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From Effectuation to Empowerment: Unveiling the Impact of Women Entrepreneurs on Small and Medium Enterprises' Performance—Evidence from Indonesia

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Abstract: Women entrepreneurs in small to medium enterprises (SMEs) in emerging countries play an essential role in the economy of developing countries such as Indonesia. Drawing on the resource-based view and entrepreneurship effectuation theory, this study examines how women's entrepreneurial effectuation (WEE) modeled as a higher-order construct (HOC) comprising its four dimensions (LOCs)—namely, flexibility, experimentation, affordable loss, and pre-commitment—can influence employee performance (EMPRF) mediated by structural (STREM) and psychological empowerment (PSYEM). Using a disjointed two-stage PLS-SEM approach with data from 218 female SME employees, our results confirm that flexibility is the most salient effectuation dimension. WEE strongly predicts both STREM and PSYEM but shows no direct impact on EMPRF, highlighting that effectuation must be activated via empowerment mechanisms. PSYEM emerges as the strongest mediator of WEE on EMPRF, with STREM also contributing significantly and being amplified by gender equality practices; market orientation, by contrast, fails to moderate any paths. Theoretically, these findings enrich resource-based view (RBV) theory by integrating entrepreneurial effectuation dimensions and empowerment as human resource capabilities that generate inimitable performance gains. Practically, they suggest that women-led SMEs should integrate effectuation heuristics with targeted empowerment programs to realize the full potential of their human capital.

Keywords: women entrepreneurial effectuation; structural empowerment; psychological empowerment; gender equality; SMEs' employee performance

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1. Introduction

The role of women in entrepreneurial settings has garnered increasing attention in recent years, particularly in the context of small and medium enterprises, or SMEs (OECD, 2023), including in Indonesia (Azis, 2024; Harini et al., 2023). Many developing economies recognize women entrepreneurs as key drivers of economic growth, innovation, and social empowerment (Franzke et al., 2022; Jain et al., 2018). Despite their contributions, the family–working balance (Teoh et al., 2021) and government support for women entrepreneurs (Hendratmi & Sukmaningrum, 2018; Kabeer, 2021) are widely discussed. There are also managerial issues, such as the mechanisms through which women entrepreneurs navigate uncertainty, leverage resources, and empower employees that are still underexplored (De Vita et al., 2014; Hoque & Islam, 2022; Yadav & Unni, 2016). This issue becomes more evident when examining women-led SMEs, where gender dynamics and

entrepreneurial approaches intersect to influence organizational outcomes (Cheema et al., 2016; Tanoto & Tahalele, 2024; Teoh et al., 2021).

SMEs in Indonesia face distinctive challenges, such as limited capital access, unstable market conditions, inadequate infrastructure, and unpredictable regulatory environments (Azis, 2024; Saifurrahman & Kassim, 2023; Soumena et al., 2024). These constraints call for leadership styles that differ from those in large firms in advanced economies (Begum et al., 2020; Cacciolatti & Lee, 2016; Hauser et al., 2019). Often lacking the capacity and resources to implement modern business concepts, Indonesian SMEs must customize their strategies to local conditions (Berard & Fréchet, 2020; Simpson et al., 2012). Accordingly, leadership in these SMEs must emphasize flexibility and resource-driven approaches (Chen & Liu, 2022; Osiyevskyy et al., 2023). In this context, research frameworks like effectuation, aligned with the operational realities of Indonesian SMEs, are particularly relevant (Yu et al., 2024). Effectuation, introduced by Saras Sarasvathy (Dew et al., 2010; S. D. Sarasvathy, 2001), offers a lens through which to understand entrepreneurial decision making in uncertain environments, enhancing SME performance without imposing rigid corporate structures (Read et al., 2009a; Reymen et al., 2016; S. D. Sarasvathy, 2022).

In resource-constrained Indonesian SMEs, traditional linear approaches relying on predictive planning are often unsuitable (Jiang & Rüling, 2017; Yuniarty et al., 2021). Therefore, effectuation as an alternative approach offers new insight for studying women entrepreneurs in SMEs, since it emphasizes flexibility, adaptability, and resource-driven strategies in conditions of uncertainty (Nyoni & Moos, 2022; Osiyevskyy et al., 2023; Yu et al., 2024). In another concept, bricolage shares similarities with effectuation in its focus on resource improvisation. Bricolage is often reactive and more focused on utilizing available materials despite the continuity of supply and allocation (Fisher, 2012). While effectuation is more proactive, it incorporates strategic principles like affordable loss and pre-commitment to guide decision making (Hauser et al., 2019; Read et al., 2009a; S. D. Sarasvathy, 2008). This makes effectuation a more comprehensive framework for understanding the nuances of SMEs, particularly from female workers' perspectives.

Previous studies have shown the benefits of framework effectuation (Chandler et al., 2011; Yuniarty et al., 2021; Yu et al., 2024), where the impact of effectuation on SME performance has been demonstrated. However, existing studies on effectuation have predominantly treated it as a unidimensional construct (Chen & Liu, 2022; Yuniarty et al., 2021), which may overlook its complexity as a multidimensional construct. Therefore, this study addresses this gap by operationalizing effectuation as a reflective construct comprising four key dimensions: experimentation, flexibility, affordable loss, and pre-commitment following their nature (S. D. Sarasvathy, 2008, 2022). Such an approach allows for a deeper understanding of how women entrepreneurs utilize effectuation principles in managing SMEs.

Thus, while prior research has highlighted effectuation's relevance in resource-constrained SMEs, this study attempts to situate effectuation within the specific context of Indonesian women entrepreneurs. Unlike generalized accounts of SMEs in emerging markets, this research addresses how Indonesian women-led SMEs navigate uncertainty and resource challenges through effectual logic. By focusing on employee empowerment mechanisms, this study extends effectuation theory beyond firm-level outcomes to include its role in fostering structural and psychological empowerment within SMEs. This offers a novel perspective on how women's entrepreneurial decision-making processes not only enhance performance but also build internal organizational capacity in women-led SMEs in Indonesia.

The inclusion of gender equality is well identified in SMEs' development in emerging countries (Bullough et al., 2021; Hoque & Islam, 2022; Vuong et al., 2021). As a moderat-

ing variable, the practice of gender equality in women-led SMEs adds another layer of novelty to this study. Gender equality is often discussed in the broader context of societal or organizational dynamics (Kabeer, 2021; Venkatesh & Ravikiran, 2012). Its specific influence on entrepreneurial behaviors and empowerment strategies within women-led SMEs remains under-researched (Riaz & Chaudhry, 2021; Mozumdar et al., 2022), although the term 'women supporting women' is well known (Amer et al., 2021; Hechavarria et al., 2018). This study posits that gender equality not only shapes the entrepreneurial environment but also moderates the pathways through which effectuation impacts structural and psychological empowerment.

This study elaborates upon the mediating function of structural and psychological empowerment in the relationship between effectuation and SME employee performance. Physiological empowerment is conceptualized as an individual's assessment that there is an increase in intrinsic factors that are oriented towards a particular task; it is manifested in cognitive aspects that reflect the individual's orientation towards their work role, such as competence, impact, meaning, and autonomy (Spreitzer, 1995). Meanwhile, structural empowerment is defined as an individual's assessment that practices in the organization have facilitated them having access to the organization's policies and information as a whole; in these circumstances, employees also receive encouragement to participate actively according to their role and adequate technical support so that individuals feel like they are part of the organization's strategy (Zimmerman, 2000).

It is acknowledged that empowerment, both psychological and structural, is an essential tool for raising worker satisfaction, engagement, and output (Begum et al., 2020; Echebiri et al., 2020; Ivanova & von Scheve, 2019; Ling et al., 2023; Mahmoud et al., 2021; Shin & Shin, 2023; van den Berg et al., 2021; Yasir et al., 2021), including in Indonesian SMEs (Pudjowati et al., 2018). However, little is known about how women entrepreneurs' reliance on effectuation principles influences both structural parallels with psychological forms of empowerment, which may provide a synergistic effect. This study explores and closes the gap between workforce dynamics and entrepreneurial decision making in women-led SMEs by examining these interactions.

Focusing on SMEs led by women entrepreneurs in developing economies, such as Indonesia, may add practical and contextual relevance to this issue. Since SMEs are the backbone of these developing economies, many female informal workers can be found. Women entrepreneurs in emerging countries, particularly in patriarchal cultures, often face unique challenges, including limited access to resources, cultural constraints, and gender biases (Ahmad et al., 2021; Mozumdar et al., 2022; Tanoto & Tahalele, 2024; Vuong et al., 2021; Yadav & Unni, 2016). This study sheds light on how women entrepreneurs may overcome these challenges through effectuation and how these strategies translate into employee performance outcomes.

This study seeks to address the following research question: How does effectuation, conceptualized as a multidimensional construct, influence employee performance in women-led SMEs in Indonesia, and to what extent are these effects mediated by structural and psychological empowerment and moderated by gender equality and market orientation? By focusing on Indonesian SMEs led by women entrepreneurs, this study aims to explore the mechanisms through which effectual logic helps navigate uncertainty and resource constraints while fostering employee empowerment and enhancing performance. Specifically, this research examines the synergistic roles of structural and psychological empowerment as dual mediators and tests whether the practices of gender equality and market orientation strengthen or alter the pathways between effectuation and employee performance. Through this integrated model, this study contributes to bridging the gap

between entrepreneurial decision making and workforce empowerment dynamics within the unique socio-economic and gendered context of Indonesian SMEs.

This research makes three key contributions: first, it operationalizes effectuation as a multidimensional construct (HOC); second, it examines the mediating role of structural and psychological empowerment; and third, it explores the moderating effect of gender equality and market orientation. This entrepreneurial research advances by incorporating effectuation, gender equality, empowerment, and employee performance into a unified model with which to explain and predict the performance of female workers in SMEs. Hence, this study offers practical insights into the empirical ability of entrepreneurial effectuation to strengthen the SME sector.

2. Literature Review and Hypotheses' Development

This research is underpinned by the resource-based view (RBV) approach developed by Barney (1991) and Wernerfelt (2013) in explaining how female leaders in small and medium enterprises (SMEs) manage internal resources to achieve competitive advantage. The RBV was known to be related to strategic human resources in business organizations in terms of value capture and value creation capabilities (Gerhart & Feng, 2021). Human resources are a key factor in maintaining business competitiveness as well as innovativeness (Drucker & Maciariello, 2014). In the context of women-led SMEs, these resources include human resources in managerial skills, social networks, business reputation, and innovation in products and services (C. G. Brush et al., 2009; Cheema et al., 2016; Teoh et al., 2021). However, the RBV was still limited in its implementation, specifically in how women entrepreneurs can develop and utilize human resources dynamically and adaptively in facing business challenges with limited resources and in the context of emerging countries/SMEs. To that end, this research integrates the RBV with the effectuation approach and empowerment theory to provide a more holistic perspective on SMEs.

Specifically, the RBV serves as the theoretical foundation in this study by positioning each variable as a key internal or relational resource contributing to competitive advantage in women-led SMEs. Entrepreneurial effectuation reflects the dynamic ability to flexibly mobilize and reconfigure limited resources (Barney, 1991; Teoh et al., 2021). Structural empowerment represents organizational resources that provide access to decision making and assets (Wernerfelt, 2013), while psychological empowerment strengthens human capital through enhanced motivation and adaptive behavior (Gerhart & Feng, 2021). Employee performance embodies the productive use of human resources that drive business outcomes (Drucker & Maciariello, 2014). Additionally, business reputation and product–service innovation are positioned as valuable, relational, and intellectual resources that sustain competitiveness (C. G. Brush et al., 2009; Cheema et al., 2016).

In the integration of the RBV, the effectuation theory from S. D. Sarasvathy (2001, 2022) was deployed to understand how female entrepreneurs adapt to a dynamic and uncertain business environment. This theory has been widely used in analyzing and developing SMEs in the world (Andersson, 2011). In this study, entrepreneurial effectuation is contextually defined as an entrepreneurial approach where business leaders can work and make decisions under conditions of uncertainty by using existing resources and being open to uncertainty, rather than being fixated on predicting the future. This approach is oriented to what the organization has, the ability to experiment, set acceptable loss limits, and collaborate with partners to exploit new business opportunities that exist (S. D. Sarasvathy, 2001).

Effectuation emphasizes that entrepreneurs do not always make decisions based on rigid long-term plans but rather by utilizing available resources flexibly and adaptively (Jiang & Rüling, 2017). In the context of SMEs, women entrepreneurs often use their

skills, establish strategic partnerships, and apply the principle of taking acceptable risks (Hechavarria et al., 2018; Read et al., 2009b). Beyond this approach, the success of these entrepreneurs is also determined by the human resources that need to be developed (Cunningham & Eberle, 2017; Gupta et al., 2016). Unfortunately, previous research has not yet clearly linked effectuation with the concept of empowerment, both structural and psychological, which plays a role in increasing the self-confidence, autonomy, and competency of the employee, which can drive the business (Seibert et al., 2011; Zimmerman, 2000). Therefore, this research makes a new contribution by integrating these concepts into one comprehensive model. This study also considers the aspect of gender equality as an important factor in empowering women in the business sector, in line with the gender equality agenda, which is increasingly relevant in global economic policy (C. Brush et al., 2018; De Vita et al., 2014).

Effectuation is an approach to entrepreneurial decision making that emphasizes flexibility, utilization of available resources, and adaptation to uncertainty, where this approach is different from causation, which is generally linear and based on rigid planning (S. D. Sarasvathy, 2001, 2008). Previous research in the context of entrepreneurship suggests a relationship between effectuation and other constructs or variables including the tendency to adapt and build a reputation (Karri & Goel, 2008; S. D. Sarasvathy, 2008), creative imagination (Gupta et al., 2016; Hauser et al., 2019), and the relationship between entrepreneurship and new venture performance (Fisher, 2012; S. Sarasvathy & Dew, 2008; Read et al., 2009b). Likewise, Read et al. (2016) highlight one of the sub-constructs of effectuation, which focuses on affordable loss, in the managerial decision making literature.

Research by S. D. Sarasvathy (2008, 2022), which was confirmed by Reymen et al. (2016), stated that effectuation is a strong antecedent based on four creation attributes, including contingency, affordable losses, and means based on available resources. Therefore, effectuation is a multidimensional variable that needs to be measured involving all four dimensions simultaneously (S. Sarasvathy & Dew, 2008; Chandler et al., 2011; Nyoni & Moos, 2022). In the context of application to women's entrepreneurship in this research, effectuation is the variable for women's entrepreneurial effectuation. The effectuation variable in this research is a higher-order construct (HOC) variable, which is measured using the four reflective dimensions as lower-order constructs (LOCs), namely experimentation, affordable loss, pre-commitment, and flexibility.

Women's entrepreneurial effectuation can play a crucial role in establishing structural empowerment within SMEs by shaping inclusive and effective organizational structures. Rooted in effectuation theory, this approach enables female entrepreneurs to navigate uncertainty by leveraging available resources and collaboration through networks (S. D. Sarasvathy, 2022). Prior research indicates that women entrepreneurs who adopt effectuation are more likely to implement adaptive structures that encourage employee participation in decision making (Chandna & Salimath, 2020; Cheema et al., 2016). In addition, entrepreneurial practice by women in SMEs often emphasizes inclusivity and shared responsibility, reinforcing empowerment by promoting open communication and collective problem solving (De Bruin et al., 2006; Echebiri et al., 2020; Hoque & Islam, 2022). Furthermore, by utilizing effectuation, female entrepreneurs enhance operational efficiency and cultivate an innovative and collaborative work environment, ultimately strengthening structural empowerment (C. Brush et al., 2018; Shin & Shin, 2023). Previous empirical studies suggest that effectuation enables women entrepreneurs to leverage social capital, creating work environments that empower employees and foster engagement (De Bruin et al., 2017; Hechavarria et al., 2018; Mozumdar et al., 2022; S. D. Sarasvathy, 2008). Consequently, women's entrepreneurial effectuation is expected to have a positive impact on structural empowerment. Therefore, a hypothesis can be proposed as follows:

H1. *Women's entrepreneurial effectuation has a positive effect on structural empowerment.*

Women entrepreneurs who apply the entrepreneurial effectuation approach allow employees to feel more meaningful in their work, confident in their competence, and have control and choice in decision making (Spreitzer, 1995; Jiang & Rüling, 2017; Seibert et al., 2011). Previous studies show that when employees are involved in the innovation process and business strategy, they feel more valued and have a stronger emotional attachment to the organization (C. Brush et al., 2018; Yitshaki et al., 2021). Women entrepreneurs who implement effectuation tend to encourage collaboration, provide space for the exploration of new ideas, and support employee self-development through training and mentoring (Begum et al., 2020; Mohamed et al., 2024; Mozumdar et al., 2022; S. D. Sarasvathy, 2008). This inclusive work environment strengthens psychological empowerment, which ultimately contributes to motivation, job satisfaction, and overall organizational performance (Begum et al., 2020; Ling et al., 2023). Therefore, a hypothesis can be proposed:

H2. *Women's entrepreneurial effectuation has a positive effect on psychological empowerment.*

The women's entrepreneurial effectuation approach emphasizes flexibility, creativity, and utilization of available resources to improve employee performance in SMEs (Chandler et al., 2011; Chen & Liu, 2022; Mozumdar et al., 2022). From the resource-based view (RBV) perspective, competitive advantage depends on unique resources, such as managerial skills and entrepreneurial capabilities (Barney, 1991; Wernerfelt, 2013). Women entrepreneurs who apply effectuation are considered to be able to optimize limited resources, create a dynamic work environment, and encourage innovation and employee involvement (Fisher et al., 2020; Teece, 2020; Yu et al., 2024). According to the principle of affordable loss, this approach helps SMEs to face market uncertainty while empowering employees to be more adaptive and proactive (S. D. Sarasvathy, 2001, 2022). Previous studies have shown that effectuation in female leadership increases motivation, innovation, and competitiveness of SMEs through flexible structures and responsive business strategies (Dew et al., 2009; Nyoni & Moos, 2022; Osiyevskyy et al., 2023) as well as also from the customer value perspective (Chen & Liu, 2022). Specifically, effectuation has been found to have a positive role in SME performance in Indonesia (Yuniarty et al., 2021). Therefore, the following hypothesis can be formulated:

H3. *Women's entrepreneurial effectuation has a positive influence on employee performance.*

In the context of SMEs, gender equality practices in organizations can play a role in strengthening the impact of women's entrepreneurial effectuation on structural empowerment, employee performance, and psychological empowerment. A more equal environment allows women to access resources, information, and opportunities fairly, thereby strengthening the relationship between entrepreneurial effectuation and structural empowerment (Bastian et al., 2023; Coron, 2020; Vuong et al., 2021). In this study, gender equality was defined and focused on as the perception of female individuals that in an organization, women have equal access to advancement opportunities, decision-making roles, and leadership positions as men and are treated fairly, with contributions valued equally (Acker, 1990).

Women entrepreneurs are expected to be able to further promote gender equality in SMEs because they feel a sense of belonging and empathy (Franzke et al., 2022). Thus, gender equality creates more inclusive working conditions (Bullough et al., 2021), which support women in implementing effectuation-based entrepreneurial strategies more effectively, thereby improving their performance in organizations (Nickel et al., 2023; Zhou &

Chen, 2019). Furthermore, in terms of psychological empowerment, a gender-equitable environment increases women's feelings of competence and control over their roles, strengthening the influence of effectuation in building self-confidence and meaning at work (Riaz & Chaudhry, 2021; Nickel et al., 2023; Yu et al., 2024). Previous studies have identified the moderating role of gender equality in organizational development and performance (Ahmad et al., 2021; Dolan et al., 2011; Campbell, 2021). Thus, three hypotheses can be formulated:

H4. *Gender equality strengthens the influence of women's entrepreneurial effectuation on structural empowerment.*

H5. *Gender equality strengthens the influence of women's entrepreneurial effectuation on employee performance.*

H6. *Gender equality strengthens the influence of women's entrepreneurial effectuation on psychological empowerment.*

Structural empowerment in organizations explains how employees gain access to information, resources, support, and influence to improve their performance (Cunningham & Eberle, 2017; Zimmerman, 2000). Empirical research shows that employees who feel structurally empowered have role clarity, high motivation, and greater commitment to work, all of which have a positive impact on their performance (Aggarwal et al., 2018; Echebiri et al., 2020; Shin & Shin, 2023). In the context of SMEs, targeted empowerment not only improves individual performance but also strengthens team collaboration and innovation (Aggarwal et al., 2018) A flexible and participatory organizational structure allows employees, especially women workers in SMEs, to actively contribute to decision making, thereby creating a culture of innovation and improving performance (Bérard & Cloutier, 2023; van den Berg et al., 2021). In addition, structural empowerment also contributes to job satisfaction, which ultimately has implications for improving employee performance (Berard & Fréchet, 2020). Therefore, in the context of SMEs in West Java, strengthening structural empowerment has the potential to improve the performance of working women.

On the other hand, structural empowerment serves as a mediator in the relationship between women's entrepreneurial effectuation and employee performance. This can be achieved by providing access to information, resources, and decision-making opportunities that enable female employees in the organization to be more independent (Monje-Amor et al., 2020). In terms of structural empowerment, effectuation principles such as experimentation and flexibility can be applied optimally, thereby increasing employee productivity and performance (Shin & Shin, 2023). Previous studies show that structural support strengthens the effectiveness of effectuation strategies in improving performance, especially in flexible business environments, such as SMEs (Berard & Fréchet, 2020; van den Berg et al., 2021). In addition, an empirical study identified the mediating role of structural empowerment (Monje-Amor et al., 2020). Therefore, in the context of SMEs, the following hypotheses can be formulated:

H7. *Structural empowerment has a positive influence on employee performance.*

H8. *Structural empowerment mediates the positive influence of women's entrepreneurial effectuation on employee performance.*

Psychological empowerment can play an important role in improving the performance of employees (Spreitzer, 2008). When employees in SMEs feel they have control over and responsibility for their tasks, their intrinsic motivation to contribute increases, which has a positive impact on their productivity and engagement in the organization (Kafetzopoulos, 2020). In addition, psychological empowerment strengthens employees' sense of self-confidence, initiative, and creativity (Avolio et al., 2004; Liu et al., 2020), enabling them to adapt to a dynamic work environment and make decisions independently. A study by Muneer et al. (2024) showed that employees who feel psychologically empowered tend to be more productive and have high work engagement. In the context of SMEs, where limited resources are often a challenge, psychological empowerment helps employees to remain innovative and effective in carrying out their duties (Ivanova & von Scheve, 2019). Further, an empirical study demonstrated the influence of psychological empowerment on individual performance (Mahmoud et al., 2021).

Psychological empowerment also links the working environment and employee performance by increasing intrinsic motivation and commitment to tasks (Muneer et al., 2024). In the context of SMEs, where women often face limited resources, psychological empowerment provides a sense of meaning and purpose in work, which contributes to improved performance (Riaz & Chaudhry, 2021). Entrepreneurial effectuation enables female SME workers to be more adaptive and flexible in managing risks, which is strengthened by psychological empowerment in order to achieve optimal performance (Huang, 2017; Kafetzopoulos, 2020). A study from Mahmoud et al. (2021) also emphasized that psychological empowerment not only increases motivation and engagement but also allows employees to utilize entrepreneurial effectuation more effectively. In SME settings with limited resources, psychological empowerment for female workers strengthens the effect of women's entrepreneurial effectuation in increasing engagement and work decision making (Echebiri et al., 2020; Ivanova & von Scheve, 2019). In addition, in developing countries, psychological empowerment has been proven to help female employees develop skills and adapt to a dynamic environment, thereby increasing their productivity (Hoque & Islam, 2022; Mozumdar et al., 2022; Riaz & Chaudhry, 2021). Further, previous studies have confirmed that psychological empowerment can function as a mediator that strengthens the positive influence on employee performance (Avolio et al., 2004; Muneer et al., 2024), so that two more hypotheses can be formulated as follows:

H9. *Psychological empowerment has a positive influence on employee performance.*

H10. *Psychological empowerment mediates the positive influence of women's entrepreneurial effectuation on employee performance.*

Market orientation in this study is conceptualized as an individual's perception that his/her organization is effectively and efficiently delivering greater benefits to consumers and is proactively evolving in line with dynamic market tastes (Narver & Slater, 1990). Market orientation, which shows the dynamic capabilities of a business organization (Teece, 2020), plays an important role in SME business development. Market orientation allows employees to be more responsive to market changes (Cacciolatti & Lee, 2016), stay competitive (Harris, 2002), and increase efficiency (Narver & Slater, 1990). Furthermore, market orientation can also strengthen the influence of women's entrepreneurial effectuation on employee performance by encouraging entrepreneurs to adapt their effectuation strategies to respond more quickly to market dynamics and increase innovation and employee involvement (Chen & Liu, 2022; Dew et al., 2010; Liao, 2015). In addition, market orientation strengthens the impact of psychological empowerment on employee performance by creating a more adaptive work environment and supporting employee innovation, thereby increasing their

sense of self-confidence and responsibility in meeting customer needs (Mahmoud et al., 2016; Narver & Slater, 1990). Previous studies have indicated the significance of the moderating effect of market orientation in the business process (Cacciolatti & Lee, 2016; Liao, 2015). Thus, the following hypotheses can be formulated:

H11. *Market orientation strengthens the influence of structural empowerment on employee performance.*

H12. *Market orientation strengthens the influence of women's entrepreneurial effectuation on employee performance.*

H13. *Market orientation strengthens the influence of psychological empowerment on employee performance.*

From the proposed hypotheses, a conceptual framework can be described with the dependent variable, employee performance in SMEs, as in Figure 1. In this figure, it can be seen that there is a mediation path along with two moderating variables, as well as entrepreneurial effectuation as a higher-order construct (HOC), which is measured by its four dimensions (LOCs).

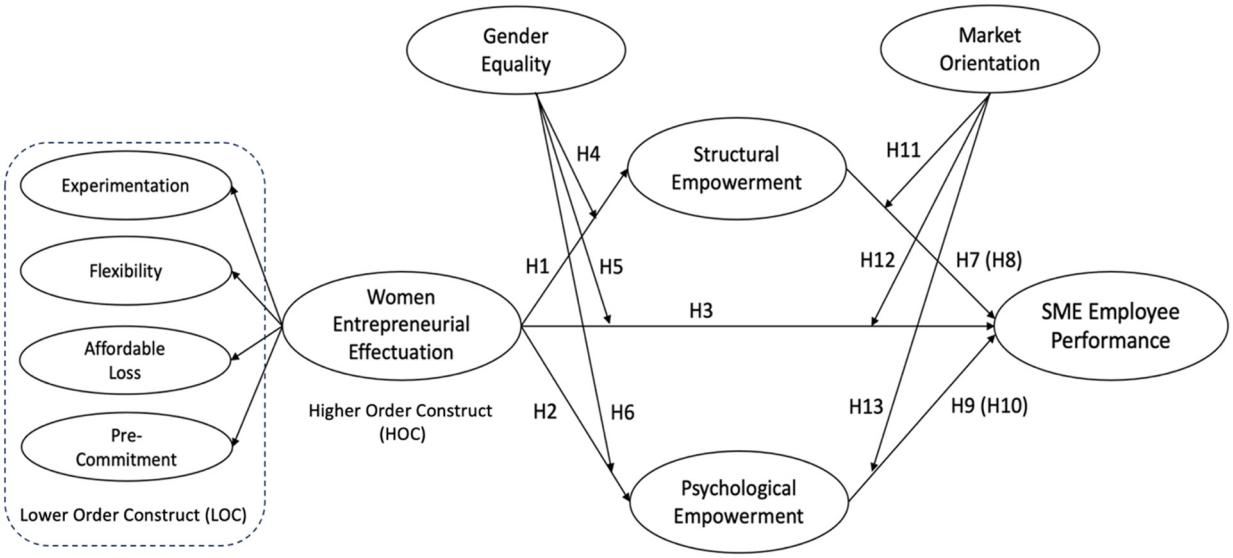

Figure 1. Respondent profile.

3. Methods

This research is a quantitative survey study using cross-sectional data to test the causal predictive model using a structural equation modeling (SEM) approach. Data were obtained from female workers at SMEs who had worked for more than one year, as an analysis unit. They must have worked for an SME that is led or managed by a woman entrepreneur. West Java province, which is located on the island of Java, has the largest number of SMEs in Indonesia (Azis, 2024). West Java was selected as the research setting because it is Indonesia's most populous province, home to over 50 million people, and supports one of the nation's largest and most diverse concentrations of women-led SMEs.

West Java's SMEs merit a focused study because West Java's or Sundanese cultural values, such as mutual learning, care, and guidance, communal decision making, and strong family ties, shape unique patterns of collaboration and gender roles in SME businesses (Charina et al., 2022). These collectivist norms influence how women entrepreneurs negotiate authority, build networks, and exercise effectual heuristics. Understanding this local

cultural context is therefore essential for designing empowerment interventions that truly resonate and enhance female employee performance in West Java's SMEs. Hence, it provides an ideal context for examining how entrepreneurial effectuation and empowerment mechanisms operate under prevailing gender and cultural dynamics.

By focusing on SMEs in West Java, Indonesia, this study captures a representative spectrum of resource constraints and social expectations that shape women's leadership practices, thereby yielding insights that are both deeply contextualized and broadly informative for policy and practice in other Indonesian regions. Under Indonesia's Government Regulation No. 7/2021, small enterprises are defined as those with total assets between roughly USD 13,000 and USD 167,000 (or annual revenues between USD 167,000 and USD 3.3 million), while medium enterprises hold assets between USD 167,000 and USD 3.3 million (or revenues between USD 3.3 million and USD 20 million). Including both small and medium categories in this study is essential to capture the full range of resource endowments and operational constraints across SMEs, thereby ensuring that the findings are robust and generalizable across differing firm sizes.

The minimum sample size in this study was calculated using power analysis according to recommendations (Hair et al., 2022). Calculation with $f^2 = 0.15$, alpha = 0.05, power 90%, and 8 predictors (including LOCs) requires a minimum sample of 153. The sample of respondents for this research was obtained by purposive sampling with the criteria of SMEs that recorded positive growth in the last five years and had a turnover of at least IDR two billion, equivalent to 121,000 USD. Respondents were also required to not have a record of poor work performance in the SME where they currently work and to not be part of the owner's family.

Purposive sampling was applied to select respondents from women-led SMEs operating in West Java, Indonesia, specifically targeting five regencies: Bogor, Sukabumi, Bandung, Cianjur, and Tasikmalaya. The sampling strategy aimed for a minimum of 153 respondents proportionally distributed across these regions (e.g., 38 from Bogor and Sukabumi, 29 from Bandung, 27 from Cianjur, and 21 from Tasikmalaya). SMEs included in the study operated in creative sectors such as packaged snacks and beverages, clothing, footwear, accessories, and fashion, aligning with the growing creative economy in Indonesia. Eligible respondents were female employees working under female SME leaders, ensuring the study's focus on empowerment and entrepreneurial effectuation within women-led businesses. Lists of potential respondents were compiled in collaboration with local SME networks, and participation was confirmed through willingness to complete an online questionnaire distributed via Google Forms.

Variable measurements in this study used questionnaire items from previous research that had been validated in previous studies. The measurement of variables used interval data with Likert points 1 to 5, where 1 was a response of "strongly disagree" to the statement sentence and 5 was "strongly agree" as a response to the item statements. For the entrepreneurial effectuation variable, which consists of four dimensions, the item questionnaire was adapted from Chandler et al. (2011) and Nyoni and Moos (2022). For psychological empowerment, the items were adapted from Spreitzer (1995), and structural empowerment was adapted from Laschinger et al. (2001). Measurement for gender equality was adapted from Kaushik et al. (2014), while market orientation was adapted from Harris (2002). Lastly, the items for employee performance in SMEs were adapted from Pradhan and Jena (2016).

The question items were first translated into Indonesian by a professional translator with expertise in research and survey instruments. To ensure conceptual accuracy, the translator was instructed to maintain the substantial meaning of each item while adapting it to the local linguistic context of the target respondents. Further, the question items

were tested for face validity by an expert panel consisting of five people. Three panellists were from the academic field in management, one was a field surveyor, and one was a psychologist who has mastered psychometrics. After minor improvements were made to the writing of statement sentences based on expert panel input, a small-scale test was carried out with 30 respondents, which confirmed that all constructs had acceptable internal consistency (Cronbach's alpha > 0.7). The final Indonesian version questionnaires, including respondent demographic questions, were then distributed to the SMEs that met the requirements. The questionnaire was distributed online to each potential respondent as a self-administered form.

Quantitative data analysis was carried out using a multivariate approach with PLS-SEM run with SmartPLS®4.0.9.8 software, which has a bootstrapping approach for non-parametric conditions (Ringle et al., 2022). The choice of this method was based on the consideration that the model was a complex model in which there were mediation, moderation, and hierarchical dimension variables (Hair et al., 2022). Furthermore, the orientation of this research is explanatory and predictive of the variables of employees' performance in SMEs. Due to the model that deploys the entrepreneurial construct as a higher-order construct (HOC), which is measured using four reflective dimensions, a disjointed two-stage approach method was used and is considered more advanced than repeated indicator techniques (Becker et al., 2023). In this method, the first stage of separation is carried out involving only the LOC, and then in the second stage, the LOC that is reliable and valid will become an indicator for reflecting the effectuation construct as an HOC. At the analysis stage, an outer model test is carried out to determine the reliability and validity of the construct measurement with its indicators. Furthermore, it proceeds with structural model analysis (the inner model), where hypothesis testing is performed. At this stage of the inner model, effectuation will be seen as an independent HOC influencing other variables. At this stage of the inner model, effectuation will be seen as an independent HOC influencing other variables, where the standardized coefficient and significance are assessed through bootstrapping.

4. Results

4.1. Respondents

The profile of respondents in the research is described in Table 1. The number of respondents obtained and who met the requirements exceeded the initial target, so all of them were used. Data obtained by respondents showed that SME workers are young women with a dominant age of 25–29 years (28%) and 18–24 years (19%). Most had a secondary level of education, with 49% being high school graduates and 29% being middle school graduates. These data confirmed that respondents were more skilled workers than knowledge workers. The majority of respondents had also worked in SMEs for 1–2 years (29%) and 3–5 years (21%), reflecting a fairly high labour turnover rate. With 66% of respondents being married, working behavior is likely to be influenced by family considerations, especially in aspects of workplace choice and self-development. In terms of the business sector, most respondents came from SMEs in the culinary industry (33%), followed by handicrafts (19%) and fashion accessories (13%), which shows the dominance of SMEs based on creative products and fast consumption.

Regarding the research model, the respondents' characteristics are relevant to the concept of women's entrepreneurial effectuation, where young women tend to have greater flexibility in experimenting and taking risks with an affordable loss approach. However, low levels of formal education can affect psychological empowerment, especially in building self-confidence and innovation in business. The high level of labour turnover also indicates that structural empowerment must be further strengthened to increase the loyalty and

performance of SME employees. In addition, with the dominance of the culinary and handicraft industries, market orientation is a key factor in increasing the competitiveness and overall performance of SMEs.

Table 1. Respondents' profile.

Description	Category	Number (*n*)	Percentage (%)
Age (years)	18–24	41	19
	25–29	61	28
	30–34	40	18
	35–39	37	17
	40–44	18	8
	>45	21	10
	Total	218	100
Education	Junior high school	63	29
	High school/similar level	107	49
	Under graduates/bachelor	27	12
	Others	21	10
	Total	218	100
Length of work period at SME (years)	1–2	63	29
	3–5	45	21
	6–10	26	12
	11–15	24	11
	>15	2	1
	Total	171	78
Marital status	Not yet married	54	25
	Married	143	66
	Others	21	10
	Total	218	100
Types of SMEs	Clothes/garments	18	8
	Fashion accessories	29	13
	Packaged snacks	19	9
	Handicrafts	42	19
	Culinary	72	33
	Service	21	10
	Others	17	8
	Total	218	100

4.2. Measurement Model (Outer Model)

In the inferential analysis, the image of the PLS-SEM output in the first stage of the disjointed two-stage model, as in Figure 2, shows the four dimensions (LOCs) that directly lead to the empowerment and employee performance variables. By specifically measuring the four LOCs, the reliability and validity of the model can be more accurately assessed, and with this approach, the role of these four dimensions can be analyzed more deeply. In Figure 2, it can be found that the four LOCs have reliable indicators. Furthermore, the

Cronbach's alpha (CA) value in the circle in the figure shows that all variables have an acceptable CA to confirm the internal consistency of the questionnaire items.

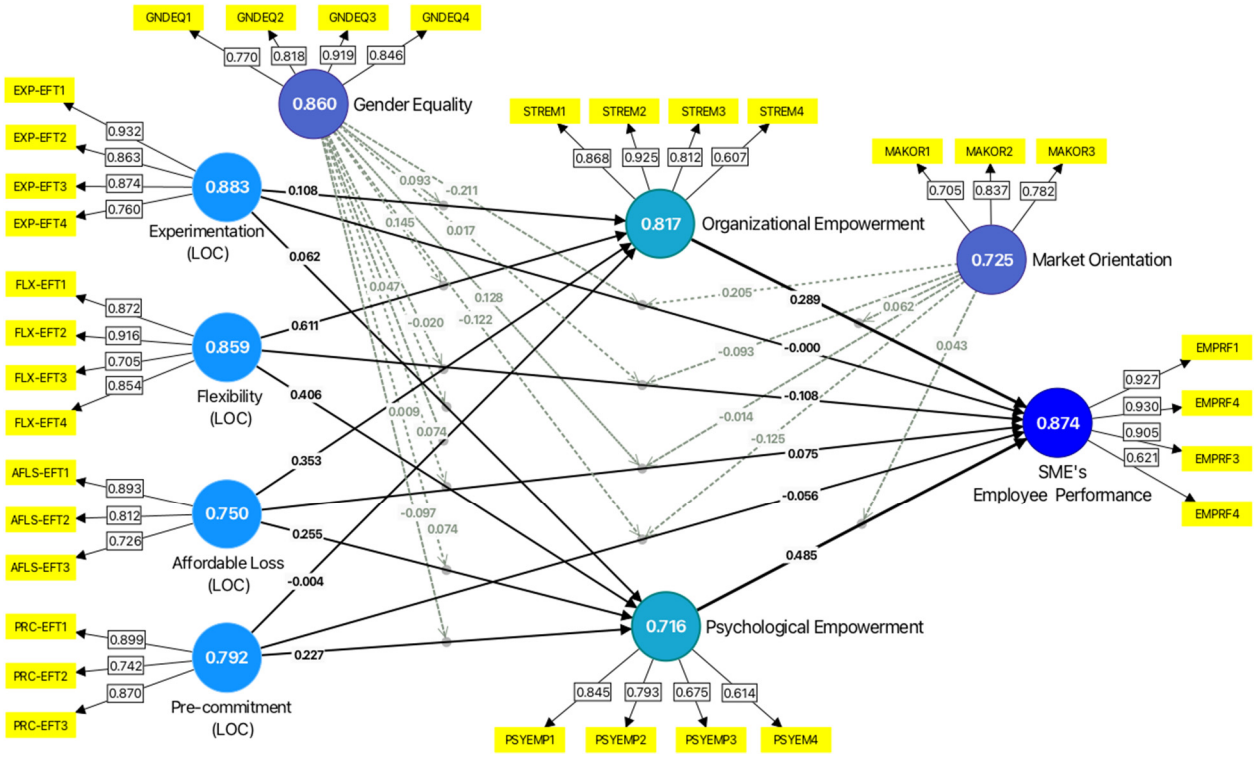

Figure 2. Firststage outer model of PLS-SEM.

In the measurement model analysis or first-stage outer model, an assessment was carried out with only the four LOCs and did not yet involve the HOC. At this stage, 33 reliable and valid indicators were obtained, and several indicators had to be eliminated since they did not meet the requirements. All indicators used in this model are shown in Table 2. In this table, the descriptive values, particularly the mean score of each construct, are also presented. The highest mean value was found in flexibility (LOC), and the lowest mean was in psychological empowerment. Further, it can be seen that almost all variables have loading values above 0.708 as required; however, there are several indicators with loading values below 0.708. This indicator can still be maintained according to the recommendations of Hair et al. (2022), as it did not interfere with the overall values of construct reliability and validity.

Table 2. Construct reliability and validity.

Variable	Code	Indicator	OL
Affordable Loss (LOC)	AFLS-EFT1	The woman leader in this SME is careful in managing investments according to the limits of the funds owned by this SME.	0.893
	AFLS-EFT2	The women leader in this SME manages the risk of costs incurred with careful calculations so that it does not become a hassle if something happens.	0.812
	AFLS-EFT3	The woman leader in this SME calculates costs within the reserve fund limits that this SME can still afford.	0.726
Mean = 3.839, CA = 0.750, Rho_a= 0.814, Rho_c = 0.853, AVE = 0.661			

Table 2. *Cont.*

Variable	Code	Indicator	OL
Experimentation (LOC)	EXP-EFT1	The woman leader in this SME encourages employees to develop new products that are different from existing ones.	0.932
	EXP-EFT2	The woman leader in this SME makes the current products different from their old products.	0.863
	EXP-EFT3	The woman leader in this SME is trying to create a new product that is different from the initial concept.	0.874
	EXP-EFT4	This female leader in this SME makes changes business processes to find more effective methods.	0.760
Mean = 4.053, CA = 0.883, Rho_a = 0.927, Rho_c = 0.918, AVE = 0.739			
Flexibility (LOC)	FLX-EFT1	The woman leader in this SME can adapt the organization's activities to capture new opportunities that exist.	0.872
	FLX-EFT2	The woman leader in this SME tries to avoid rigid ways of working to move towards the changes needed.	0.916
	FLX-EFT3	The woman leader in this SME is flexible and able to seize new opportunities in business.	0.705
	FLX-EFT4	This SME was developed by a woman leader who can adapt to changes in the resources she has.	0.854
Mean = 4.205, CA = 0.859, Rho_a = 0.880, Rho_c = 0.905, AVE = 0.707			
Pre-commitment (LOC)	PRC-EFT1	The woman leader in this SME makes cooperation agreements with business partners as soon as possible.	0.899
	PRC-EFT2	The woman leader in this SME establishes cooperative ties with external parties such as suppliers to reduce uncertainty.	0.742
	PRC-EFT3	The women leader in this SME seeks mutually beneficial cooperation agreements with other organizations earlier.	0.870
Mean = 3.843, CA = 0.792, Rho_a = 0.846, Rho_c = 0.877, AVE = 0.706			
Structural Empowerment	STREM1	Like others, I got the opportunity to develop my skills in this UKM.	0.868
	STREM2	In this SME, I can easily ask about the rules that apply in the workplace.	0.925
	STREM3	In this SME, there is openness to discussing solving problems that occur in the workplace.	0.812
	STREM4	I receive support if I need help in carrying out assignments in this SME.	0.607
Mean = 3.908, CA = 0.817, Rho_a = 0.825, Rho_c = 0.883, AVE = 0.659			
Psychological Empowerment	PSYEMP1	I am convinced that the work I do in this SME is important for my life.	0.845
	PSYEMP2	I believe that the work activities I do in this SME will bring prosperity to me in the future.	0.793
	PSYEMP3	I am encouraged to be confident in doing my job well in this SME.	0.675
	PSYEMP4	I am supported to have adequate skills to carry out the tasks given.	0.614
Mean = 3.252, CA = 0.716, Rho_a = 0.758, Rho_c = 0.824, AVE = 0.544			

Table 2. *Cont.*

Variable	Code	Indicator	OL
Employee Performance	EMPRF1	I can usually complete the work that is my responsibility on time.	0.927
	EMPRF2	I usually work according to the standards set by the leaders in this SME.	0.905
	EMPRF4	I can do my assignments well consistently and as is expected from time to time.	0.930
	EMPRF4	I can still work well even under the pressure of work deadlines.	0.621
Mean = 3.471, CA = 0.874, Rho_a = 0.929, Rho_c = 0.914, AVE = 0.732			
Gender Equality	GNDEQ1	Wages for female workers are given without distinction of gender.	0.770
	GNDEQ2	Incentives are given regardless of the gender of workers in this SME.	0.818
	GNDEQ3	Women are included in decision making when working in this UKM.	0.919
	GNDEQ4	In my opinion, female workers in this SME have fair rights.	0.846
Mean = 3.830, CA = 0.860, Rho_a = 0.875, Rho_c = 0.905, AVE = 0.706			
Market Orientation	MAKOR1	The SMEs I work with seem to understand what today's consumers want.	0.705
	MAKOR2	The SMEs where I work focus on efforts to increase consumer satisfaction.	0.837
	MAKOR3	The SMEs where I work are able to adapt their products to new trends that consumers are interested in.	0.782
Mean = 3.937, CA = 0.725, Rho_a = 0.822, Rho_c = 0.820, AVE = 0.603			

CA = Cronbach's alpha, OL = outer loading, AVE = average variance extracted, LOC = lower-order construct.

All the variables in this research model, including the four LOCs, have Cronbach's alpha and rho_a values above 0.7 and rh0_c or composite reliability values as the upper limit below 0.95. Furthermore, all variables have an AVE value above five, as required, so it can be concluded that this research model in the first stage met the mandatory requirements for reliability and validity. The largest CA values were found in the Experimentation (0.883) and Employer performance (0.874) dimensions. This shows the stable internal consistency of these variables, while the lowest CA value was found in psychological empowerment (0.716), which also had the lowest AVE value (0.544); this finding can be an input note for further survey research. The discriminant validity test used the Heterotrait–monotrait (HTMT) ratio, as recommended at the first stage; it was found that all constructs had HTMT ratio values below 0.9, so it was said that all indicators in the model had been discriminated satisfactorily.

Based on these findings, the analysis step can be continued to the next stage, which is the two-stage stage, where the four LOCs with latent variable (LV) scores generated by PLS-SEM become indicators or HOCs. In this second stage, reliability and validity testing were carried out, similar to the four types of tests carried out in the first stage. At this stage, attention was focused on the HOC, which was also confirmed to be reliable and valid when measured together with other constructs. Women's entrepreneurial effectuation

as an HOC had a Cronbach's alpha value of 0.778 and AVE = 0.602. The four LOCs as HOC-reflective indicators had adequate external loading values; the largest OL value of 0.840 was for pre-commitment (LOC), while the smallest was 0.696 for affordable loss (LOC). Furthermore, inferential HTMT testing, as recommended (Henseler et al., 2015), was carried out using bootstrapping, and the results are shown in Table 3 below.

Table 3. Heterotrait–monotrait ratio.

Path	HTMT Ratio	Confidence Interval	
		5.0%	95.0%
Market Orientation <-> Gender Equality	0.808	0.729	0.883
Organizational Empowerment <-> Gender Equality	0.529	0.427	0.623
Organizational Empowerment <-> Market Orientation	0.526	0.428	0.639
Psychological Empowerment <-> Gender Equality	0.813	0.741	0.882
Psychological Empowerment <-> Market Orientation	0.682	0.587	0.785
Psychological Empowerment <-> Organizational Empowerment	0.727	0.630	0.821
Employee Performance <-> Gender Equality	0.697	0.623	0.767
Employee Performance <-> Market Orientation	0.578	0.475	0.678
Employee Performance <-> Organizational Empowerment	0.673	0.593	0.749
Employee Performance <-> Psychological Empowerment	0.888	0.833	0.947
Entrepreneurial Effectuation (HOC) <-> Gender Equality	0.887	0.825	0.942
Entrepreneurial Effectuation (HOC) <-> Market Orientation	0.832	0.758	0.900
Entrepreneurial Effectuation (HOC) <-> Organizational Empowerment	0.872	0.811	0.934
Entrepreneurial Effectuation (HOC) <-> Psychological Empowerment	0.858	0.808	0.813
Entrepreneurial Effectuation (HOC) <-> SME's Employee Performance	0.836	0.776	0.891

HOC = higher-order construct, HTMT = heterotrait–monotrait.

From Table 3, it can be seen that all constructs had values below 0.9, and the maximum value in the 95% confidence interval range was below one. Therefore, it was confirmed at the second stage that all constructs can be measured specifically by their respective indicators. The lowest HTMT ratio value was 0.526 in structural empowerment with market orientation. Meanwhile, the highest HTMT was 0.888 in employee performance with psychological empowerment. By confirming that the measurement model was reliable and valid, the analysis could continue to the assessment of the quality of the model. The inner VIF (variance inflation factor) data obtained were below three (3) as expected. These results confirm that the model was free from multicollinearity problems. A VIF value lower than 3.3 also indicates that the model was exempt from the possibility of common method bias (CMB) (Kock, 2015).

4.3. Structural Model (Inner Model)

In a further test, it was discovered that the R^2 value for employee performance at SMEs was 0.659. This value is above 0.5 and approaching 0.75, which is the limit for the model to be said to have substantial explanatory power. These results show that the model can explain 66% of the variance, while the remaining 36% can be explained by other variables not included in the model. Testing with PLS Predict found a Q^2 predict value

of 0.527 for employee performance; this value was larger than 0.5, so we could confirm that the model has large predictive relevance (Shmueli et al., 2019). However, in testing using the Cross-Validated Prediction Ability Test (CVPAT) approach as recommended by Sharma et al. (2022), we found that the comparison with the Indicator Average (IA) PLS model had less error (negative average loss), whereas in comparison with the Linear Model (LM), the PLS model had a larger error. Thus, the model can only be said to have valid predictions. In addition, the SRMR value obtained was below 0.08, so we could concludes that the model has sufficient quality to explain and predict its dependent variable.

The outcome results from analysis using PLS-SEM produce an image of the inner model or structural model as in Figure 3. It can be seen that entrepreneurial effectuation appeared as an HOC with four reflective dimensions (or LOCs). This inner model image can provide the main information in the form of significance and standardized coefficients on the path studied in the model. The *p*-value in brackets shows the significance limit, while the coefficient value shows the direction and magnitude of the effect.

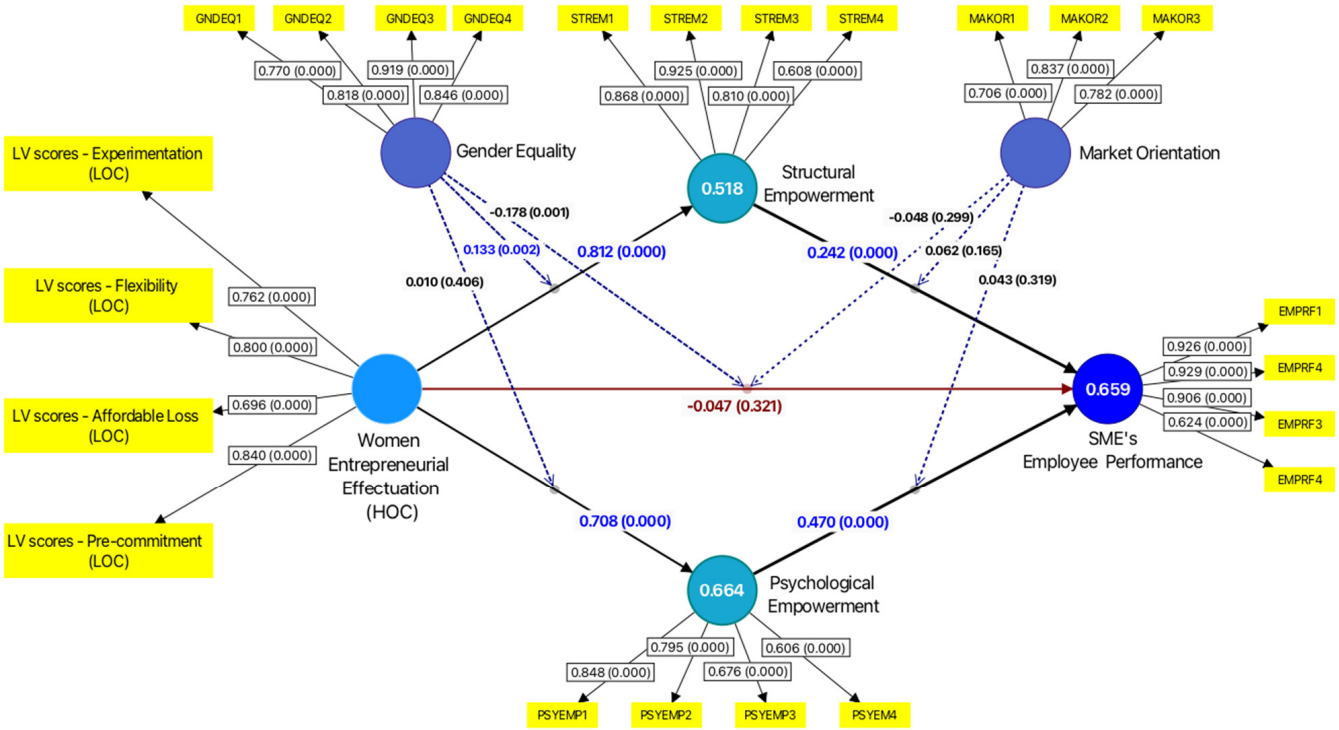

Figure 3. Secondstage inner model PLS-SEM.

In Figure 3, it can be seen that the direct influence of effectuation on employees' performance was found not to be significant, with a *p*-value = 0.321. Likewise, we also found the role of the two moderating variables in the model, especially their significance. The key findings of this research show that the influence of women's entrepreneurial effectuation must be through the mediation of empowerment. On the other hand, the pathway through physiological empowerment seems to be stronger when compared to the path through structural empowerment.

The most important stage in data analysis was the testing of the proposed hypothesis. This was achieved by looking at the significance of the *p*-value along with the 95% confidence interval value. Of the 13 hypotheses proposed, it was known that the direct path from entrepreneurial effectuation was not significant, due to the *p*-value being greater than 0.05, and there was a value of 0, which fell within the confidence interval range. Meanwhile, on the other path, through both types of empowerment, the hypothesis can be stated to be supported because the significance value and direction of influence were positive,

following the direction of the one-tailed hypothesis. Thus, this influence can be applied to a wider research population. Of the six moderation hypotheses, only one hypothesis was supported—that gender equality strengthens the influence of women's entrepreneurial effectiveness on structural empowerment. Meanwhile, the three market orientation moderations were not supported by sufficient evidence to be said to be significant.

From the 13 hypothesis test results, 2 mediation hypotheses (H8 and H10) were significant with positive coefficients, and thus both mediation hypotheses are supported. On the other hand, the direct influence of women's entrepreneurial effectuation on SME employees is not supported. Therefore, both structural and psychological empowerment function as mediators of the indirect-only type, which is often called full mediation.

A simple slope analysis of the only significant moderating effect (H4), as in Figure 4, shows that the slope of the green line (SD + 1) is greater than the slope of the blue line, so it can be said to strengthen moderation. The stronger the perception of gender equality in the SME, the stronger the influence of women's entrepreneurial effectuation on structural empowerment. This strengthening effect is more prominent in the quadrant where the influence of effectuation and structural empowerment tends to be weak.

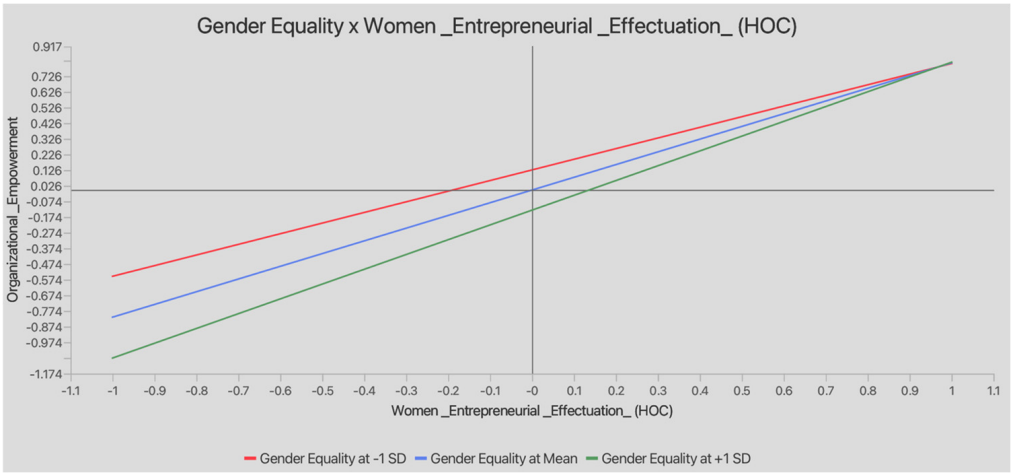

Figure 4. Moderation slope analysis.

4.4. Structural Model (Inner Model)

Advanced analysis of PLS-SEM was also conducted to identify areas of improvement in SME organizations.

In the analysis with Importance Performance Mapping Analysis (IPMA), which is an additional tool in PLS-SEM, indicators can be analyzed more deeply for managerial implications (Ringle & Sarstedt, 2016). The findings, as in Figure 5, show that the most important indicator is the indicator of psychological empowerment, namely PSYEMP1, which contains "I am convinced that the work I do in this SME is important for my life." However, this indicator was below the average line, so it was positioned in the lower right quadrant (high importance–low performance). The same result was also found in PSYEMP2; therefore, it must be prioritized immediately for improvement in order to have an impact on performance. From the IPMA analysis, it can be found that the position of the flexibility (LOC) dimension was in the upper right quadrant; thus, it can be concluded that this dimension was the most important for workers and has shown relatively good performance. Consequently, it needs to be maintained.

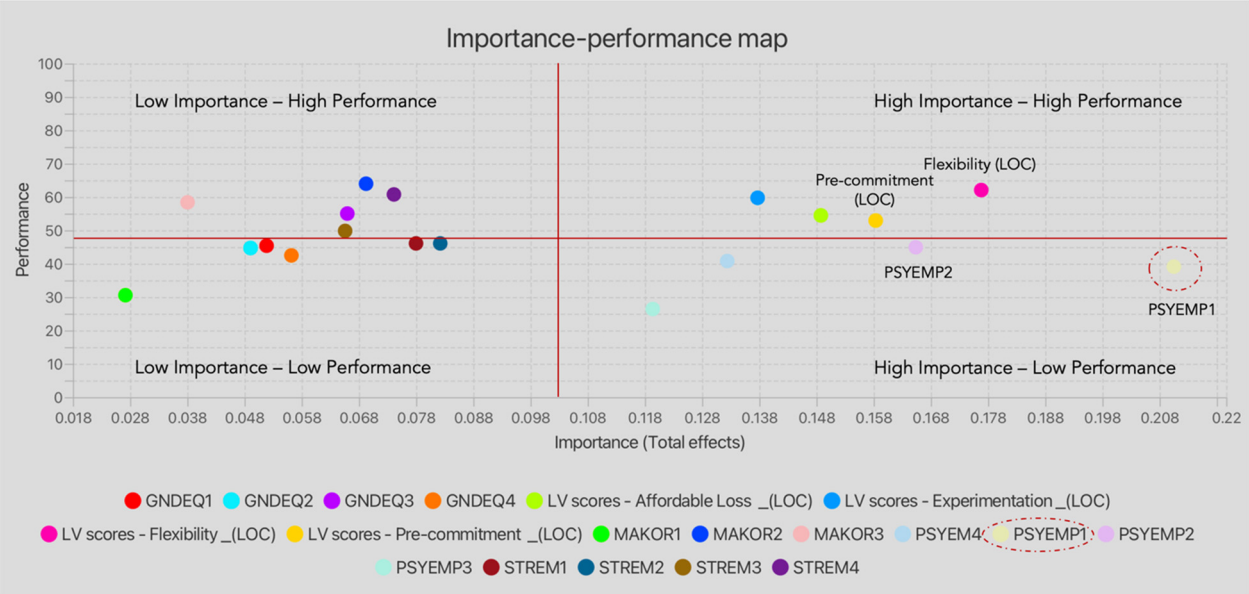

Figure 5. IPMA indicator.

5. Discussion

This research aims to explain and predict employee performance among female workers in SMEs using predictors of women's entrepreneurial effectuation as a higher-order construct (HOC). The effectuation effect is mediated by both structural and physiological empowerment and moderated by gender equality and market orientation. This research model was tested using survey data on SMEs in Indonesia, especially in West Java province, which is the province with the most SMEs in Indonesia. Key findings from this research show interesting results. Although the results of the analysis confirm the role of effectuation in encouraging increased performance by female workers (S. D. Sarasvathy, 2001, 2022), it is known that entrepreneurial effectuation cannot directly influence the performance of SME workers; instead, this needs to be achieved through mediation that amplifies effectuation through both structural and physiological empowerment. Both mediation pathways show a significant influence, as in Table 4, where the path through psychological empowerment is greater ($\beta = 0.333$) than that through structural empowerment ($\beta = 0.196$). These findings are different from those of previous research (Chen & Liu, 2022; Osiyevskyy et al., 2023), which shows the direct effect of effectuation. This may be related to the subjectivity of the respondents, which is influenced by intrinsic motivational factors.

By confirming the applicability of resource-based view (RBV) theory (Wernerfelt, 2013) and interweaving it with entrepreneurship effectuation (S. D. Sarasvathy, 2001, 2022), this study offers a compelling framework for enhancing SME employee performance by simultaneously leveraging internal human capital and adaptive decision-making heuristics. The results of this study revealed that when effectuation principles such as embracing flexibility, pre-commitment to strategic partnerships, and tolerating affordable loss are overlaid onto this resource base, SMEs can dynamically reconfigure human capital in response to market demand. Based on the empirical analysis from SME in Indonesia, this study suggests that women entrepreneurs who cultivate structural and psychological empowerment create an environment where employees feel both supported by formal systems and intrinsically motivated to apply their unique capabilities to iterative experimentation and co-creation. This synergistic implementation not only fortifies the firm's resource profile but also translates into elevated levels of creativity, engagement, and ultimately, performance among SME employees.

Table 4. Hypothesis testing results.

	Hypotheses	Std. Coefficient	*p*-Values	Confidence Interval		Result
				5.0%	95.0%	
H1	WEE (HOC) -> STREM	0.812	0.000	0.709	0.906	Hypothesis supported
H2	WEE (HOC) -> PSYEM	0.708	0.000	0.605	0.813	Hypothesis supported
H3	WEE (HOC) -> SME's Employee Performance	−0.047	0.321	−0.211	0.117	Hypothesis not supported
H4	Gender Equality × WEE (HOC) -> STREM	0.133	0.002	0.060	0.212	Hypothesis supported
H5	Gender Equality × WEE (HOC) -> SME's Employee Performance	−0.178	0.001	−0.274	−0.079	Hypothesis not supported
H6	Gender Equality × WEE (HOC) -> PSYEM	0.010	0.406	−0.059	0.076	Hypothesis not supported
H7	STREM -> SME's Employee Performance	0.242	0.000	0.152	0.325	Hypothesis supported
H8	WEE (HOC) -> STREM -> SME's Employee Performance	0.196	0.000	0.122	0.269	Hypothesis supported
H9	PSYEM -> SME's Employee Performance	0.470	0.000	0.355	0.599	Hypothesis supported
H10	WEE (HOC) -> PSYEM -> SME's Employee Performance	0.333	0.000	0.247	0.438	Hypothesis supported
H11	MARKO × STREM-> SME's Employee Performance	0.062	0.165	−0.050	0.161	Hypothesis not supported
H12	MARKO × WEE (HOC) -> SME's Employee Performance	−0.048	0.299	−0.195	0.099	Hypothesis not supported
H13	MARKO × PSYEM -> SME's Employee Performance	0.043	0.319	−0.103	0.195	Hypothesis not supported

WEE: women's entrepreneurial effectuation, STREM: structural empowerment, PSYEM: psychological empowerment, MARKO: market orientation, HOC: higher-order construct, Std: standardized.

This study confirms that entrepreneurial effectuation can be operationalized to predict SME performance, but this study also stands to add something new to the body of knowledge in the study of entrepreneurship by specifically testing entrepreneurial effectuation through the disjointed two-stage method, which is considered more precise in assessing the reliability and validity of dimensions (LOCs) (Becker et al., 2023). The assessment results show that effectuation can and needs to be measured through its dimensions. These findings underline that effectuation is a multidimensional construct that needs to be assessed comprehensively in practice. From the four dimensions of flexibility, experimentation, affordable loss, and pre-commitment, it was found that flexibility had the greatest effect, while the weakest came from experimentation. This is understandable because for SMEs' workers, trying new things means dealing with changes that are not always comfortable. This finding turns out to be in line with research by Nyoni and Moos (2022) in South Africa, who also found the flexibility dimension to be the strongest factor. The finding of flexibility as a main element of effectuation is important in supporting explanations (Fisher, 2012) of the differences between effectuation, causation, and bricolage in entrepreneurship. This implies that women entrepreneurs need to focus on a more flexible approach in running their business and when dealing with unexpected situations.

This research, in which the respondents are female workers, produced interesting findings, showing that these SME female workers need empowerment first. This effectuation practice in women-led SMEs suggests that the effectuation approach will only be understood if female leaders feel that this entrepreneurial approach provides direct benefits to themselves and the organization. Another possibility that shows that entrepreneurial effectuation does not have a direct influence on individual performance is that the perspective of female workers is still influenced by local patriarchal culture, so they tend to trust male leadership more (Bullough et al., 2021). To foster greater confidence among SME female employees operating within patriarchal contexts, organizations should implement targeted interventions that build both individual self-efficacy and supportive team norms. This can be achieved by providing regular assertiveness and communication training that teaches women to articulate ideas, negotiate boundaries, and challenge assumptions in safe facilitated settings. Furthermore, we should establish women's peer networks or affinity groups that meet periodically to share experiences, offer mutual encouragement, and develop collective strategies for overcoming hierarchical barriers.

This study underlines that the resource-based view (RBV) can be implemented empirically by treating individual female employees' skills, knowledge, and social networks as valuable human resources within SMEs. By measuring these human capital attributes through validated survey instruments and linking them to performance metrics, this study pointed out how women's unique resource profiles contribute to organizational outcomes in the SME context. Particularly, the results of this study's analysis align with previous research that shows the importance of empowerment in organizations (Echebiri et al., 2020; Shin & Shin, 2023; van den Berg et al., 2021; Yasir et al., 2021). This result indicates the magnitude of the direct effect of entrepreneurial effectuation on structural empowerment (β = 812) and psychological empowerment (β = 708), while the direct effect of effectiveness cannot be said to be significant based on empirical data.

The results of the analysis show that empowerment approaches, both in terms of the organizational structural and psychological aspects of each individual, have a significant positive influence on employee performance. The influence of psychological empowerment was found to be stronger (β = 0.470) than that of structural empowerment (β = 0.242). The findings of the positive influence of psychological empowerment and structural empowerment on performance in SMEs are consistent with previous research (Cunningham & Eberle, 2017; Ling et al., 2023; Mahmoud et al., 2021). Yet, these findings add a new perspective: both types of empowerment have a direct impact on the performance of SME employees. This shows that worker performance is more driven by what female workers feel personally. To increase the capacity of female workers in SMEs, an entrepreneurial approach is needed that ensures that female workers are empowered according to their potential. This requires the SME leader to have strong communication skills and the ability to better understand the unique psychological needs of each worker.

The result of indirect-only mediation through empowerment, also previously known as full mediation, shows that entrepreneurial effectuation might be poorly understood at the employee level in general, especially for employees who have not worked for the SME for a long time, such as the respondents in this study. Above all, the findings of this study confirm that the effectuation approach can lead to increased performance for employees in SMEs that display continuous growth through empowerment only. This result points out that female employees in resource-constrained SMEs should be empowered through practical measures, for example, by delegating clear decision rights over routine activities such as choosing order fulfillment methods or scheduling client follow-ups in order to enhance autonomy and ownership. This can also be achieved by establishing a rotating

supervisor–mentor system where experienced employees devote one hour weekly to coaching a junior employee on specific skills, leveraging in-house expertise at no extra cost.

These findings indicate that the entrepreneurial effect approach, in order to be effective and become an approach that is supported by female employees, needs to involve and empower them; in this way, it will be felt directly by female employees. This result is consistent with previous studies (Begum et al., 2020; Ivanova & von Scheve, 2019; Ling et al., 2023). Entrepreneurial style, which is related to business decision making, is a complex matter and is sometimes not easily understood by ordinary workers who do not yet have business acumen. In practice, this finding shows that effectuation needs to be communicated well to workers so that they can understand the decisions taken by SME business leaders. This finding is also supported by other interesting evidence that moderating gender equality significantly strengthens the positive influence of women's entrepreneurial effectuation on structural empowerment; however, even though it has a positive effect, it is not significant on the path from effectuation to psychological empowerment.

The results regarding gender equality, which can strengthen female employees' perceptions that their organizations are empowered, are consistent with previous research (Riaz & Chaudhry, 2021). These findings show that female workers in the context of SMEs feel that gender equality practices will have a positive effect on the SME organization. The results of this research emphasize that in SME businesses run by women entrepreneurs, it is necessary to encourage gender equality. The more this practice is carried out, the stronger the process of empowering female workers becomes. This research confirms that gender equality, apart from being related to human rights, can also be a factor associated with the performance of SME organizations, so it cannot be ignored. These findings show that gender equality in Jawa Barat province in Indonesia is still a relevant issue. Consequently, this issue needs to be paid attention to not only by women entrepreneurs but also by stakeholders, especially local governments and national policymakers. This study suggests that the promotion of the protection of female workers' rights in SMEs can also be linked to a more productive work environment.

This study recommends that policymakers prioritize the institutionalization of gender-equitable practices within SMEs by embedding formal mandates—such as gender-neutral hiring and promotion criteria, pay-equity audits, and quotas for female representation in decision-making bodies—into regional and national SME support programs. By coupling these mandates with targeted incentives (e.g., preferential access to low-interest financing, tax credits, or certification as "gender equity-compliant" enterprises), legislators can accelerate the adoption of structural empowerment mechanisms that have been shown to magnify the positive effects of women's entrepreneurial effectuation. In doing so, not only will female entrepreneurs be better positioned to leverage flexibility, pre-commitment, and affordable-loss heuristics; their employees are also likely to demonstrate higher performance, thereby fostering more resilient, inclusive, and competitive SME sectors.

On the other hand, the findings of this study show that gender equality does not play a significant role in strengthening the relationship between entrepreneurial effectuation and psychological empowerment in the context of MSMEs in Indonesia. One factor that can explain this finding is the characteristics of the respondents, where the majority have a secondary education level (49% are high school graduates/equivalent) and relatively short work experience (29% have only worked for 1–2 years in MSMEs). In the context of community-based businesses such as SMEs in the culinary sector (33%) and handicrafts (19%), performance is often influenced by social norms and family-based organizational hierarchies, which still maintain the traditional division of roles in work in the organization. For example, women are more involved in routine and repetitive work, in which performance progress is more difficult to self-assess (C. Brush et al., 2018).

Regarding the perception of SME market orientation by female workers, the findings of this research show insignificant results. This is possibly due to respondents' limited length of time working in SMEs, as in the respondent profile, where above 50% still have a length of service of less than four years. This short length of time in work enables individuals to assess organizational changes that adapt to the market environment and therefore needs to be taken into account in the sampling process. This may reflect measurement bias arising from respondents' uneven levels of domain knowledge, which could have attenuated the construct's validity. Concerning market orientation measurement, it is suggested that in further research, respondents who have more specific jobs (for example, in marketing and business development positions, rather than production workers) should be selected. Furthermore, market orientation can be measured with employees' perceptions of social media technology in business as a moderator, thereby capturing a more contextually relevant driver of focal relationships with customers.

6. Conclusions

This study concludes that women's entrepreneurial effectuation significantly enhances employee performance in SMEs in West Java, Indonesia, provided that such effectuation is channeled through both psychological and structural empowerment. Specifically, among the four dimensions of effectuation, flexibility, pre-commitment, and affordable loss emerge as the most influential drivers of performance. These findings underscore that internalization of effectuation logic at the employee level requires deliberate empowerment efforts, so that decisions are understood, accepted, and translated into proactive ownership of organizational goals.

The results of this study provide several theoretical implications; first, it underlines that effectuation is a dynamic entrepreneurial capability within the RBV. By integrating entrepreneurship effectuation theory with the resource-based view (RBV), this research shows that effectuation processes serve as socially complex, path-dependent capabilities, which may be difficult for SME's competitors to imitate and hence reconfigure their internal resources into performance. Second, unlike traditional effectuation models that posit a direct link to performance, this study's findings reveal that effectuation's impact must be fully mediated by both structural and psychological empowerment, since the direct effect of effectuation on performance is not significant. This extends effectuation theory by highlighting the indispensable role of empowerment mechanisms in translating entrepreneurial heuristics into human capital advantage. Third, this study indicates that gender equality is a boundary condition. Gender equality strengthens the path from effectuation to structural empowerment, suggesting that gender-equitable practices amplify the translation of entrepreneurial decision making into formal support structures. However, gender equality does not significantly moderate the relationship between effectuation and psychological empowerment, indicating that perceptions of fairness and inclusion alone may be insufficient to bolster employees' intrinsic confidence and autonomy without deliberate psychological support programs.

In terms of practical implications, this study's results point to the importance of interweaving entrepreneurial agility with intentional empowerment efforts. Women SME leaders should embed flexibility and early commitment mechanisms into their governance processes while setting clear, affordable loss boundaries, and they must invest equally in building structural supports and cultivating employees' psychological resources. Women entrepreneurs need to leverage gender-equitable practices to enhance the structural supports, such as clear roles, procedures, and resource allocations, that allow effectuation behaviors to flourish. Moreover, they need to invest equally in structural (governance frameworks, role clarity, etc.) and psychological approaches like coaching, autonomy, and

recognition as empowerment initiatives, since effectuation by itself does not translate into performance without both mediators. In particular, women entrepreneurs who lead SMEs need to develop business skills that are oriented towards embedding effectuation dimensions (namely, flexibility, pre-commitment, and affordable loss), into leadership training and SOPs, ensuring that decision flows are both adaptive and aligned with resource constraints.

While covering over twenty SMEs across sectors like culinary, handicrafts, and fashion accessories, this study's cross-sectional design limits causal inference. Future research should test these relationships longitudinally, explore industry-specific moderators, and further examine how cultural power distance interacts with both types of empowerment approach in shaping effectuation outcomes. Moreover, this study relied on self-reported measures of psychological and structural empowerment, which could be vulnerable to common-method bias; we have not yet explored other potential boundary conditions such as market volatility or the role of digitalization in SME operations. Future research would benefit from an experimental study design that tracks changes in effectuation behaviors and empowerment outcomes over time and tests additional moderators, including cultural power distance and technology adoption. In doing so, scholars can deepen the understanding of how entrepreneurial effectuation heuristics translate into sustained performance under diverse contextual pressures.

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