

Kadiyono, Anissa Lestari; Sulistiobudi, Rezki Ashriyana

Article

Linking psychological capital, technology readiness and entrepreneurial orientation to entrepreneurs' financial performance: a study of women MSMEs in Indonesia

Cogent Business & Management

Provided in Cooperation with:

Taylor & Francis Group

Suggested Citation: Kadiyono, Anissa Lestari; Sulistiobudi, Rezki Ashriyana (2024) : Linking psychological capital, technology readiness and entrepreneurial orientation to entrepreneurs' financial performance: a study of women MSMEs in Indonesia, Cogent Business & Management, ISSN 2331-1975, Taylor & Francis, Abingdon, Vol. 11, Iss. 1, pp. 1-23, <https://doi.org/10.1080/23311975.2024.2413380>

This Version is available at:

<https://hdl.handle.net/10419/326605>

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.



<https://creativecommons.org/licenses/by/4.0/>

Linking psychological capital, technology readiness and entrepreneurial orientation to entrepreneurs' financial performance: a study of women MSMEs in Indonesia

Anissa Lestari Kadiyono & Rezki Ashriyana Sulistiobudi

To cite this article: Anissa Lestari Kadiyono & Rezki Ashriyana Sulistiobudi (2024) Linking psychological capital, technology readiness and entrepreneurial orientation to entrepreneurs' financial performance: a study of women MSMEs in Indonesia, Cogent Business & Management, 11:1, 2413380, DOI: [10.1080/23311975.2024.2413380](https://doi.org/10.1080/23311975.2024.2413380)

To link to this article: <https://doi.org/10.1080/23311975.2024.2413380>



© 2024 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group



Published online: 14 Oct 2024.



[Submit your article to this journal](#)



Article views: 1942



[View related articles](#)





[View Crossmark data](#)



Citing articles: 3 [View citing articles](#)

Linking psychological capital, technology readiness and entrepreneurial orientation to entrepreneurs' financial performance: a study of women MSMEs in Indonesia

Anissa Lestari Kadiyono  and Rezki Ashriyana Sulistiobudi 

Fakultas Psikologi – Universitas Padjadjaran, Indonesia Center for Human Capital & Organizational Development, Bandung, Indonesia

ABSTRACT

This study investigates the entrepreneurial financial performance of women micro, small, and medium enterprise (MSME) actors in Indonesia, drawing upon social cognitive theory to assess the interplay of psychological capital (PsyCap), technology readiness, and entrepreneurial orientation. Recognizing women entrepreneurs in MSMEs as pivotal economic contributors, this study examined the moderating effect of technology readiness on the entrepreneurial outcomes facilitated by PsyCap. Simultaneously, we explore how entrepreneurial orientation mediates this relationship. The sample comprised 920 female MSME actors from West Java, D.I.Y. Yogyakarta, and West Sumatra, selected through quota sampling. Data were collected via self-reported questionnaires measuring PsyCap, technology readiness, entrepreneurial orientation, and entrepreneurs' financial performance. The data was analyzed using structural equation modeling. These findings indicate that technological readiness significantly moderates the relationship between PsyCap and entrepreneurs' financial performance. Although technology readiness directly influences entrepreneurial orientation, it does not alter the overall model's efficacy. This suggests that technology readiness can enhance performance, but it does not impact the PsyCap factors that propel women entrepreneurs' financial performance. These insights can inform potential government interventions to bolster female entrepreneurship. This study contributes novel empirical evidence to entrepreneurial literature by presenting a comprehensive model that elucidates the mediating and moderating processes necessary for fostering entrepreneurial financial performance. It offers practical implications for SME governance and policymakers aiming to elevate the competitive stance of women entrepreneurs in a demanding business ecosystem.

ARTICLE HISTORY

Received 9 March 2024

Revised 30 September 2024

Accepted 2 October 2024

KEYWORDS

Social cognitive theory perspective; women's entrepreneur financial performance; psychological capital; technology readiness; entrepreneur orientation

SUBJECTS

Gender studies – soc sci; work & organizational psychology; entrepreneurship; entrepreneurial finance; entrepreneurship and small business management; behavioral psychology

1. Introduction

MSMEs are a focal point for the Indonesian Government, both in the strategies of National Economic Recovery and in the post-pandemic era, empowerment initiatives in the MSME sector are expected to sustain and boost their vital contributions to the Indonesian economy (Indonesian Ministry of Finance, 2020). MSMEs or SMEs are a key pillar underpinning the economic structure of Indonesia (Indonesian Ministry of Finance, 2021). SMEs play a pivotal role in the country's economic landscape by generating a substantial portion of the GDP and employing around 117 million people, which is 97 percent of the total GDP (Mulawarman et al., 2020). Additionally, as of the first half of 2021, MSMEs are responsible for attracting 60.4 percent of the total investments, highlighting their integral position in Indonesia's economy (Indonesian Ministry of Finance, 2021). In 2023, the contribution of MSMEs (Micro, Small, and Medium Enterprises) accounts for 61% of Indonesia's Gross Domestic Product (Indonesian Ministry of Finance, 2023).

CONTACT Anissa Lestari Kadiyono  anissa.lestari@unpad.ac.id  Fakultas Psikologi – Universitas Padjadjaran, Indonesia Center for Human Capital & Organizational Development, Jl. Raya Bandung Sumedang KM. 21 Jatinangor – Sumedang, Bandung, Indonesia

© 2024 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group

This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0/>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited. The terms on which this article has been published allow the posting of the Accepted Manuscript in a repository by the author(s) or with their consent.

Indonesian Medium-Term Development Plan 2005–2025 includes a key goal of improving the quality of human resources, with a particular focus on increasing women's participation in development. To achieve this, gender mainstreaming is used as a strategy to ensure that gender considerations are incorporated into all stages of national policy and development program planning, formulation, implementation, monitoring, and evaluation (Nasional, 2020). Additionally, global programs such as the Sustainable Development Goals (SDGs) also support efforts to uphold women's rights, achieve gender equality and justice, and strengthen gender mainstreaming in development (Ministry of National Development Planning, 2021).

Based on data from the Central Bureau of Statistics, women engaged in micro, small, and medium companies (MSMEs) have a significant impact on Indonesia's economy, underscoring the enormous contribution of women to the country's economic progress. Women entrepreneurs can lead Indonesia to economic growth, job creation, and social development. Data from the Central Statistics Agency for 2021 indicate that women manage 64.5% of all SMEs in Indonesia (Bayumi et al., 2022). At the micro-enterprise level, women constitute 52% of 63.9 million micro-entrepreneurs. Women represent 56% of the 193,000 small business owners, and at the medium enterprise level, they account for 34% of the 44.7 thousand business actors (Indonesia Central Bureau of Statistics, 2023). Data show an upward trend in women's income contributions, rising from 33.50% in 2010 to 37.22% in 2020 (Indonesia Central Bureau of Statistics, 2023).

In general, most research indicates that female entrepreneurs encounter more hurdles than male entrepreneurs, particularly in areas such as finance, credit, management experience, insufficient social support networks, the prevailing societal biases and stereotypes, and also cultural perceptions (Cardella et al., 2020; Guzman & Kacperczyk, 2019; Singh et al., 2010; Amaral et al., 2020; Balachandra, 2020; Geiger, 2020). Female entrepreneurs face several challenges in terms of professional advancement and creating their businesses compared to their male colleagues (Amaral et al., 2020). They encounter difficulties in reconciling their personal and professional lives, which are further complicated by gender discrimination as well as a lack of recognition from their spouses and the business organizations with which they interact (Singh et al., 2010). Studies have shown that females receive significantly less venture capital funding than males, despite demonstrating comparable competencies and potential for success (Balachandra, 2020; Geiger, 2020).

Women entrepreneurs in developing countries like India, Nigeria, and Bangladesh face similar challenges. Despite their significant contributions to the economy through job creation and fostering innovation, they encounter obstacles such as limited financial access, socio-cultural barriers, and insufficient support networks (Bulsara et al., 2014; Parvin et al., 2012; Mozahem, 2022; Simba et al., 2022). This phenomenon occurs not just in impoverished nations, but also in rich countries. Female entrepreneurs in the United States and Australia have a vital impact on promoting innovation and economic variety. They frequently lead the way in emerging industries, making significant contributions to job growth. However, they also encounter obstacles related to balancing work and personal life, as well as obtaining funding (Dann et al., 2006; Robb et al., 2014).

While in Indonesia, the culture places a strong emphasis on distinct roles for men and women, with clear differences in masculinity and femininity shaping their roles, and patriarchal social structure. (Hofstede, 2011). A woman is often expected to bear the primary responsibility for caring for her children and husband, managing all household chores, and maintaining both the family's social and economic well-being (Forshee, 2006). The difficulties stem from balancing the dual roles of being both entrepreneurs and mothers. To meet expectations, women often place extra pressure on themselves when trying to balance work and family responsibilities.

Previous research also indicates that a significant factor hindering the growth of women entrepreneurs in Indonesia is their underlying motives, which are classified as either growth-oriented or necessity-oriented. Unlike growth-oriented entrepreneurs, who show the capability and willingness to scale their businesses, necessity-oriented women entrepreneurs engage in entrepreneurial activities because they have no other options and are less likely to alter their business paths (Riantoputra & Muis, 2020). Necessity-oriented entrepreneurs are more likely to experience kin tax, which diverts their capital to support their extended family and capital diversion, due to their lack of motivation to grow their businesses.

To be successful or fail in overcoming all those challenges, the entrepreneur woman can be determined by a set of psychological capital, and future orientation as an internal drive to grow their success

(Digan et al., 2019; Ingalagi et al., 2021; Riantoputra & Muis, 2020; Villanueva-Flores et al., 2021). They can use their strength to overcome obstacles and increase their entrepreneurial performance. Entrepreneur women need a belief to run the business even in the tough situation, they need to be strong to bounce back after failure and juggle multiple roles.

Today, businesses must tackle an urgent issue: how to steer through the unpredictable changes and technological progress. With traditional business models becoming outdated due to constant innovation, businesses that do not swiftly leverage advanced technologies risk becoming irrelevant (Hossain, 2024). Emerging digital technologies today offer the potential for female entrepreneurs to surmount obstacles in establishing and managing new business endeavors (Ughetto et al., 2020). Technological advancement can benefit women entrepreneurs, allowing them to broaden their pursuits, generate prospects for further growth, and be more likely to attain heightened levels of entrepreneurial performance (Swetha et al., 2014).

Nevertheless, there are ongoing technical issues like the lack of skills and knowledge (Mulawarman et al., 2020). Technology awareness and use for business is relatively low in Indonesia (Ong et al., 2020), it is also due to the highly diverse geographical variations. The ICT (Information, Communication, and Technology) capabilities could be very limited in one area due to the lack of infrastructure, minimal public literacy, and exposure to the usability of technology (Kartiasih et al., 2023). This digital disparity makes it difficult to increase competitiveness and market the entrepreneur's products (Muljono et al., 2021). Their readiness to use recent technology is a big challenge faced by Indonesian women entrepreneurs in increasing their business performance.

In Indonesia, the financial contribution of SMEs added value mostly concentrated in Java Island. Regions such as Jakarta, Surabaya, Yogyakarta, and West Java showcased impressive growth (Indonesian Ministry of Finance, 2023). However, this growth was not evenly distributed across other provinces in Indonesia. Notably, more than 25% of the total SMEs in Indonesia are located outside Java Island (Indonesian Ministry of Finance, 2021). Their financial performance is also critical for business sustainability. Business performance can be measured by the financial growth of SMEs. The financial performance of MSMEs refers to the ability to manage their financial resources and achieve desired financial outcomes. Subjective measure SME performance shows how excellent enterprises can utilize their assets from their primary enterprise activities and generate future cash inflow to the entity (Ahmad & Jamil, 2020).

Interestingly, limited studies examine how psychological capital, entrepreneurial orientation, and the role of technology readiness toward the performance success of women entrepreneurs. This current study narrows the void theoretical of factors that contribute to enhancing women's entrepreneurial performance specifically in developing countries such as Indonesia and in this area of advanced business technology. This study emphasizes the importance of psychological capital, which includes the internal processes of self-efficacy, resilience, optimism, and hope, in translating into explicit, goal-oriented actions characteristic of strong entrepreneurial performance. It also explores whether this relationship to entrepreneurial financial performance can be strengthened by the readiness to use technology. The study highlights technology readiness as a facilitating factor, particularly for small and medium-sized enterprises, which is believed to have the potential to revolutionize methods of creating added value and significantly enhance the strategic benefits obtained by using the technology (Muljono et al., 2021). Based on the arguments presented, this study specifically aims to achieve the following goals: (1) To understand the relationship of Psychological Capital, Entrepreneurial Orientation to Financial Entrepreneurial performance in Indonesian women entrepreneurs; (2) To examine how Technology Readiness strengthens the relationship among the Psychological Capital and Entrepreneurial Orientation toward Financial Entrepreneurial performance Indonesian women entrepreneur.

2. Underpinning theory

2.1. Social cognitive theory

Social Cognitive Theory (SCT) suggests that human motivation and behavior are largely influenced by an individual's abilities and expectations regarding the potential outcomes of performing a particular action.

This study's conceptual framework is grounded in Bandura's (1988) Social Cognitive Theory (SCT), which describes human functioning as a dynamic interplay among personal and cognitive factors, environmental influences, and behaviors. These elements form the triadic reciprocal causation framework (Bandura, 1991). SCT offers a valuable framework for examining how cognitive and environmental factors interact to elucidate entrepreneur orientation and performance. Several previous studies also used the SCT to describe the dynamic of entrepreneur variables such as entrepreneur orientation, intention, munificence, etc. (Abdullah Alnemer, 2021; Altinay et al., 2022; Bacq et al., 2017; Nwosu et al., 2022; Shetty et al., 2023).

SCT is founded on the principles of reinforcement and observational learning, highlighting the importance of internal mental processes and interactions with others. This theory has been widely applied in the literature to understand how behavior is acquired, modified, and regulated through the interaction of social, environmental, and personal factors. Bandura asserts that 'progress in understanding how personal factors affect actions and situations is best advanced through the microanalysis of interactive processes' (p. 28). Therefore, comprehending any aspect of personal agency or intentional action necessitates analyzing both these factors and their interactions. Hence, based on the framework of Social Cognitive Theory (SCT), this study examines psychological capital as a personal factor and technology readiness as an environmental perception factor, both of which are predicted to contribute to entrepreneurial orientation and subsequently impact entrepreneurial performance.

2.2. Literature review and hypothesis formation

2.2.1. Psychological capital & entrepreneurial orientation

Psychological Capital is a concept within positive psychology that focuses on cultivating psychological resources to enhance well-being and performance (Luthans et al., 2007). Based on SCT, Psychological Capital is seen as a personal factor of women entrepreneur. Psychological capital is defined as an individual's positive psychological state of development. It is characterized by self-efficacy, optimism, hope, and resilience. A person's resilience and entrepreneurial self-efficacy are crucial components of the entrepreneurial mindset that influence their orientation. By having a good degree of self-efficacy, entrepreneurs believe they can perform the roles and tasks of an entrepreneur (McGee & Terry, 2022). Even though self-efficacy in one's ability is widely regarded as the most frequently studied positive cognitive factor influencing entrepreneurial decisions, there are certain situations where self-efficacy alone may not suffice (Renko et al., 2021). In developing countries, resilience makes a significant contribution to entrepreneurs in handling difficult times and crises (Sharma & Rautela, 2022). We define resilience as the capacity to endure and recover from difficulties, or even surpass previous performance levels (Luthans et al., 2006). The studies in small business enterprises found that entrepreneurial resilience comprises two essential elements: facing adversity and positively adapting, which leads to some form of evolution of the business (Bernard & Dubard Barbosa, 2016; Sharma & Rautela, 2022).

Individuals with optimism are more likely to grow their business activities, optimism distinguishes successful entrepreneurs from those who are less successful (Lindblom et al., 2020) also when they face adverse circumstances (Jabbari et al., 2024). Optimism also correlates with a firm's growth, profit, performance, and the entrepreneur's perseverance (Kawai & Kazumi, 2020; Lim & Morris, 2023). Exceptionally optimistic entrepreneurs often tackle challenges and concerns during business expansion with a positive attitude (Cassar, 2008; Ephrem et al., 2021). Similarly, entrepreneurs with high levels of hope are more confident set and pursuing goals that are moderately challenging yet attainable. They are also more adept at developing innovative solutions to address demands and problems (Mahfud et al., 2020).

Most of the previous literature stated the outcomes of psychological capital are entrepreneur intention, entrepreneur behavior, and entrepreneur success (de Lima et al., 2020; Elsafty et al., 2020; Hu et al., 2022; Jalil et al., 2023; Mahfud et al., 2020). Nevertheless, there is a lack of research on how psychological resources such as psychological capital influence entrepreneurial orientation. Entrepreneurial Orientation is a psychological construct reflecting an individual's intentions and mindset toward seeking entrepreneurial opportunities (Makhloufi et al., 2021). Entrepreneurial orientation can guide the entrepreneur in their strategy-making, influencing how they take actions, allocate resources, and establish precedents for their business.

Entrepreneurial orientation (EO) encompasses the policies and practices that underpin entrepreneurial decisions and actions. Thus, EO can be seen as key decision-makers use to fulfill their firm's organizational purpose, maintain its vision, and create competitive advantage (Rauch et al., 2009). As a strategy-making process, entrepreneurial orientation provides individuals with a basis for entrepreneurial decisions and actions which has five dimensions (1) Autonomy; (2) Innovativeness; (3) Proactiveness, and Risk-Taking (Bolton & Lane, 2012).

Several literatures agree that entrepreneurial orientation is vital for guiding business actions, behaviors, and goals that ultimately impact entrepreneurial performance (Al-Mamary et al., 2020; Wahyuni & Sara, 2020; Yacob et al., 2021). The strategic decisions made by entrepreneurs serve as a clear guide for the operation of their businesses. For example, the extent to which innovation orientation is incorporated into their business strategy is crucial for achieving product or service differentiation in a competitive market. By prioritizing innovation, entrepreneurs can create unique value propositions that set their offerings apart from those of their competitors (Huang et al., 2022; Liu & Atuahene-Gima, 2018; Makhouloufi et al., 2021).

Previous literature stated that aspects of psychological capital contribute to determining creativity in business and the innovative behavior of entrepreneurs (Gao et al., 2020; Huang et al., 2022). Optimism involves maintaining a positive outlook on current and future success and persistently working towards goals, while hope is about finding alternative paths to achieve these goals (Luthans et al., 2008). Optimism and hope are expressions of self-confidence for entrepreneurs, which can encourage them to engage in innovative activities. Creative innovation has always represented a form of breakthrough thinking sought by individuals. For businesses, the strength of creative innovation is a long-term assurance for enhancing company performance (Gao et al., 2020). A way for innovation and creativity in differentiating a business demonstrates an entrepreneur's orientation toward their entrepreneurial goals. Besides innovation and creativity, the willingness of entrepreneurs to take risks and proactively lead their organizations can be significant traits for their aspect in life including entrepreneurial performance. Based on those works of literature, we proposed the first hypothesis:

Hypothesis 1: Psychological Capital positively contributes to Entrepreneurial Orientation in women entrepreneurs

2.2.2. Technology readiness and entrepreneurial orientation

According to the Social Cognitive Theory (SCT), besides focusing on the individual or entrepreneur, we must also consider the need for support from the environment, specifically the role of technology. The role of technology is significant in most business strategies, whether it is for managing business processes, finances, or marketing. Technology-enabled or assisted initiatives have helped businesses survive during global crises. Online businesses or those with online support have emerged as the survivors (Sharma & Rautela, 2022). Women entrepreneurs should have a propensity to adopt and integrate technology into their lives, or technology readiness.

Technology Readiness focuses on gauging the preparedness of individuals to embrace and weave technology into their daily activities. The conceptual model offers a broad perspective on the various factors that influence an individual's willingness to adopt technological innovation (Parasuraman & Colby, 2015). Technology Readiness is determined by a set of positive and negative beliefs associated with technology (Parasuraman & Colby, 2015) consists: (1) Optimism is the belief that technology is beneficial and efficient (2) Innovativeness is characterized by the inclination to be at the forefront of technology and to be a visionary in thinking. (3) Discomfort is defined as the subjective experience of not having sufficient control over technology and feeling overwhelmed by it. (4) Insecurity is connected to the anticipated advantages of innovation. This pertains to a deficiency in confidence in technology and its capacity to function effectively.

Readiness to adopt technology can enable entrepreneurs to modernize their businesses. The willingness to use digital technologies, platforms, and infrastructures offers opportunities for new businesses to arise and allows existing businesses to transition from offline to online environments, shifting from traditional methods to technology-based approaches for marketing and selling their products (Jafari-Sadeghi et al., 2021). The business orientation of the entrepreneur should shift towards being innovative and creative. By developing innovative business strategies and operations, entrepreneurs can enhance

strategic flexibility at both organizational and sector levels, adapting to the new competitive environments in which businesses operate. Hence, regarding the explanation above, the second hypothesis is as follows:

Hypothesis 2: Technology Readiness positively contributes to Entrepreneurial Orientation in women entrepreneurs

The explanation above (Hypothesis 1) about Psychological Capital suggests that women entrepreneurs with a strong positive psychological state are more likely to enhance their orientation towards strategy-making, influencing how they take actions and allocate resources for their business. However, according to Social Cognitive Theory (SCT), the environmental factor, such as technology readiness, should strengthen this correlation. Earlier research emphasizes how the innovative and creative orientation of an entrepreneur determines their use of technology to develop their business (Nasution et al., 2021; Octavia et al., 2020).

Fundamentally, entrepreneurs need to feel both confident and comfortable with new technology-based services before adopting them. They often face a conflict between the benefits of increased value and the challenges of learning and trusting new business methods (Parasuraman & Colby, 2015). The balance of positive and negative feelings about technology differs from person to person, influencing their willingness to adopt and use new technologies. Understanding how entrepreneurs respond to advanced technologies is crucial for grasping how these responses affect their business strategies. Accordingly, we assert the third following hypothesis:

Hypothesis 3: Technology Readiness moderates the contribution of Psychological Capital to Entrepreneurial Orientation in women entrepreneurs.

2.2.3. Entrepreneur financial performance

The performance of SMEs is driven by entrepreneurs consistently striving to meet corporate objectives. Entrepreneur performance can be both financial and non-financial (Ahmad & Jamil, 2020a). Entrepreneurial performance encompasses various dimensions, including business growth, innovation, customer satisfaction, and market expansion (Al-Mamary et al., 2020). The measure should be considered the most important factor for the business. In Indonesia, an enterprise's ability to generate wealth during its startup phase and sustain its market presence is crucial for long-term sustainability. Given the economic value added by SMEs, they play a vital role in Indonesia's national economic growth, significantly contributing to overall economic development and employment rates. SME performance is often measured by productivity or profitability and export value, which relates to the quantity of products sold internationally (Fitriati et al., 2020).

In this regard, we can say that entrepreneurial success in Indonesia relies most on financial performance. Financial performance is crucial for sustainability for startups and small businesses (Makhoulfi et al., 2021). The significance of entrepreneurial financial performance extends to the viability and sustainability of these enterprises, serving as a key area of focus for both entrepreneurs and policymakers (Alheet, 2019). It includes various indicators of a company's financial health, such as profitability, sales growth, and cash flow management (Ahmad & Jamil, 2020; Elsafty et al., 2020).

Numerous studies have reported that psychological capital and entrepreneurial orientation separately, are given critical contributions to entrepreneur performance (Al-Mamary et al., 2020; Gao et al., 2020; Fitriati et al., 2020; Wahyuni & Sara, 2020; Wang et al., 2022). Psychological capital, as a personal capability, drives entrepreneurs to persist and take appropriate actions to sustain their businesses (Sharma & Rautela, 2022). It acts as a precursor to resilience, enabling entrepreneurs to recover from failures and maintain the belief that their business will grow. This allows them to keep striving for success, even when the journey is challenging.

Psychological capital, encompassing self-efficacy, hope, resilience, and optimism, should be considered as a factor directly related to an entrepreneur's financial performance. It could also serve as a personal drive to influence how female entrepreneurs develop strategies to guide their business activities (Nasution et al., 2021; Rauch et al., 2009; Yacob et al., 2021). Our study considered the challenges faced by female entrepreneurs within a patriarchal social culture. Psychological capital should be a dominant personal

factor in helping them navigate, strive, and thrive amidst business competition and uncertainty (Liyanagamage et al., 2023). Consequently, we propose the fourth hypothesis:

Hypothesis 4: Psychological Capital positively contributes to Entrepreneur Financial Performance in woman entrepreneurs

On the other hand, to the best of our knowledge, previous studies have not yet included the role of technology as an environmental factor influencing entrepreneurial performance. Based on the SCT model, we include the perception of environmental factors i.e. technology readiness to strengthen the contribution of personal capabilities and orientation to the business's financial performance. Technology readiness focuses primarily on individual-level factors and perceptions related to information technology adoption (Jafari-Sadeghi et al., 2021). However, the readiness of digital technologies to drive digital transformation can significantly enhance business performance (Porter, 1985). Environmental factors such as internet access, technological proficiency, and digital tools for business can contribute to more effective marketing strategies, leading to higher financial performance or increased business profit and sales growth (Audrey et al., 2023; Daud et al., 2022; Teng et al., 2022). Specifically in developing countries, the adoption and use of social media can enhance the SME's performance, technological literacy also positively contributes to the growth of the business (Kulathunga et al., 2020; Qalati et al., 2022). Consequently, we propose the fifth hypothesis:

Hypothesis 5: Technology Readiness contributes to Entrepreneur Financial Performance in women entrepreneurs

Studies have shown that while psychological capital can provide the drive and resilience needed for entrepreneurial success. We also predict that psychological capital have a significant contribution to entrepreneurial performance (Hypothesis 4). The ability to leverage technology effectively can significantly amplify these positive effects (Tang, 2020). Technology Readiness, on the other hand, can be viewed as the environmental factor, reflecting the availability and an individual's comfort with utilizing technological resources (Govindaraju, 2021). Technology can be seen as a supportive factor that helps women entrepreneurs run their businesses more efficiently, ultimately leading to improved business outcomes. The readiness of entrepreneurs to use technology is predicted to strengthen the relationship between psychological capital and entrepreneurial financial performance. Consequently, we propose the sixth hypothesis:

Hypothesis 6: Technology Readiness moderates the contribution of Psychological Capital to Entrepreneur Financial Performance in Women Entrepreneurs.

In recent decades, there has been substantial research on the correlation between Entrepreneurial Orientation and business performance (Saeed et al., 2014). This has led to the recognition of Entrepreneurial Orientation as a valuable and widely accepted factor in determining entrepreneurial performance (Zainol, 2013). With a strong Entrepreneurial Orientation, entrepreneurs must focus on innovation, risk-taking, and proactiveness, enabling them to create unique value propositions that distinguish their products or services from competitors, ultimately leading to better business outcomes. The business's strong financial performance can be attributed to the actions and strategies implemented by the business owner or executive decision-makers (Al-Mamary et al., 2020). These strategies are a type of implementation of the entrepreneur's business orientation aligned with the entrepreneurial orientation. Entrepreneurial orientation can be understood as the entrepreneurial strategy-making processes employed by key decision-makers to achieve their firm's organizational goals, uphold its vision, and gain competitive advantages (Rauch et al., 2009). Accordingly, we assert the seventh hypothesis:

Hypothesis 7: Entrepreneurial Orientation contributes to Entrepreneur Financial Performance in women entrepreneurs

Studies have shown that technologically adept entrepreneurs are more likely to identify and exploit new market opportunities (Shane & Venkataraman, 2001). They can leverage technology to access information, analyze trends, and connect with potential customers and investors more effectively. This supports the idea that technology readiness can strengthen the relationship between entrepreneurial

orientation (specifically the dimensions of proactiveness and innovativeness) and financial performance. Women entrepreneurs with high Psychological Capital may be more motivated to identify opportunities, and their success in capitalizing on these opportunities can be further enhanced by their Technology Readiness. Therefore, Entrepreneurial Orientation is a mediating factor, influenced by the interaction between internal and external factors, ultimately determining how well individuals can operate and grow their businesses. Based on the literature review, we examine whether there is a relationship between Psychological Capital, Technology Readiness, Entrepreneurial Orientation on Entrepreneurial Financial Performance. Hence, we proposed the last hypothesis:

Hypothesis 8: Technology Readiness moderates the mediation of Psychological Capital on Entrepreneur Financial Performance through Entrepreneurial Orientation in women entrepreneurs.

We will incorporate these findings into our manuscript to provide a comprehensive analysis of how psychological capital and technology readiness influence financial entrepreneurial performance through entrepreneurial orientation among women entrepreneurs in MSMEs in Indonesia. By including comparative literature and recent studies, we will highlight the multifaceted nature of entrepreneurial success and the critical factors that drive performance outcomes (Figure 1).

Methods

Procedures and sample

The Research Ethics Committee of Universitas Padjadjaran, Indonesia, granted ethical review and approval under reference number 4/UN6. KEP/EC/2023. Moreover, informed consent is required for psychological research surveys. The informed consent process encompassed the following elements: (1) explanation of the research purpose, anticipated duration, and procedures; (2) clarification of participants' right to decline participation or withdraw after commencement; (3) presentation of potential research benefits; (4) assurance of confidentiality; (5) provision of incentives for participation; and (6) identification of the contact person for research inquiries and participants' rights (American Psychological Association, 2002; Ripley et al., 2018).

We provided a comprehensive explanation of the participant's involvement in the study. The participants were approached to provide consent by filling out and signing an informed consent form. Each participant who provided informed consent affirmed their willingness to participate in the study. Subsequently, we administered the questionnaire individually, providing direct guidance through each section. Due to the varied educational backgrounds of the participants, we did not limit the survey completion time. On average, participants, whether with or without assistance, were able to finish the survey within 15–25 minutes.

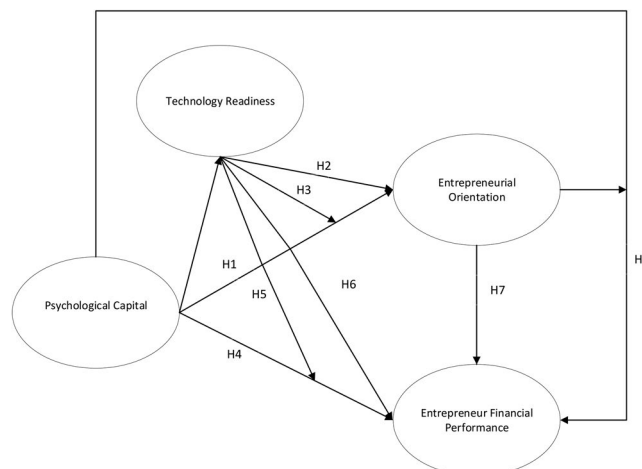


Figure 1. Research model.

We have collaborated with the PNM, a government-established institution (<https://www.pnm.co.id/>) to assist marginalized communities in entrepreneurship, to reach a certain number of participants. The particular program of PNM is PNM Mekaar, designed for mothers involved in MSMEs (Micro, Small, and Medium Enterprises). Participants in the PNM program receive entrepreneurial assistance through the PNM Mekaar program (<https://www.pnm.co.id/bisnis/pnm-mekaar>), which provides micro-credit services to underprivileged women entrepreneurs through the Family Welfare Economic Development program.

All the participants participated were female entrepreneurs from three Indonesian provinces: the Special Region of Yogyakarta in Central Java, West Java, and West Sumatra. The criteria for micro-enterprises include achieving an annual business profit of Rp 2 billion and possessing assets or a net wealth of at least Rp 1 billion (excluding land and building assets). In comparison, small enterprises have assets of at least Rp 1–5 Billion (DPR, 2022).

We established the minimum required sample size based on commonly accepted guidelines to ensure adequate statistical power in structural equation modeling and factor analysis. The minimum participant count necessary was 300, 500 as very good, and 1000 as excellent (Guadagnoli & Velicer, 1988) (Wilson Van Voorhis & Morgan, 2007). We used quota sampling to secure a minimum of 300 participants from each province, totaling approximately 900 participants. The initial total reached 956 participants; however, following data cleaning procedures using the Mahalanobis distance as a recommended approach for multivariate outlier detection (Finch, 2012), we ultimately retained 920 datasets from the participants in this study.

Measures

In establishing the validity and reliability of our study, we employed three key methods: evidence based on test content using the Item Content Validity Index (I-CVI), evidence-based on internal structure through Confirmatory Factor Analysis (CFA), and evidence-based on the examination of relationships with other variables (Table 1) using Pearson Correlation (Goodwin & Leech, 2003), alongside reliability analysis utilizing Cronbach's Alpha.

Psychological capital

PsyCap was evaluated using the Indonesian version of the scale. Psychological capital encompasses four distinct aspects: Hope, Self-Efficacy, Resilience, and Optimism (Luthans et al., 2006). Within the Hope subscale (3 items), sample items include statements such as 'I can think of many ways to reach my current work goals'. Sample items in self-efficacy (3 items) include 'I feel confident helping to set targets/goals in my work area'. 'I usually manage difficulties one way or another at work' are the sample items in the Resilience subscale (3 items). Lastly, the Optimism subscale (3 items) includes, 'I'm optimistic about what will happen to me in the future as it pertains to work'. The item content validity index (I-CVI) ranged from 0.8 to 1.0, indicating clarity, relevance, and sufficiency all of the items.

All items were assessed using a 6-point Likert scale ranging from 1 (Strongly Disagree) to 6 (Strongly Agree). Likert's scale 6 points have a higher trend of discrimination and reliability than scale 5 points

Table 1. Correlation among variables.

Variables	Mean	SD	1	2	3	4	5	6	7	8
1. Age	2.825	0.110	1							
2. Education level	3.521	0.113	−0.318**	1						
3. Business scale	1.110	0.307	0.006	0.178**	1					
4. Business duration	3.071	10.250	0.486**	−0.178**	0.127**	1				
5. PC	4.158	0.552	0.046	0.018	0.053	0.125*	1			
6. TR	3.733	0.812	−0.263**	0.255**	0.018	−0.181**	0.165**	1		
7. EO	4.091	0.706	0.140**	−0.068	−0.055	0.119*	0.679**	0.069	1	
8. EFP	3.718	0.869	−0.084	0.175*	0.175**	−0.024	0.403**	0.289**	0.255**	1

Note. * $p < 0.05$; ** $p < 0.01$ (two-tailed).

PC: psychological capital; TR: technology readiness; EO: entrepreneurial orientation; EFP: entrepreneur financial performance. Age (years old) was coded as 1=20–25, 2=26–35, 3=36–45, 4=46–60, 5 = >60. Education level was coded as 1= primary school, 2=secondary school, 3=high school, 4=diploma, 5=bachelor. Business Scale was coded as 1= micro scale enterprise, 2=small scale enterprise, duration of business operation was coded 1=0–1 years, 2=1–3 years, 3=3–5 years, 4=5–10 years, 5=10–20 years, 6 = >20 years.

(Chang, 1994; Chomeya, 2010). High total scores indicate a perception of high levels of psychological capital. We performed a confirmatory factor analysis (CFA) to determine the factor structure of psychological capital measurement. To assess the suitability of the items for inclusion in the scale, we applied a cut-off criterion of 0.5. As a result of the confirmatory factor analysis, we identified 11 items that remained on the psychological capital scale: three items for Optimism, Self-efficacy, and Hope. The resilience dimension consisted of two items.

The factor loadings for all remaining items were deemed satisfactory, falling within the range of 0.64–0.76. These factor loadings indicated a reasonable association between the items and their respective subscales, supporting the validity of the scale for measuring psychological capital in our study.

We used the model fit cutoff criteria suggested using the maximum likelihood (ML) criteria of CFI, TLI, RNI, and RMSEA (Hu & Bentler, 1999). The CFA results and reliability analysis results are presented in Table 1. We can conclude a relatively good fit between the hypothesized model and observed data. We also calculated that the reliability of the PsyCap questionnaire was good ($\alpha=0.889$).

Technology readiness

We used The Technology Readiness Index (TRI) 2.0 (Parasuraman & Colby, 2015). The original TRI 2.0 consists of 16 items with four subscales: Optimism and Innovativeness as Motivator factors (8 items), Discomfort and Security as Inhibitor factors (8 items). We conducted content and construct validity analyses to evaluate the accuracy of the measurement tools in the Indonesian context.

Before evaluating content validity, we performed forward and backward translations of TRI 2.0. Furthermore, we made certain adjustments to the wording of the items to ensure their relevance to the context of women entrepreneurs. For example, we reworded ‘New technologies contribute to a better quality of life’ into ‘New technologies contribute to the enhancement of our business’. ‘I think that technology systems are not designed for use by ordinary people’ reworded to, ‘I think that technology systems are not designed for use by ordinary entrepreneur woman like me’. We used 5 Likert Scale (Strongly Agree – Strongly Disagree).

Content validity was assessed using the Content Validity Index (CVI). We employed a universal agreement approach among the three experts (Polit et al., 2007). Specifically, the scale-level content validity index (S-CVI) was determined, representing the proportion of items on the instrument that received a rating of 3 or 4 from all content experts. Three experts stated that the inhibitor dimension was unsuitable for women entrepreneurs in Indonesia. Parasuraman and Colby (2015) also stated that the limitations of the TRI 2.0 subscales related to inhibitor dimensions, namely discomfort and insecurity, demonstrate some weaknesses in specific psychometric criteria (Parasuraman & Colby, 2015).

Additionally, representing the conceptual core as a set of homogeneous attributes is challenging. Hence, we removed the inhibitor dimension from TRI 2.0, as it did not align with the respondents in Indonesia. We only used the motivator factor. The three experts provided a minor revision to the adapted TR 2.0 for the motivator factor. We also investigated the robustness of TRI 2.0, specifically for women entrepreneurs in Indonesia.

Additionally, the Item-Content Validity Index (I-CVI) was calculated for each item of the scale. Subsequently, the average I-CVI across all items was computed. The content validity of the TRI 2.0 is good. The I-CVI ranged 0.80 from 1.00. Furthermore, we evaluated construct validity using CFA with the cut-off criteria from Hu and Bentler (1999). We eliminated items with a negative loading factor or a factor below 0.4. Out of the initial eight items, only four remained after the analysis, as these four items exhibited good loading factors and acceptable cutoff criteria of fit indices (Table 1). The reliability of these measurements is acceptable ($\alpha=0.807$).

Entrepreneurial orientation

The instrument to measure women’s entrepreneurship orientation (EO) was the Individual Entrepreneurial Orientation Instrument (Santos et al., 2020). This entrepreneurial orientation not only enhances individual and collective economic outcomes but also reinforces the cycle of empowerment, as successful women

entrepreneurs become role models who inspire and mentor others, thereby perpetuating a culture of entrepreneurship among women (De Bruin et al., 2007; Soharwardi & Ahmad, 2020). The EO scale consisted of five distinct factors (10 items): 2 items for each subscale of innovativeness, risk-taking, proactiveness, passion, and perseverance. An example of items in innovativeness is 'I prefer, when I learn something new, to try to do it my way than to do it like everyone else does.' A sample item of risk-taking is 'I like to venture into the unknown and make risky decisions.' A sample item of proactiveness, passion, and perseverance is 'I usually act in anticipation of future problems, needs, or changes', 'I have a passion for envisioning, growing, and expanding my business', 'I always finish what I start', respectively. A five-point Likert scale was used in this study. The item content validity index (I-CVI) ranged from 0.8 to 1.0, indicating clarity, relevance, and sufficiency in all of the items.

We adapted the EO scale to the context of women in Indonesia. All eight items were loaded reasonably well, ranging from 0.60 to 0.80 (1 item for Risk-Taking, 2 items for innovativeness, 2 items for passion, 2 items for proactiveness, 1 item for perseverance). The EO model fit indices were determined using the multi-likelihood method with the cut-off criteria from Hu and Bentler (1999). From Table 1, we can conclude that EO is a good fit model. We also checked the reliability coefficient in the present sample and showed that EO had good reliability ($\alpha=0.893$).

Entrepreneurial financial performance

The absence of annual reports and complete financial statements from SMEs necessitated the development of an Entrepreneurial Financial Performance (EFP) questionnaire. Due to the respect for each business's financial confidentiality, we prefer using self-reported over objective measurement. Self-reported is simpler yet serves as an effective tool for evaluating organizational performance and identifying areas for improvement from the perspective of the business owner (Ahmed et al., 2003). We use self-reported measurement from (Ahmad & Jamil, 2020). The questionnaire on financial performance consisted of three factors (profit, sales, and cash flow). Each factor consisted of 2 items. The example statements of financial performance include 'profit for this month is higher than last month', 'sales for this year are higher than the last year', 'for this year, the actual cash income is higher than budgeted cash income', sequentially. A six-point Likert scale ranging from 1 to 6 (Strongly Disagree – Strongly Agree) was used.

Confirmatory Factor Analysis (CFA) was used to establish construct validity based on internal structure, with the cut-off criteria from Hu and Bentler (1999). The findings revealed that all six items exhibited strong factor loadings ranging from 0.51 to 0.87, indicating a good fit for the Entrepreneurial performance model, as demonstrated by the acceptable fit indices in Table 1. Moreover, the reliability coefficient ($\alpha=0.863$) also showed satisfactory internal consistency.

Statistical analysis

Calculations were performed to determine the mean scores, standard deviations, scale reliabilities (measured using Cronbach's alpha), and Pearson's correlations for all variables. A Confirmatory Factor Analysis (CFA) was conducted to establish evidence-based internal structure validity for each construct. Pearson correlation is used as the evidence based on relation to other variables. The reliability of all the instruments was estimated using Cronbach's alpha. Additionally, Alpha is accompanied by a 95% confidence interval (CI), which provides a range of highly probable values of reliability in the population.

Results

Table 2 displays the demographics of the respondents. The majority of the study's sample fell within the 26–60years age range (81.09%), signifying a predominantly productive working age. The general educational level of respondents was high school (44.13%), and the scale of business was mostly categorized as Micro Scale (88.91%). The Duration of Business Operation was typically 1–10years (90.65%). Table 2 indicates a notable trend of respondents commencing entrepreneurial ventures later in life. Specifically, a significant portion of respondents, 25.98%, reported that the duration of their businesses ranged between 3 to 5 years.

Table 2. Demographic of respondent.

Variable	Category	Percentage (%)
Age (years old)	20–25	16.74
	26–35	23.70
	36–45	31.96
	46–60	25.43
	>60	2.17
Education level	Elementary school	3.37
	Secondary school	7.83
	High school	44.13
	Diploma	12.17
	Bachelor	32.50
Scale of business	Micro	88.91
	Small	11.09
Duration of business operation (years)	0–1	9.35
	1–3	28.91
	3–5	25.98
	5–10	20.98
	10–20	14.67
	>20	0.11

Table 1 explains the correlation among variables. According to the statistical analysis outcomes, it was determined that there exists a correlation between Psychological Capital and Business Duration. It was observed that respondents with higher levels of Psychological Capital tend to have longer operational durations for their businesses. This finding aligns with existing research suggesting that individuals with elevated psychological capital exhibit greater engagement in their work, consequently leading to extended durations of business operation (APA, 2023; Loghman et al., 2023).

Technological Readiness is related to the age and education level of respondents, where younger respondents show a younger generation that is more receptive to technology. Conversely, at the education level, a higher educational level indicates greater technological readiness. Enhancing the nation's capabilities through education and technological proficiency has the potential to boost productivity and competitiveness. Nevertheless, our research indicates that female entrepreneurs in transformation economies are still falling behind and encountering significant obstacles in terms of technological preparation. This aligns with a study undertaken in the United Arab Emirates on the level of preparedness in technology for global competitiveness (Abdalla Alfaki & Ahmed, 2013).

From the perspective of Entrepreneurial Orientation, it is known that age and business duration also have a correlation. A more mature age and a longer duration of business indicate a stronger entrepreneurial orientation. Meanwhile, regarding Entrepreneurial Financial Performance, it was found that education level and business scale correlate with performance, so the higher the education and the larger the scale of the business, the higher the entrepreneurial financial performance obtained. This shows that the more mature and long time involved in the field of entrepreneurship, the higher one's entrepreneurial orientation becomes. This aligns with research conducted through meta-analysis on female entrepreneurs, which suggests that enhancing the women entrepreneurship ecosystem can promote economic empowerment by fostering innovation in conjunction with the advancement of digitalization through digital technology. Additionally, improving the education system and employment practices can maximize the potential of female entrepreneurs, leading to positive outcomes such as job creation and increased welfare (Rusydiana & Izza, 2022).

In **Table 3**, the data reveals that all the instruments—Psychological Capital, Technological Readiness, Entrepreneurial Orientation, and Entrepreneurial performance—have high reliability as the measured Cronbach's alpha scores are above 0.8, and the index of fit for each instrument is also good. The RMSEA, SRMR, TLI, CFI, and RNI were calculated to evaluate the goodness of fit of the different models for all variables.

As shown in **Table 4**, each factor exhibits a certain level of differential validity. Moreover, the confirmatory component analysis results for the four variables demonstrate that the four-factor model outperforms the alternative models (as presented in **Table 4**). These findings suggest that the four factors are independent of one another and display a high degree of discriminative validity. Structural Equation Modeling (SEM) using JASP version 0.17 was employed to test the hypotheses in the study.

Table 3. Result of reliability and validity.

Variables	Item	Loading factor	Cronbach α	Index of fit					
				χ^2/df	RMSEA	SRMR	TLI	CFI	RNI
Psychological capital	PC 1	0.62	0.889	252.493/40	0.076	0.037	0.926	0.947	0.947
	PC 2	0.62							
	PC 3	0.66							
	PC 4	0.69							
	PC 5	0.72							
	PC 6	0.62							
	PC 7	0.69							
	PC 8	0.72							
	PC 9	0.66							
	PC 10	0.67							
	PC 11	0.64							
Technology readiness	TR 1	0.83	0.807	58.086/1	0.074	0.039	0.967	0.961	0.961
	TR 2	0.87							
	TR 3	0.54							
	TR 4	0.69							
Entrepreneurial orientation	EO 1	0.62	0.893	191.132/ 30	0.096	0.034	0.952	0.932	0.932
	EO 2	0.66							
	EO 3	0.66							
	EO 4	0.68							
	EO 5	0.65							
	EO 6	0.62							
	EO 7	0.73							
	EO 8	0.65							
Entrepreneurial financial performance	EFP 1	0.75	0.850	69.828/8	0.092	0.025	0.955	0.976	0.976
	EFP 2	0.84							
	EFP 3	0.91							
	EFP 4	0.77							
	EFP 5	0.66							
	EFP 6	0.51							

Table 4. Confirmatory factor analysis.

Models factor	χ^2/df	RMSEA	SRMR	TLI	CFI	RNI
One factor model (PC+TR+EO+EFP)	4268.738/324	0.134	0.123	0.546	0.581	0.546
Two factor model (PC+TR, EO+EFP)	3625.799/323	0.123	0.121	0.619	0.649	0.649
Three-factor model (PC, TR, EO+EFP)	2759.057/321	0.106	0.106	0.717	0.741	0.741
Four-factor model (PC, TR, EO, EFP)	1461.007/361	0.063	0.051	0.898	0.908	0.908

Notes: PC: psychological capital; EO: entrepreneurial orientation; TR: technology readiness; EFP: entrepreneur financial performance.

Path analysis

The model structure was analyzed using SEM to determine the effects of psychological capital, Technology Readiness, and entrepreneurial orientation on entrepreneurial financial performance. The results are shown in Figure 2.

Table 5 summarizes the results of the path analysis. This indicates that Psychological Capital significantly contributes to entrepreneurial orientation and financial performance. Hence, H1 ($\beta=0.992$) and H4 ($\beta=0.488$) were supported. Technology Readiness also has a significant impact on Entrepreneurial Orientation and financial performance. Thus, H2 ($\beta=0.067$) and H5 ($\beta=0.113$) are supported. The interaction effect of technological readiness and psychological capital significantly impacts entrepreneurial financial performance (H6 is supported, $\beta=0.073$). In contrast, the interaction effect does not significantly contribute to entrepreneurial orientation and financial performance (H3 not supported, $\beta=0.002$).

Moderated mediation analysis

Table 6 indicates that Technology Readiness did not mediate the effect of psychological capital on entrepreneurial financial performance through entrepreneurial orientation ($\beta=-0.00026$). Thus, Hypothesis 8 was not supported. The indirect impact on entrepreneurial financial performance through entrepreneurial orientation was not significant across varying levels of Technology Readiness: low, moderate, and high ($p < 0.001$).

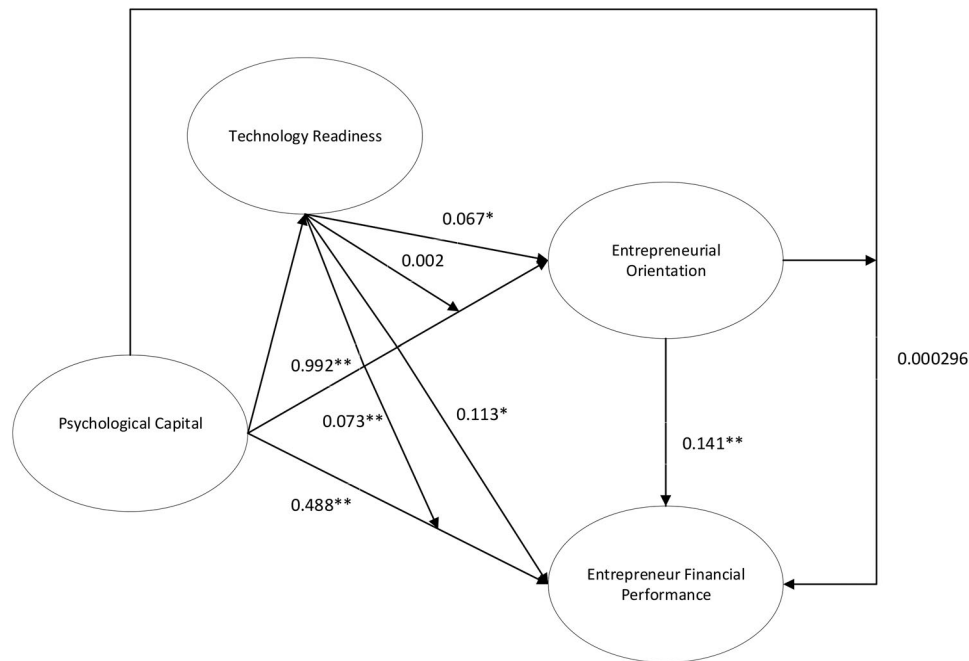


Figure 2. SEM result (Note: * $p < 0.05$; *** $p < 0.001$).

Table 5. Result of path analysis.

Path	Estimate	Std. Error	z-Value	p-Value	Conclusion
PC → EO	0.992	0.082	12.164	<0.001	H1 supported
TR → EO	0.067	0.031	2.168	0.030	H2 supported
INT1 → EO	0.002	0.005	0.336	0.737	H3 not supported
PC → EFP	0.488	0.103	4.730	<0.001	H4 supported
TR → EFP	0.113	0.043	2.608	0.009	H5 supported
INT1 → EFP	0.073	0.007	10.310	<0.001	H6 supported
EO → EFP	0.141	0.072	1.967	0.049	H7 supported

Notes: PC: psychological capital; EO: entrepreneurial orientation; TR: technology readiness; EFP: entrepreneur financial performance; INT 1: interaction effect of PC and TR.

Table 6. Index of moderated mediation effect.

Independent variable	Mediator	Dependent variable	Moderator	Estimate	Std. error	z-Value	p-Value
PC	EO	EFP	TR IMM 1	-2.296×10^{-4}	6.940×10^{-4}	-0.331	0.741
			Low	-0.141	0.072	-1.949	0.051
			Moderate	-0.141	0.072	-1.949	0.051
			High	-0.141	0.073	-1.948	0.051

Notes: PC: psychological capital; EO: entrepreneurial orientation; TR: technology readiness; EFP: entrepreneur financial performance; IMM: index moderated mediation.

Discussion

Our study's findings offer substantial insights into the entrepreneurial mechanisms among Indonesian women's MSME actors. Our hypotheses H1, H2, and H4–H8 are supported. Given the circumstances in Indonesia, including the need for gender equality, the need to enhance the Indonesian economy, and the presence of rules promoting micro, small, and medium-sized enterprises (MSMEs), this has prompted study on this subject. The results of this study indicate that cultivating and advancing psychological capital, together with encouraging technological preparedness, may greatly improve the success of women in entrepreneurship. Moreover, these findings highlight the interdependence between psychological elements and the willingness to use technology in entrepreneurship.

Social Cognitive Theory provides insights into the social learning process and the role of cognitive and behavioral factors in shaping entrepreneurial behavior (Srinath & Supriya, 2009). This study highlights that psychological capital positively impacts entrepreneurial orientation and entrepreneur financial

performance (H1, H4). This indicates that individuals with higher levels of psychological capital tend to have a positive mindset and attitude essential for entrepreneurial endeavors (de Lima et al., 2020; Elsafty et al., 2020). Entrepreneurial orientation embodies multiple facets, including innovativeness, risk-taking, proactiveness, passion, and perseverance, which are essential, as they encapsulate the fundamental attitudes and behaviors that propel entrepreneurial efforts. Proactiveness, for instance, involves seeking new opportunities beyond current operations, launching new products or services before competitors, and strategically exiting maturing or declining business areas (Chabaud & Sattin, 2019).

To develop strategic actions for a business, a woman should have high motivation as a driving force. Optimism distinguishes successful entrepreneurs from those who are less successful (Lindblom et al., 2020). With strong capabilities, even in difficult situations, entrepreneurs are more likely to think about solutions and strategies (Bernard & Dubard Barbosa, 2016; Bullough et al., 2014), maintain their hope, have a strong belief that there is always a better way to handle difficulties, and trust that hard times will pass by taking even small steps to keep moving forward (Bullough et al., 2014; McGee & Terry, 2022; Renko et al., 2021; Sharma & Rautela, 2022). The positive and strong drive of woman entrepreneurs can enhance firm performance (Gao et al., 2020) by opening opportunities for a broader market, increasing product sales, and ultimately achieving higher profits. According to Social Cognitive Theory, self-efficacy plays a crucial role in how individuals approach goals and challenges (Bandura, 2013). Our findings that higher self-efficacy is associated with better entrepreneurial performance support SCT's assertion that individuals with strong self-belief are more likely to take on and persist in challenging tasks, leading to higher performance outcomes.

Our second hypothesis (H2, H5) proved that technology readiness significantly influences entrepreneurial orientation and financial performance. Technology readiness refers to an individual's preparedness and openness to adopt and utilize new technologies. This implies that more technologically ready individuals are likely to embrace innovation and implement technological advancement in their entrepreneurial ventures. The readiness to adopt technology allows entrepreneurs to modernize their businesses. It facilitates the generation of ideas, innovation, and creativity, which in turn leads to strategic actions for business development. This includes orienting the business towards digitalization, employing technology-based marketing strategies, and developing suitable products.

Female entrepreneurs who exhibit a higher level of readiness to embrace and employ technology generally achieve superior performance (Hossain, 2024; Jafari-Sadeghi et al., 2021), supporting the findings from Hypothesis 5 (H5). The Technology Acceptance Model (TAM) supports the idea that readiness and positive attitudes toward technology improve performance outcomes (Davis, 1989; Ritz et al., 2019). Emerging digital technologies offer the potential for female entrepreneurs to surmount obstacles in establishing and managing new business endeavors (Ughetto et al., 2020). Technological advancement can benefit women entrepreneurs, allowing them to broaden their pursuits, generate prospects for further growth, and be more likely to attain heightened levels of entrepreneurial performance. Technology acts as both a pull and push mechanism, enabling MSMEs to reach a certain level of performance (Astuti et al., 2020).

We also found that technology readiness moderates the relationship between psychological capital and financial performance (H6). This finding indicates that when individuals possess strong psychological capabilities, their readiness to use technology in business can positively impact entrepreneurial profits. Generally, individuals with high technology readiness scores are adept, enthusiastic, and comfortable with innovative technologies, and they are less likely to face technical challenges (Daud et al., 2022; Parasuraman & Colby, 2015; Scuotto et al., 2019; Wang et al., 2016).

However, it is important to note that the interaction between psychological capital and technology readiness does not contribute significantly to entrepreneurial orientation (H3). Technology readiness also failed to moderate the mediation of entrepreneurial orientation to psychological capital and financial performance (H8). This suggests that while psychological capital and technology readiness partially influence entrepreneurial orientation, their combined effect is insignificant. It is essential to acknowledge that the capabilities of the individual as an entrepreneur play a stronger role in entrepreneurial success compared with technology readiness. Readiness does not always play a significant part, conversely, the more important things are skill, the ability to employ technology or digital skills in their business (Audrey et al., 2023; Daud et al., 2022; Jafari-Sadeghi et al., 2021; Porter, 1985; Teng et al., 2022). In terms of

technology usage, the more critical aspect is understanding how to integrate technological innovations into the business strategy and effectively incorporate distinctive technological features, strategies, and actions beyond just readiness alone. This suggests that while technology readiness is important, the more critical aspect is the capability of the individuals running the business.

In the context of Indonesia, many MSMEs, especially those in rural areas or those engaged in traditional sectors, have limited access to technology and adequate digital skills (Muljono et al., 2021). Furthermore, a lack of financial literacy and low trust in digital platforms can also hinder the use of technology to improve business orientation to performance. Therefore, more comprehensive efforts are needed to improve technology readiness among MSMEs, including digital skills training, providing affordable technological infrastructure, and building trust in the digital ecosystem.

The significance of the MSME matter was assessed at the People's Representative Council of the Republic of Indonesia, which provided an analysis of the challenges faced by MSMEs in the digital market, they stated that the individuals responsible for MSMEs have constraints in their ability to get digital tools and gain digital literacy skills. Furthermore, in terms of manufacturing, the limited ability of MSMEs to meet product requirements sometimes hinders their efforts to expand into the digital-based export market. Regulations and cross-border business procedures that are complex, expensive, and time-consuming hinder economic digital activity for MSMEs. Furthermore, MSMEs must address a multitude of challenges, such as innovation and technology, digital literacy, productivity enhancement, legal compliance and licensing, financial management, branding and marketing, human resource management, adherence to standards and certification, efficient construction deployment, training and infrastructure, and the establishment of a unified database (Lisnawati, 2023).

Conclusion

The study aimed to investigate the correlation between psychological capital as a personal element, technological readiness as an environmental factor, entrepreneurial orientation, and financial performance among women entrepreneurs. The results demonstrate that psychological capital significantly influences both entrepreneurial orientation and financial performance. Conversely, technology readiness independently influences psychological capital and entrepreneurial financial performance. According to the Social Cognitive Theory, elevated Technology Readiness enables individuals with substantial Psychological Capital to recognize and exploit opportunities, acquire market information, and operate their firms effectively. Nonetheless, technology readiness has no substantial influence when acting as a moderator in the links between psychological capital and entrepreneurial orientation, as well as between entrepreneurial orientation and financial performance. Psychological capital is the most significant personal factor influencing women entrepreneurs' business orientation and their attainment of greater financial success. Collaboration with appropriate stakeholders is essential to formulate or assess regulations that more effectively promote the development of women-led SMEs.

Theoretical contributions

The interaction of personal capabilities and technological factors is becoming an increasingly important aspect of research on women's entrepreneurship. This study contributes to expanding the theoretical model of Social Cognitive Theory (SCT) in entrepreneurship. This research model demonstrates how psychological capital and technology readiness influence women's entrepreneurial orientation and how these three aspects collectively contribute to entrepreneurial financial performance, particularly among women entrepreneurs in developing countries. Entrepreneurial orientation is a significant aspect of this model as it highlights the strategies women use to run their business activities, emphasizing innovation, creativity, risk-taking, passion, and perseverance. In addition to personal capacities such as self-efficacy, resilience, hope, and optimism, we identified that technology readiness plays a significant and direct role in shaping business orientation strategies and increasing the profitability of women-owned businesses. This study offered a more comprehensive theoretical structure for future studies on entrepreneurship and the development of entrepreneurship theory.

Practical implications

This research holds significant practical implications for women's entrepreneurship. Firstly, it indicates that the psychological capital of female entrepreneurs outweighs technology readiness as a pivotal factor in enhancing their financial performance. Our study suggests that training programs for women entrepreneurs should focus not only on enhancing technical skills and technology readiness but also on developing PsyCap components such as self-efficacy, resilience, optimism, and hope. These programs can help women entrepreneurs better navigate challenges and improve their business performance.

Government policies emphasizing 'Go-Digital' for SMEs may be less effective when they do not increase entrepreneurs' personal capacity simultaneously. It is recommended that governance focus more on capacity building for SME entrepreneurs to improve their entrepreneurial mentality, particularly their psychological capital. Coordination with relevant stakeholders is needed to develop or review regulations that better support the development of women-led SMEs. Organizations that support women entrepreneurs, such as business incubators, NGOs, and financial institutions, can use our findings to design more effective support mechanisms. For example, integrating psychological support and technology training into their programs can address the multifaceted needs of women entrepreneurs.

Limitation & future research

This study elucidated the psychological mechanisms linking the psychological capacity of women-owned SMEs, technology readiness, entrepreneurial orientation, and financial performance based on social cognitive theory, using a cross-sectional approach. Analyzing entrepreneurial performance progression over multiple periods could provide detailed insights into performance enhancement and further test the robustness of the conclusions with longitudinal data. In this study, we were unable to obtain supporting quantitative data on the financial performance of women entrepreneurs. For future research, if such data can be obtained, the indicator of entrepreneurial financial performance may be more comprehensive using objective measurements such as quantitative data on profit, sales, and cash flow. In Indonesia, we know that discrepancies in digital technology usage still exist. Some areas have integrated technology into their businesses to varying degrees of proficiency, while others are not yet ready. Therefore, future research should consider the levels of technology mastery, skill, and implementation to provide a more comprehensive understanding of how technology impacts the performance of women-owned businesses. When the business analyzed is sustained over a period of time, future research should also include non-financial performance as an indicator of entrepreneurial success, alongside financial performance. These non-financial indicators could include employee conditions, valued customers, and product development.

Ethical approval

The current study has been reviewed and approved by the Institutional Review Board (IRB) of Universitas Padjadjaran, approval number 00013495, and holds a Federal Wide Assurance (FWA) with the number 00018324. The Research Ethics Committee of Universitas Padjadjaran has assigned the number 4/UN6. KEP/EC/2023 to this study. All participants have provided written informed consent to participate in this study.

Author contributions

ALK: conceptualization and design, writing-original draft preparation, funding acquisition, investigation, resources, writing review, and editing. RAS: methodology, statistical analysis, interpretation of the data, validation & visualization and writing draft. All authors contributed to the article and approved the submitted version.

Disclosure statement

No potential conflict of interest was reported by the author(s).

Funding

This research was supported by the Indonesian Ministry of Education, Culture, Research and Technology [Grant No. 1318/UN6.3.1/PT.00/2022].

About the authors

Anissa Lestari Kadiyono is a lecturer at the Faculty of Psychology, Universitas Padjadjaran, Indonesia. She completed her doctoral degree from Universitas Padjadjaran in Indonesia. She is a psychologist, HR consultant, trainer, lecturer, and researcher. Furthermore, she is also the head of the West Java Region at the Indonesian Industrial & Organizational Psychology Association (APIO) and the head of the continuing education compartment at the Indonesian Psychological Association (Himpunan Psikologi Indonesia). Her research interests include entrepreneurship, business psychology, gender, and the improvement of human capital.

Rezki Ashriyana Sulistiobudi is a lecturer and researcher at the Faculty of Psychology, Universitas Padjadjaran, Indonesia. Under the Study Center of Human Capital and Organizational Development, she is actively engaged in research on workplace, employability, and employee well-being. She also fosters collaboration between the government and institutions to implement research in industrial and organizational practices.

ORCID

Anissa Lestari Kadiyono  <http://orcid.org/0000-0001-6134-6847>

Rezki Ashriyana Sulistiobudi  <http://orcid.org/0000-0002-6774-0973>

Data availability statement

The data supporting the findings of this study are available from the corresponding author (Anissa Lestari Kadiyono) upon reasonable request.

References

- Abdalla Alfaki, I. M., & Ahmed, A. (2013). Technological readiness in the United Arab Emirates towards global competitiveness. *World Journal of Entrepreneurship, Management and Sustainable Development*, 9(1), 4–13. <https://doi.org/10.1108/20425961311315683>
- Abdullah Alnemer, H. (2021). Predicting start-up intention among the females of Saudi Arabia using social cognitive theory. *World Journal of Entrepreneurship, Management and Sustainable Development*, 17(4), 889–906. <https://doi.org/10.1108/WJEMSD-05-2021-0085>
- Ahmad, N. N., & Jamil, N. N. (2020). Measuring the financial and nonfinancial performance of micro-enterprise in Pahang, Malaysia. *International Journal of Academic Research in Business and Social Sciences*, 10(10), 706–717. <https://doi.org/10.6007/IJARBS/v10-i10/8004>
- Ahmed, A. M., Yang, J. B., & Dale, B. G. (2003). Self-assessment methodology: The route to business excellence. *Quality Management Journal*, 10(1), 43–57. <https://doi.org/10.1080/10686967.2003.11919052>
- Alheet, A. F. (2019). Investigating the relationship between entrepreneurial activity and economic growth: A case of Middle East. *Entrepreneurship and Sustainability Issues*, 7(2), 1036–1047. [https://doi.org/10.9770/jesi.2019.7.2\(17\)](https://doi.org/10.9770/jesi.2019.7.2(17))
- Al-Mamary, Y. H., Alwaheeb, M. A., Alishammri, N. G. M., Abdulrab, M., Balhareth, H., & Soltane, B. (2020). The effect of entrepreneurial orientation on financial and non financial performance in Saudi SME'S : A review. *Journal of Critical Reviews*, 7(14), 270–278. <https://doi.org/10.31838/jcr.07.14.35>
- Altinay, L., Kromidha, E., Nurmagambetova, A., Alrawadieh, Z., & Madanoglu, G. K. (2022). A social cognition perspective on entrepreneurial personality traits and intentions to start a business: Does creativity matter? *Management Decision*, 60(6), 1606–1625. <https://doi.org/10.1108/MD-12-2020-1592>
- Amaral, L. A. N., Moreira, J. A., Dunand, M. L., Tejedor Navarro, H., & Lee, H. A. (2020). Long-term patterns of gender imbalance in an industry without ability or level of interest differences. *PloS One*, 15(4), e0229662. <https://doi.org/10.1371/journal.pone.0229662>
- American Psychological Association. (2002). Ethical principles of psychologists and code of conduct. *American Psychologist*, 57(12), 1060–1073. <https://doi.org/10.1037/0003-066X.57.12.1060>
- APA. (2023). *Psychological capital: What it is and why employers need it now*. American Psychological Association. <https://www.apa.org/topics/healthy-workplaces/psychological-capital>.
- Astuti, E. S., Sanawiri, B., & Iqbal, M. (2020). Attributes of innovation, digital technology and their impact on SME performance in Indonesia. *International Journal of Entrepreneurship*, 24(1), 1–14. <https://doi.org/10.6084/m9.figshare.12228692>

- Audrey, K., Sinaga, S., Irene, J., & Christanti, R. (2023). Digital adoption and financial performance: Evidence from Indonesian SMES in food and beverage sector. *Return: Study of Management, Economic and Bussines*, 2(4), 423–434. <https://return.publikasikupublisher.com/index.php/return/index> <https://doi.org/10.57096/return.v2i04.94>
- Bacq, S., Ofstein, L. F., Kickul, J. R., & Gundry, L. K. (2017). Perceived entrepreneurial munificence and entrepreneurial intentions: A social cognitive perspective. *International Small Business Journal: Researching Entrepreneurship*, 35(5), 639–659. <https://doi.org/10.1177/0266242616658943>
- Balachandra, L. (2020). How gender biases drive venture capital decision-making: Exploring the gender funding gap. *Gender in Management: An International Journal*, 35(3), 261–273. <https://doi.org/10.1108/GM-11-2019-0222>
- Bandura, A. (1988). Organisational applications of social cognitive theory. *Australian Journal of Management*, 13(2), 275–302. <https://doi.org/10.1177/031289628801300210>
- Bandura, A. (1991). Social cognitive theory of self-regulation. *Organizational Behavior and Human Decision Processes*, 50(2), 248–287. [https://doi.org/10.1016/0749-5978\(91\)90022-L](https://doi.org/10.1016/0749-5978(91)90022-L)
- Bandura, A. (2013). Health promotion from the perspective of social cognitive theory. In *Understanding and changing health behaviour* (pp. 299–339). Psychology Press.
- Bayumi, M. R., Jaya, R. A., & Shalihah, B. M. (2022). Kontribusi Peran Perempuan dalam Membangun Perekonomian sebagai Penguatan Kesetaraan Gender di Indonesia. *Al Huwiyah: Journal of Woman and Children Studies*, 2(2). <https://doi.org/10.24042/jwcs.v2i2.14317>
- Bernard, M.-J., & Dubard Barbosa, S. (2016). Resilience and entrepreneurship: A dynamic and biographical approach to the entrepreneurial act. *M@n@Gement M@n@Gement*, 19(2), 89–123.
- Bolton, D. L., & Lane, M. D. (2012). Individual entrepreneurial orientation: Development of a measurement instrument. *Education + Training*, 54(2/3), 219–233. <https://doi.org/10.1108/00400911211210314>
- Bullough, A., Renko, M., & Myatt, T. (2014). Danger zone entrepreneurs: The importance of resilience and self-efficacy for entrepreneurial intentions. *Entrepreneurship Theory and Practice*, 38(3), 473–499. <https://doi.org/10.1111/etap.12006>
- Bulsara, H. P., Chandwani, J., & Gandhi, S. (2014). Women entrepreneurship and innovations in India: An exploratory study. *International Journal of Innovation*, 2(1), 32–44. <https://doi.org/10.5585/iji.v2i1.2>
- Cardella, G. M., Hernández-Sánchez, B. R., & Sánchez-García, J. C. (2020). Women Entrepreneurship: A systematic review to outline the boundaries of scientific literature. *Frontiers in Psychology*, 11, 1557. <https://doi.org/10.3389/fpsyg.2020.01557>
- Cassar, G. (2008). *Are individuals entering self-employment overly-optimistic? An empirical test of plans and projections on nascent entrepreneur expectations** (Vol. 898, Issue 215). <http://ssrn.com/abstract=945206> <http://ssrn.com/abstract=945206>
- Chabaud, D., & Sattin, J. F. (2019). Back to the roots! Testing Miller's entrepreneurial orientation construct using Sono-Leontief conditions. *Journal of Business Venturing Insights*, 11, e00113. <https://doi.org/10.1016/j.jbvi.2019.e00113>
- Chang, L. (1994). A psychometric evaluation of 4-point and 6-point likert-type scales in relation to reliability and validity. *Applied Psychological Measurement*, 18(3), 205–215. <https://doi.org/10.1177/014662169401800302>
- Chomeya, R. (2010). Quality of psychology test between likert scale 5 and 6 points. *Journal of Social Sciences*, 6(3), 399–403. <https://doi.org/10.3844/jssp.2010.399.403>
- Dann, S., Russell-Bennett, R., Drennan, J., & Dann, S. (2006). Female entrepreneurship in Australia: Revisited. In *ANZMAC 2006 Conference Proceedings* (pp. 1–7). Australian and New Zealand Marketing Academy.
- Daud, I., Nurjannah, D., Mohyi, A., Ambarwati, T., Cahyono, Y., Haryoko, A. D. E., Handoko, A. L., Putra, R. S., Wijoyo, H., Ari-Yanto, A., & Jihadi, M. (2022). The effect of digital marketing, digital finance and digital payment on finance performance of Indonesian SMES. *International Journal of Data and Network Science*, 6(1), 37–44. <https://doi.org/10.5267/j.ijdns.2021.10.006>
- Davis, F. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 13(3), 319. <https://doi.org/10.36863/mds.a.14027>
- De Bruin, A., Brush, C. G., & Welter, F. (2007). Advancing a framework for coherent research on women's entrepreneurship. *Entrepreneurship Theory and Practice*, 31(3), 323–339. <https://doi.org/10.1111/j.1540-6520.2007.00176.x>
- de Lima, L. G., Nassif, V. M. J., & Garçon, M. M. (2020). The power of psychological capital: The strength of beliefs in entrepreneurial behavior. *Revista de Administracao Contemporanea*, 24(4), 317–334. <https://doi.org/10.1590/1982-7849rac2020180226>
- Digan, S. P., Sahi, G. K., Mantok, S., & Patel, P. C. (2019). women's perceived empowerment in entrepreneurial efforts: The role of bricolage and psychological capital. *Journal of Small Business Management*, 57(1), 206–229. <https://doi.org/10.1111/jsbm.12402>
- DPR. (2022). *UMKM Tulang Punggung Perekonomian Nasional*. DPR RI. <https://www.dpr.go.id/berita/detail/id/42324/t/UMKM+Tulang+Punggung+Perekonomian+Nasional>
- Elsafty, A., Abadir, D., & Shaarawy, A. (2020). How does the entrepreneurs' financial, human, social and psychological capitals impact entrepreneur's success? *Business and Management Studies*, 6(3), 55. <https://doi.org/10.11114/bms.v6i3.4980>
- Ephrem, A. N., Nguetzet, P. M. D., Charmant, I. K., Murimbika, M., Awotide, B. A., Tahirou, A., Lydie, M. N., & Manyong, V. (2021). Entrepreneurial motivation, psychological capital, and business success of young entrepreneurs in the DRC. *Sustainability*, 13(8), 4087. <https://doi.org/10.3390/su13084087>

- Finch, W. H. (2012). Distribution of variables by method of outlier detection. *Frontiers in Psychology*, 3(JUL), 211. <https://doi.org/10.3389/fpsyg.2012.00211>
- Fitriati, T. K., Purwana, D., Buchdadi, A. D., & Subagja, I. K. (2020). Entrepreneurial orientation and Sme performance: dynamic capabilities as mediation study on Smes in Indonesia. *KnE Social Sciences*, 74-89. <https://doi.org/10.18502/kss.v4i14.7860>
- Forshee, J. (2006). *Culture and customs of Indonesia*. Greenwood Press.
- Gao, Q., Wu, C., Wang, L., & Zhao, X. (2020). The entrepreneur's psychological capital, creative innovation behavior, and enterprise performance. *Frontiers in Psychology*, 11, 1651. <https://doi.org/10.3389/fpsyg.2020.01651>
- Geiger, M. (2020). A meta-analysis of the gender gap (s) in venture funding: Funder-and entrepreneur-driven perspectives. *Journal of Business Venturing Insights*, 13, e00167. <https://doi.org/10.1016/j.jbvi.2020.e00167>
- Goodwin, L., & Leech, N. (2003). The meaning of validity in the new stand.pdf. *Measurement and Evaluation in Counseling and Development*, 36(3), 181-191. <https://doi.org/10.1080/07481756.2003.11909741>
- Govindaraju, V. (2021). A review of social cognitive theory from the perspective of interpersonal communication. *Multicultural Education*, 7(12), 488-492.
- Guadagnoli, E., & Velicer, W. F. (1988). Relation of sample size to the stability of component patterns. *Psychological Bulletin*, 103(2), 265-275. <https://doi.org/10.1037/0033-2909.103.2.265>
- Guzman, J., & Kacperczyk, A. O. (2019). Gender gap in entrepreneurship. *Research Policy*, 48(7), 1666-1680. <https://doi.org/10.1016/j.respol.2019.03.012>
- Hofstede, G. (2011). Dimensionalizing cultures: The Hofstede model in context. *Online Readings in Psychology and Culture*, 2(1), 8. <https://doi.org/10.9707/2307-0919.1014>
- Hossain, S. (2024). The constraints and obstacles of social media entrepreneurship powered by AI. In *Cases on social media and entrepreneurship* (pp. 213-227). IGI Global.
- Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling*, 6(1), 1-55. <https://doi.org/10.1080/10705519909540118>
- Huang, Y., Li, P., Wang, J., & Li, K. (2022). Innovativeness and entrepreneurial performance of female entrepreneurs. *Journal of Innovation & Knowledge*, 7(4), 100257. <https://doi.org/10.1016/j.jik.2022.100257>
- Indonesia Central Bureau of Statistics. (2023). Perempuan dan Laki-laki 2023 di Indonesia. Badan Pusat Statistik (vol. 14, pp. 1-70). <https://www.bps.go.id/id/publication/2023/12/22/e5942bdd51b158776ee5eabf/perempuan-dan-laki-laki-di-indonesia-2023.html>
- Indonesian Ministry of Finance. (2020). *Pemulihan Ekonomi Nasional mulai dari UMKM*. <https://www.djkn.kemenkeu.go.id/kanwil-sumut/baca-artikel/13495/Pemulihan-Ekonomi-Nasional-Dimulai-dari-UMKM.html>
- Indonesian Ministry of Finance. (2021). *UMKM Hebat, Perekonomian Indonesia Meningkatkan*. <https://djpb.kemenkeu.go.id/portal/id/berita/lainnya/opini/4133-umkm-hebat-perekonomian-nasional-meningkat.html>
- Indonesian Ministry of Finance. (2021). *UMKM Hebat, Perekonomian Indonesia Meningkatkan*, Published. Retrieved from <https://djpb.kemenkeu.go.id/portal/id/berita/lainnya/opini/4133-umkm-hebat-perekonomian-nasional-meningkat.html>
- Indonesian Ministry of Finance. (2023). *UMKM Hebat, Perekonomian Indonesia Meningkatkan*, Published. Retrieved from <https://djpb.kemenkeu.go.id/portal/id/berita/lainnya/opini/4133-umkm-hebat-perekonomian-nasional-meningkat.html>
- Ingalagi, S. S., Nawaz, N., Rahiman, H. U., Hariharasudan, A., & Hundekar, V. (2021). Unveiling the crucial factors of women entrepreneurship in the 21st century. *Social Sciences*, 10(5), 153. <https://doi.org/10.3390/socsci10050153>
- Jabbari, J., Zheng, H., Roll, S., Auguste, D., & Heller, O. (2024). How did reskilling during the COVID-19 pandemic relate to entrepreneurship and optimism? Barriers, opportunities, and implications for equity. *Journal of Family and Economic Issues*, 45(2), 410-429. <https://doi.org/10.1007/s10834-023-09906-y>
- Jafari-Sadeghi, V., Garcia-Perez, A., Candelero, E., & Couturier, J. (2021). Exploring the impact of digital transformation on technology entrepreneurship and technological market expansion: The role of technology readiness, exploration and exploitation. *Journal of Business Research*, 124, 100-111. <https://doi.org/10.1016/j.jbusres.2020.11.020>
- Jalil, M. F., Ali, A., & Kamarulzaman, R. (2023). The influence of psychological capital and social capital on women entrepreneurs' intentions: the mediating role of attitude. *Humanities and Social Sciences Communications*, 10(1), 1-14. <https://doi.org/10.1057/s41599-023-01908-3>
- Kartiasih, F., Djalal Nachrowi, N., Wisana, I. D. G. K., & Handayani, D. (2023). Inequalities of Indonesia's regional digital development and its association with socioeconomic characteristics: A spatial and multivariate analysis. *Information Technology for Development*, 29(2-3), 299-328. <https://doi.org/10.1080/02681102.2022.2110556>
- Kawai, N., & Kazumi, T. (2020). Female entrepreneurs' cognitive attributes and venture growth in Japan: The moderating role of perceived social legitimacy. *International Journal of Gender and Entrepreneurship*, 13(1), 1-29. <https://doi.org/10.1108/IJGE-05-2020-0063>
- Kulathunga, K. M. M. C. B., Ye, J., Sharma, S., & Weerathunga, P. R. (2020). How does technological and financial literacy influence SME performance: Mediating role of ERM practices. *Information*, 11(6), 297. <https://doi.org/10.3390/info11060297>
- Lim, K. Y., & Morris, D. (2023). Business optimism and the innovation-profitability nexus: Introducing the COVID-19 adaptable capacity framework. *Research Policy*, 52(1), 104623. <https://doi.org/10.1016/j.respol.2022.104623>

- Lindblom, A., Lindblom, T., & Wechtler, H. (2020). Dispositional optimism, entrepreneurial success and exit intentions: The mediating effects of life satisfaction. *Journal of Business Research*, 120, 230–240. <https://doi.org/10.1016/j.jbusres.2020.08.012>
- Lisnawati. (2023). Tantangan UMKM Di Tahun 2024. Isu Sepekan Bidang Ekkuinbang, Komisi VI DPR RI (pp. 1–2). https://berkas.dpr.go.id/pusaka/files/isu_sepekan/Isu%20Sepekan---V-PUSLIT-November-2023-246.pdf
- Liu, W., & Atuahene-Gima, K. (2018). Enhancing product innovation performance in a dysfunctional competitive environment: The roles of competitive strategies and market-based assets. *Industrial Marketing Management*, 73, 7–20. <https://doi.org/10.1016/j.indmarman.2018.01.006>
- Liyanagamage, N., Glavas, C., Kodagoda, T., & Schuster, L. (2023). Psychological capital and emotions on “surviving” or “thriving” during uncertainty: Evidence from women entrepreneurs. *Journal of Small Business Management*, 62(5), 2670–2706. <https://doi.org/10.1080/00472778.2023.2250408>
- Loghman, S., Quinn, M., Dawkins, S., Woods, M., Om Sharma, S., & Scott, J. (2023). The comprehensive meta-analyses of the nomological network of psychological...: EBSCOhost. *Journal of Leadership & Organizational Studies*, 30(1), 108–128. <https://doi.org/10.1177/15480518221107998>
- Luthans, F., Avolio, B. J., Avey, J. B., & Norman, S. M. (2007). *Positive psychological capital: Measurement and relationship positive psychological capital: Measurement and relationship with performance and satisfaction with performance and satisfaction*. <https://digitalcommons.unl.edu/leadershipfacpub/11>.
- Luthans, F., Norman, S. M., Avolio, B. J., & Avey, J. B. (2008). The mediating role of psychological capital in the supportive organizational climate—employee performance relationship. *Journal of Organizational Behavior: The International Journal of Industrial, Occupational and Organizational Psychology and Behavior*, 29(2), 219–238. <https://doi.org/10.1002/job.507>
- Luthans, F., Vogelgesang, G. R., & Lester, P. B. (2006). Developing the psychological capital of resiliency. *Human Resource Development Review*, 5(1), 25–44. <https://doi.org/10.1177/1534484305285335>
- Mahfud, T., Triyono, M. B., Sudira, P., & Mulyani, Y. (2020). The influence of social capital and entrepreneurial attitude orientation on entrepreneurial intentions: The mediating role of psychological capital. *European Research on Management and Business Economics*, 26(1), 33–39. <https://doi.org/10.1016/j.iemeen.2019.12.005>
- Makhloufi, L., Laghouag, A. A., Sahli, A. A., & Belaid, F. (2021). Impact of entrepreneurial orientation on innovation capability: The mediating role of absorptive capability and organizational learning capabilities. *Sustainability*, 13(10), 5399. <https://doi.org/10.3390/su13105399>
- McGee, J. E., & Terry, R. P. (2022). COVID-19 as an external enabler: The role of entrepreneurial self-efficacy and entrepreneurial orientation. *Journal of Small Business Management*, 62(2), 1–26. <https://doi.org/10.1080/00472778.2022.2127746>
- Ministry of National Development Planning. (2021). *Kesetaraan Gender*. Sdgs Bappenas. <https://sdgs.bappenas.go.id/tujuan-5/>
- Mozahem, N. A. (2022). Social cognitive theory and women's career choices: An agent—Based model simulation. *Computational and Mathematical Organization Theory*, 28(1), 1–26. <https://doi.org/10.1007/s10588-020-09317-6>
- Mulawarman, L., Hasan, H., & Sharif, S. M. (2020). Motivations and challenges of women entrepreneurs: The Indonesian mumpreneur perspective. *European Journal of Molecular & Clinical Medicine*, 7(6), 2020. <https://www.researchgate.net/publication/348160330>.
- Muljono, W., Setiyawati, S., Sudarsana, S., & Pertiwi Setiawati, P, Ministry of Communication and Information Technology, the Republic of Indonesia Graduate School of Economics, Universitas Sebelas Maret. (2021). Barriers to ICT adoption by SMEs in Indonesia: How to bridge the digital disparity? *Jurnal Aplikasi Manajemen*, 19(1), 69–81. <https://doi.org/10.21776/ub.jam.2021.019.01.07>
- Nasional, K. P. P. (2020). Strategi Nasional Percepatan Pengarusutamaan Gender (PUG) melalui Perencanaan dan Penganggaran yang Responsif Gender (PPRG). Kementerian Pemberdayaan Perempuan dan Perlindungan Anak Republik Indonesia. <https://www.kemenpppa.go.id/page/view/ODAw>
- Nasution, M. D. T. P., Rafiki, A., Lubis, A., & Rossanty, Y. (2021). Entrepreneurial orientation, knowledge management, dynamic capabilities towards e-commerce adoption of SMEs in Indonesia. *Journal of Science and Technology Policy Management*, 12(2), 256–282. <https://doi.org/10.1108/JSTPM-03-2020-0060>
- Nwosu, H. E., Obidike, P. C., Ugwu, J. N., Udeze, C. C., & Okolie, U. C. (2022). Applying social cognitive theory to placement learning in business firms and students' entrepreneurial intentions. *The International Journal of Management Education*, 20(1), 100602. <https://doi.org/10.1016/j.ijme.2022.100602>
- Octavia, A., Indrawijaya, S., Sriyudha, Y. H., & Hasbullah, H. A. (2020). Impact on e-commerce adoption on entrepreneurial orientation and market orientation in business performance of SMES. *Asian Economic and Financial Review*, 10(5), 516–525. <https://doi.org/10.18488/journal.aefr.2020.105.516.525>
- Ong, S. Y. Y., Habidin, N. F., Salleh, M. I., & Fuzi, N. M. (2020). The relationship between women's entrepreneurship practice, ICT adoption, and business performance in Malaysia and Indonesia. *International Journal of Entrepreneurship and Small Business*, 39 (4), 530–547.
- Parasuraman, A., & Colby, C. L. (2015). An updated and streamlined technology readiness index: TRI 2.0. *Journal of Service Research*, 18(1), 59–74. <https://doi.org/10.1177/1094670514539730>
- Parvin, L., Jinrong, J., & Rahman, M. W. (2012). Women entrepreneurship development in Bangladesh: What are the challenges ahead? *African Journal of Business Management*, 6(11), 3862.

- Polit, D. F., Beck, C. T., & Owen, S. V. (2007). Focus on research methods: Is the CVI an acceptable indicator of content validity? Appraisal and recommendations. *Research in Nursing & Health*, 30(4), 459–467. <https://doi.org/10.1002/nur.20199>
- Porter, M. E. (1985). Technology and competitive advantage. *Journal of Business Strategy*, 5(3), 60–78. <https://doi.org/10.1108/eb039075>
- Qalati, S. A., Ostic, D., Sulaiman, M. A. B. A., Gopang, A. A., & Khan, A. (2022). Social media and SMEs' performance in developing countries: Effects of technological-organizational-environmental factors on the adoption of social media. *SAGE Open*, 12(2), 215824402210945. <https://doi.org/10.1177/21582440221094594>
- 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. <https://doi.org/10.1111/j.1540-6520.2009.00308.x>
- Renko, M., Bullough, A., & Saeed, S. (2021). How do resilience and self-efficacy relate to entrepreneurial intentions in countries with varying degrees of fragility? A six-country study. *International Small Business Journal: Researching Entrepreneurship*, 39(2), 130–156. <https://doi.org/10.1177/0266242620960456>
- Riantoputra, C. D., & Muis, I. (2020). New insights on psychological factors for the development of women entrepreneurs in Indonesia. *Advances in Developing Human Resources*, 22(2), 150–163. <https://doi.org/10.1177/1523422320907045>
- Ripley, K. R., Hance, M. A., Kerr, S. A., Brewer, L. E., & Conlon, K. E. (2018). Uninformed consent? The effect of participant characteristics and delivery format on informed consent. *Ethics & Behavior*, 28(7), 517–543. <https://doi.org/10.1080/10508422.2018.1456926>
- Ritz, W., Wolf, M., & McQuitty, S. (2019). Digital marketing adoption and success for small businesses: The application of the do-it-yourself and technology acceptance models. *Journal of Research in Interactive Marketing*, 13(2), 179–203. <https://doi.org/10.1108/JRIM-04-2018-0062>
- Robb, A., Coleman, S., & Stangler, D. (2014). Sources of economic hope: Women's entrepreneurship. Available at SSRN 2529094.
- Rusydiana, A. S., & Izza, N. N. (2022). Women entrepreneurship: A sentiment analysis. *Review of Islamic Social Finance and Entrepreneurship*, 1(2), 109–120. <https://doi.org/10.20885/RISFE.vol1.iss2.art3>
- Saeed, S., Yousafzai, S. Y., & Engelen, A. (2014). On cultural and macroeconomic contingencies of the entrepreneurial orientation–performance relationship. *Entrepreneurship Theory and Practice*, 38(2), 255–290. <https://doi.org/10.1111/etap.12097>
- Santos, G., Marques, C. S., & Ferreira, J. J. (2020). Passion and perseverance as two new dimensions of an Individual Entrepreneurial Orientation scale. *Journal of Business Research*, 112, 190–199. <https://doi.org/10.1016/j.jbusres.2020.03.016>
- Scuotto, V., Arrigo, E., Candelò, E., & Nicotra, M. (2019). Ambidextrous innovation orientation effected by the digital transformation: A quantitative research on fashion SMEs. *Business Process Management Journal*, 26(5), 1121–1140. <https://doi.org/10.1108/BPMJ-03-2019-0135>
- Shane, S., & Venkataraman, S. (2001). Entrepreneurship as a field of research: A response to Zahra and Dess, Singh, and Erikson. *Academy of Management Review*, 26(1), 13–16. <https://doi.org/10.5465/amr.2001.27879269>
- Sharma, S., & Rautela, S. (2022). Entrepreneurial resilience and self-efficacy during global crisis: Study of small businesses in a developing economy. *Journal of Entrepreneurship in Emerging Economies*, 14(6), 1369–1386. <https://doi.org/10.1108/JEEE-03-2021-0123>
- Shetty, K., Fitzsimmons, J. R., & Anand, A. (2023). Entrepreneurship as a career choice for Emirati women: A social cognitive perspective. *Journal of Small Business and Enterprise Development*, 30(1), 58–77. <https://doi.org/10.1108/JSBED-10-2021-0397>
- Simba, A., Kalu, E. U., Onodugo, V., Okoyeuzu, C. R., & Ogundana, O. M. (2022). Women entrepreneurs in Nigeria. In *Women entrepreneurs in Sub-Saharan Africa: Historical framework, ecosystem, and future perspectives for the region* (pp. 155–172). Springer International Publishing.
- Singh, S., Mordi, C., Okafor, C., & Simpson, R. (2010). Challenges in female entrepreneurial development—A case analysis of Nigerian entrepreneurs. *Journal of Enterprising Culture*, 18(04), 435–460. <https://doi.org/10.1142/S0218495810000628>
- Soharwardi, M. A., & Ahmad, T. I. (2020). Dimensions and determinants of women empowerment in developing countries. *International Journal of Sustainable Development and Planning*, 15(6), 957–964. <https://doi.org/10.18280/ijstdp.150620>
- Srinath, T. T., & Supriya, M. V. (2009). Entrepreneurial characteristics and behaviour demonstration—A comparative study between small scale manufacturing entrepreneurs and service entrepreneurs. *Asia Pacific Business Review*, 5(1), 56–60. <https://doi.org/10.1177/097324700900500106>
- Swetha, M., Reddy, M. J. M., & Sudharani, V. (2014). Extent of empowerment of women entrepreneurs on entrepreneurial and technological empowerment. *Journal of Extension Education*, 26(4).
- Tang, J. J. (2020). Psychological capital and entrepreneurship sustainability. *Frontiers in Psychology*, 11, 866. <https://doi.org/10.3389/fpsyg.2020.00866>
- Teng, X., Wu, Z., & Yang, F. (2022). Research on the relationship between digital transformation and performance of SMEs. *Sustainability*, 14(10), 6012. <https://doi.org/10.3390/su14106012>

- Ughetto, E., Rossi, M., Audretsch, D., & Lehmann, E. E. (2020). Female entrepreneurship in the digital era. *Small Business Economics*, 55(2), 305–312. <https://doi.org/10.1007/s11187-019-00298-8>
- Villanueva-Flores, M., Diaz-Fernandez, M., Hernandez-Roque, D., & van Engen, M. (2021). Psychological capital and entrepreneurship: Gender differences. *Gender in Management*, 36(3), 410–429. <https://doi.org/10.1108/GM-07-2020-0231>
- Wahyuni, N. M., & Sara, I. M. (2020). The effect of entrepreneurial orientation variables on business performance in the SME industry context. *Journal of Workplace Learning*, 32(1), 35–62. <https://doi.org/10.1108/JWL-03-2019-0033>
- Wang, R., Zhou, H., & Wang, L. (2022). The influence of psychological capital and social capital on the entrepreneurial performance of the new generation of entrepreneurs. *Frontiers in Psychology*, 13, 832682. <https://doi.org/10.3389/fpsyg.2022.832682>
- Wang, Y., So, K. K. F., & Sparks, B. A. (2016). Technology readiness and customer satisfaction with travel technologies: A cross-country investigation. *Journal of Travel Research*, 56(5), 563–577. <https://doi.org/10.1177/0047287516657891>
- Wilson Van Voorhis, C. R., & Morgan, B. L. (2007). Understanding power and rules of thumb for determining sample sizes. *Tutorials in Quantitative Methods for Psychology*, 3(2), 43–50. <https://doi.org/10.20982/tqmp.03.2.p043>
- Yacob, S., Sulistiyo, U., Erida, E., & Siregar, A. P. (2021). The importance of E-commerce adoption and entrepreneurship orientation for sustainable micro, small, and medium enterprises in Indonesia. *Development Studies Research*, 8(1), 244–252. <https://doi.org/10.1080/21665095.2021.1976657>
- Zainol, F. A. (2013). The antecedents and consequences of entrepreneurial orientation in Malay family firms in Malaysia. *International Journal of Entrepreneurship and Small Business*, 18(1), 103–123. <https://doi.org/10.1504/IJESB.2013.050755>