

Enhancing Small Industrial Enterprise Performance: The Influence of Entrepreneurial Competence, Education, and Self-Efficacy

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ABSTRACT

This quantitative study examines the impact of entrepreneurial competence and education on the performance of small industrial enterprises, specifically in Medan's leather shoes and wood furniture industries. The research focuses on a sample of 154 businesses from a total population of 250, utilizing questionnaires and Structural Equation Modeling-Partial Least Squares (SEM-PLS) for analysis. The findings highlight the positive influence of entrepreneurial competence and non-formal education on business performance. The study underscores self-efficacy's role as a mediator between entrepreneurial competence and performance, indicating that entrepreneurs with higher self-efficacy effectively navigate business challenges. However, the study doesn't confirm self-efficacy as a mediator for formal and non-formal education's impact on performance. This suggests that while competence and non-formal education directly benefit performance, the interplay of self-efficacy with formal education is more complex. In conclusion, the research emphasizes the importance of entrepreneurial competence for business success and the role of self-efficacy in overcoming challenges. While self-efficacy's role in formal education needs more exploration, this study enhances understanding of factors affecting small industrial enterprises' performance, offering practical insights for ambitious entrepreneurs.

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1. INTRODUCTION

Small and medium-sized enterprises (SMEs) play a crucial role in shaping a country's economic landscape, making significant contributions to economic growth, job creation, and enhanced productivity (Hoogendoorn, der Zwan, & Thurik, 2011; Indarti & Langenberg, 2004). Despite constituting an impressive 99.99% of business units, SMEs' actual contribution to the GDP remains at 61%, highlighting substantial untapped potential (Tambunan, 2019). One primary reason for this discrepancy is the limited level of education and entrepreneurial expertise among workers and business owners (Tambunan, 2008).

The challenges faced by small industrial enterprises are multifaceted, encompassing limited access to financial resources like bank loans and marketing difficulties (Das & Mohiuddin, 2015; Oyelana & Adu, 2015; Raghuvanshi, Agrawal & Ghosh, 2017; Thapa, Thulaseedharan, Goswami, & Joshi, 2008). These constraints impede their growth and success, contributing to early-stage failures often observed within the first three years of operation (Ahmad, Ramayah, Wilson, & Kummerow, 2010; Jones, Macpherson, Thorpe, & Ghecham, 2007).

The determinants of small business success pivot on the competencies of entrepreneurs, encompassing both knowledge and skills, as well as the impact of formal and non-formal education. Entrepreneurial competence, which includes attitudes, beliefs, knowledge, skills, abilities, personality traits, expertise, and behavioral tendencies, holds immense significance in entrepreneurship (Kiggundu, 2002). Additionally, the level of education, whether formal or non-formal, shapes an entrepreneur's thought processes and actions, playing a pivotal role in adapting to various business scenarios (Segal, Borgia, & Schoenfeld, 2010).

The correlation between an entrepreneur's education and company performance is well-documented in various studies. Segal, Borgia, and Schoenfeld (2007) found a positive correlation between a founder's education and company performance. Thapa et al. (2008) highlighted a moderately positive relationship between education and entrepreneurial success. A meta-analysis by Vander Sluis, Van Praag, and Vijverberg (2004) supported the positive impact of education on entrepreneurial performance. Woldie, Leighton, and Adesua (2008) also demonstrated the influence of education on company growth.

Entrepreneurs with undergraduate education demonstrate a remarkable ability to access knowledge from diverse sources necessary for business success (Pickernell, Packham, Jones, Miller, & Thomas, 2011). Tambunan (2008) identified a deficiency in formal education among Indonesian MSME entrepreneurs as a reason for low performance in the processing industry. Non-formal education also contributes to enhancing the knowledge, skills, and abilities required by employers, encompassing activities such as training, seminars, and workshops (De Grip & Sauermann, 2013).

Furthermore, training positively affects productivity (Ballot, Fakhfakh, & Taymaz, 2006) and is linked to performance (Aragón-Sánchez, Barba-Aragón, & Sanz-Valle, 2003). Thang & Quang (2011) established that training significantly boosts sales and productivity. In this context, self-efficacy emerges as a vital influencer of entrepreneurial endeavors. Self-efficacy, as defined by Bandura (1977), represents an individual's belief in their capacity to succeed in tasks, shaping decision-making, persistence, cognitive abilities, and approach to challenges (Albert Bandura & Locke, 2003). A strong sense of self-efficacy empowers entrepreneurs to view setbacks as challenges, fueling their commitment to goals (Albert Bandura, 2012). Albert Bandura (1986) underscores that personal factors contribute to self-efficacy, which is a cornerstone of his social cognitive theory. He identifies four sources shaping self-efficacy: mastery experiences, vicarious experiences, verbal persuasion, and physiological and affective states. Positive conditions across these sources increase self-efficacy.

The level of self-efficacy influences performance and serves as a predictor of future success. Higher self-efficacy drives greater goal attainment and commitment, as explained by McClelland's achievement motivation theory by Chandler & Jansen (1992). Research by Segal, Borgia, & Schoenfeld (2005) links determination to succeed (self-efficacy) with entrepreneurial performance. Moreover, self-efficacy proves pivotal in improving business performance (Olusola, 2011), determining individual performance (Cherian & Jacob, 2013), and influencing academic performance (Hughes, 2011), language learning results (Mahyuddin et al., 2006), and academic caution (Fosse, Buch, Säfvenbom, & Martinussen, 2015).

While existing research emphasizes the interplay between entrepreneurial competence, education, self-efficacy, and SME performance, there is a need to address these factors and their relationships comprehensively. This study aims to examine how entrepreneurial competence, formal and non-formal education, and self-efficacy interact to impact SME performance. By exploring these aspects, this study

seeks to provide a solid theoretical foundation suggesting that self-efficacy can bolster business performance.

Consequently, the research questions (RQ) guiding this study are as follows:

- RQ 1: Does entrepreneurial competence significantly influence small industrial enterprises' performance?
- RQ 2: Does entrepreneurial competence significantly affect self-efficacy in small industrial enterprises?
- RQ 3: Does formal education significantly impact self-efficacy in the context of small industrial enterprises?
- RQ 4: Does non-formal education significantly contribute to self-efficacy among small industry entrepreneurs?
- RQ 5: Does formal education significantly influence small industrial enterprises' performance?
- RQ 6: Does non-formal education significantly impact small industrial enterprises' performance?
- RQ 7: Does self-efficacy significantly affect small industrial enterprises' performance?
- RQ 8: Does self-efficacy mediate the relationship between entrepreneurial competence and small industrial enterprises' performance?
- RQ 9: Does self-efficacy mediate the impact of non-formal education on small industrial enterprises' performance?
- RQ 10: Does self-efficacy mediate the influence of formal education on small industrial enterprises' performance?

These research questions give rise to the following hypotheses:

- Hypothesis 1: Entrepreneurial competence significantly influences small industry performance.
- Hypothesis 2: Entrepreneurial competence significantly influences self-efficacy.
- Hypothesis 3: Formal education significantly influences self-efficacy.
- Hypothesis 4: Non-formal education significantly influences self-efficacy.
- Hypothesis 5: Formal education significantly influences small industry performance.
- Hypothesis 6: Non-formal education significantly influences small industry performance.
- Hypothesis 7: Self-efficacy significantly influences small industry performance.
- Hypothesis 8: Self-efficacy mediates the influence of entrepreneurial competence and small industry performance.
- Hypothesis 9: Self-efficacy mediates the influence of non-formal education on small industry performance.
- Hypothesis 10: Self-efficacy mediates the influence of formal education on small industry performance.

Through the exploration of these research questions and hypotheses, this study aims to offer a comprehensive understanding of how entrepreneurial competence, education, and self-efficacy collectively contribute to small industrial enterprises' performance. By addressing gaps in previous research, this study strives to enhance both theoretical and practical perspectives on fostering the growth and success of small industrial enterprises in a dynamic business landscape.

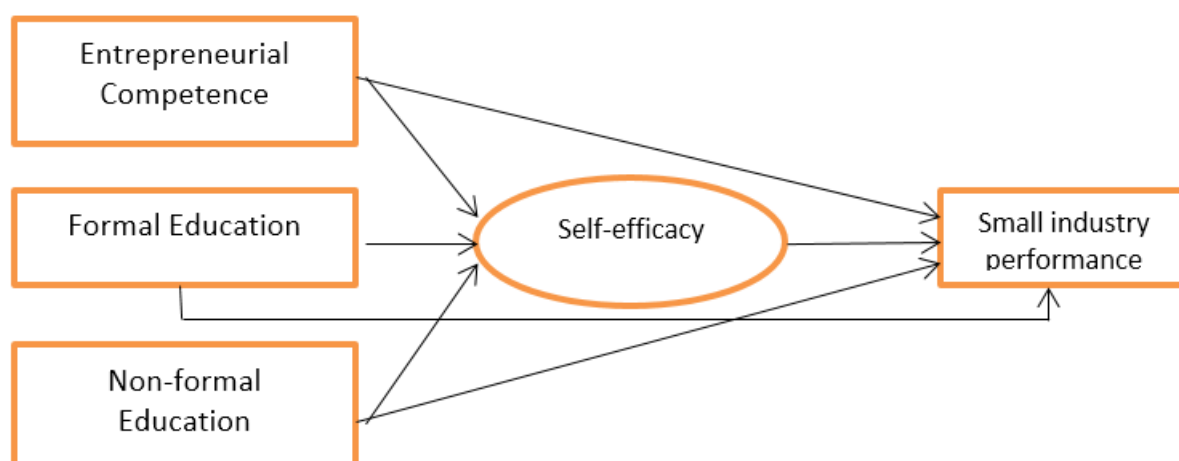


Figure 1. Research Model

2. METHOD

2.1. Data collection and instrumentation

The research variables consist of 4, namely a) entrepreneurial competence, b) education, namely formal and non-formal education, c) self-efficacy, and d) small industry performance. Entrepreneurial competence is measured by six dimensions: strategic, conceptual, opportunity, relationship, learning, and personal, and adopted (Hazlina Ahmad, Ramayah, Wilson, & Kummerow, 2010). The self-efficacy variable is measured by three dimensions: magnitude, strength, and generality (Bandura, 1977). Small industry performance is measured by the increase in sales turnover over the last three years (Segal et al., 2005; Hazlina Ahmad et al., 2010; Chaston, 2012).

The questionnaire for entrepreneurial competence uses a Likert scale with five alternative answers. The answer to the statement (a) strongly agree is given a score of 5, (b) agree = 4, (c) undecided = 3, (d) disagree = 2, and (e) strongly disagree = 1. Respondents' educational information obtained data identity. Formal education is the highest level of education obtained by respondents, such as (a) elementary school graduates are classified as very low, (b) junior high school graduates are classified as low, (c) high school graduates are classified as moderate, and (d) tertiary institutions are classified as high. Furthermore, non-formal education is education and training/seminars that are related/related to performance improvement that respondents have participated in in the last two years. Furthermore, self-efficacy uses a Likert scale with five answer choices. Instrument adopted from (Kiggundu, 2002; Schwarzer, Mueller, & Greenglass, 1999).

Then, measure the performance of small industries using questions/tables. Small business performance can be measured using questions (Chandler & Hanks, 1993; Hazlina Ahmad et al., 2010; Chaston, 2012; Rakib, 2009; Segal et al., 2005; 2010). The choice of question form is because, generally, small industries do not carry out financial reports like large companies

2.2. Data analysis procedure

Data were analyzed by SEM-PLS. However, instead of using multi-item measures, data analysis will be carried out with single-item measures and sum scores. Single items have practical advantages, such as ease of application, brevity, and lower costs associated with their use (Hair Jr, Hult, Ringle, & Sarstedt, 2016). The questionnaire was tested for validity and reliability first to get valid data. Because formal education data is ordinal data and non-formal education data is in the form of ratio data, the data is first standardized. The way to standardize it is with the z-score as for the formula $z = \frac{x_i - \bar{x}}{s}$, x_i is the x value of each data, and \bar{x} is the mean, while s is the standard deviation. To avoid negative

values so as not to confuse interpreting them, the z-score value will be standardized with the T-score with the formula $T = 50 + 10z$ (Runyon & Haber, 1980).

3. FINDINGS AND DISCUSSION

3.1. Descriptive statistics

Based on the results of the survey of the entrepreneurial competence of 154 small entrepreneurs, a description of the competencies is obtained as presented in Table 1. The average entrepreneurial competence of shoe industry entrepreneurs is higher (89.45) than that of the shoe industry (85.08).

Table 1. Sample demographic background

Range	Type of Industry				Total		Category
	Furniture		Shoe				
	f	%	f	%	f	%	
66,00 - 73,19	2	2,82	2	2,41	4	2,60	Very low
73,20 - 80,39	14	19,72	3	3,61	17	11,04	Low
80,40 - 87,59	32	45,07	21	25,30	53	34,42	Moderate
87,60 - 94,79	18	25,35	44	53,01	62	40,26	High
94,50 – 102,0	5	7,04	13	15,66	18	11,69	Very high
Total	71	100	83	100	154	100	
Mean	85,08		89,45		87,27		

The survey results obtained are presented in Table 2. The education of furniture entrepreneurs is higher than that of shoe entrepreneurs, where 63.38% have a high school education and above, while shoe entrepreneurs are only 42.17%. Then for higher education as well as furniture entrepreneurs, 15.49% higher compared to 10.84%.

Table 2. Entrepreneur Education

Formal Education	Educational stage	Type of industry				Total		Category
		Furniture		Shoe				
		f	%	f	%	f	%	
	Primary	11	15,49	13	15,66	24	15,58	Very low
	Junior high	15	21,13	35	42,17	50	32,47	Low
	Senior high	34	47,89	26	31,33	60	38,96	Moderate
	Higher education	11	15,49	9	10,84	20	12,99	High
	Total	71	100	83	100	154	100	
Non-formal Education	Opt-in range (times)	Type of industry				Total		Category
		Furniture		Shoe				
		f	%	f	%	f	%	
	0,00- 0,99	60	84,51	25	30,12	85	55,19	Very low
	1,00 - 1,99	6	8,45	23	27,71	29	18,83	Low
	2,00 - 2,99	5	7,04	28	33,73	33	21,43	Moderate
	3,00 - 3,99	0	0,00	4	4,82	4	2,60	High
	4,00 - 5,00	0	0,00	3	3,61	3	1,95	Very high
	Total	71	100	83	100	154	100	
Mean		0,23		1,21		0,79		

Furthermore, the participation of entrepreneurs in non-formal education is meager. As many as 55.19% of entrepreneurs have never participated in it, while the frequency of participation is also low, 1 to 5 times over the last two years. When comparing furniture and shoe entrepreneurs, as many as 84.51% of furniture entrepreneurs have never followed, while 30.12% of shoe entrepreneurs have never followed suit. Self-efficacy owned by entrepreneurs describes the extent to which the level of confidence/confidence of entrepreneurs in running a business is based on their knowledge, abilities, and experience. The survey results are presented in Table 3.

Table 3. Self-Efficacy of Small Entrepreneurs

Range	Type of Industry				Total		Category
	Furniture		Shoe				
	f	%	f	%	f	%	
22,00 - 25,59	1	1,41	1	1,20	2	1,30	Very low
25,60 - 29,19	2	2,82	6	7,23	8	5,19	Low
29,20 - 32,79	21	29,58	19	22,89	40	25,97	Moderate
32,80 - 36,39	37	52,11	39	46,99	76	49,35	High
36,40 - 40,00	10	14,08	18	21,69	28	18,18	Very high
Total	71	100	83	100	154	100	
Total mean	33,82		34,17		33,89		
Mean	-		-		4,25		

Entrepreneurs' self-efficacy level is excellent, where 67.53% is in the high to very high category. Meanwhile, the level of self-efficacy in the deficient category is only 1.30%. The level of self-efficacy between industries is also balanced where 66.20% of furniture entrepreneurs are in the high to very high category and an average of 33.82 and shoe entrepreneurs are 69.67% with an average of 34.17. The performance in this study is seen in the growth of sales turnover. The business performance achievements obtained by entrepreneurs are presented in Table 4.

Table 4. Small Industry Performance

Sales Turnover Growth (%)	Type of Industry				Total		Category
	Furniture		Shoe				
	f	%	f	%	f	%	
0,0 – 9,9	4	5,63	1	1,20	5	3,25	Very low
10,0 – 19,9	10	14,08	6	7,23	16	10,39	Low
20,0 – 29,9	23	32,39	15	18,07	38	24,68	Moderate
30,0 – 39,9	24	33,80	28	33,73	52	33,77	High
40,0 – 50,0	10	14,08	33	39,76	43	27,92	Very high
Total	71	100	83	100	154	100	
Mean	25,52		33,59		29,30		

The highest ability of entrepreneurs to achieve sales turnover growth was achieved in the growth range of 30 to 39.99%, namely 33.77% of businesses, followed by a growing range of 40 to 50%, which was 27.92%. The growth of 20% and above in the furniture business reached 80.28%, lower than that achieved by the shoe business at 91.57%. Likewise, the average growth of the furniture business was lower at 25.52% compared to the shoe business at 33.59%. From this data, it can be concluded that the performance of the shoe business's turnover growth is higher than that of the furniture business.

3.2. Hypothesis Testing

According to statistical calculations, entrepreneurial competence has a positive and significant effect on self-efficacy and small business performance. The coefficients obtained are 0.430 and 0.336, respectively, the sig value. Then, if looking at the sig value of the entrepreneurial competence variable of 0.000 is smaller than (0.05) or sig < 0.05, then the null hypothesis (Ho) is rejected. This means that

entrepreneurial competence and self-efficacy have a positive and significant impact on the performance of small industries. The findings of this research explain that entrepreneurial competence is very much needed by an entrepreneur so that his/her self-efficacy can increase and subsequently improve performance. This study confirms the research of (Gerli, Gubitta, & Tognazzo, 2011) that entrepreneurial competence has a positive effect on business performance; (Abaho, 2016) explains that entrepreneurial competencies possessed by owners and managers can improve business operations.

Entrepreneurial competence needs to be developed in educational institutions. Tittel & Terzidis (2020) stated that many competencies need to be developed, especially strategic and management competencies. Then, the emergence of digital business and innovation breakthroughs are new challenges to developing entrepreneurial competencies and demand new perspectives in entrepreneurship education (Reis, Fleury, & Carvalho, 2021). Ferreras-Garcia, Hernández-Lara, & Serradell-López (2019) recommends that entrepreneurship learning needs to be given the material on the process of making business plans because it produces higher competencies. Grewe & Brahm (2020) also suggest that developing further entrepreneurship education programs, such as building interactions between schools, companies, and business partners, is important.

Table 5. Summary of Hypothesis Testing

	Original Sample (O)	T Statistics (O /STDEV I)	P Values	Significance (p < 0.05)
H1: Entrepreneurial competence -> Small industry performance	0,336	4,345	0,000	Confirm
H2: Entrepreneurial competence -> Self-efficacy	0,430	5,110	0,000	Confirm
H3: Formal education -> Self-efficacy	0,078	1,115	0,265	Unconfirm
H4: Non-formal education -> Self-efficacy	0,027	0,395	0,693	Unconfirm
H5: Formal education -> Small industry performance	-0,017	0,240	0,811	Unconfirm
H6: Non-formal education -> Small industry performance	0,301	2,788	0,005	Confirm
H7: Self-efficacy -> Small industry performance	0,214	3,684	0,000	Confirm
Specific indirect effect				
H8: Entrepreneurial competence -> Self-efficacy -> Small industry performance	0,092	3,035	0,002	Confirm
H9: Non-formal education -> Self-efficacy -> Small industry performance	0,006	0,386	0,700	Unconfirm
H10: Formal education -> Self-efficacy -> Small industry performance	0,017	1,029	0,304	Unconfirm
Total effect				
Self-efficacy -> Small industry performance	0,214	3,684	0,000	-
Entrepreneurial competence -> Self-efficacy	0,430	5,110	0,000	-
Entrepreneurial competence -> Small industry performance	0,428	5,496	0,000	-
Formal education -> Self-efficacy	0,078	1,115	0,265	-
Formal education -> Small industry performance	0,000	0,000	1,000	-
Non-formal education -> Self-efficacy	0,027	0,395	0,693	-
Non-formal education -> Small industry performance	0,307	2,723	0,007	-
r square				
Self-efficacy	0,212	3,207	0,001	-
Small industry performance	0,402	6,022	0,000	-
SRMR	0,000	0,000		

Formal education is not proven to affect self-efficacy and small business performance because the sig values 0.265 and 0.811 are greater than (0.05). Meanwhile, non-formal education does not affect self-efficacy but has a positive and significant effect on business performance. Then the null hypothesis (H_0) is rejected. This means that the success of small industries can be explained by non-formal education of 30.1%. Self-efficacy has a positive and significant effect on the performance of small industries. The results of the calculation of the hypothesis test are presented in Table 5.

In the statistical results of the test of the mediating role of self-efficacy on the influence of entrepreneurial competence on small business performance, self-efficacy was significantly proven as a mediating variable, namely partial mediation. The magnitude of the mediating effect of self-efficacy is 0.092 or 9.2%. The results of the self-efficacy mediation test on the influence of education (formal and non-formal) were not proven as a mediating variable because each sig value > 0.05 .

The findings of this study are in line with (Hazlina Ahmad et al., 2010), those who state that entrepreneurial competence, as a strong predictor of small business success, improves business performance (Gerli et al., 2011; Hazlina Ahmad et al., 2010; Brinckmann, 2008; Ardiana, Brahmayanti, & Subaedi, 2010; Ismail & Abidin, 2010; Al Mamun, Naw, Zainol, & others, 2016; Kisubi et al., 2022). The higher the entrepreneurial competence level of the entrepreneur, the higher the performance. Formal education and non-formal education owned by entrepreneurs affect business performance. This is very rational because the higher the education and the more frequent the education and training (training), seminars, and the like will make the decisions and actions taken more appropriate. The higher the formal education owned by the entrepreneur, the more rational in dealing with problems because education will affect the perspective on a problem. Likewise, the following training provides practical experience in running a business. At the same time, the seminar will provide new information related to the business that is being run.

The findings of this study support several previous studies, such as; (Ballot et al., 2006), who state that training has a positive effect on productivity, (Aragón-Sánchez et al., 2003), a significant relationship between training and performance and the study of (Thang & Quang, 2011) training significantly increases sales and productivity. With the proof that non-formal education has a significant effect on performance, research supports the human capital theory (Becker, 2009), which states that education can increase one's productivity.

This research can prove self-efficacy as a mediating variable on the influence of entrepreneurial competence on the performance of small industries. This explains that the presence of the self-efficacy mediating variable increases motivation or confidence for entrepreneurs to take action based on their knowledge, abilities, and skills to achieve better performance. Alternatively, in other words, self-efficacy plays a role in increasing the desire to achieve better business performance. McClelland's theory of the need for achievement is a motive for achievement (need for achievement; thus, this research can complement McClelland's theory of the need for achievement).

4. CONCLUSION

Entrepreneurial competence needs to be owned by entrepreneurs because it has a positive and significant effect on the performance of small businesses. The higher the entrepreneurial competence possessed, the higher the business performance. The entrepreneurial competencies in question include the ability of entrepreneurs to formulate (future) strategic plans, the ability to conceptualize business development, the ability to seize opportunities, the ability to build relationships, the ability to learn to continue to develop the business, and personal abilities. To stay focused on business development, small industry entrepreneurs need to increase participation in non-formal education such as training, seminars, and exhibitions related to their business. Through non-formal education, they will gain practical knowledge and experience. Self-efficacy can mediate the influence of entrepreneurial competence on small business performance. Entrepreneurs need to increase their self-efficacy because it will increase their confidence in running a business. However, this study does have a few limitations,

one of which is the absence of a multi-city sample. To strengthen the findings and extend their applicability, future researchers should consider conducting similar studies with larger samples, and employing longitudinal approaches. This would provide greater confirmation and generalizability to the results obtained in this study.

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Conflicts of Interest: The authors declare no conflict of interest.

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