Entrepreneurial Mindset and MSME Performance: A Meta-Analysis

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Abstract. Research on the entrepreneurial mindset and its correlation with MSME performance shows varied results. We meta-analyzed the final 5 articles with a total sample size of 1,912 individuals and found a significant, medium correlation between entrepreneurial mindset and the performance of MSME. Due to the high heterogeneity, narrative synthesis is carried out to explain the meta-analysis result further. This research has implications for entrepreneurship scholars, program evaluators, and policymakers.

Keywords: entrepreneurial mindset · performance MSME · meta-analysis

1 Introduction

Micro, Small, and Medium Enterprises (MSMEs) are the basis of economic growth and contribute essentially to a country's economy. Thus, it is critical to understand the factors affecting the performance of this sector. Research on the factors affecting the performance of MSMEs has attracted the attention of researchers across the globe [1–4] The outcome of this research is expected to contribute to finding appropriate interventions or program development for MSMEs to continue to develop and benefit society. Improving small businesses' performance must be addressed because low performance can lead to business failure [5].

The entrepreneurial mindset is an essential factor in the success of MSMEs [5–7], and without it, MSMEs will fail [8]. With a thriving entrepreneurial mindset, MSME executants will be eager to seek new opportunities and ways to profit from alteration. This opportunity will trigger the MSMEs' actions, ultimately resulting in success. A developed entrepreneurial mindset will enable individuals to identify and take advantage of uncertain opportunities because they have the cognitive ability to deal with these conditions [8, 9]. By adopting an entrepreneurial mindset, entrepreneurs can accept and manage risk [5].

Although the relationship between entrepreneurial mindset and the performance of MSMEs has been proven, the magnitude of the relationship remains uncertain. Triggered by this condition, meta-analytic research is needed to examine the magnitude of the relationship between entrepreneurial mindset and the performance of MSMEs. This result

can be a reference for future research regarding MSME and entrepreneurship. In addition, practically, this research can serve as important information for the policymakers and evaluators of entrepreneurship programs.

2   Research Methods

Meta-analysis provides a quantitative estimate of the effect of EM on performance. The IV and DV of this research are Entrepreneurial Mindset and performance.

Inclusion and Exclusion Criteria. The criteria for selecting studies to be included in this meta-analysis are as follows:

1. Research with the main question or one of the research questions to determine the relationship between entrepreneurial mindset and MSME performance. The definition of MSMEs in question is companies with a maximum number of employees of 50 people or companies with a maximum total wealth of 10 million US Dollars (SME (Noun) Definition and Synonyms | Macmillan Dictionary, n.d.)
2. This study considers all types of theories and measurements of an entrepreneurial mindset. The level of analysis can be the company as a whole, managers, or owners of the MSME.
3. Articles can be peer-reviewed journals, dissertations, or conference proceedings that use English and have full paper access.
4. The article uses a quantitative research design with a cross-sectional method and the statistical data provided should allow for the effect size calculation.

Source of Information. This study used a systematic literature search on the Web of Science and Scopus electronic databases. We use the PICO to determine the scope of the study (Table 1).

As for the results of this search, 279 articles were obtained, which were then selected based on predetermined inclusion and exclusion criteria. We use PRISMA diagrams [10] and Rayyan software [11] for the screening process. As a result, only 2 articles met the inclusion criteria. To obtain more comprehensive meta-analysis results, we conducted an additional search by tracing the list of references used in the two articles. However, the articles in the reference list still needed to meet the inclusion criteria. Therefore, this study carried out non-systematic research to search the electronic databases and Google Scholar reference lists. And eventually, 3 additional studies were obtained that matched the inclusion criteria. Finally, there were 5 studies included in the process of synthesis and meta-analysis.

Table 1. Keyword Search

P (Population)	I/E (Exposure)	C(Comparison)	O(outcome)
MSMEs or small and medium sized enterprises or small businesses or small companies	(Entrepreneurial Mindset)	N/A	Performance

Study Selection. The search was carried out by two reviewers individually. The first step is identifying and removing duplicate articles. Next, each reviewer independently analyzed and read the titles and abstracts thoroughly. Each reviewer makes a selection according to the eligibility criteria used. When there is disagreement, a consensus resolution is needed.

Data Extraction. The important data collected is guided by the data extraction form predetermined in the protocol. It includes authors, year of publication, type of publication, country, method, results of statistical calculations, and conclusions.

Risk of Bias Assessment Method. This assessment aims to assess a study's methodological quality and determine how much it addresses possible biases in its design, implementation, and analysis using a checklist for analytical cross-sectional studies from the Joanna Briggs Institute (JBI) (see https://jbi.global). This tool consists of eight questions with four answer choices: yes, no, unclear, and not applicable. Reviewers answer each question by placing a check mark ($\sqrt{}$) on one of the four available answer choices. After that, the reviewer determines a final assessment consisting of including, excluding, and seeking further info on the assessed articles. A comment column is also prepared at the end of this formula, which reviewers can fill in. Each yes answers to each question are given a weight of 1.

Data Synthetic Method. The data that have been collected were then synthesized using two methods: qualitative (narrative) and quantitative (meta-analysis). In the narrative synthesis, the findings of each study were explored, then the correlation between one study and another were identified. Furthermore, the potential funnel plot asymmetry test was carried out using Egger's regression and the Fail-Safe N Rosenthal Approach, while the correlation coefficient used the DerSimonian-Laird estimator. The R analysis was based on the Jamovi version 2.3.12 program using a random-effects meta-analysis model (REM). Interpretation of effect sizes is based on (Cohen, 1992), where $d = 0.2$ small categories, $d = 0.5$ medium categories, and $d = 0.8$ large categories.

3   Results

Study Characteristics. Of the 279 articles identified during the search, the final results were 5 articles that met the criteria (inclusion) to be used as research samples. The five studies published from 2017 to 2022 are still relatively new (the last 5 years). In this meta-analysis itself, there is no restriction on the year the research was published.

Regarding population, all studies were conducted in developing countries, 2 on the European continent (Russia and Turkey), 2 on the African continent (Nigeria and Kenya), and 1 on the Asian continent (Iraq). Regarding population, 3 studies examine MSMEs, 1 study in the Small Business population and 1 study in the Medium Enterprise population. All studies do not limit the MSME based on the sector/type of business or the length of the business. The majority of sampling uses probability sampling. All studies used questionnaires for data collection. A summary of the data from the five studies can be seen in Table 2.

Risk of Bias Assessment. Overall, the risk score of bias in the study sample varied from 3 to 7.

Synthetic Data Results. This study uses Jamovi software to obtain summary effect values, heterogeneity test results, forest plots, and publication bias analysis. The data

used as input is the effect size (ES), in this case, the correlation coefficient (r), and the number of samples used in the study (n). Results are shown in Table 2. A total of k = 5 studies were included in the analysis. The observed correlation coefficients range from 0.1030 to 0.8700, with primarily positive estimates (100%). Table 2 shows the estimated average correlation coefficient based on the Random Effect Model, which is 0.4949 (95% CI: 0.2212 to 0.7686) or classified as medium [12]. The mean outcome differed significantly from zero (z = 3.5439, p = 0.0004).

According to the Q-test, the results were heterogeneous (Q(4) = 376.2890, p < 0.0001, tau^2 = 0.0962, I2 = 98.9370%) [13, 14]. I2 values greater than 90% indicate that the effect size values vary too much and are rare or rare. This very high heterogeneity is due to this meta-analysis' small number of samples (k = 5). When a meta-analysis study has a small number of samples, the estimated value of I^2 must be interpreted cautiously because it also has a potential bias [15]. Because of the very high heterogeneity, even though the correlation coefficient is classified as medium (0.4949 (95% CI: 0.2212 to 0.7686), this pooled effect size estimate does not explain the entire study. Therefore, it must be Narrative synthesis was carried out to explain each study.

4   Discussion and Conclusion

This study aims to systematically examine the consistency and variability of studies on the relationship between entrepreneurial mindset and the performance of MSMEs. The results show that the effect size conclusions are not meaningful; therefore, the consistency of the studies cannot be concluded. However, we conduct a narrative synthesis of the five existing studies to see the variability of the studies.

Research by Abdullah et al. [16] is a study with a plausible effect size (0.87 [0.84–0.90]). Indeed, this study used a probability sampling technique, but the inclusion and exclusion criteria for the sample used for the study needed to be more evident. In addition, this study also does not identify nor determine strategies to deal with confounding variables. In measurement, no explanation was found regarding the indicators or theories used to measure performance or entrepreneurial mindset.

Similarities can be seen in Kimathi's research (2020). Even though it has a relatively strong effect size (0.57 [0.50–0.64]), the authors do not mention the theoretical basis for constructing the measuring instrument. In addition, measuring the validity of the instruments used still needs to be determined. Regarding the research sample, the authors were able to provide a detailed explanation of the inclusion, exclusion, and sample settings involved in the study. This research has also identified confounding variables and included strategies to overcome them.

Research by Shirokova & Gafforova [4] has an effect size that is classified as medium (0.39 [0.33–0.46]). The vital information not obtained in this study was the absence of information regarding the validity test of the measuring instruments used, even though measurement has a significant role in social research. The validity of an instrument's validity indicates whether the instrument actually measures the construct to be measured, in this case, the performance of MSMEs and an entrepreneurial mindset.

Ersarı & Naktiyok's research [16] has an effect size (of 0.10[0.01–0.20]). In this study, the setting and research subjects were described comprehensively. However, the

Table 2. Heterogeneity Test Output Results

Random-Effects Model (k = 5)

	Estimate	SE	Z	p	CI Lower Bound	CI Upper Bound
Intercept	0.495	0.140	3.54	<.001	0.221	0.769

Note. Tau^2 Estimator: **DerSimonian-Laird**

Heterogeneity Statistics

Tau	Tau^2	I^2	H^2	R^2	df	Q	p
0.310	0.0962 (SE = 0.0798)	98.94%	94.072	.	4.000	376.289	<.001

sampling technique used in the study was not further explained. In addition, there is no explanation of the theory used as the basis for compiling measuring instruments for entrepreneurial mindset and performance variables.

Abdullah's research [17] has an effect size (of 0.53[0.45–0.61]). This study selected the sample based on clear inclusion and exclusion criteria. Researchers have also attempted to identify confounding variables that may have an effect. However, the strategy for overcoming the influence of confounding variables on the relationship between entrepreneurial mindset and MSME performance is still unclear. This confounding variable can be ignored. However, in multiple regression analysis, this neglect can affect the conclusions of the analysis results.

Based on the discussion, several weaknesses can be identified in this meta-analysis. First is the limited number of samples (n = 5); second is the source of data information; and lastly, the design of the meta-analysis (e. g inclusion and exclusion criteria) [18].

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