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MSME Resilience in the Face of COVID-19 and Beyond: A Meta-Analysis of Factors that Influence MSME Resilience

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Executive Summary
This study investigates the resilience of Micro, Small, and Medium Enterprises (MSMEs) during the COVID-19 pandemic by analyzing firm characteristics and entrepreneurial competencies. Utilizing a meta-analysis approach, 60 literature studies and 425 empirical estimates were examined. The findings reveal that entrepreneurial competence, encompassing entrepreneurial orientation, networking and social capital, and human capital, significantly enhances MSME resilience more than firm characteristics such as firm size, business age, and financial capital. Additionally, technological utilization and cultural aspects (uncertainty avoidance, individualism, and motivation towards achievements and success) were assessed as moderating factors. The results indicate that robust ICT infrastructure, proficiency, and utilization, along with supportive policies, bolster MSME resilience. The study also underscores the negative impact of high uncertainty avoidance and individualism on resilience, whereas motivation towards achievement and success positively influences resilience. The analysis of Indonesian MSMEs, incorporating 26 literature studies and 91 empirical estimates, corroborates these findings, highlighting the greater impact of entrepreneurial competence. The study suggests the need for targeted policies and support programs to enhance MSME resilience through technological and cultural adaptation.

JEL Classification: L25; L26

Keywords
MSME resilience — entrepreneurial competence — firm characteristics — meta-analysis

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1. Introduction

The COVID-19 pandemic drastically impacted the global economy, causing economic downturns and widespread job losses (Cajner et al., 2020; Dingel & Neiman, 2020). Global GDP declined by 2.87%, and unemployment rose to 6.9% between 2019 and 2020 (World Bank Group, 2024). MSMEs, contributing over 40% of national income and 90% of businesses worldwide (World Bank Group, 2019), were severely affected. Their innovation and adaptability are vital for sustainable growth and addressing unemployment and poverty (WEF, 2023; Saad et al., 2021; Williams & Vorley, 2014; de Carvalho et al., 2021). However, the pandemic exposed their vulnerabilities due to limited financial buffers and reliance on local economies (Belghitar et al., 2022; Chowdhury et al., 2022). Lockdowns and social distancing pushed MSMEs towards digitalization as consumer behavior shifted to online shopping. E-commerce's global retail share grew from 14% in 2019 to 17% in 2020 (UNCTAD, 2021), making digital adoption crucial for maintaining operations (Jaumotte et al., 2023; Radicic & Petković, 2023). However, many MSMEs struggled with the transition due to lack of time, expertise, and resources (Belghitar et al., 2022; Dua et al., 2020; OECD, 2023).

The pandemic highlighted a paradox: MSMEs' innovation and adaptability are crucial for recovery, but these strengths also posed challenges (Amankwah-Amoah et al., 2021; Cowling et al., 2020). Researchers and policymakers have sought to improve MSME resilience by focusing on adaptability, growth, and maintaining operations amidst uncertainties (Fiksel, 2006). MSME resilience during the pandemic demonstrated agility and innovation, but recovery requires adapting business models, supportive policies, access to finance, and leveraging technology. Despite increased research interest, a comprehensive synthesis of MSME resilience across regions, industries, and sizes is lacking. Previous studies indicate that coping ability alone does not ensure sustainable resilience policies (Tunio et al., 2021; Alam et al., 2018) and highlight constraints in institutional capacities and cultural contexts (Sarkar & Clegg, 2021; Duchek, 2020). There is also a gap in understanding the long-term implications of these adaptations post-pandemic (Saad et al., 2021). This study aims to bridge these gaps by systematically reviewing empirical studies to identify how MSME size, age, and structure influence resilience. It examines the role of entrepreneurial skills, technology adoption, and cultural influences in supporting business continuity and market reach. By focusing on Indonesia's specific context, this research provides a holistic understanding of MSME resilience, using a meta-analytical approach to enhance the statistical power and precision of findings (Cooper et al., 2009).

2. Materials and Methods

Micro, Small, and Medium Enterprises (MSMEs) are businesses that meet specific criteria for personnel, revenues, and assets, varying by country. Entrepreneurs face challenges like financing, resources, and external crises, requiring resilience to survive and thrive. Resilience helps businesses assess, overcome, and improve, enabling them to withstand future shocks through survival, adaptation, and innovation. This study defines MSME resilience as the abil-

ity to anticipate, adapt, innovate, and seize opportunities amidst disruptions. Various factors influence MSME resilience, particularly in developing countries (Tengeh, 2016; Linnenluecke, 2017). Key factors include firm characteristics and entrepreneurial competence. Firm characteristics encompass size, age, and financial capital. Smaller businesses take more risks, while larger ones prefer safer decisions (Sullivan-Taylor & Branicki, 2011). Older firms benefit from institutional support and proficiency (Audretsch & Keilbach, 2007). Financial capital enhances resilience, with financially literate companies better accessing resources and recovering from disruptions (Falciola et al., 2023; Roffia & Dabić, 2024). However, MSMEs often face financial challenges during economic recessions, affecting their resilience.

Entrepreneurial competence includes traits driving business birth, survival, and growth, such as knowledge, motives, traits, self-images, social roles, and skills (Bird, 2019). Key aspects are human capital, entrepreneurial orientation (EO), and networking and social capital. EO traits like proactiveness, innovation, creativity, risk-taking, and opportunity-seeking influence a business's capacity to navigate challenges and thrive in uncertainty (Covin & Slevin, 1989; Rauch et al., 2009). Strong EO offers flexibility and adaptability, crucial for resilient MSMEs, helping them utilize limited resources effectively for improved performance (Ates & Bititci, 2011; Miller, 2011; Wiklund & Shepherd, 2003; Brouthers et al., 2015). Networking provides access to resources and knowledge, helping MSMEs manage interdependencies and cope with uncertainty (OECD, 2023). Social capital, including trust and shared norms, enhances long-term resilience by facilitating mobilization, knowledge transfer, and innovation (Chiesi, 2014; Nichter & Goldmark, 2009; Demmer et al., 2011; Gunasekaran et al., 2011; Abylaev et al., 2014). Enterprises with strong networks benefit from credit mobilization and human capital acquisition (Torres et al., 2019). Human capital, encompassing the skills, knowledge, and experiences of the entrepreneur and workforce, significantly impacts business performance. High-quality human resources enhance the ability to innovate, manage efficiently, and navigate complex situations, crucial for resilience (Daou et al., 2014; Tovstiga & Tulugurova, 2007). Investment in training and empowerment is essential for business success and resilience (Biggs et al., 2015; Abylaev et al., 2014).

The resilience of MSMEs has been extensively studied, highlighting the importance of entrepreneurial competence and firm characteristics during crises. To understand these dynamics better, external factors such as technology utilization and cultural context must be considered. Moderator variables provide insights into these relationships (Field & Gillet, 2010). Technology utilization involves adopting and integrating technology to improve efficiency, performance, and business models. For instance, cloud computing enables remote work, and data analytics aid decision-making (Assante et al., 2016; Bhardwaj, 2022; Ferraris et al., 2019). MSMEs can strengthen resilience by leveraging technology, though they may need support in training, financial incentives, and cybersecurity (OECD, 2023; Dua et al., 2020; Belghitar et al., 2022). Understanding cultural influences is crucial for MSMEs adapting to crises like COVID-19. Cultural aspects significantly impact firm performance through interactions with employees, customers, suppliers, and communities (Scott, 2008). Cultural norms affect values and behaviors within a firm, ensuring performance and survival by adapting to societal values, beliefs, and norms (Gallego-Álvarez & Pucheta-Martínez, 2020). Studies show that national culture influences decision-making ethics and affects organizational structure and management behavior (Su, 2006; Tsakumis, 2007; Richerson & Boyd, 2004).

Research on MSME resilience has expanded, providing insights into enhancing resilience during crises. This section reviews literature on firm characteristics, entrepreneurial competence, and technology utilization, highlighting their impact on MSME resilience. Falciola et al. (2023) identified financial, social, and human capital, strong networking, and entrepreneurial orientation as crucial for the resilience of MSMEs in Benin and the Philippines during the COVID-19 pandemic. Seraj et al. (2022) emphasized financial literacy and knowledge in improving firm resiliency among Saudi Arabian entrepreneurs. Ozanne et al. (2022) found that social capital and dynamic capabilities enhance resilience in MSMEs in Australia and New Zealand. Asare-Kyire et al. (2023) highlighted that entrepreneurial orientation positively impacts resilience in Ghanaian MSMEs. Khalil et al. (2022) noted that digital technologies help smaller businesses build capabilities. Mishrif & Khan (2023) supported that technology adoption improves business models, innovation, performance, and social capital. Cultural aspects also play a crucial role in MSME resilience. Fietz et al. (2021) found that collectivistic values increase firm resilience in NAFTA companies. Gallego-Álvarez & Pucheta-Martínez (2020) suggested individualism weakens innovation, while achievement motivation strengthens it in companies from 28 countries. Memili et al. (2023) indicated that risk-taking behavior increases resilience in family-owned SME hotels in Turkey. These studies collectively underscore the importance of firm characteristics, entrepreneurial competence, technology utilization, and cultural aspects in enhancing MSME resilience during the COVID-19 pandemic.

This study uses meta-analysis to examine factors influencing MSME resilience by synthesizing results from multiple empirical studies, minimizing research bias, and accounting for heterogeneity (Field & Gillett, 2010; Gopalakrishnan & Ganeshkumar, 2013). This method provides robust conclusions, including confidence interval computation, effect size variability estimation, and moderator variable exploration (Fisher, 1935; Field, 2003). Data collection involved searching databases like Scopus, ScienceDirect, Google Scholar, PubMed, Mendeley, and IDEAS/RePEc using topic-related keywords, following PRISMA guidelines (Page et al., 2021; Siddaway et al., 2019). Studies were checked for duplicates, screened by titles and abstracts, and underwent full-text eligibility checks. Inclusion criteria prioritize quantitative assessments from published journals, working papers, conference papers, and unranked journals from 2020 to 2024, focusing on MSME resilience during COVID-19. Exclusion criteria include pre-2020 studies, non-COVID-19 contexts, and inaccessible literature through Universitas Indonesia's SSO services. Eligible studies undergo effect size calculations using Pearson's correlation coefficient (r) to measure relationship strength between vari-

ables (Turney, 2024; Pearson, 1895). The r-value is transformed to a z-score using Fisher's transformation and calculated into the effect's weighted average (Fisher, 1921; Hedges & Vevea, 1998; Hedges & Oklin, 2014). Meta-analysis is conducted using fixed- or random-effect models based on heterogeneity tests with Cochran's Q and I^2 statistics (Higgins et al., 2003). High Q and I^2 values suggest the random-effect model, while low values suggest the fixed-effect model. The final phase involves estimating the population effect using confidence intervals, presented in a forest plot.

After the basic meta-analysis, a moderator variable analysis provides additional insights. Moderator variables influence relationships between variables, enhancing external validity (Field & Gillet, 2010). This analysis examines how independent and dependent variable relationships are affected. Meta-regression analysis, widely accepted in scientific literature (Ridhwan et al., 2022), will be used to explore between-study heterogeneity. A fixed-effect meta-regression will be employed, assuming all heterogeneity is accounted for by the included variables (Greenland, 1987).

$$\hat{\theta}_j = x_j\beta + \varepsilon_j \;;\; \text{weighted by } w_j = \frac{1}{\widehat{\sigma_j^2}} \;;\; \text{where } \varepsilon_j \sim N(0, \widehat{\sigma_j^2}) \tag{1}$$

Equation 1. Fixed-Effect Meta-Regression

To ensure the reliability of the data, publication bias analysis can be done to assess potential bias in research findings due to selective publication. Light & Pillemer (1984) suggested using a funnel plot, which shows effect sizes plotted against sample size and standard error, with unbiased samples forming a symmetric cloud (Field & Gillet, 2010). To complement this, Egger's Test checks for asymmetry by regressing normalized effect estimates against precision. A p-value $\leq .05$ indicates publication bias, while $p > .05$ suggests no bias (Egger et al., 1997). The research hypotheses proposed in this research consisted of six points that highlights resilience factors's—firm characteristics and entrepreneurial competence—influence on MSME resilience during COVID-19 as well as the role of technology utilization and cultural aspects in moderating those resilience factors' influences. The proposed hypotheses are:

H1: Firm Characteristics will have a significant and positive influence on MSME resilience.

H2: Entrepreneurial Competence will have significant positive influence MSME resilience.

H3: A higher level of Technology Utilization will strengthen the positive relationship between Firm Characteristics and MSME resilience.

H4: A higher level of Technology Utilization will strengthen the positive relationship between Entrepreneurial Competence and MSME resilience.

H5: At least one Cultural Aspect will have significant influence on the relationship between Firm Characteristics and MSME resilience.

H5a: High Uncertainty Avoidance Culture will weaken the impact of Firm Characteristics on MSME resilience.

H5b: More Individualistics Culture will weaken the impact of Firm Characteristics on MSME resilience.

H5c: The Culture with Strong Motivation towards Achievements and Success will strengthen the impact of Firm Characteristics on MSME resilience.

H6: At least one Cultural Aspect will have significant influence on the relationship between Entrepreneurial Competence and MSME resilience.

H6a: High Uncertainty Avoidance Culture will weaken the impact of Entrepreneurial Competence on MSME resilience.

H6b: More Individualistics Culture will weaken the impact of Entrepreneurial Competence on MSME resilience.

H6c: The Culture with Strong Motivation towards Achievements and Success will strengthen the impact of Entrepreneurial Competence on MSME resilience.

3. Results

3.1 Data Collection

The literature search process followed the PRISMA Flow Diagram displayed in the Figure 2 Appendix A. It successfully finds 949 kinds of literature that might be relevant to this research. Of these 949 titles, Google Scholar and Scopus became the largest contributors, with 308 and 307 studies found, respectively. The two were later followed by IDEAS/RePEc (169), ScienceDirect (74), Mendeley (52), and PubMed (39). The data selection process consisted of three phases: identification, screening, and eligibility check. In the identification phase, 353 duplicates were removed, leaving 596 studies. The screening phase removed 451 studies, leaving 145 studies. The eligibility check process assessed the remaining 145 studies against inclusion and exclusion criteria. 85 studies were removed due to various criteria not being met. Finally, the author obtained 60 studies with 459 empirical estimates across 26 countries, mainly in Asia, with some from America, Africa, and Europe. Indonesia has the most studies (26) and estimates (91), followed by Turkey (76), Italy (52), and China (38). The studies were assessed for quality using Scimago JR's quartiles and h-index. The selection includes 44 studies from quartile-ranked journals and 16 from unranked journals, with most from Q1 and Q2 journals, indicating high quality and impact (Bagelu, 2021). Over half of the studies (39) are from journals with an h-index of at least 20, reflecting their respectable quality and productivity. The more detailed distribution regarding the included studies' will be displayed on Table 4 Appendix A.

3.2 Meta-Analysis of Reviewed Literatures

The Pearson's correlation coefficients extracted from included studies will be transformed into z-scores using Fisher's r-to-z transformation. Outliers, defined as effect sizes below -0.08 or above 0.55, will be excluded, leaving 425 of the original 459 estimates. A heterogeneity test will be conducted on the overall effect size, clusters and six resilience factors' subgroups. As suggested in Table 5 Appendix B, The test indicates heterogeneity in all included studies ($P > Q < .05$), suggesting the utilizatio of random-effect model. The meta-analysis will be performed using the restricted maximum likelihood model of the random-effect (RE-REML) in STATA 18.

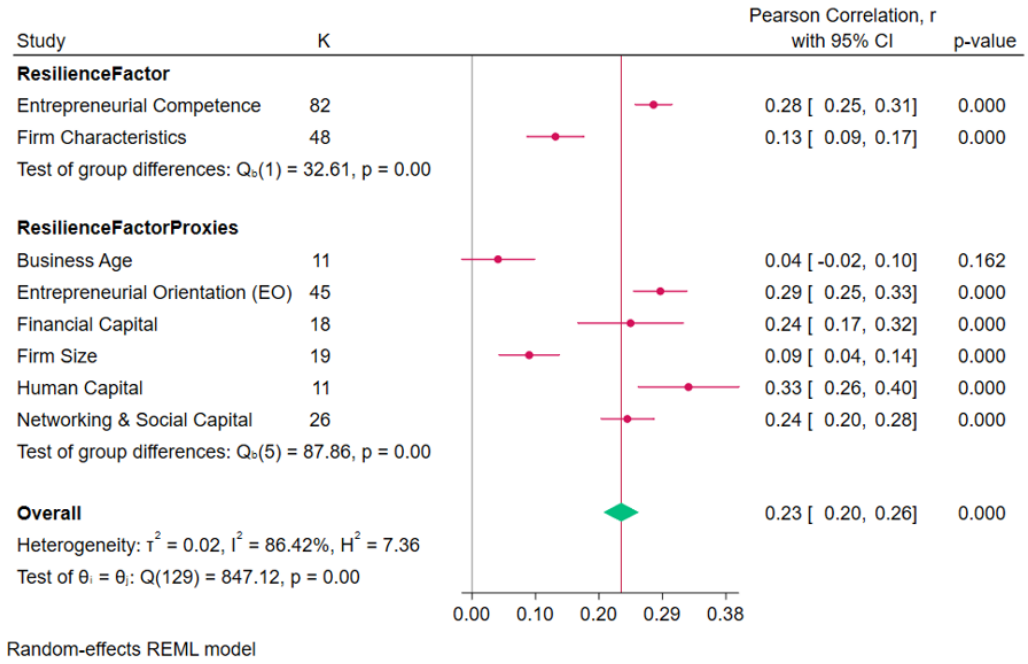

Figure 1. The Forest Plot of The Reviewed Literature
Source: Author's Calculation (STATA 18)

Table 1. Summary of The Effect Size of Resilience Factor Subgroups on MSME Resilience In COVID-19

Clusters	Number of Observations	Effect Size, r	95% Confidence Interval		p-value
Firm Characteristics	48	.131	.087	.174	.000
Firm Size	19	.090	.042	.137	.000
Business Age	11	.041	-.016	.098	.162
Financial Capital	18	.245	.165	.321	.000
Entrepreneurial Competence	82	.278	.251	.305	.000
Entrepreneurial Orientation (EO)	45	.288	.249	.326	.000
Networking and Social Capital	26	.240	.200	.279	.000
Human Capital	11	.328	.256	.397	.000
Overall Effect Size	130	.231	.204	.257	.000

Source: Author's Calculation (STATA 18)

According to Hemphil's (2003) guidelines for interpreting correlation coefficients in meta-analysis, effect sizes are categorized as weak ($r < .2$), moderate ($.2 < r < .3$), and strong ($r > .3$). Figure 1 illustrates a significant positive yet moderate correlation between combined factor clusters (Firm Characteristics and Entrepreneurial Competence) and MSME resilience. Both Firm Characteristics and Entrepreneurial Competence show significant positive correlations with MSME resilience, supporting H1 and H2. Interestingly, Entrepreneurial Competence has a greater impact on MSME resilience than Firm Characteristics, suggesting its critical role during the COVID-19 pandemic (Dias et al., 2022; Awad & Martín-Rojas, 2024; Faeni et al., 2023). For each resilience factor cluster, the study estimates will be divided into three smaller groups, creating a total of six subgroups. The estimates under the Firm Characteristics cluster will be placed in Firm Size, Business Age, and Financial Capital subgroups, while the estimates under Entrepreneurial Competence will be split into Entrepreneurial Orientation, Networking and Social Capital, and Human Capital subgroups. The summary of the effect size of each subgroup will be presented in Table 1.

In the Firm Characteristics cluster, Financial Capital is the most influential factor within the Firm Characteristics cluster, showing the strongest positive correlation. Adequate financial resources and financial knowledge are essential for sustaining business operations and adapting to the uncertainties brought about by COVID-19 (Roffia & Dabić, 2024; Ariana et al., 2024; Seraj et al., 2022). Firm Size also demonstrates a positive correlation, indicating that larger firms have more resources to enhance resilience in facing crisis (Park & Seo, 2024; Ozanne et al., 2022). In contrast, Business Age shows a weak and non-significant correlation, implying that the length of time a business has been operating does not substantially impact its ability to cope with crises (Brunelli et al., 2023; Ozanne et al., 2022; Memili et al., 2023).

In the Entrepreneurial Competence cluster, Human Capital exhibits the strongest positive correlation, highlighting the importance of skills and expertise in fostering resilience. Studies by Faeni et al. (2023), Quansah et al. (2022), and Falciola et al. (2023) underscore the importance of investing in human capital development, suggesting that firms with a strong focus on employee training, development, and empowerment are better positioned to navigate uncertainties and maintain operational stability while building

a foundation for sustained growth and competitiveness in the long term. Entrepreneurial Orientation, characterized by innovation, proactiveness, and risk-taking, also shows a robust positive correlation. It emphasizes the importance of a proactive, innovative, and risk-taking mindset in enhancing resilience, particularly during the COVID-19 pandemic (Falciola et al., 2023; Delladio et al., 2023; Faeni et al., 2023). Networking and Social Capital, reflecting the ability to leverage relationships and social networks, follows with a positive correlation. MSMEs with robust networking capabilities tend to be more resilient during the pandemic due to well-coordinated supply chains and stable relationships (Falciola et al., 2023). Moreover, high social capital fosters strong stakeholder relationships, facilitating resource sharing and mutual support (Faeni et al., 2023; Kussudyarsana et al., 2023). These findings collectively highlight the critical role of both financial and human resources in enhancing MSME resilience. Financial capital provides the necessary buffer to manage economic shocks, while human capital equips businesses with the skills and knowledge to navigate and innovate in response to challenges. Furthermore, fostering entrepreneurial orientation and building robust social networks are essential strategies for MSMEs to enhance their resilience and ensure long-term sustainability.

3.3 Moderator Variable Analysis

The analysis of moderator variables will use fixed-effect meta-regression, assuming all heterogeneity can be explained by the included variables (Greenland, 1987). This method attributes variation in effect size to moderators, including Technology Utilization (Network Readiness Index) and Cultural Aspects (Uncertainty Avoidance, Individualism, Motivation towards Achievement). These continuous variables' influence will be estimated using inverse variance weights for accuracy (Lipsey & Wilson, 2001). This approach provides a nuanced understanding of how these factors impact MSME resilience during COVID-19. The meta-regression results, presented in Table 2, show the significance and strength of these moderating effects.

The meta-regression table indicates that cultural and technological environments significantly moderate the effects of resilience factors on MSME resilience. The Network Readiness Index (NRI) consistently enhances resilience, suggesting higher network readiness amplifies resilience during COVID-19. High levels of Uncertainty Avoidance reduce resilience, indicating risk-averse cultures weaken resilience (rejecting H5a). Individualism also shows a negative moderation, suggesting that individualistic societies may hinder MSME resilience (Models 3 and 4, supporting H5b). However, Motivation towards Achievement and Success positively moderates resilience, indicating that cultures with a strong drive for success significantly boost MSME resilience (rejecting H5c). These results highlight the interplay between cultural aspects, technological utilization, and Firm Characteristics in influencing MSME resilience.

NRI consistently shows a positive and significant effect, supporting that higher network readiness amplifies the impact of entrepreneurial competence on resilience (supporting H4). Uncertainty Avoidance has a non-significant negative effect, suggesting a slight weakening of resilience in risk-averse cultures (rejecting H6a). Individualism negatively impacts resilience, reducing its positive effects in individualistic societies (supporting H6b). Motivation towards Achievement and Success, while positive, is non-significant, indicating only a slight enhancement of resilience (supporting H6c). Overall, NRI strengthens the positive impact of Entrepreneurial Competence on MSME resilience, while Uncertainty Avoidance slightly weakens it. Individualism significantly decreases the positive impact, whereas Motivation towards Achievement and Success enhances it, suggesting a strong drive for success boosts resilience.

Table 3 furtherly breaks down the influence of the moderating variables on firm characteristics and entrepreneurial competence subgroups, which includes Firm Size, Financial Capital, Entrepreneurial Orientation, Networking and Social Capital, and Human Capital.

The meta-regression results reveal that cultural aspects and technological utilization significantly moderate the relationship between firm size, financial capital, and MSME resilience during the COVID-19 pandemic. The Network Readiness Index (NRI) consistently demonstrates a positive and significant moderation effect, enhancing the resilience of larger firms and amplifying the positive effects of financial capital in technologically advanced environments (Models 1–3). This indicates that higher technological readiness strengthens both firm size and financial resources' roles in supporting resilience. Conversely, Uncertainty Avoidance negatively moderates these relationships (Models 2–3), suggesting that risk-averse cultures may hinder larger firms' adaptability and limit the innovative use of financial resources. Individualism shows a non-significant negative moderation effect on both firm size and financial capital, implying limited impact (Models 3–4). Motivation towards Achievement and Success, however, positively moderates the impact of financial capital (Model 4), highlighting its potential to enhance resilience by fostering a strong drive for success. Model 4 also underscores this cultural dimension as a decisive factor in leveraging financial capital to strengthen MSME resilience during the pandemic.

Entrepreneurial orientation benefits substantially from higher Network Readiness Index (NRI) levels, which consistently amplify its positive effects across models. This highlights the critical role of technological readiness in fostering resilience. Conversely, Uncertainty Avoidance negatively moderates these effects, though its impact remains insignificant (Models 3 and 4). Individualism significantly diminishes the positive impact of entrepreneurial orientation, suggesting that individualistic cultures may undermine collective entrepreneurial efforts (Models 3 and 4). In contrast, Motivation towards Achievement and Success significantly enhances these positive effects (Model 4), underscoring the importance of a strong achievement drive in leveraging entrepreneurial orientation. Similarly, networking and social capital are strongly moderated by technological utilization and cultural dimensions. NRI consistently strengthens the positive impacts of networking and social capital on MSME resilience across four models. However, Uncertainty Avoidance negatively moderates this relationship (Models 2–4), indicating that risk-averse cultures may struggle to harness social networks effectively. Individualism also negatively moderates these effects (Model 3), reflecting reduced benefits of networking in individualistic

Table 2. The Meta-Regression Result on Resilience Factors

Resilience Factors	Moderators	Model 1	Model 2	Model 3	Model 4
Overall Effect Size	Network Readiness (NRI)	.0033***	.0048***	.0067***	.0046***
		(0.0001)	(0.0003)	(0.0003)	(0.0005)
	Uncertainty Avoidance		-.0014***	-.0006**	-.0003
			(0.0003)	(0.0003)	(0.0003)
	Individualism			-.0042***	-.0037***
				(0.0003)	(0.0003)
	Motivation				.0018***
					(0.0004)
Firm Characteristics	Network Readiness (NRI)	.0019***	.0027***	.0041***	.0035***
		(0.0001)	(0.0004)	(0.0006)	(0.0008)
	Uncertainty Avoidance		-.0008*	-.0006	-.0005
			(0.0004)	(0.0004)	(0.0004)
	Individualism			-.0019***	-.0017***
				(0.0006)	(0.0006)
	Motivation				.0005
					(0.0005)
Entrepreneurial Competence	Network Readiness (NRI)	.0047***	.006***	.007***	.0047***
		(0.0001)	(0.0004)	(0.0004)	(0.0007)
	Uncertainty Avoidance		-.0014***	-.0006	-.0003
			(0.0004)	(0.0004)	(0.0004)
	Individualism			-.0032***	-.0027***
				(0.0003)	(0.0004)
	Motivation				.0021***
					(0.0005)

Source: Author's Calculation (STATA 18)
Note: ***p < 0.01; **p < 0.05; *p < 0.1

Table 3. The Meta-Regression Result on Resilience Factor Subgroups

Resilience Factors	Moderators	Model 1	Model 2	Model 3	Model 4
Firm Size	Network Readiness (NRI)	.0015***	.0028***	.0039***	.0042**
		(.0002)	(.0006)	(.0011)	(.0017)
	Uncertainty Avoidance		-.0013***	-.0013**	-.0014**
			(.0006)	(.0006)	(.0006)
	Individualism			-.0013	-.0014
				(.0011)	(.0012)
	Motivation				-.0002
					(.0008)
Financial Capital	Network Readiness (NRI)	.0029***	.0059***	.0063***	-.0004
		(.0002)	(.0008)	(.0009)	(.0014)
	Uncertainty Avoidance		-.003***	-.0028***	-.0001
			(.0008)	(.0008)	(.0009)
	Individualism			-.0008	-.0005
				(.0009)	(.0009)
	Motivation				.0055***
					(.001)
Entrepreneurial Orientation (EO)	Network Readiness (NRI)	.005***	.0057***	.0068***	.0044***
		(.0001)	(.0006)	(.0006)	(.0009)
	Uncertainty Avoidance		-.001*	.0004	.0007
			(.0005)	(.0005)	(.0006)
	Individualism			-.0043***	-.0036***
				(.0005)	(.0005)
	Motivation				.0022***
					(.0006)
Networking and Social Capital	Network Readiness (NRI)	.004***	.0059***	.0064***	.0036**
		(.0002)	(.0007)	(.0008)	(.0013)
	Uncertainty Avoidance		-.002**	-.0017**	-.0015*
			(.0007)	(.0008)	(.0008)
	Individualism			-.0012**	-.0009
				(.0006)	(.0006)
	Motivation				.0026**
					(.001)
Human Capital	Network Readiness (NRI)	.0065***	.006***	.0089***	.0076**
		(.0004)	(.0016)	(.0019)	(.0031)
	Uncertainty Avoidance		.0006	-.0012	-.0019
			(.0018)	(.0019)	(.0022)
	Individualism			-.0033**	-.0033**
				(.0011)	(.0011)
	Motivation				.0021
					(.0039)

Source: Author's Calculation (STATA 18)
Note: ***p < 0.01; **p < 0.05; *p < 0.1

societies. Motivation towards Achievement and Success, on the other hand, significantly enhances the positive impact of networking and social capital (Model 4), emphasizing its role in fostering effective collaboration and resilience. Human capital's impact on MSME resilience is similarly shaped by cultural and technological factors. Higher NRI levels amplify its positive effects across all models, demonstrating the importance of technological readiness in leveraging human resources for resilience. While Uncertainty Avoidance tends to reduce these benefits, the effect is not significant (Models 2–4). Individualism significantly diminishes human capital's positive influence (Models 3 and 4), reflecting its limited recognition in cultures focused on individual achievements. Meanwhile, Motivation towards Achievement and Success positively moderates human capital's impact, though not significantly (Model 4), suggesting that strong motivation enhances human resource-driven resilience during the pandemic.

3.4 Publication Bias Analysis

As mentioned in the previous chapters, the publication bias analysis analysis will be performed using funnel plot (Light & Pillemer, 1984) and Egger's test (Egger et al., 1997). This analysis intended to complete the meta-analysis by pointing out the possibility of unincluded literatures. It assess and address the potential bias in the collected research findings due to the selective publication of studies. The results of the publication bias analysis are displayed in the figures and tables on Appendix B. The funnel plot analysis results show that the study estimates are evenly distributed around the overall effect size line and forming a symmetrical funnel, suggesting there is no significant evidence of publication bias in the studies included in the meta-analysis. These findings are further supported by Egger's test results.

4. Discussions

4.1 Overall Analysis

The combined resilience factors significantly enhance MSME resilience during COVID-19, as shown in Figure 1. Both Firm Characteristics and Entrepreneurial Competence are crucial, with Entrepreneurial Competence—skills, knowledge, and attributes of the entrepreneur—having a more substantial impact. This underscores the importance of human elements and adaptive capabilities, aligning with dynamic capabilities theory (Teece et al., 1997). Studies by Dias et al. (2022), Faeni et al. (2023), and Ngoc & Vy (2023) support this, showing that firms with these competencies can continuously adapt and innovate. Muzi et al. (2023) highlighted that firms with strong innovative capacity and digital operations are more likely to survive. Meta-regression results in Table 2. show that technology utilization and cultural aspects significantly influence resilience factors' effects on MSME resilience. The Network Readiness Index (NRI) enhances these positive effects, with advanced ICT infrastructure helping firms navigate disruptions (Khalil et al., 2022; Wided, 2023; Nurcaya et al., 2024). High Uncertainty Avoidance weakens these impacts, as risk-averse cultures hinder growth (Pang & Pang, 2023; Qian, 2016; Li, 2009). Individualistic cultures also diminish the positive effects by undervaluing collective strategies. Conversely, Motivation towards Achievement and Success bolsters resilience through clear goals and ambition, supporting findings by Gallego-Álvarez & Pucheta-Martínez (2020) and Passarelli (2024).

4.2 Detailed Analysis

The meta-analysis in Figure 1 confirms that firm characteristics—Firm Size, Business Age, and Financial Capital—positively influence MSME resilience during COVID-19, supporting Hypothesis 1 (H1). Financial capital is the most influential factor, serving as a crucial buffer during crises, allowing firms to sustain operations and invest in adaptive strategies (Sullivan-Taylor & Branicki, 2011; Wedawatta et al., 2010; Falciola et al., 2023). Financial literacy also enhances resource management and strategic planning (Falciola et al., 2023; Seraj et al., 2022). Firm size has a positive but minor influence, indicating larger firms' resources and capacities were less impactful during the pandemic. Larger firms tend to make safer decisions, leading to slower adaptation compared to smaller firms that take more risks (Sullivan-Taylor & Branicki, 2011; Bishop & Megicks, 2002). Business age shows a positive but insignificant impact on MSME resilience, suggesting that duration of operation does not predict pandemic coping ability (Awad & Martín-Rojas, 2024; Brunelli et al., 2023; Ozanne et al., 2022). This aligns with Audretsch & Keilbach's (2007) finding that smaller, newer businesses might be more proactive in developing capabilities to compete with established firms.

Entrepreneurial competence—comprising Entrepreneurial Orientation, Networking and Social Capital, and Human Capital— also confirmed to have significantly enhances MSME resilience during COVID-19, supporting Hypothesis 2 (H2). Entrepreneurial Orientation, characterized by innovativeness, proactiveness, and risk-taking, greatly impacts resilience, aligning with studies by Falciola et al. (2023), Asare-Kyire et al. (2023), Brouthers et al. (2015), and Ates & Bititci (2011). This mindset helps businesses navigate crises and thrive post-pandemic. Networking and Social Capital also significantly boost resilience by providing access to resources and fostering information flow, trust, and cooperation (Freeman, 2010; Becchetti et al., 2012). Human Capital, the most impactful factor, emphasizes the importance of skills and knowledge for innovation and adaptation (Khalil et al., 2022; Faeni et al., 2023). It complements entrepreneurial orientation and social capital, enabling firms to seize opportunities and succeed during crises (Omri et al., 2015; Faeni et al., 2023). These findings highlight the need for MSMEs to invest in training and human empowerment.

The meta-regression results in Table 2 show that Technology Utilization, measured by the Network Readiness Index (NRI), significantly strengthens the positive impact of firm characteristics on MSME resilience, supporting Hypothesis 3 (H3). This underscores the crucial role of ICT capabilities in addressing COVID-19 challenges (Khalil et al., 2022). Technology utilization enhances the positive effects of firm size and financial capital on MSME resilience, as shown in Table 3. Larger firms leverage technology to mitigate pandemic impacts, and high-level technology utilization improves financial literacy and resource access (Falciola et al., 2023; Seraj et al., 2022; Ariana et al., 2024). Technology Utilization also amplifies the positive

impact of entrepreneurial competence on MSME resilience, supporting Hypothesis 4 (H4) and findings by Mishrif & Khan (2023). As Table 3 illustrates, technology boosts entrepreneurial orientation, integrating advancements with strategies (Khalil et al., 2022; Nurcaya et al., 2024; Wided, 2023). The positive effect on networking and social capital highlights the role of digital platforms in maintaining networks during physical distancing (Awad & Martín-Rojas, 2024). Additionally, technology enhances human capital by providing access to knowledge and fostering continuous learning, boosting innovation and adaptation (Khalil et al., 2022; Faeni et al., 2023; Putritamara et al., 2023). These findings emphasize the necessity for MSMEs to embrace and integrate technological changes to maximize resilience.

Cultural Aspects—Uncertainty Avoidance, Individualism, and Motivation towards Achievement and Success—significantly influence the relationship between Firm Characteristics and MSME resilience, supporting Hypothesis 5 (H5). Uncertainty Avoidance generally shows non-significant negative effects, slightly weakening the positive impact of firm characteristics on resilience. Individualism significantly reduces resilience benefits, neglecting the collective efforts essential during crises (Ozanne et al., 2022; Sulastri et al., 2023a,b). Motivation towards Achievement and Success does not significantly enhance the positive impact, suggesting ambition alone is insufficient without resources and support. Cultural factors have varied moderation effects on firm size and financial capital. Uncertainty Avoidance negatively moderates the influence of firm size on resilience, implying that larger firms in high uncertainty avoidance cultures may be overly risk-averse. For Financial Capital, Uncertainty Avoidance weakens its influence, while strong Motivation towards Achievement and Success enhances it, indicating that resource optimization in ambitious cultures leads to resilience. Cultural Aspects also significantly influence the positive impact of Entrepreneurial Competence on MSME resilience, supporting Hypothesis 6 (H6). Uncertainty Avoidance generally has non-significant negative effects, indicating that higher levels may slightly weaken entrepreneurial competence's positive effects on resilience (Pang & Pang, 2023; Memili et al., 2023). Individualism significantly reduces resilience benefits, highlighting the importance of collective strategies during crises (Ozanne et al., 2022; Sulastri et al., 2023a,b). Conversely, strong Motivation towards Achievement and Success significantly enhances entrepreneurial competence's impact, emphasizing the need for ambition and goal orientation driven by leadership (Murugan & Natarajan, 2022; Passarelli, 2024).

However, these cultural contexts may differently moderate entrepreneurial orientation, networking and social capital, and human capital. Uncertainty Avoidance negatively impacts these factors, particularly for networking & social capital, as high risk-aversion hinders effective use of social networks (Dias et al., 2022; Falciola et al., 2023; Ozanne et al., 2022). Individualism negatively moderates all three factors, stressing the importance of collective efforts for optimizing resilience. This collaborative approach fosters creativity and trust, crucial for resilience during COVID-19 (Saputra & Herlina, 2021; Sulastri et al., 2023a,b). Motivation towards Achievement and Success bolsters entrepreneurial orientation and networking and social capital, driving ambitious goals and collaboration, providing vital access to information, resources, and knowledge essential for survival and growth during the pandemic (Quansah et al., 2022; Passarelli, 2020; Waty et al., 2023; Dias et al., 2022).

4.3 The Case of Indonesia

To give more insights on the applicability, the author conducted a meta-analysis on Indonesian literatures, consist of 26 studies with 91 empirical estimates. Results, shown in Figure 6 Appendix C, reveal a significant positive correlation between resilience factors and MSME resilience during COVID-19. Entrepreneurial Competence has a greater impact than Firm Characteristics, underscoring the importance of skills and attitudes (Saputra et al., 2024; Faeni et al., 2023; Telagawathi et al., 2022). Financial Capital shows the strongest correlation within Firm Characteristics, emphasizing financial resources and literacy (Ariana et al., 2024). Human Capital, Entrepreneurial Orientation, and Networking and Social Capital are key within Entrepreneurial Competence (Faeni et al., 2023; Omri et al., 2015). Meta-regression analysis, considering Indonesia's Network Readiness Index (NRI), Uncertainty Avoidance, Individualism, and Motivation towards Achievement, provides additional insights. Indonesia's moderate NRI score (50.25) suggests room for technological improvement. Moderate Uncertainty Avoidance (48) supports calculated risk-taking and flexibility (Astuty et al., 2024; Srimulyani et al., 2023). A low Individualism score (5) highlights a collectivist culture, enhancing resilience through collaboration (Sulastri et al., 2023a,b; Ozanne et al., 2022). Moderate Motivation towards Achievement (46) reflects community-centered achievements, further supporting resilience (Ozanne et al., 2022; Kussudyarsana et al., 2023). These findings highlight the need for Indonesian MSMEs and the government to invest in training, empowerment, and technological adoption to enhance growth and sustainability during and beyond COVID-19.

5. Conclusion

Amidst COVID-19, MSME resilience research has gained prominence as MSMEs represent 90% of businesses and create over 50% of jobs worldwide (World Bank Group, 2019). This study analyzed firm characteristics and entrepreneurial competence's impact on MSME resilience through a meta-analysis of 60 studies and 425 estimates. Findings reveal entrepreneurial competence—entrepreneurial orientation, networking & social capital, and human capital—enhances resilience more than firm characteristics like firm size, business age, and financial capital. Technology utilization and cultural aspects (Uncertainty Avoidance, Individualism, and Motivation Towards Achievements and Success) also moderate these effects. Better ICT infrastructure and supportive policies enhance resilience (Khalil et al., 2022). High uncertainty avoidance and individualism weaken resilience, while motivation towards achievement strengthens it (Pang & Pang, 2023; Sulastri et al., 2023a,b; Ozanne et al., 2022; Gallego-Álvarez & Pucheta-Martínez, 2020; Passarelli, 2024). The analysis of 26 studies and 91 estimates on Indonesian MSMEs supports these findings, indicating potential for technological improvements and benefits from strong collec-

tivism and community-centered achievements. This study highlights the importance of entrepreneurial orientation, networking, social capital, and human capital on MSME resilience, emphasizing the need for training, human empowerment, and technological adoption.

5.1 Practical Implications

The findings of this research offer practical implications for MSMEs, governments, and policymakers to enhance MSME resilience and growth. While MSMEs shape their responses through internal factors, governments and policymakers should design targeted support programs that boost technology uptake and leverage cultural strengths, fostering collaboration and innovation for long-term competitiveness.

On the entrepreneurial view, MSMEs should prioritize technology integration, manage cultural barriers like uncertainty avoidance and individualism, set clear goals, and develop strong networks. Firstly, embracing technological advancement is crucial. The study indicates that prioritizing technology integration, including the adoption of digital tools for business operations, marketing, and customer engagement, consistently strengthens MSME resilience across all models. Secondly, understanding and strategically managing cultural barriers, such as uncertainty avoidance and individualism, are essential. Training and organizational culture initiatives should aim to mitigate risk-averse tendencies and balance collective and individual goals. Thirdly, clear goal setting and motivation encouragement are vital. A high-achieving culture within an organization, supported by motivational strategies that align personal and business goals, can significantly enhance the application of entrepreneurial competencies in overcoming business challenges. Lastly, developing strong networking and social capital is imperative. Strong networks provide access to various resources, including financial support, expert advice, technological assistance, information sharing, and knowledge transfer. Regular communication and active participation in network activities can place businesses at the forefront among peers and stakeholders, facilitating collaboration opportunities and necessary support. These strategies provide access to resources, financial support, and knowledge, crucial for resilience and growth during crises.

For governments and policymakers, building robust technological infrastructure and advancing related programs are essential. this research may suggests several policy implications to enhance MSME resilience, growth, and sustainability. Firstly, building sufficient technological infrastructure and advancing related programs are crucial. Ensuring businesses have the necessary tools and connectivity to adopt new technologies effectively can be achieved through development and funding programs that support MSME technology adoption. This includes training and knowledge transfer to improve digital literacy and technological skills, easing the transition to more digitally adapted businesses. Secondly, fostering government-MSME collaborations is essential. Policymakers can create a supportive ecosystem by establishing platforms for regular dialogue with MSMEs, encouraging collaborative projects focused on digital transformation, innovation, and business continuity planning, and including MSME representatives in the policy-making process. To top it all, facilitating connections with stakeholders can significantly contribute to MSME success. Creating platforms for dialogue, collaborative projects, and stakeholder connections, such as digital marketplaces and trade fairs, can significantly enhance MSME resilience. Workshops and seminars can further facilitate knowledge sharing and partnership building.

In summary, MSMEs, governments, and policymakers must collaborate to foster a resilient, innovative, and adaptive business environment, addressing technological, cultural, and networking challenges to ensure MSMEs are well-equipped to handle future crises and achieve sustained growth.

5.2 Research Limitation and Future Research Recommendations

The author is aware that this research is not perfect and still has more room for improvement. The meta-analysis may lack full geographic representation, relying on accessible data that might not cover a comprehensive range of countries. The use of available academic databases could limit the depth of analysis. The models may not fully capture the complexity of interactions between moderators, incorporating only the overall Network Readiness Index (NRI) and some Hofstede cultural dimensions. The study focuses on internal MSME factors like entrepreneurial competence and firm characteristics, limiting the understanding of external factors and broader policy impacts. Future research should aim for broader geographic representation and diversify data sources, including reports and additional reputable databases. Integrating more of Hofstede's cultural dimensions and detailed aspects of the NRI could provide a more holistic understanding. Future studies should also explore external factors affecting MSME resilience, such as market conditions, regulatory environments, and macroeconomic trends. Examining the effectiveness of existing MSME support policies and programs, and the roles of stakeholders like government agencies, financial institutions, and community organizations, could enhance resilience strategies. By including these external factors and policy impacts, future research can offer a more comprehensive understanding of MSME resilience and provide targeted recommendations for policymakers and practitioners.

References

Abylaev, M., Pal, R., & Torstensson, H. (2014). Resilience challenges for textile enterprises in a transitional economy and regional trade perspective–a study of Kyrgyz conditions. *International Journal of Supply Chain and Operations Resilience, 1*(1), 54-75. doi: https://doi.org/10.1504/IJSCOR.2014.065459.

Alam, K., Erdiaw-Kwasie, M. O., Shahiduzzaman, M., & Ryan, B. (2018). Assessing regional digital competence: Digital futures and strategic planning implications. *Journal of Rural Studies, 60*, 60-69. doi: https://doi.org/10.1016/j.jrurstud.2018.02.009.

Amankwah-Amoah, J., Khan, Z., & Wood, G. (2021). COVID-19 and business failures: The paradoxes of experience, scale, and scope for theory and practice. *European Management Journal, 39*(2), 179-184. doi: https://doi.org/10.1016/j.emj.2020.09.002.

Ariana, M., Wiksuana, G. B., Candraningrat, I. R., & Baskara, G. K. (2024). The effects of financial literacy and digital literacy on financial resilience: serial mediation roles of financial inclusion and financial decisions. *Un-*

certain Supply Chain Management, 12(2), 999-1014. doi: https://doi.org/10.5267/j.uscm.2023.12.008.

Asare-Kyire, L., Appienti, W. A., Bonsu, C. A., & Ackah, O. (2023). Entrepreneurial orientation and organizational resilience: role of organizational reconfiguration and absorptive capabilities. *Open Journal of Business and Management, 11*(5), 2014-2033. doi: https://doi.org/10.4236/ojbm.2023.115111.

Assante, D., Castro, M., Hamburg, I., & Martin, S. (2016). The use of cloud computing in SMEs. *Procedia computer science, 83*, 1207-1212. doi: https://doi.org/10.1016/j.procs.2016.04.250.

Astuty, E., Sudirman, I. D., & Aryanto, R. (2024). Sustainable resilience strategy: unleash the micro-businesses's potential in the digitalization and sustainability era. *Cogent Business & Management, 11*(1), 2313672. doi: https://doi.org/10.1080/23311975.2024.2313672.

Ates, A., & Bititci, U. (2011). Change process: A key enabler for building resilient SMEs. *International Journal of Production Research, 49*(18), 5601-5618. doi: https://doi.org/10.1080/00207543.2011.563825.

Audretsch, D. B., & Keilbach, M. (2007). The theory of knowledge spillover entrepreneurship. *Journal of Management Studies, 44*(7), 1242-1254. doi: https://doi.org/10.1111/j.1467-6486.2007.00722.x.

Awad, J., & Martín-Rojas, R. (2024). Enhancing social responsibility and resilience through entrepreneurship and digital environment. *Corporate Social Responsibility and Environmental Management, 31*(3), 1688-1704. doi: https://doi.org/10.1002/csr.2655.

Bagelu, K. K. (2021, April 21). *What's journal quartile and rankings of a research journal* -. https://www.linkedin.com/pulse/whats-journal-quartile-rankings-research-dr-koshal-k-bagelu-.

Becchetti, L., Ciciretti, R., Hasan, I., & Kobeissi, N. (2012). Corporate social responsibility and shareholder's value. *Journal of Business Research, 65*(11), 1628-1635. doi: https://doi.org/10.1016/j.jbusres.2011.10.022.

Belghitar, Y., Moro, A., & Radić, N. (2022). When the rainy day is the worst hurricane ever: The effects of governmental policies on SMEs during COVID-19. *Small Business Economics, 58*(2), 943-961. doi: https://doi.org/10.1007/s11187-021-00510-8.

Bhardwaj, S. (2022). Data analytics in small and medium enterprises (SME): A systematic review and future research directions. *Information Resources Management Journal (IRMJ), 35*(2), 1-18. doi: https://doi.org/10.4018/irmj.291691.

Biggs, D., Hicks, C. C., Cinner, J. E., & Hall, C. M. (2015). Marine tourism in the face of global change: The resilience of enterprises to crises in Thailand and Australia. *Ocean & Coastal Management, 105*, 65-74. doi: https://doi.org/10.1016/j.ocecoaman.2014.12.019.

Bird, B. (2019). Toward a theory of entrepreneurial competency. In Katz, J. A., & Corbet, A. C. (eds.), *Seminal ideas for the next twenty-five years of advances* (Advances in Entrepreneurship, Firm Emergence and Growth, vol. 21) (pp. 115-131), Emerald Publishing Limited. doi: https://doi.org/10.1108/s1074-754020190000021011.

Bishop, P., & Megicks, P. (2002). Competitive strategy and firm size in the estate agency industry. *Journal of Small Business and Enterprise Development, 9*(2), 150-161. doi: https://doi.org/10.1108/14626000210427393.

Brouthers, K. D., Nakos, G., & Dimitratos, P. (2015). SME entrepreneurial orientation, international performance, and the moderating role of strategic alliances. *Entrepreneurship Theory and Practice, 39*(5), 1161-1187. doi: https://doi.org/10.1111/etap.12101.

Brunelli, S., Gjergji, R., Lazzarotti, V., Sciascia, S., & Visconti, F. (2023). Effective business model adaptations in family SMEs in response to the COVID-19 crisis. *Journal of Family Business Management, 13*(1), 101-117. doi: https://doi.org/10.1108/JFBM-02-2022-0020.

Cajner, T., Crane, L. D., Decker, R. A., Grigsby, J., Hamins-Puertolas, A., Hurst, E., Kurz, C., & Yildirmaz, A. (2020). The U.S. labor market during the beginning of the pandemic recession. *NBER Working Paper, 27159*. National Bureau of Economic Research. doi: 10.3386/w27159.

Chiesi, A. M. (2014). Interpersonal networking and business resilience: How immigrants in small business face the crisis in Italy. *European Sociological Review, 30*(4), 457-469. doi: https://doi.org/10.1093/esr/jcu052.

Chowdhury, M. T., Sarkar, A., Paul, S. K., & Moktadir, M. A. (2022). A case study on strategies to deal with the impacts of COVID-19 pandemic in the food and beverage industry. *Operations Management Research, 15*(1), 166-178. doi: https://doi.org/10.1007/s12063-020-00166-9.

Cooper, H., Hedges, L. V., & Valentine, J. C. (eds.). (2009). *The handbook of research synthesis and meta-analysis* (2nd edition). Russell Sage Foundation.

Covin, J. G., & Slevin, D. P. (1989). Strategic management of small firms in hostile and benign environments. *Strategic Management Journal, 10*(1), 75-87. doi: https://doi.org/10.1002/smj.4250100107.

Cowling, M., Brown, R., & Rocha, A. (2020). Did you save some cash for a rainy COVID-19 day? The crisis and SMEs. *International Small Business Journal, 38*(7), 593-604. doi: https://doi.org/10.1177/0266242620945102.

Daou, A., Karuranga, E., & Su, Z. (2014). Towards a better understanding of intellectual capital in Mexican SMEs. *Journal of Intellectual Capital, 15*(2), 316-332. doi: https://doi.org/10.1108/jic-08-2013-0092.

de Carvalho, G. D. G., de Resende, L. M. M., Pontes, J., de Carvalho, H. G., & Betim, L. M. (2021). Innovation and management in MSMEs: A literature review of highly cited papers. *Sage Open, 11*(4). doi: https://doi.org/10.1177/21582440211052555.

Delladio, S., Caputo, A., Magrini, A., & Pellegrini, M. M. (2023). Italian entrepreneurial decision-making under lockdown: The path to resilience. *Management Decision, 61*(13), 272-294. doi: https://doi.org/10.1108/MD-12-2022-1746.

Demmer, W. A., Vickery, S. K., & Calantone, R. (2011). Engendering resilience in small-and medium-sized enterprises (SMEs): A case study of Demmer Corporation. *International Journal of Production Research, 49*(18), 5395-5413. doi: https://doi.org/10.1080/00207543.2011.563903.

Dias, Á. L., Cunha, I., Pereira, L., Costa, R. L., & Gonçalves, R. (2022). Revisiting small-and medium-sized enterprises' innovation and resilience during COVID-19: The tourism sector. *Journal of Open Innovation: Technology, Market, and Complexity, 8*(1), 11. doi: https://doi.org/10.3390/joitmc8010011.

Dingel, J. I., & Neiman, B. (2020). How many jobs can be done at home?. *Journal of Public Economics, 189*, 104235. doi: https://doi.org/10.1016/j.jpubeco.2020.104235.

Dua, A., Ellingrud, K., Mahajan, D., & Silberg, J. (2020, June 18). *Which small businesses are most vulnerable to COVID-19—and when*. McKinsey & Company. https://www.mckinsey.com/featured-insights/americas/which-small-businesses-are-most-vulnerable-to-covid-19-and-when.

Duchek, S. (2020). Organizational resilience: a capability-based conceptualization. *Business Research, 13*(1), 215-246. doi: https://doi.org/10.1007/s40685-019-0085-7.

Egger, M., Smith, G. D., Schneider, M., & Minder, C. (1997). Bias in meta-analysis detected by a simple, graphical test. *BMJ, 315*(7109), 629-634. doi: https://doi.org/10.1136/bmj.315.7109.629.

Faeni, D. P., Faeni, R. P., Riyadh, H. A., & Yuliansyah, Y. (2023). The COVID-19 pandemic impact on the global tourism industry SMEs: A human capital development perspective. *Review of International Business and Strategy, 33*(2), 317-327. doi: https://doi.org/10.1108/RIBS-08-2021-0116.

Falciola, J., Mohan, S., Ramos, B., & Rollo, V. (2023). Drivers of SME resilience in Southeast Asia during COVID-19. *The Journal of Development Studies, 59*(8), 1236-1257. doi: https://doi.org/10.1080/00220388.2023.2219126.

Ferraris, A., Mazzoleni, A., Devalle, A., & Couturier, J. (2019). Big data analytics capabilities and knowledge management: impact on firm performance. *Management Decision, 57*(8), 1923-1936. doi: https://doi.org/10.1108/md-07-2018-0825.

Field, A. P. (2003). The problems in using fixed-effects models of meta-analysis on real-world data. *Understanding Statistics, 2*(2), 105-124. doi: https://doi.org/10.1207/s15328031us0202˙02.

Field, A. P., & Gillett, R. (2010). How to do a meta-analysis. *British Journal of Mathematical and Statistical Psychology, 63*(3), 665-694. doi: https://doi.org/10.1348/000711010x502733.

Fietz, B., Hillmann, J., & Guenther, E. (2021). Cultural effects on organizational resilience: Evidence from the NAFTA Region. *Schmalenbach Journal of Business Research, 73*(1), 5-46. doi: https://doi.org/10.1007/s41471-021-00106-8.

Fiksel, J. (2006). Sustainability and resilience: Toward a systems approach. *Sustainability: Science, Practice and Policy, 2*(2), 14-21. doi: https://doi.org/10.1080/15487733.2006.11907980.

Fisher, R. A. (1921). *On the "probable error" of a coefficient of correlation deduced from a small sample*. https://scispace.com/pdf/on-the-probable-error-of-a-coefficient-of-correlation-1xhe0ncl97.pdf.

Fisher, R. A. (1935). *The design of experiments*. Oliver & Boyd.

Freeman, R. E. (2010). *Strategic management: A stakeholder approach*. Cambridge University Press.

Gallego-Álvarez, I., & Pucheta-Martínez, M. C. (2020). Hofstede's cultural dimensions and R&D intensity as an innovation strategy: a view from different institutional contexts. *Eurasian Business Review, 11*(2), 191-220. doi: https://doi.org/10.1007/s40821-020-00168-4.

Gopalakrishnan, S., & Ganeshkumar, P. (2013). Systematic reviews and meta-analysis: Understanding the best evidence in primary healthcare. *Journal of Family Medicine and Primary Care, 2*(1), 9-14. doi: 10.4103/2249-4863.109934.

Greenland, S. (1987). Quantitative methods in the review of epidemiologic literature. *Epidemiologic Reviews, 9*(1), 1-30. https://doi.org/10.1093/oxfordjournals.epirev.a036298.

Gunasekaran, A., Rai, B. K., & Griffin, M. (2011). Resilience and competitiveness of small and medium size enterprises: An empirical research. *International Journal of Production Research, 49*(18), 5489-5509. doi: https://doi.org/10.1080/00207543.2011.563831.

Hedges, L. V., & Vevea, J. L. (1998). Fixed-and random-effects models in meta-analysis. *Psychological Methods, 3*(4), 486-504. doi: https://doi.org/10.1037/1082-989x.3.4.486.

Hedges, L. V., & Olkin, I. (2014). *Statistical methods for meta-analysis*. Academic Press.

Hemphill, J. F. (2003). Interpreting the magnitudes of correlation coefficients. *American Psychologist, 58*(1), 78-79. doi: https://doi.org/10.1037/0003-066x.58.1.78.

Higgins, J. P., Thompson, S. G., Deeks, J. J., & Altman, D. G. (2003). Measuring inconsistency in meta-analyses. *BMJ, 327*(7414), 557-560. doi: https://doi.org/10.1136/bmj.327.7414.557.

Jaumotte, F., Oikonomou, M., Pinizelli, C., & Tavares, M. M. (2023, March 21). How pandemic accelerated digital transformation in advanced economies. *IMF Blog*. International Monetary Fund. https://www.imf.org/en/Blogs/Articles/2023/03/21/how-pandemic-accelerated-digital-transformation-in-advanced-economies.

Khalil, A., Abdelli, M. E. A., & Mogaji, E. (2022). Do digital technologies influence the relationship between the COVID-19 crisis and SMEs' resilience in developing countries?. *Journal of Open Innovation: Technology, Market, and Complexity, 8*(2), 100. doi: https://doi.org/10.3390/joitmc8020100.

Kussudyarsana, K., Maulana, H. K., Maimun, M. H., Santoso, B., & Nugroho, M. T. (2023). The role of social capital, innovation, and capabilities on MSMEs' resilience in economic hard times. *Jurnal Manajemen Bisnis, 14*(1), 72-89. doi: https://doi.org/10.18196/MB.V14I1.15887.

Li, W. (2009). Hofstede cultural dimensions and intercultural studies. *Social Sciences*, 12, 126-129.

Light, R. J., & Pillemer, D. B. (1984). *Summing up: The science of reviewing research*. Harvard University Press.

Linnenluecke, M. K. (2017). Resilience in business and management research: A review of influential publications and a research agenda. *International Journal of Management Reviews, 19*(1), 4-30. doi: https://doi.org/10.1111/ijmr.12076.

Lipsey, M. W., & Wilson, D. B. (2001). *Practical meta-analysis*. SAGE Publications, Inc.

Memili, E., Fang, H. C., & Koç, B. (2023). The antecedents of family firms' resilience to crisis in hospitality and tourism. *International Journal of Hospitality Management, 113*, 103526. doi: https://doi.org/10.1016/j.ijhm.2023.103526.

Miller, D. (2011). Miller (1983) revisited: A reflection on EO research and some suggestions for the future. *Entrepreneurship Theory and Practice, 35*(5), 873-894. doi: https://doi.org/10.1111/j.1540-6520.2011.00457.x.

Mishrif, A., & Khan, A. (2023). Technology adoption as survival strategy for small and medium enterprises during COVID-19. *Journal of Innovation and Entrepreneurship, 12*, 53. doi: https://doi.org/10.1186/s13731-023-00317-9.

Murugan, M., & Natarajan, P. M. (2022). Agile leader's emotional resilience and their digital innovations and business transformations in a workplace in MSME sector (new normal) to mitigate COVID-19 & its successors. *International Journal of Professional Business Review, 7*(4), e0755. doi: https://doi.org/10.26668/businessreview/2022.v7i4.e755.

Muzi, S., Jolevski, F., Ueda, K., & Viganola, D. (2023). Productivity and firm exit during the COVID-19 crisis: Cross-country evidence. *Small Business Economics, 60*(4), 1719-1760. doi: https://doi.org/10.1007/s11187-022-00675-w.

Ngoc, T. M., & Vy, H. D. B. (2023). Exploring the internal drivers of SMEs' resilience: The case of Ho Chi Minh City SMEs in the context of Covid-19. *Ho Chi Minh City Open University Journal of Science-Economics and Business Administration, 13*(1), 103-120. doi: 10.46223/HCMCOUJS. econ.en.13.1.2324.2023.

Nichter, S., & Goldmark, L. (2009). Small firm growth in developing countries. *World Development, 37*(9), 1453-1464. doi: https://doi.org/10.1016/j.worlddev.2009.01.013.

Nurcaya, I. N., Rahyuda, I. K., Giantari, G. A. K., & Ekawati, N. W. (2024). Business performance concept development apparel industry MSMEs in Bali. *Uncertain Supply Chain Management, 12*(1), 315-322. doi: 10.5267/j.uscm.2023.9.019.

OECD. (2023). *OECD SME and entrepreneurship outlook 2023*. OECD Publishing. doi: https://doi.org/10.1787/342b8564-en.

Omri, A., Frikha, M. A., & Bouraoui, M. A. (2015). An empirical investigation of factors affecting small business success. *Journal of Management Development, 34*(9), 1073-1093. doi: https://doi.org/10.1108/JMD-07-2013-0088.

Ozanne, L. K., Chowdhury, M., Prayag, G., & Mollenkopf, D. A. (2022). SMEs navigating COVID-19: The influence of social capital and dynamic capabilities on organizational re-

silience. *Industrial Marketing Management, 104*, 116-135. doi: https://doi.org/10.1016/j.indmarman.2022.04.009.

Page, M. J., McKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., ... & Moher, D. (2021). The PRISMA 2020 statement: An updated guideline for reporting systematic reviews. *BMJ, 372*, n71. doi: https://doi.org/10.1136/bmj.n71.

Pang, R., & Pang, R. (2023). The success and failure of international business english negotiation: Based on Hofstede's cultural dimension perspective. *BCP Education & Psychology, 10*, 332-339. doi: https://doi.org/10.54691/bcpep.v10i.5403.

Passarelli, G. (2020). *A study of resilience in SMEs* (Thesis, Department of Economics and Management, Università degli Studi di Padova). https://thesis.unipd.it/handle/20.500.12608/21020.

Pearson, K. (1895). VII. Note on regression and inheritance in the case of two parents. *Proceedings of the Royal Society of London, 58*(347-352), 240-242. doi: https://doi.org/10.1098/rspl.1895.0041.

Putritamara, J. A., Hartono, B., Toiba, H., Utami, H. N., Rahman, M. S., & Masyithoh, D. (2023). Do dynamic capabilities and digital transformation improve business resilience during the COVID-19 pandemic? Insights from beekeeping MSMEs in Indonesia. *Sustainability, 15*(3), 1760. doi: https://doi.org/10.3390/su15031760.

Qian, L. (2016). Interpreting the causes of conflicts in sino-foreign business negotiations from the Hofstede's cultural dimension theory. *Science & Technology Vision, 26*.

Quansah, E., Moghaddam, K., Solansky, S., & Wang, Y. (2022). Strategic leadership in SMEs: The mediating role of dynamic capabilities. *Leadership & Organization Development Journal, 43*(8), 1308-1320. doi: https://doi.org/10.1108/LODJ-05-2021-0229.

Radicic, D., & Petković, S. (2023). Impact of digitalization on technological innovations in small and medium-sized enterprises (SMEs). *Technological Forecasting and Social Change, 191*, 122474. doi: https://doi.org/10.1016/j.techfore.2023.122474.

Rauch, A., Wiklund, J., Lumpkin, G. T., & Frese, M. (2009). Entrepreneurial orientation and business performance: An assessment of past research and suggestions for the future. *Entrepreneurship Theory and Practice, 33*(3), 761-787. doi: https://doi.org/10.1111/j.1540-6520.2009.00308.x.

Richerson, P. J., & Boyd, R. (2004). *Not by genes alone: How culture transformed human evolution*. University of Chicago Press.

Ridhwan, M. M., Nijkamp, P., Ismail, A., & M. Irsyad, L. (2022). The effect of health on economic growth: A meta-regression analysis. *Empirical Economics, 63*(6), 3211-3251. https://doi.org/10.1007/s00181-022-02226-4.

Roffia, P., & Dabić, M. (2024). The role of management control and integrated information systems for the resilience of SMEs. *Review of Managerial Science, 18*(5), 1353-1375. doi: https://doi.org/10.1007/S11846-023-00657-6.

Saad, M. H., Hagelaar, G., Van Der Velde, G., & Omta, S. W. F. (2021). Conceptualization of SMEs' business resilience: A systematic literature review. *Cogent Business & Management, 8*(1), 1938347. doi: https://doi.org/10.1080/23311975.2021.1938347.

Saputra, N., & Herlina, M., G. (2021). Double-sided perspective of business resilience: Leading SME rationally and irrationally during COVID-19. *Journal of Management and Marketing Review, 6*(2), 125-136. doi: https://doi.org/10.35609/jmmr.2021.6.2(4).

Saputra, N., Sari, R., Sahir, S. H., Patimah, S., & Safriadi (2024). Pro-social behavior on SME resilience: SME's leadership in overcoming COVID-19 crisis. *Elementary Education Online, 20*(4), 832-838.

Sarkar, S., & Clegg, S. R. (2021). Resilience in a time of contagion: Lessons from small businesses during the COVID-19 pandemic. *Journal of Change Management, 21*(2), 242-267. doi: https://doi.org/10.1080/14697017.2021.1917495.

Scott, W. R. (2008). Approaching adulthood: The maturing of institutional theory. *Theory and Society, 37*, 427-442. doi: https://doi.org/10.1007/s11186-008-9067-z.

Seraj, A. H. A., Fazal, S. A., & Alshebami, A. S. (2022). Entrepreneurial competency, financial literacy, and sustainable performance—Examining the mediating role of entrepreneurial resilience among Saudi entrepreneurs. *Sustainability, 14*(17), 10689. doi: https://doi.org/10.3390/su141710689.

Siddaway, A. P., Wood, A. M., & Hedges, L. V. (2019). How to do a systematic review: A best practice guide for conducting and reporting narrative reviews, meta-analyses, and meta-syntheses. *Annual Review of Psychology, 70*(1), 747-770. doi: https://doi.org/10.1146/annurev-psych-010418-102803.

Srimulyani, V. A., Hermanto, Y. B., Rustiyaningsih, S., & Waloyo, L. A. S. (2023). Internal factors of entrepreneurial and business performance of small and medium enterprises (SMEs) in East Java, Indonesia. *Heliyon, 9*(11), e21637. doi: https://doi.org/10.1016/j.heliyon.2023.e21637.

Su, S. H. (2006). Cultural differences in determining the ethical perception and decision-making of future accounting professionals: A comparison between accounting students from Taiwan and the United States. *Journal of American Academy of Business, 9*(1), 147-158.

Sulastri, S., Mulyadi, H., Disman, D., & Hendrayati, H. (2023a). Entrepreneurial ecosystem model based on digital innovation in building MSME resilience in Bandung City. In Hurriyati, R., Wibowo, L. A., Abdullah, A. G., Sulastri, Lisnawati, & Murtadlo, Y. (eds.), *Proceedings of the 7th Global Conference on Business, Management, and Entrepreneurship (GCBME 2022)* (pp. 1899-1902). Atlantis Press. doi: 10.2991/978-94-6463-234-7˙200.

Sulastri, S., Mulyadi, H., Disman, D., Hendrayati, H., & Purnomo, H. (2023b). Resilience acceleration model of small and medium enterprises through digital transformation. *Journal of Eastern European and Central Asian Research (JEECAR), 10*(4), 609-619. doi: https://doi.org/10.15549/jeecar.v10i4.1355.

Sullivan-Taylor, B., & Branicki, L. (2011). Creating resilient SMEs: why one size might not fit all. *International Journal of Production Research, 49*(18), 5565-5579. doi: https://doi.org/10.1080/00207543.2011.563837.

Teece, D. J., Pisano, G., & Shuen, A. (1997). Dynamic capabilities and strategic management. *Strategic Management Journal, 18*(7), 509-533. doi: https://doi.org/10.1002/(SICI)1097-0266(199708)18:7¡509::AID-SMJ882¿3.0.CO;2-Z.

Telagawathi, N. L. W. S., Yasa, N. N. K. Y., Giantari, I. G. K. A., & Ekawati, N. W. (2022). The role of innovation strategies in mediating covid-19 perceptions and entrepreneurship orientation on Endek weaving craft business performance. *Uncertain Supply Chain Management, 10*(3), 913-922. doi: https://doi.org/10.5267/j.uscm.2022.3.003.

Tengeh, R. K. (2016). Entrepreneurial resilience: The case of Somali grocery shop owners in a South African township. *Problems and Perspectives in Management, 14*(4-1), 203-211. doi: https://doi.org/10.21511/ppm.14(4-1).2016.09.

Torres, A. P., Marshall, M. I., & Sydnor, S. (2019). Does social capital pay off? The case of small business resilience after Hurricane Katrina. *Journal of Contingencies and Crisis Management, 27*(2), 168-181. doi: https://doi.org/10.1111/1468-5973.12248.

Tovstiga, G., & Tulugurova, E. (2007). Intellectual capital practices and performance in Russian enterprises. *Journal of Intellectual Capital, 8*(4), 695-707. doi: https://doi.org/10.1108/14691930710830846.

Tsakumis, G. T. (2007). The influence of culture on accountants' application of financial reporting rules. *Abacus, 43*(1), 27-48.

doi: https://doi.org/10.1111/j.1467-6281.2007.00216.x.

Tunio, M. N., Yusrini, L., Shah, Z. A., Katper, N., & Jariko, M. A. (2021). How hotel industry cope up with the COVID-19: An SME Perspective. *Etikonomi, 20*(2), 213-224. doi: https://doi.org/10.15408/etk.v20i2.19172.

Turney, S. (2024, February 10). Pearson correlation coefficient (r) — Guide & examples. *Scribbr*. https://www.scribbr.com/statistics/pearson-correlation-coefficient/.

UNCTAD. (2021, March 15). *How COVID-19 triggered the digital and e-commerce turning point*. UN Trade and Development. https://unctad.org/news/how-covid-19-triggered-digital-and-e-commerce-turning-point.

Waty, E., So, I. G., Indrajit, R. E., & Abdinagoro, S. B. (2023). Digital innovation, agility, and the government intervention in the culinary sector small and medium enterprises: business resilience in Indonesia after turbulence. *International Journal of eBusiness and eGovernment Studies, 15*(1), 103-133. doi: 10.34109/ijebeg.2023150106.

Wedawatta, G., Ingirige, B., & Amaratunga, D. (2010). Building up resilienc e of construction sector SMEs and their supply chains to extreme weather events. *International Journal of Strategic Property Management, 14*(4), 362-375. doi: https://doi.org/10.3846/ijspm.2010.27.

WEF. (2023, October 9). *Data Unleashed: Empowering Small and Medium Enterprises (SMEs) for innovation and success*. World Economic Forum. https://www.weforum.org/publications/data-unleashed-empowering-small-and-medium-enterprises-smes-for-innovation-and-success/.

Wided, R. (2023). IT capabilities, strategic flexibility and organizational resilience in SMEs post-COVID-19: A mediating and moderating role of big data analytics capabilities. *Global Journal of Flexible Systems Management, 24*(1), 123-142. doi: https://doi.org/10.1007/s40171-022-00327-8.

Wiklund, J., & Shepherd, D. (2003). Knowledge-based resources, entrepreneurial orientation, and the performance of small and medium-sized businesses. *Strategic Management Journal, 24*(13), 1307-1314. doi: https://doi.org/10.1002/smj.360.

Williams, N., & Vorley, T. (2014). Economic resilience and entrepreneurship: lessons from the Sheffield City Region. *Entrepreneurship & Regional Development, 26*(3-4), 257-281. doi: https://doi.org/10.1080/08985626.2014.894129.

World Bank Group. (2019). *Small and Medium Enterprises (SMEs) finance: Improving SMEs' access to finance and finding innovative solutions to unlock sources of capital*. https://www.worldbank.org/en/topic/smefinance.

World Bank Group. (2024). *GDP (current US$): World Bank national accounts data, and OECD National Accounts data files*. https://data.worldbank.org/indicator/NY.GDP.MKTP.CD.

APPENDICES

APPENDIX A – Included Studies and Its Distributions

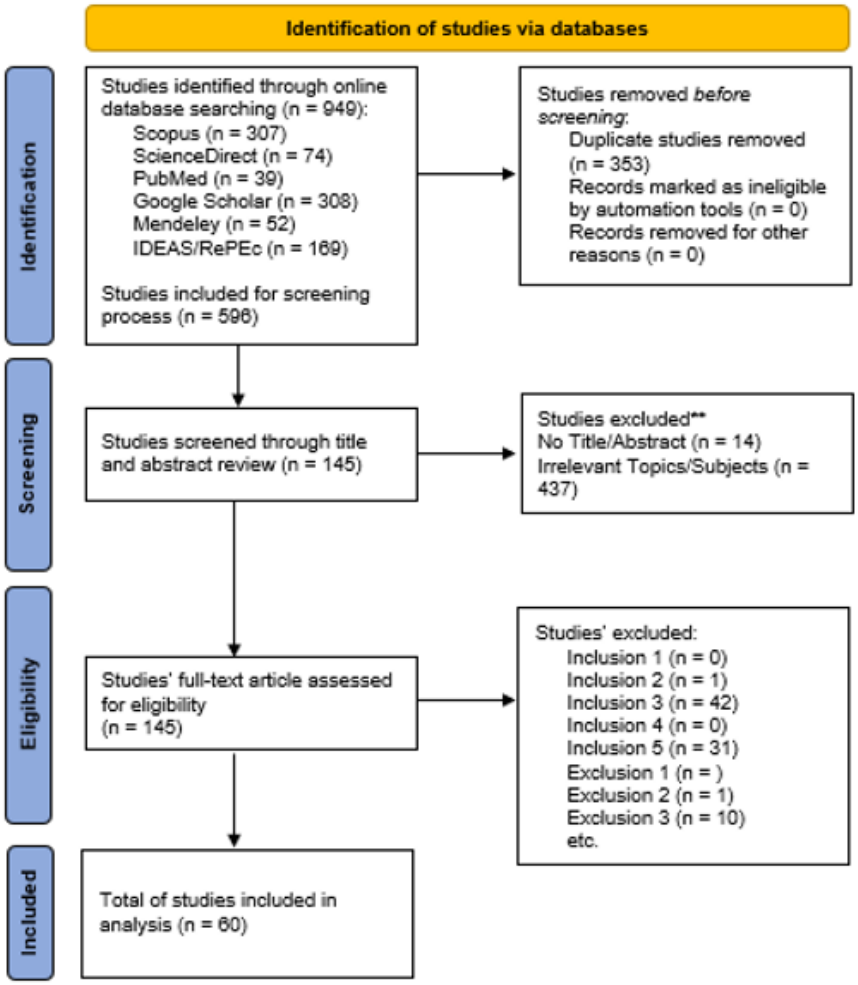

Figure 2. PRISMA Flow Diagram of The Data Selection Process

Table 4. Distribution of Studies and Empirical Estimates by Countries

Countries	Number of Studies	Number of Observations	Study Year(s)
Armenia	1	6	2021
Australia	1	6	2022
China	4	38	2022; 2024
Dominican Republic	1	5	2024
Egypt	3	14	2022
India	1	4	2022
Indonesia	26	91	2020; 2021; 2022; 2023; 2024
Italy	4	52	2020; 2023
Korea	2	18	2023
Lebanon	1	2	2023
Mexico	1	4	2023
New Zealand	1	6	2022
Nigeria	1	4	2022
Pakistan	1	2	2022
Philippines	1	38	2023
Portugal	1	7	2022
Puerto Rico	1	5	2024
Romania	1	5	2020
Saudi Arabia	3	13	2022; 2023
South Africa	3	12	2023; 2024
Spain	1	6	2023
Thailand	1	10	2023
Tunisia	2	2	2022
Turkey	1	76	2023
United Arab Emirates	1	2	2022
USA	1	13	2022
Vietnam	2	18	2022; 2023
Total	67	459	

Source: Author's Data Processing

APPENDIX B – Main Findings

Table 5. Heterogeneity Test on Resilience Factor Subgroups

Resilience Factors	d.f.	Q	P > Q	τ^2	I^2	H^2
Firm Characteristics (Overall)	47	219.72	.000	.016	84.71	6.54
Firm Size	18	38.03	.004	.005	59.00	2.44
Business Age	10	38.12	.000	.005	59.32	2.46
Financial Capital	17	105.03	.000	.021	84.10	6.29
Entrepreneurial Competence (Overall)	81	407.37	.000	.013	80.36	5.09
Entrepreneurial Orientation (EO)	44	259.39	.000	.016	83.54	6.07
Networking and Social Capital	25	74.31	.000	.007	67.59	3.09
Human Capital	10	41.92	.000	.013	76.12	4.19
Overall	129	847.12	.000	.019	86.42	7.36

Source: Author's Calculation (STATA 18)

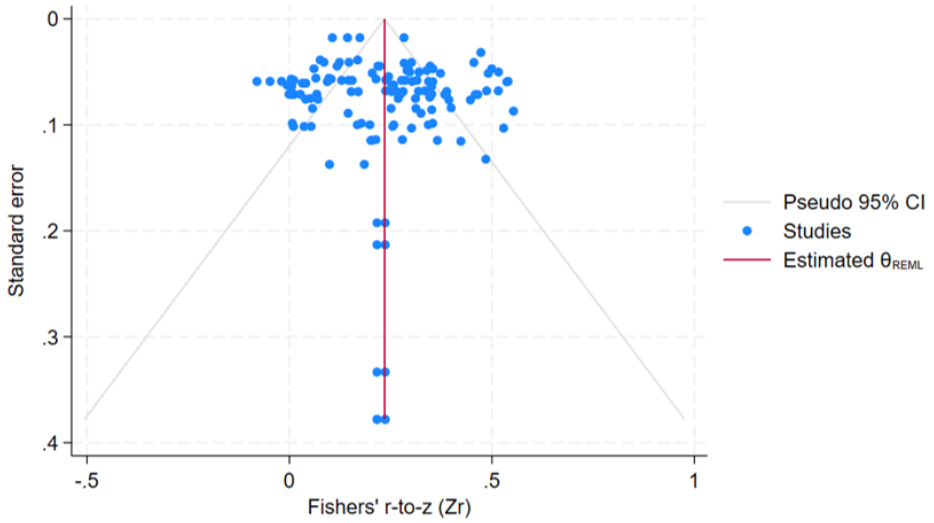

Figure 3. Funnel Plot (Overall Effect Sizes)

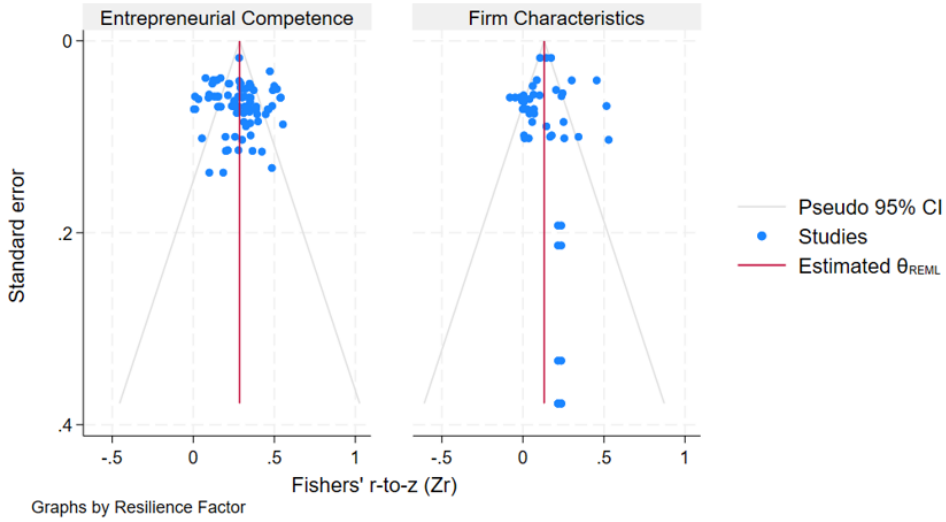

Figure 4. Funnel Plot (Resilience Factor Clusters)

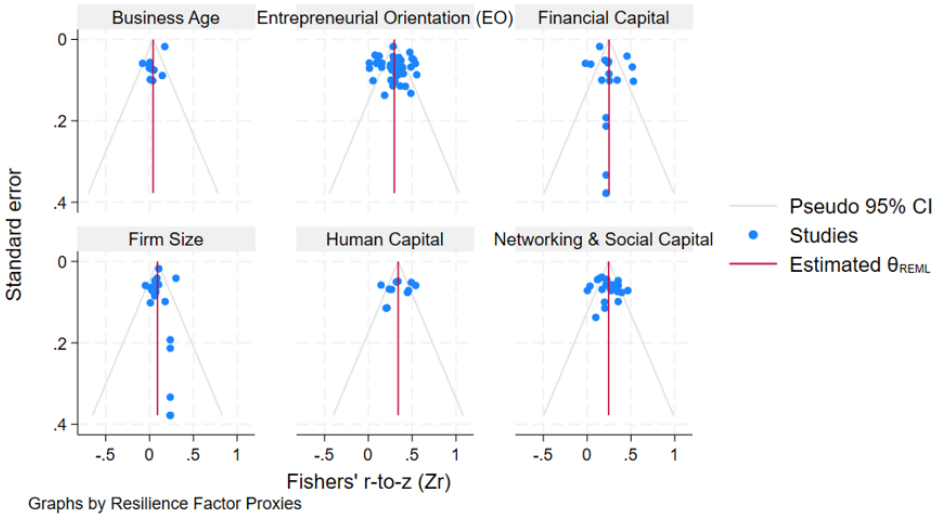

Figure 5. Funnel Plot (Resilience Factors Subgroups)

Table 6. Egger's Test

Resilience Factors	Egger's Regression (p-value)
Overall	.8534
Firm Characteristics	.3776
Firm Size	.5787
Business Age	.1031
Financial Capital	.9044
Entrepreneurial Competence	.7671
Entrepreneurial Orientation (EO)	.6155
Networking and Social Capital	.656
Human Capital	.3149

Source: Author's Calculation (STATA 18)
Notes: *p < 0.05; Indication For Publication Bias

APPENDIX C – Case of Indonesia

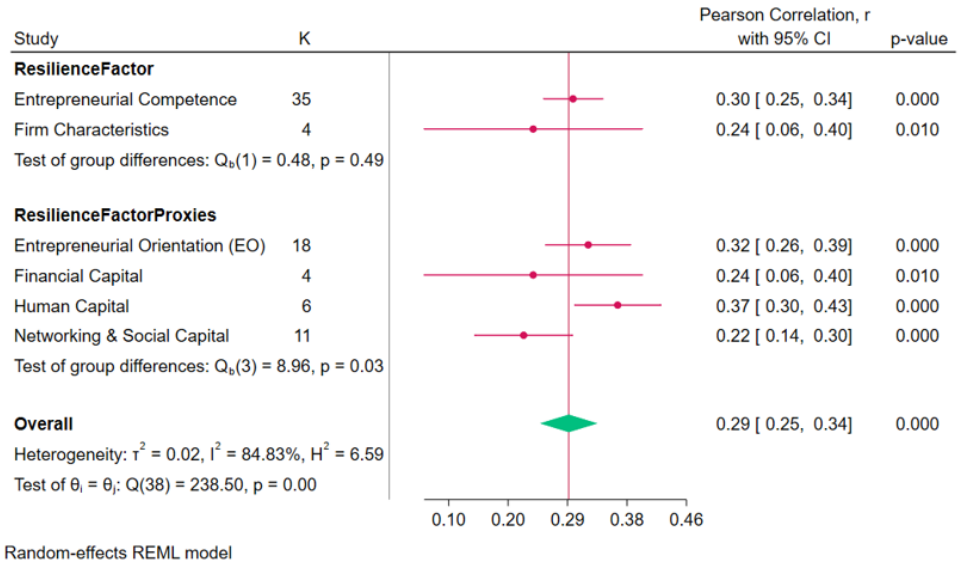

Figure 6. The Forest Plot of The Reviewed Literature (Indonesia)
Source: Author's Calculation (STATA 18)

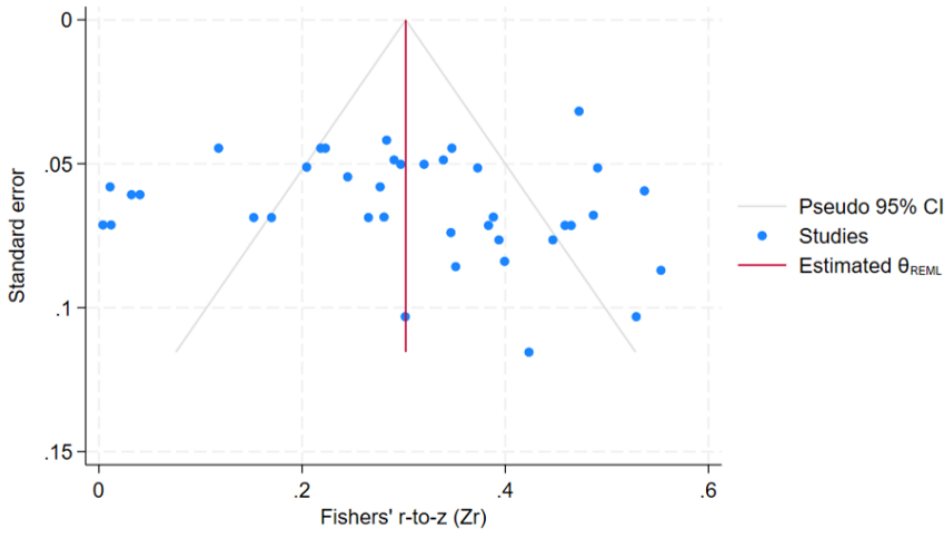

Figure 7. Funnel Plot of Overall Effect Sizes for Indonesian Studies

Table 7. Egger's Test of of Resilience Factors Subgroups for Indonesian Studies

Resilience Factors	Egger's Regression (p-value)
Overall	.1904
Firm Characteristics	.2122
Firm Size	N/A
Business Age	N/A
Financial Capital	.2122
Entrepreneurial Competence	.4249
Entrepreneurial Orientation (EO)	.7711
Networking and Social Capital	.2997
Human Capital	.7461

Source: Author's Calculation (STATA 18)
Notes: *p < 0.05; Indication For Publication Bias

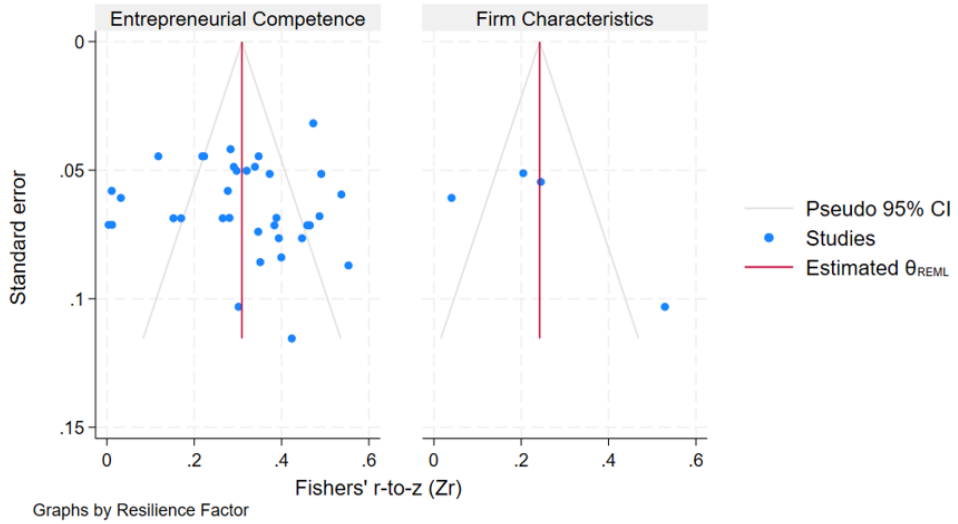

Figure 8. Funnel Plot of Resilience Factor Clusters for Indonesian Studies

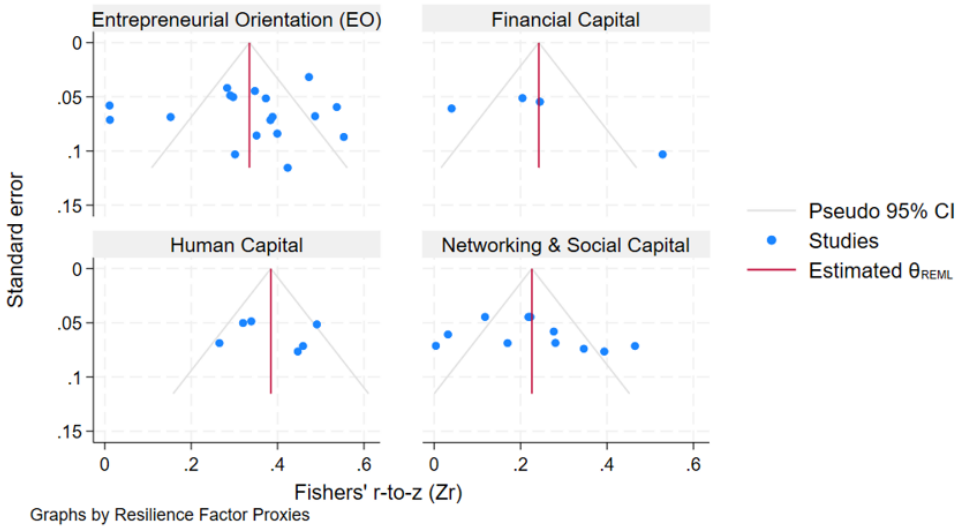

Figure 9. Funnel Plot of Resilience Factors Subgroups for Indonesian Studies

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