use the correlation statistical test to describe and measure the degree of association (or relationship) between two or more variables or sets of scores and not attempt to control or manipulate the variables.

This research included students at the Faculty of Economics, Medan State University, Indonesia. Data collection was carried out from September to November 2020 using an online survey platform.

**Participants**

The study population was all 307 students of the Economic Education Study Program, Faculty of Economics, State University of Medan. Only those willing to participate in the study (n = 260) were included. Notifications about this research were given during participants classes in which the students were invited to participate in the study.

**Data collection**

Questionnaires were used to collect data on entrepreneurial knowledge, self-efficacy, and entrepreneurial intentions. The questionnaire measuring entrepreneurial knowledge and self-efficacy variables was adopted from Roxas, while the questionnaire measuring entrepreneurial intentions was adopted from the questionnaire developed by Linan & Chen. The three questionnaires used a scale of 1-5. A value of 1 means very weak, while a value of 5 means very strong in measuring the questions on each variable, respectively.

The occupation of parents was divided into entrepreneur and non-entrepreneur (entrepreneur = 1, non-entrepreneur = 0), while gender is divided into male and female (male = 1, female = 0).
Data analysis
The research data was processed by using Smart-PLS 3.0 and SPSS (version 25). Before statistical analysis was performed, normality assumption was tested using Kolmogorov–Smirnov test, and the result was that the data were not normally distributed. Therefore, the most suitable statistical analysis for the data was a non-parametric approach. To compare participants by tribe, Kruskal Wallis was used; for all other variables, Mann-Whitney was used. Meanwhile SEM-PLS was used to examine subgroups and interactions between variables.

Ethical approval
Ethics approval was obtained from the Institute for Research and Community service of State University of Medan (approval number, IC220190/IC2RSE/LPPM/2020). Completion of the questionnaire also was taken as consent of the students to take part in the study.

Results
A total of 260 students returned the questionnaire; male participants numbered 52 individuals, while female participants numbered 208 individuals. In total, 129 participants came from the Batak Toba tribe, 34 individuals came from Batak Karo, 15 were from Batak Simalungun, 4 were from Batak Dairi/Pakpak, 35 were Javanese, 7 were Melayu, 6 were Nias, 2 were Chinese, 14 were Batak Mandailing, 7 were Minang, and 3 were Aceh. A total of 4 individuals belonged to other tribes not described above.

For gender, there was no significant difference in the level of entrepreneurial knowledge, entrepreneurial intention, and self-efficacy (Table 1). When examining the students' tribe, there was also no significant difference between entrepreneurial knowledge, entrepreneurial intentions, and self-efficacy (Table 2). The number of students was predominantly Toba Batak tribe at 49.62% followed by Javanese 13.46%, Batak Karo 13.08%. We observed that the average score of students' entrepreneurial intentions from Chinese tribe was the highest at 4.085, and the lowest was Karo tribe at 3.451 (scale 1-5).

Figure 1. Research model for SEM-PLS analysis.
We observed that students' entrepreneurial intentions based on their parents' occupation have no significant difference. However, the average score of the entrepreneurial intentions, showed that for students whose parents have their own businesses scored 3.72, while students from white collar families scored 3.59. Families who owned their own businesses consisted of entrepreneurs, farmers, and fishermen. Meanwhile, white collar families cooperated with other people or agencies such as state-owned enterprises employees, civil servants, soldier/police, and private employees.

**Evaluation of model**

*Measurement models (outer)*

**Validity**

The validity testing for reflective indicators was observed from the convergent validity and average variance extracted (AVE). The correlation coefficient between the items score and the construct score (Table 4) showed that the loading factor PK1 - to PK 6 has a value that was above the recommended value of 0.7, so that all indicators were valid and fit the convergent validity. Another method to observe is the discriminant validity, which looked at the square root of AVE. The recommended value was above 0.5. The data showed that all the constructs contained in the research model have values of above 0.5 (see Table 4).
Reliability

The reliability test was done by looking at the composite reliability value of the indicators that measured the construct. The results of different tests and levels of entrepreneurial knowledge, entrepreneurial intentions, and self-efficacy based on gender, tribe and parents’ occupation can be seen in Table 5 (composite reliability EI, SE, and EK are all 0.9). Reliability test can also be strengthened with Cronbach’s Alpha, and for all constructs it is > 0.6.

Table 3. Levels of entrepreneurial knowledge, entrepreneurial intentions, and self-efficacy stratified by parents’ occupation.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Parent’s occupation</th>
<th>N</th>
<th>Percent</th>
<th>Mean score</th>
<th>Asymp. Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entrepreneurial knowledge</td>
<td>Not entrepreneur</td>
<td>77</td>
<td>29.62</td>
<td>3.17</td>
<td>0.743</td>
</tr>
<tr>
<td></td>
<td>Entrepreneur</td>
<td>183</td>
<td>70.38</td>
<td>3.17</td>
<td></td>
</tr>
<tr>
<td>Entrepreneurial intentions</td>
<td>Not entrepreneur</td>
<td>77</td>
<td>29.62</td>
<td>3.59</td>
<td>0.427</td>
</tr>
<tr>
<td></td>
<td>Entrepreneur</td>
<td>183</td>
<td>70.38</td>
<td>3.72</td>
<td></td>
</tr>
<tr>
<td>Self-efficacy</td>
<td>Not entrepreneur</td>
<td>77</td>
<td>29.62</td>
<td>3.65</td>
<td>0.562</td>
</tr>
<tr>
<td></td>
<td>Entrepreneur</td>
<td>183</td>
<td>70.38</td>
<td>3.71</td>
<td></td>
</tr>
</tbody>
</table>

Table 4. Results summary for reflective measurement models.

<table>
<thead>
<tr>
<th>Latent variable</th>
<th>Indicators</th>
<th>Convergent validity</th>
<th>Internal consistency reliability</th>
<th>Discriminant validity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Loadings &gt;0.70</td>
<td>AVE &gt;0.50</td>
<td>Composite reliability 0.60-0.90</td>
</tr>
<tr>
<td>Entrepreneurial knowledge</td>
<td>PK1</td>
<td>0.826</td>
<td>0.708</td>
<td>0.936</td>
</tr>
<tr>
<td></td>
<td>PK2</td>
<td>0.809</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>PK3</td>
<td>0.890</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>PK4</td>
<td>0.803</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>PK5</td>
<td>0.815</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>PK6</td>
<td>0.900</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-efficacy</td>
<td>EF1</td>
<td>0.805</td>
<td>0.684</td>
<td>0.945</td>
</tr>
<tr>
<td></td>
<td>EF2</td>
<td>0.850</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>EF3</td>
<td>0.883</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>EF4</td>
<td>0.885</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>EF5</td>
<td>0.862</td>
<td></td>
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<tr>
<td></td>
<td>EF6</td>
<td>0.693</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>EF7</td>
<td>0.807</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>EF8</td>
<td>0.816</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Entrepreneurial intentions</td>
<td>IK1</td>
<td>0.859</td>
<td>0.771</td>
<td>0.953</td>
</tr>
<tr>
<td></td>
<td>IK2</td>
<td>0.829</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>IK3</td>
<td>0.888</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>IK4</td>
<td>0.897</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>IK5</td>
<td>0.915</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>IK6</td>
<td>0.878</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 5. Structural coefficient.

<table>
<thead>
<tr>
<th>Path coefficient</th>
<th>R Square</th>
<th>t Values</th>
<th>p Values</th>
<th>Significance (p &lt; 0.05)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entrepreneurial knowledge -&gt; Entrepreneurial intentions</td>
<td>0.268</td>
<td>0.383</td>
<td>3.958</td>
<td>0.000</td>
</tr>
<tr>
<td>Self-efficacy -&gt; Entrepreneurial intentions</td>
<td>0.438</td>
<td>5.371</td>
<td>0.000</td>
<td>Yes</td>
</tr>
<tr>
<td>Moderating Effect 1 (Self-efficacy) -&gt; Entrepreneurial intentions</td>
<td>−0.015</td>
<td>0.163</td>
<td>0.871</td>
<td>No</td>
</tr>
</tbody>
</table>

Structural model (Inner)

The inner model explains whether the research model that is built is a good model. In Table 5, the R-Square value that is obtained is 0.383. This explains that entrepreneurial knowledge and self-efficacy can explain entrepreneurial intentions by 38.3% and the remaining 61.7% is explained outside the research model.

Hypothesis testing

This study examines whether entrepreneurial knowledge and self-efficacy play a role in increasing entrepreneurial intentions and it also examines whether self-efficacy act as moderating variables. The results obtained were: (1) Entrepreneurial Knowledge has a positive and significant effect on entrepreneurial intentions, and this can be seen from the P value, which is 0.000 (< 0.05); (2) The Path Coefficient value is positive, which is 0.268, and which indicates that the direction of the relationship between entrepreneurial knowledge and entrepreneurial intentions is positive; (3) Self-efficacy is proven to have a positive and significant effect on entrepreneurial intention, where p value is 0.000 (< 0.05).

Discussion

The desire to increase women's participation in Indonesia's political and economic sectors can be done through higher education. This desire gained momentum as women's participation in higher education continued to increase and women's achievements were on par with men. In fact, it has been observed that women's academic achievement is higher than men. In terms of self-efficacy, there is no difference between genders. Instead, women have a more adaptive approach when doing learning tasks. The problem lies in increasing women's intention to be active in the economic field and how to eliminate the fear of failure, which is a barrier to entering the business world. This study analyzed whether there are differences in the level of entrepreneurial knowledge, entrepreneurial intentions, and self-efficacy between genders. However, it was observed that there is no significant difference between the two. When viewed from the average score of entrepreneurial intentions, women have a slightly higher score, with a score of 3.69, as compared to men who have a score of 3.65. This is a valuable asset that should encourage women to become entrepreneurs, because the results of previous researches stated that the entrepreneurial intention of male students was higher than female students as well as women having lesser intentions to starting a business. Therefore, this study has implications for how to design entrepreneurship education that can change the orientation of female students to become entrepreneurs.

In Indonesia, women are more interested in becoming teachers than entrepreneurs. In 2020, the number of female teachers was at a percentage of 69.84%, while that of male teachers was 30.16%. At the tertiary level, female students in education majors are also higher in number. This situation buttresses the fact that women's intentions to become entrepreneurs are still low. Davis & Shaver explained that women are less likely than men to increase entrepreneur numbers. One solution that can be proffered is for the government and all stakeholders to provide entrepreneurship education to women so as to increase their entrepreneurial intentions. This is important because as Oosterbeek et al. and Westhead & Solesvik opined, entrepreneurship education is designed to be better able to increase the entrepreneurial intention of the male students. Gender stereotypes may make women to consider themselves as less competent than men in entrepreneurship. Not only that, barriers to women's entrepreneurship can be in the form of social, economic exclusion, and inequality.

In this study, the respondents were divided into 12 tribes. The Toba Batak tribe consisted of the majority of the study population (49.62%), which was almost half of the respondents. This study found no significant differences in terms of the level of entrepreneurial knowledge, entrepreneurial intentions, and efficacy when viewed from the category of tribe. However, when viewed from the average score for the three aspects, it would be observed that the Chinese tribe had a higher scores than other tribes. However, the accuracy is low due to the minimal number of samples for the Chinese tribe. This information aligns with business practices so far, at least in Indonesia, which is more dominated by Chinese ethnic groups. When analyzed further, the number of students' in the ethnic groups of the Batak tribe was far greater, consisting of the Toba Batak, Karo, Simalungun, Dairi/Pakpak, and Mandailing Batak. The number of Batak respondents was
Entrepreneurial knowledge can be increased through entrepreneurship education. The European Union provides entrepreneurship education to equip knowledge and encourage entrepreneurial careers' attractiveness to the younger generation. Furthermore, entrepreneurship education can develop entrepreneurial intentions. This research strengthens the theoretical foundation that increasing students' entrepreneurial intentions can be done by implementing entrepreneurship education. Entrepreneurship education should not be limited to business education, but it can start from primary education to higher education with a design that is adjusted to the level of education and the clusters of knowledge being held.

Furthermore, self-efficacy is proven to have a positive and significant effect on entrepreneurial intentions. Thus, this study's results strengthen the research that stated that self-efficacy is positively and significantly related to entrepreneurial intentions. When students possess self-efficacy, it helps them to build a belief that enables them to do and achieve things. This belief is what drives the intention to become entrepreneurs. These findings explain that increasing entrepreneurial intentions can be done by increasing self-confidence. Self-efficacy can be built by increasing knowledge about business management through apprenticeships in the business world and successful entrepreneur models.

Moreover, when the self-efficacy variable was used as a moderating variable for the entrepreneurial knowledge variable on entrepreneurial intentions, it was found that self-efficacy did not play a role in increasing entrepreneurial intentions. According to Bandura's definition of self-efficacy, self-efficacy refers to the belief in a person's ability to carry out the necessary actions to produce something. The cause of self-efficacy is not a moderating variable. It can be presumed that the level of self-efficacy is influenced by the level of knowledge about managing the owned business.
Limitations
Since our research did not address the perspectives of families, we do not know their role in preparing their children for their future professions, therefore the data obtained was limited to only students’ perspectives. However, this issue is increasingly important because we need to know the differences in family roles based on ethnicity.

Conclusions
This study examined the impact of entrepreneurial knowledge and self-efficacy on entrepreneurial intentions and whether self-efficacy acts as a moderating variable. It also analyzed the level of knowledge, self-efficacy, and entrepreneurial intentions based on gender, ethnicity, and parent’s occupation. This study’s findings are: (1) Entrepreneurial knowledge and self-efficacy positively and significantly affect entrepreneurial intentions; (2) Self-efficacy is not proven as a moderating variable; (3) The level of entrepreneurial knowledge, self-efficacy, and entrepreneurial intentions did not differ significantly when it was observed between gender, ethnicity, and parents’ occupation. Thus, efforts to increase women’s role in entrepreneurship won’t be too difficult to achieve because the entrepreneurial intentions of women are not lower than the men as in previous studies. Nevertheless, we need to know the impact of informal education that occurs within the family system. Also, it will be interesting to know the differences that abound in families educating their children based on culture (patrilineal) and parents’ work. This study’s results cannot be generalized because it only involved one field of science, namely economic education. However, this study provides information on the importance of entrepreneurship education, so as to increase the entrepreneurial knowledge and self-efficacy of women. For this reason, it is necessary to create entrepreneurial education designs that can increase entrepreneurial intentions, especially for women.

Data availability
Underlying data

Data are available under the terms of the Creative Commons Zero “No rights reserved” data waiver (CC0 1.0 Public domain dedication).

Acknowledgements
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References
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