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The Effect of Financial Literacy (FL), Financial Access (FA), Financial Risk Attitude (FRA) on Business Sustainability (BS): Mediating Role of Local Cultural Innovation (CI) and Moderating Role of Dynamic Capabilities (DCs)

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Abstract
The financial competencies are not alone able to ensure sustainability unless backed by cultural and organizational capabilities in the fast-changing business environment. It is crucial to understand the factors that facilitate businesses to become environmentally responsible in today's dynamic world. Hence, the objective of this study is to develop a model to further examine the impact of Financial Literacy (FL), Financial Access (FA), and the Financial Risk Attitude (FRA) on Business Sustainability (BS). Further, to examine the role of Cultural Innovation (CI) and Business Performance (BP) as mediating and Dynamic Capabilities (DCs) as moderating variable on the relationship of FL, FA, and FRA by integrating Cultural Embeddedness Theory (CET) Resource Based View (RBV) and Diffusion of Innovation (DOI) theory. The study has devised a quantitative research design which employed a structured questionnaire. The data will be collected from the employees working in Micro and Small Medium Enterprises (MSMEs), Malang, Indonesia. Data is recommended to be analysed through Partial least Square-Structural Equation Modelling (PLS-SEM) to assess the direct, mediating, and moderating impact of FL, FA, FRA, BP, and DA on SB. The findings of the study will reveal that FL, FA, FRA impact on BS. Further the results will reveal the mediating CI and BP and moderating role of DCs. Furthermore, the results will be highlighting the importance of integrating different variables into business strategies. The study has contributed to the existing scholarship by integrating CET, RBV, and DOI theories to develop a framework to investigate the impact of different factors on BS. Furthermore, the study has provided integration of DCs and CI to better understand the phenomenon under investigation. By offering a unique understanding of how cultural and financial factors interact with dynamic environments. The study provides a practical and theoretical insight for policymakers, businesses, and MSMEs to foster sustainable business models in developing economies.

Keywords: Business Performance (BP), Business Sustainability (BS), Cultural Embeddedness Theory (CET), Cultural Innovation (CI), Diffusion of Innovation (DOI), Dynamic Capabilities (DCs), Financial Access (FA), Financial Literacy (FL), Financial Risk Attitude (FRA), Micro and Small Medium Enterprises (MSMEs), Partial least Square-Structural Equation Modelling (PLS-SEM), Resource-Based View (RBV)

1. Introduction

Sustainability stands for the natural resources' preservation for the future generations (The General Assembly of United Nations, 2015). It is the capacity to provide a high standard of living for people in thriving ecosystems (Liu et al., 2022). Reducing ecological harm through effective resource management, waste disposal, energy use, and natural resource conservation are examples of environmental sustainability methods (León & Calvo-Amodio, 2017). In this sense, businesses are frequently under pressure from both internal and external sources to make investments which are environmentally friendly (Broccardo, Zicari, Jabeen, & Bhatti, 2023).

Institutional Theory and Market Orientation Theory are the sources of external pressures. These theoretical justifications hold that adopting green and environmentally friendly practices is a sensible corporate reaction toward different external pressures from the market, customers, and industry laws (Du & Wang, 2022; Xiaohong Chen, Yi, Zhang, & Li, 2018). However, past studies also highlighted that environmental regulations may also exert pressure in promoting environmental benefits (You, Hou, & Wang, 2024).

Effective managerial skills can assist businesses in more effective allocation and use of resources to support environmentally sustainable performance. This is theoretically supported by RBV and Corporate Social Responsibility Theory (CSR) (Jiang, Cai, & Wang, 2024). Among demographic variable, education is frequently highlighted as one the determining factor (Mahran & Elamer, 2024). In this regard, limited past studies focused on this aspect and results depicted significant impact toward sustainable behaviour (Aini, Harymawan, Nasih, & Kamarudin, 2024).

In Indonesian economic growth, Micro and Small Medium Enterprises (MSMEs) have a substantial impact, through their contribution for creation of employment opportunities and innovation and employment. However, MSMEs mostly facing challenges pertaining to their understanding of financial matters, market orientation, access to capital, and innovation adoption. Results of past studies demonstrated that provision of finance and credit to these enterprises will have great impact on the economy (Sarapung, Andi Chairil Furqan, Zahra, & Megawati, 2024). Further, financial access will enable MSMEs innovation and expansion of markets (Puspitowati, Firdausy, & Handoyo, 2024). Hence, it is highly essential to back these enterprises with credits, training, and policies that enable them grow and promote the sustainable development (Golam, Akhtari, & Lasmiatun, 2024; Trupp, Salman, Stephenson, Chan, & Gan, 2025; Zulfadhli, Desfitriana, & Pramajaya, 2024).

There are different factors that influence the sustainability of MSMEs. Economically, these factors have limited investment and credit availability, market access, product innovation, and literacy of owners. Most of MSMEs in Indonesia still depends on the local markets, which have limited supply and demand and less purchasing power of the buyer. According to a report issued by the Asian Development Bank (ADB), only 10 percent of MSMEs can enter the international markets. The lack of product innovation, capital availability, and financial literacy of owners are among factors that influence business sustainability and growth. Hence, the study aims to examine the impact of different factors on sustainability and business growth.

2. Literature Review

a. Background of MSMEs

According to the data provided by the Ministry of Cooperatives and SMEs at the start of year 2021, the number of (MSMEs) in Indonesia raised to 64.2 million with a 61.07 percent contribution toward GDP. Indonesian MSMEs are capable to absorb 97 percent of the existing workforce. These MSMEs have managed to collect 60.42 percent the total Indonesian investment (Ferli, 2023). According to the United Nation Development Program (UNDP), MSMEs have shown a 77 percent decrease in income since 2021. The number of MSMEs have suffered a lack of sufficient capital. Number of Government programs have been developed to support this strategic sector. Only 15 percent of these enterprises were able to make loans from only banking sector.

b. Past studies

According to Molina-García, Galache-Laza, González-García, & Diéguez-Soto1 (2025), FL facilitates Small and Medium Enterprises (SMEs)' involvement in environmental sustainability by improving risk management, investment, and financing decisions. By better understanding the trade-off between risks and benefits in SMEs, FL helps Chief Executive Officers (CEOs) to appropriately evaluate the risks associated with environmentally friendly investments (Liu et al., 2022). In other words, FL aids CEOs in setting priorities, comprehending, and overseeing environmentally friendly pledges and investments, as well as the risks involved (Liu et al., 2022).

In developing countries, access to capital one of the major challenges faced by MSMEs. Expanding, innovating, and running daily operations all require capital, yet many MSMEs struggle to secure sufficient funding. The primary complicating elements are obstacles including restricted access to official financial institutions, strict lending rules, and a lack of guarantee (Harrison, Li, Vigne, & Wu, 2022; Zulfadhli et al., 2024). Access to financing is crucial to MSMEs growth since it allows them to expand their operations, invest in new technology, and enter new markets (Lee, Sameen, & Cowling, 2015). Additionally, studies indicate that MSMEs with greater access to financing typically grow more quickly and are more sustainable (Bozintan (Cosma-Guler) & Badulescu, 2023; Harrison et al., 2022; Zulfadhli et al., 2024).

A company can see opportunities and challenges associated with financial and business decisions making by adopting a financial risk-taking attitude (Willebrands, Lammers, & Hartoq, 2012). According to Gärling, Kirchler, Lewis, & van Raaij (2009), an organization's financial decision-making process is influenced by its financial risk-taking attitude. A company's attitude toward financial risk affects both its decision-making for survival and failure (Caliendo, Fossen, & Kritikos, 2010). The financial risk attitude differs depending on the features of the management and business owners. Because they concentrate on business opportunities rather than risks, entrepreneurs, for example, tend to see business conditions more favourably than non-entrepreneurs (Palich & Bagby, 1995). Therefore, variations in attitudes toward financial risk can significantly impact the success of businesses. Therefore, we suggest that SMEs' sustainability is influenced by their financial risk-taking attitude.

Teece (2007) stated that in organizations, DCs play an important role in opportunities identification and seizing while equipping the organization to address the possible threats. DCs also enhance competitiveness capabilities and play role in long-term development of the organization (Kareem, Kummitha, & Kolloju, 2024). Businesses may develop, implement, and safeguard the intangible assets that underpin exceptional long-term business performance through DCs. It is challenging to build and implement the micro foundations of DCs-the unique disciplines, organizational structures, processes, procedures, and decision rules that support organizations sensing, seizing, and reconfiguration capabilities. Strongly dynamic businesses have a strong entrepreneurial spirit (Teece, 2007). Hence, it can be hypothesized that DCs significantly influence the BP and BS.

Several prior studies have examined the relationship between financial literacy and business sustainability across various contexts. For instance, Molina-García et al. (2025), in the context of Spanish SMEs, found that financial literacy positively influences environmental sustainability through the mediating effect of process innovation. This suggests that financial knowledge enhances firms' innovative capacities, which in turn contributes to more sustainable environmental practices. Similarly, Ye & Kulathunga (2019) studied SMEs in Sri Lanka and reported that financial literacy improves sustainability performance indirectly through enhanced access to finance and financial risk attitude, highlighting the importance of both financial infrastructure and psychological readiness in achieving sustainability outcomes.

In Nigeria, Babajide et al. (2021) focused on small businesses and found that both financial literacy and financial capability significantly influence sustainable business practices, though no mediating or moderating variables were considered in their analysis. Zulfadhli et al. (2024) explored MSEMs in Indonesia and revealed that financial literacy, capital accessibility, and entrepreneurial orientation positively affect business growth, sustainability, and market orientation, further underscoring the strategic role of financial competencies in fostering sustainable enterprise development. Collectively, these studies affirm that financial literacy is a critical factor influencing sustainability across different regions and enterprise sizes, often interacting with other financial or innovation-related factors to strengthen business performance.

Cultural Embeddedness Theory (CET) supports the idea that local and cultured-based products innovation influences business performance. The CET emphasize that local-culture shapes how businesses design their products and engage with the market. The culture-based innovation not only generates economic value but also contributes to society by conserving local culture. For instance, tourism industry can sell goods based on regional customs to boost market appeal while benefiting the local economy. Hence, in this study it is hypothesized that CI mediates the relationship between FL and BS, FA and BS, and FRA and BS.

c. Underpinning Theories

The Diffusion of Innovation (DOI) and Resource-Based View (RBV) theories strengthen the conceptual framework of this study. DOI explains the process of innovation adoption, which is relevant to understanding how SMEs and MSMEs implement innovation strategies. Meanwhile, RBV highlights the importance of unique resources and internal capabilities in achieving business sustainability and growth. The study also employed CET. The study aims to examine the impact of Cultural Innovation (CI). CET supports local culture-based product innovation. This theory emphasizes that culture influences the way companies design products and interact with the market. The combination of these theories provides a holistic approach to explore MSMEs sustainability. By leveraging financial literacy, financial access, risk-taking, and local culture-based innovation, MSMEs can improve their business performance. When moderated by dynamic capabilities, these relationships become stronger, enabling MSMEs to achieve balanced business sustainability that positively impacts society, the economy, and the environment. This not only provides theoretical contributions to the literature but also provides practical insights to support sustainability policies and strategies for SMEs in Indonesia.

d. Proposed Hypotheses

The summary of proposed hypotheses is as below:

Table 1. Summary of Proposed Research Hypotheses

No.	Type of Relationship	Hypotheses
1.	Direct	Financial Literacy (FL) will positively affect the Business Sustainability (BS).
2.	Direct	Financial Access (FA) will positively affect the Business Sustainability (BS).
3.	Direct	Financial Risk Attitude (FRA) will positively affect the Business Sustainability (BS).
4.	Mediating	Cultural Innovation (CI) will mediate the relation between Financial Literacy (FL) and Business Sustainability (BS).
5.	Mediating	Cultural Innovation (CI) will mediate the relation between Financial Access (FA) and the Business Sustainability (BS).
6.	Mediating	Cultural Innovation (CI) will mediate the relation between Financial Risk Attitude (FRA) and the Business Sustainability (BS).
7.	Mediating	Business Performance (BI) will mediate the relation between Financial Literacy (FL) and Business Sustainability (BS).
8.	Mediating	Business Performance (BI) will mediate the relation between Financial Access (FA) and the Business Sustainability (BS).
9.	Mediating	Business Performance (BI) will mediate the relation between Financial Risk Attitude (FRA) and the Business Sustainability (BS).
10.	Moderating	Dynamic Capabilities (DCs) will moderate the relationship between financial literacy (FL) and the business sustainability (BS).
11.	Moderating	Dynamic capabilities (DCs) will moderate the relationship between Financial Access (FA) and the Business Sustainability (BS).
12.	Moderating	Dynamic Capabilities (DCs) will moderate the relationship between courage to take Financial Risk Attitude (FRA) and the Business Sustainability (BS).

Source: Authors' own work (2025)

e. Conceptual Model

Based on the above discussion and hypotheses development, the proposed research framework is given in the Figure 1. Impact of Financial Literacy (FL), Financial Access (FA), and Financial Risk Attitude (FRA) on Business Sustainability (BS). Further, to examine the role of Cultural Innovation (CI) and Business Performance (BP) as mediating and Dynamic Capabilities (DCs) as moderating variable on the relationship of FL, FA, and FRA.

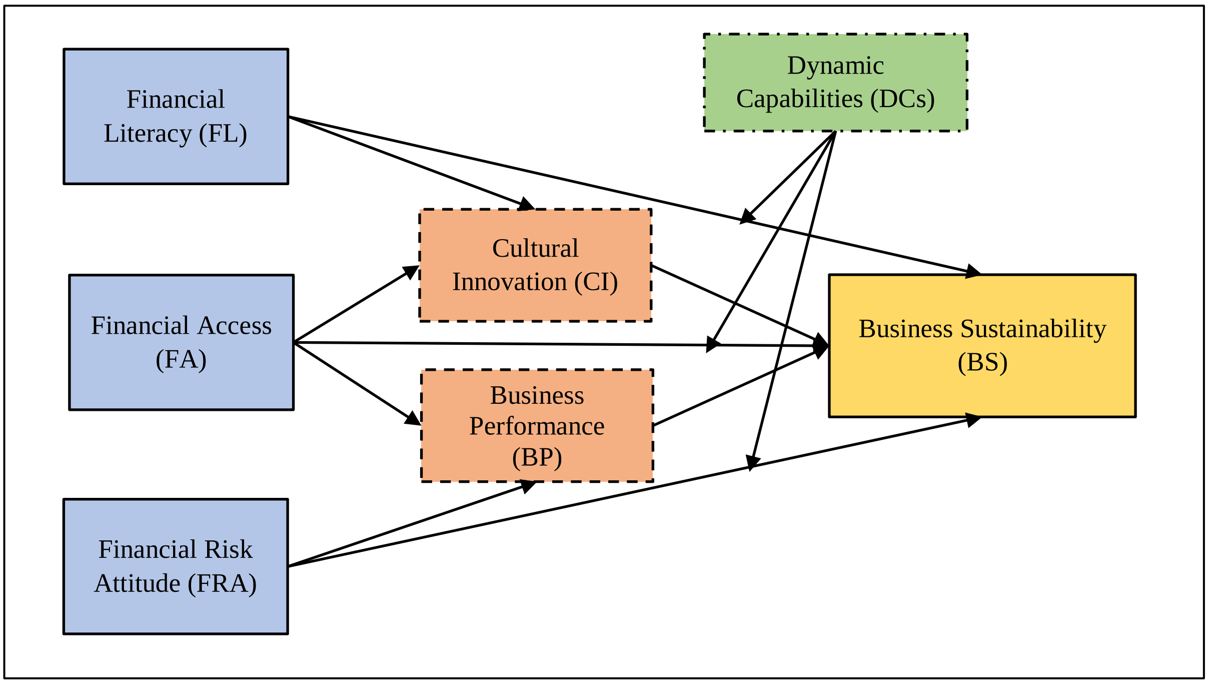

Figure 1. Proposed Research Framework
Source: Authors' own work (2025)

3. Methods

a. Research Design

There are two types of data for this study, primary data and secondary data. The secondary data has been used to develop the problem statement, literature review, and hypotheses of the study. The primary data will be collected from a structured questionnaire. The study adopted a quantitative research paradigm which refers to a *"fundamental belief systems or world view that guides the researcher"* (Guba Y. S, 1994). Quantitative methods help in generating quantifiable data that can be statistically tested (Sekaran & Bougie, 2016). The population of the study is MSMEs operating in Malang, Indonesia. Based on the objectives of the study, purposive sampling is the best suited technique to collect the responses. Those MSMEs will be part of the study which have age of not less than one year and particular sectors like manufacturing, retail, and service industries will be the unit of analysis. Based on the data source, use of PLS-SEM, and variable-item ratio, the minimum sample of 200 to maximum sample of 400 will be used (Bagozzi & Yi, 2012; Hair, Risher, Sarstedt, & Ringle, 2019). Data will be collected from the self-administrated questionnaire. The study will use Malang for data collection, as it is famous for rapid growth of MSMEs in Indonesia. The business innovation and creations in Malang has shown a potential in development of the local community.

b. Questionnaire

The items to measure the variables of the study are adopted from past literature. The dependent variable of the study is BS which is measured with adoption of environmental practices like energy and water consumption reduction, carbon emission reduction, and recycling (Cantele & Zardini, 2020). The items related to respondents' understanding of financial concepts, savings, budget, investment decisions, and risk associated with finance are used to measure FL and adopted from Majid & Nugraha (2022) and Sufyati, Handayani, Marzuki, & Zaelani (2022). FA is measured by items that evaluate the efforts to get external finance, credit availability, and funds adequacy adopted from Efendi, Wati, & Kuraesin (2023) and Putri et al. (2022). The FRA variable was measured with the items that evaluate the respondent's propensity toward innovation, risk-taking intention, and proactiveness. These items are taken from Lestari, Savitri, & Natariasari (2021). The BS and BP are evaluated by growth of business in terms of net sales, net profit, market share, and ability of the business to sustain the operational cost over time by Gao et al. (2023) and Purnomo, Purwandari, & Sentosa (2022).

c. Partial Least Square-Structural Equation Modelling (PLS-SEM)

In business research particularly, positivism needs theoretical frameworks to be thoroughly tested (Armstrong & Hilton, 2014; Barbara Bird, Harold Welsch, Astrachan, & Pistrui, 2002; Tabachnick & Fidell, 2021), and PLS-SEM advances powerful statistical techniques for such thorough testing. It is a second-generation multivariate technique used for statistically testing the causal relationships (Pearl, 2003). It is a collection of multivariate statistical techniques that allow for the concurrent investigation of several theoretical relationships between one or more independent variables with continuous or discrete variables and one or more dependent variables with the same type of variable (Armstrong & Hilton, 2014; do Nascimento & da Silva Macedo, 2016). As one of the most recent multivariate techniques used in the Social Sciences, the PLS-SEM enables the researcher to simultaneously investigate multiple relations of dependence. As this study has introduced mediation and moderation relations along with dependent and independent, hence, PLS-SEM will best suit to test the relationships. The research design and method discussed above are summarized in given Figure 2.

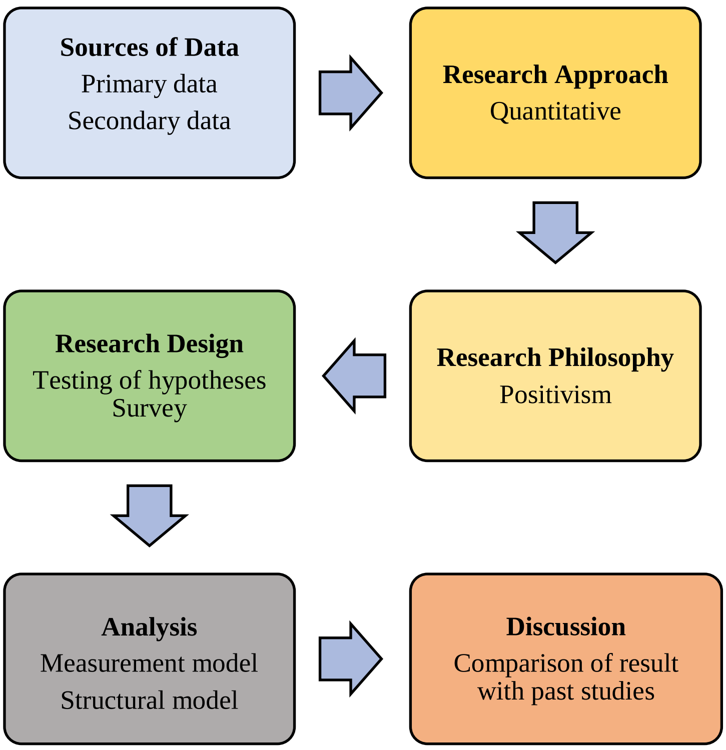

Figure 2. Summary of the research design and method

Source: Authors' own work (2025)

4. Conclusion

This study is expected to provide insight into how financial factors (FL and FA) affect the sustainability of MSMEs. In addition, the role of local cultural innovation and business performance have been discussed to see the extent to which these two factors can support BS. DC are expected to be important variables that can increase the effectiveness of the relationship between these factors and business sustainability. This study is expected to make a significant contribution to the development of MSMEs in Malang City, by providing recommendations on the importance of financial management, the courage to take risks, and the importance of local culture-based innovation in maintaining business sustainability. The current study is limited to the framework development to understand the impact of different factors on business sustainability and growth. The conceptual model can be tested empirically not in the context of SMEs and MSMEs of Malang but also in different provinces and contexts.

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