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Analysis Of Inhibiting Factors Of Agility Of Women's Msmes In Makassar City

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Abstract: This study aims to examine the key barriers faced by female-owned Small and Medium Enterprises (SMEs) in Makassar City, focusing on financial access, education and training opportunities, and social-cultural factors. Using factor analysis, data were collected from female entrepreneurs across various subdistricts in Makassar. The results highlight that access to financial resources, such as loans and venture capital, and participation in business networks are the most significant challenges faced by these women. Additionally, issues related to household responsibilities and limited access to quality education and training programs further hinder the agility of female-owned SMEs. The study also identifies that financial constraints, particularly high loan costs and difficulties in obtaining funding approvals, are the primary obstacles. While participation in education programs plays a moderate role, social factors like unequal household work distribution also impact business success. However, the research is limited by its focus on a single geographic area, reliance on self-reported data, and a cross-sectional design, which may not capture the full complexity of challenges faced by female entrepreneurs over time. The findings suggest that policy interventions should prioritize improving access to financial resources and business networks, enhancing educational opportunities, and addressing gender-related social barriers to support the growth of female-owned SMEs in Makassar City.

Keywords: Female SMEs**;** financial access**;** education**;** social-cultural barriers**;** Makassar City**.**

1. Introduction

The role of Micro, Small, and Medium Enterprises (MSMEs) in Indonesia's economy, particularly in Makassar City, is undeniably significant. MSMEs contribute not only to employment generation but also to the overall economic resilience of the region. Makassar, as a rapidly urbanizing city, presents both opportunities and challenges for MSMEs. The increasing population and urbanization create a burgeoning market for products and services, thus providing fertile ground for MSMEs to thrive. However, in parallel, urbanization intensifies competition in the job market, especially for vulnerable groups such as women, who often face discrimination and stereotyping in various sectors of the workforce. Despite the important role that women play in driving the MSME sector, particularly in selling and production, they encounter numerous challenges that can inhibit their agility and ability to adapt to rapidly changing market conditions. This research aims to examine the factors that hinder women's agility in MSMEs in Makassar City, drawing on the findings of various studies and data.

1.1 The Role of Women in MSMEs

In Indonesia, women are frequently perceived as more adept than men in certain aspects of business, particularly in sales and production. According to Neolaka et al. (2024) and Anggadwita et al. (2022), women have demonstrated superior skills in these areas. Women in poor communities, in particular, constantly strive to escape the cycle of economic

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powerlessness by seeking opportunities within the MSME sector. Women's empowerment is increasingly seen as a vital mechanism for addressing gender inequality and for solving the social and economic issues that women face. However, despite their capabilities, women are often relegated to domestic roles or limited to lower-status, lower-paying jobs within the service sector. The prevailing traditional gender roles perpetuate a notion that women are less capable than men, especially in more physically demanding or higher-skilled jobs, contributing to a sense of subordination.

This subordination of women has been historically pervasive in many industries, including MSMEs. Sari (2019) suggests that many women are seen as powerless and are offered job opportunities only in domestic service sectors, which further reinforces their marginalization. However, the reality shows that women are often more adept than men in managing small businesses, demonstrating the need to rethink traditional gender roles in the context of MSMEs. In many cases, women's empowerment initiatives, such as education and vocational training, help to transform gender perceptions and provide women with the skills they need to thrive in the business environment.

1.2 Urbanization and Employment Challenges in Makassar

Makassar City, being one of Indonesia's rapidly urbanizing regions, is a hotspot for both macro and microeconomic activities. The rise in population presents ample opportunities for MSMEs, as more people equate to a larger customer base. However, urbanization also brings about increased job competition, which disproportionately affects women. As the job market becomes more saturated with applicants, particularly those seeking work in industries where women are underrepresented, the challenges of unemployment become more pronounced. This issue is compounded by traditional gender biases, which often limit the sectors in which women are deemed employable.

The number of MSMEs in Makassar continues to grow, with the most recent data indicating that there are approximately 18,492 MSMEs in the city (Makassar, 2021). This growth is driven by the need to absorb the increasing number of unemployed people, particularly women, and to provide them with the means to sustain themselves economically. However, merely increasing the number of MSMEs is not enough. It is essential to address the underlying factors that inhibit the ability of women to fully engage in these businesses. For MSMEs to continue to serve as a pillar of Makassar's economy, the agility and adaptability of their female employees must be enhanced.

1.3 The Importance of Employee Agility in MSMEs

Agility, defined as the ability to quickly adapt to changes, is a key factor in the success of any business entity, particularly in a fast-moving economic environment. According to Ahammad (2020), employee agility is critical for responding to rapidly changing market dynamics. MSMEs, which are inherently more flexible and adaptable than larger organizations, rely on the agility of their workforce to remain competitive and responsive to market demands. In the context of MSMEs in Makassar City, the agility of female employees is particularly important, as women make up a significant portion of the workforce in this sector.

Despite the vital role that women play in MSMEs, they often face barriers that reduce their level of agility. These barriers can be both internal and external. Internal factors, such as low self-confidence, lack of necessary skills, and poor motivation, are often shaped by the existing work environment and organizational culture (Perkin & Abraham, 2017). These factors can be influenced by the attitudes and policies of business owners, many of whom may not fully recognize the potential of their female employees. In contrast, external factors, such as limited access to financial resources, education, and training, as well as traditional gender roles and stereotypes, create an additional layer of challenges for women. Discrimination in the workplace, along with limited access to networks, mentoring, and technology, further compounds the difficulties women face in achieving agility (Joiner, 2019; Perkin & Abrahams, 2020).

1.4 Challenges Faced by Women in MSMEs in Makassar City

In Makassar City, women working in MSMEs encounter numerous challenges that impede their ability to be agile and responsive to market changes. One significant factor is the persistent gender-based discrimination that affects women's access to education and training. Women often receive less support than men when it comes to acquiring the skills and knowledge necessary for adapting to new technologies or for innovating within their businesses. Limited access to financial resources is another critical factor, as women may have fewer opportunities to secure funding for their business ventures, leaving them at a disadvantage compared to their male counterparts. Traditional gender roles also continue to restrict women's participation in the workforce, as they are often expected to prioritize household duties over professional development or business activities.

Moreover, the lack of access to networks and mentoring further hinders women's agility in the MSME sector. Women in Makassar may struggle to find mentors or professional networks that can provide guidance and support, leaving them without the necessary resources to navigate the challenges they face in their businesses. Discrimination and stereotypes also persist in the MSME sector, where women are often perceived as less capable than men, especially in areas requiring physical labor or technical expertise. This perpetuates a cycle in which women are less likely to be hired for certain roles, and even when they are employed, they may not receive the same opportunities for advancement as their male counterparts.

1.5 Empowering Women to Enhance Agility in MSMEs

To overcome these challenges and enhance the agility of female employees in MSMEs, a multifaceted approach is required. First, there is a need for greater awareness and education regarding the potential of women in the workforce. Business owners and policymakers must recognize the value that women bring to the MSME sector and take steps to eliminate discriminatory practices that limit women's opportunities. This can be achieved through the implementation of gender-sensitive policies that promote equality in hiring, promotion, and professional development.

Second, providing women with access to education and vocational training is essential for building the skills they need to thrive in the business environment. This includes offering training programs that focus on digital literacy, financial management, and technical skills, which are increasingly important in the modern economy. Additionally, creating mentoring and networking opportunities for women can help to bridge the gap between male and female entrepreneurs, providing women with the support they need to succeed.

Third, addressing the issue of limited access to financial resources is critical for empowering women in MSMEs. Policymakers and financial institutions should work together to create funding opportunities that are specifically targeted at women entrepreneurs. This could include the establishment of microfinance programs or other financial products that are designed to meet the unique needs of women in the MSME sector.

Finally, efforts to combat traditional gender roles and stereotypes must be intensified. This can be done through public awareness campaigns, community engagement initiatives, and educational programs that challenge outdated notions about women's capabilities and promote a more inclusive vision of the workforce. By breaking down these barriers, women in Makassar will be better positioned to enhance their agility and contribute even more effectively to the MSME sector.

MSMEs play a crucial role in Makassar's economy, particularly in providing employment opportunities for women, there are still numerous challenges that hinder the agility of female employees. These challenges are multifaceted, encompassing both internal and external factors, ranging from discrimination and traditional gender roles to limited access to education, training, and financial resources. To address these challenges and enhance the agility of women in MSMEs, concerted efforts are needed from both the government and the private sector. By empowering women through education, training, access to networks, and

financial support, it is possible to unlock their full potential and enable them to contribute even more effectively to the growth and success of MSMEs in Makassar City.

To achieve this goal, this research will adopt an approach. The factor analysis method is a statistical approach used to identify patterns of relationships between a large number of related variables. In the context of this research, the factor analysis method can be used to identify the factors that underlie the obstacles to the agility of female employees in MSMEs in Makassar City. To measure the level of agility of female MSMEs using the "Three Box" Method (Siregar, 2013). Where the "Three Box" method is one method that can be used to measure the level of employee agility, including female employees. This method describes agility as a combination of three main dimensions: speed, reliability, and adaptability (Sugiyono, 2022) where the indicators in this research are

a. limited access to financial resources,
b. limited access to education and training
c. traditional gender roles
d. lack of access to networks and mentoring
e. discrimination and stereotypes as well
f. lack of access to technology and infrastructure.

This research will involve a structured survey to collect quantitative data from female employees in various MSMEs in Makassar City. The survey will include questions about respondents' demographic characteristics, level of agility, as well as factors that may influence their agility. In addition, this research will also involve in-depth interviews with a number of female employees to obtain a more qualitative and detailed perspective on their experiences in facing these obstaPreviously, research on the agility of female employees in the context of MSMEs had been conducted (De Meuse et al., 2010), however, there was still a lack of research that specifically highlighted conditions in Makassar City. Existing research also tends to focus more on certain sectors or different geographical areas, so the results may not be completely relevant for MSMEs in Makassar City.

This research will provide a new contribution by focusing on MSMEs in Makassar City and exploring the factors inhibiting the agility of female employees in a more comprehensive manner. Thus, it is hoped that this research can provide a deeper understanding of these conditions and provide more valuable insights for stakeholders, both from an academic and practical perspective.

2. Methodology

The factor analysis method is a statistical approach used to identify patterns of relationships between a large number of related variables. In the context of this study, the factor analysis method can be used to identify the factors underlying the barriers to the agility of female employees in MSMEs in Makassar City. The following are general steps in using the factor analysis method in research.

Location and Time of Research: This research will be conducted on MSMEs in Makassar City with assistance from the Makassar City Cooperative and MSME Service. With an estimated research time of 4 (four) months.

Types and Sources of Data: The types of data used are:

a. Quantitative data, namely data obtained from questionnaire answers given to respondents.
b. Qualitative data, namely data in the form of information, both oral and written, obtained from respondents.

The data sources used are:

a. Primary data, namely data taken directly from the research object. The method used to obtain primary data is by using a questionnaire method given to lecturers at private universities in Makassar City.

b. Secondary data, namely data obtained in writing by collecting documents and other literature related to the research to be conducted, such as data on the number of MSMEs in Makassar City obtained from the Makassar City Cooperative and MSME Office.

Data Collection Technique: In this study, the data collection technique used was field research, where the data collection technique was to prepare statements in each questionnaire in the form of closed statements. Scoring or value for the answers in the questionnaire that had been provided was divided into five alternative answers that had been graded with the provision of a value weight (score). The answer criteria in the questionnaire were based on the Likert scale, namely:

Strongly Agree (SS) score = 5
Agree (S) score = 4
Less Agree (KS) score = 3
Disagree (TS) score = 2
Strongly Disagree (STS) score = 1

Population & Sample: The population in this study is the number of Women's MSMEs that are registered with the cooperative and MSME office in Makassar City, which is 5,833 people. The sample used is Purposive Sampling with the following criteria:

a. MSMEs registered with the cooperative and MSME office in Makassar City
b. Women's MSMEs with a business history of more than 3 years

In determining the number of samples, the Slovin sampling method Akob (2022) was used, with the formula:

$$n = N/1 + N(e)2$$

The error rate used is 5%, so the number of samples is 398 people.

Data Analysis Method: The type of research used in this study is quantitative descriptive, namely research used to describe, explain, or summarize various conditions, situations, phenomena, or various research variables according to events as they are obtained from the questionnaire (Ghozali, 2016) which is measured on a Likert scale of 1 to 5. Then the data is processed using a statistical tool, namely Factor Analysis. The stages of data processing in this study are:

a. Testing the validity of the research instrument, where the validity or otherwise of an instrument item can be determined by comparing the Pearson product moment correlation index with a level of significance of 5% to its correlation value. If the significance of the correlation result is less than .05, it is declared valid and vice versa, it is declared invalid (Sugiyono, 2022).
b. Testing the reliability of the research instrument, where reliability shows the extent to which a measuring instrument can be trusted or relied upon. One approach to reliability testing is the Cronbach Alpha approach. If Cronbach's Alpha is greater than 0.6, the research data is considered good enough and reliable to be used as input in the data analysis process (Siregar, 2013).
c. The analysis method used is factor analysis which aims to determine the factors formed from several observable variables or manifest variables (Didiharyono, 2022). Clearly, common factors can be formulated as follows:

$$Fi = WiX1 + Wi2X2 + Wi3X3 + ...+ WinXn$$

Where:
Fi= 1st estimated factor
Wi = factor weight or factor coefficient score
Xn = number of variables

Operational Definition of Variables: To obtain data related to factors that inhibit Women's MSMEs in Makassar City, the following explains the limitations of the variables collected from several journals related to inhibiting human resource agility:

The following are details of the methods or methods that will be used: Research Steps:

(X1). Access to Loans: The level of loan approval from formal financial institutions can be an indicator of access to financial resources. If women's MSMEs have difficulty getting loans, it can be a sign of obstacles in financial access.

(X2). Amount of Accessible Capital: The amount of money that women's MSMEs can access from financial institutions or other resources can be an indicator of access to financial resources. If women have difficulty getting enough capital to develop or run their businesses, it indicates obstacles to financial access.

(X3). Loan Costs and Interest: The interest rate charged on loans, as well as additional fees such as administration fees or insurance, can be indicators of access to financial resources. High fees or unaffordable interest rates can be barriers for women MSMEs in obtaining loans.

(X4). Availability of Venture Capital and Investment: The availability of venture capital or investment for women MSMEs is also an indicator of access to financial resources. If women have difficulty attracting venture capital or investment for their businesses, it indicates that there are other forms of financial access barriers.

(X5). Access to Financial Programs and Services: The level of participation of women MSMEs in financial programs and services, such as training on financial management or guidance on how to access loans, can also be an indicator of access to financial resources. If women have limited or low access to these services, it can be a sign of barriers to financial access.

(X6). Participation in Education and Training Programs: The level of participation of women in education and training programs relevant to business development can be an indicator of limited access to education and training. Low participation may indicate difficulties of access or lack of opportunities for women to access these programs.

(X7). Access to Education and Training Programs: The availability of education and training programs that are relevant to the needs of women's MSMEs and their ability to access them can be an indicator of limited access. If these programs are not widely available or affordable for women, it can be a barrier to developing the skills and knowledge needed to manage their businesses effectively.

(X8). Quality of Education and Training Programs: The quality of available education and training programs can also be an indicator of limited access. If these programs do not provide relevant skills or knowledge or are not aligned with the needs of women's MSMEs, it can hinder their ability to grow their businesses successfully.

(X9). Access to Mentors and Business Consultants: Women's access to mentors and business consultants who can provide guidance and support in developing business skills and knowledge can also be an indicator of limited access to education and training. If women face difficulties in finding or accessing appropriate mentors or consultants, it can be a barrier to their business development.

(X10). Participation in Business and Community Networks: Women's participation in business and community networks that provide opportunities to learn from fellow entrepreneurs and share knowledge and experiences can also be an indicator of limited access to education and training. If women have limited or low access to these networks, it can hinder their ability to develop business skills and knowledge effectively.

(X11). Division of Household Work: The unequal division of household work between women and men in a household can be an indicator of traditional gender roles that hinder the agility of women's MSMEs. If women have to spend more time and energy on household work than on business development, it can hinder their ability to adapt to changing markets or business opportunities.

(X12). Opportunities for Innovation and Business Development: Women's ability to innovate and develop their businesses can be affected by gender expectations and norms that limit their roles and responsibilities in society. If women are expected to follow limited traditional roles and are not given the opportunity to take risks or develop new ideas, it can hinder their ability to be agile in running a business

(X13). Loan and Funding Approvals: If women have difficulty getting loans or funding approved for their business, despite having equally competent proposals as their male counterparts, it can indicate discrimination in the financial sector.
(X14). Difficulty Negotiating Business Deals: If women have difficulty negotiating business deals or gaining support from business partners or investors, it can also be an indication of stereotypes or prejudices about women's abilities and authority in business
(X15). Access to Business Networks: If women have difficulty building or expanding business networks due to gender stereotypes or prejudices, it can be an indicator of discrimination. For example, if women are perceived as less capable or less experienced in a particular business area and are therefore passed over for networking or partnership opportunities, it can be a sign of discrimination.

3. Empirical Findings/Result

The data used in this research was obtained by distributing questionnaires to respondents. The number of SME's Makassar City is 5,833 people. The sample used was purposive sampling (Iskandar, 2008) with criteria.

The distributed questionnaire consists of 15 questions with details of work environment variables, limited resources (X1) Access to Loans, (X2) Amount of Accessible Capital, (X3) Loan Costs and Interest, (X4) Availability of Venture Capital and Investment, (X5) Access to Financial Programs and Services, (X6) Participation in Education and Training Programs, (X7) Access to Education and Training Programs, (X8) Quality of Education and Training Programs, (X9) Access to Mentors and Business Consultants, (X10) Participation in Business and Community Networks, (X11) Division of Household Work, (X12) Opportunities for Innovation and Business Development, (X13) Loan and Funding Approvals, (X14) Difficulty Negotiating Business Deals, (X15) Access to Business Networks.

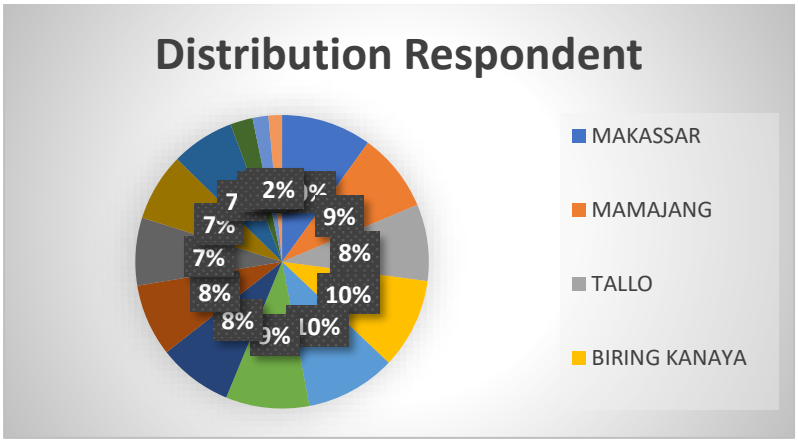

Figure 1. Distribution Respondents Female SME's Based on Subdistrict in Makassar City

Figure 1 illustrates the distribution of respondents based on subdistricts in Makassar City. The data reflects the representation of female entrepreneurs from different areas participating in the study, which aims to identify the challenges faced by women-owned Small and Medium Enterprises (SMEs) in the city. Each color segment in the pie chart corresponds to a specific subdistrict, with percentages indicating the proportion of respondents from that area.

The distribution shows that subdistricts such as Makassar, Panakkukang, and Tallo have the highest representation, each contributing a significant percentage of the total respondents. On the other hand, certain subdistricts like Rappocini and Mamajang have a smaller share of respondents. This distribution provides insights into the concentration of female entrepreneurs across the city, highlighting areas where SMEs are more densely represented. The diverse geographical representation ensures a comprehensive understanding of the challenges faced by female SME owners in Makassar.

KMO and Bartlett's Test

Table 1. KMO and Bartlett's Test Results

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		**0.891**
Bartlett's Test of Sphericity	Approx. Chi-Square	2725.019
	Df	105
	Sig	.000

Based on the table displays the results of the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and Bartlett's test of sphericity, which are used to assess the suitability of the data for factor analysis. From limited resources (X1) Access to Loans, (X2) Amount of Accessible Capital, (X3) Loan Costs and Interest, (X4) Availability of Venture Capital and Investment, (X5) Access to Financial Programs and Services, (X6) Participation in Education and Training Programs, (X7) Access to Education and Training Programs, (X8) Quality of Education and Training Programs, (X9) Access to Mentors and Business Consultants, (X10) Participation in Business and Community Networks, (X11) Division of Household Work, (X12) Opportunities for Innovation and Business Development, (X13) Loan and Funding Approvals, (X14) Difficulty Negotiating Business Deals, (X15) Access to Business Networks. The KMO value ranges between 0 and 1, and a higher value indicates better sampling adequacy. A KMO value of 0.891 suggests that the data is suitable for factor analysis and that the correlations between the variables are substantial enough for such an analysis. Generally, a value above 0.8 is considered meritorious. The KMO score suggests that the relationships between factors such as (X1) Access to Loans, (X2) Amount of Accessible Capital, and the others are sufficient to conduct factor analysis. These variables have meaningful correlations, making them appropriate to group into underlying factors.

The large chi-square value of 2725.019 with a significance level of .000 indicates that the null hypothesis of the test (that the correlation matrix is an identity matrix) is rejected. This result confirms that there are significant relationships among the variables, which is a key assumption for proceeding with factor analysis. With a significant Bartlett's test, it can be concluded that variables like (X3) Loan Costs and Interest, (X4) Availability of Venture Capital, (X5) Access to Financial Programs, and the rest of the variables are significantly correlated and can be reduced to a smaller set of latent factors, simplifying the understanding of the barriers to agility for female SMEs.

Anti Image Matrices

Table 2. Anti Image Matrices Test Results

Variabel	Anti Image Correlation
X1	0.903
X2	0.901
X3	0.901
X4	0.901
X5	0.899
X6	0.904
X7	0.906
X8	0.903
X9	0.904
X10	0.898
X11	0.901
X12	0.901
X13	0.900
X14	0.902
X15	0.905

The results based on each variable frm the table 2 explain that X1 (Access to Loans) – Anti-Image Correlation: 0.903, this high value indicates that the variable "Access to Loans" has a strong correlation with the other variables, making it a good candidate for factor analysis.

X2 (Amount of Accessible Capital) – Anti-Image Correlation: 0.901, similar to X1, the high anti-image correlation means that "Amount of Accessible Capital" is well-correlated with other variables, suggesting its relevance in the analysis. X3 (Loan Costs and Interest) – Anti-Image Correlation: 0.901 the variable "Loan Costs and Interest" also shows a strong relationship with the other variables, making it suitable for inclusion in factor analysis. X4 (Availability of Venture Capital and Investment) – Anti-Image Correlation: 0.901 the variable "Availability of Venture Capital and Investment" has a high correlation, indicating its importance in the overall analysis.

X5 (Access to Financial Programs and Services) – Anti-Image Correlation: 0.899 This is slightly lower than the others but still very close to 0.9, meaning "Access to Financial Programs and Services" remains sufficiently correlated with the rest of the variables. X6 (Participation in Education and Training Programs) – Anti-Image Correlation: 0.904 this value suggests strong correlation, showing that participation in educational programs is highly linked with other variables. X7 (Access to Education and Training Programs) – Anti-Image Correlation: 0.906 With the highest anti-image correlation value in the table, "Access to Education and Training Programs" is very strongly related to the other variables, making it a key variable. X8 (Quality of Education and Training Programs) – Anti-Image Correlation: 0.903 This high value reflects a strong correlation, indicating that the quality of education and training is integral to the other variables. X9 (Access to Mentors and Business Consultants) – Anti-Image Correlation: 0.904 Access to mentors and consultants is well-correlated with other variables, reinforcing its relevance in understanding the challenges of SMEs. X10 (Participation in Business and Community Networks) – Anti-Image Correlation: 0.898 Although slightly lower than 0.9, this value still indicates a solid correlation, suggesting that participation in networks is a factor worth including in the analysis.

X11 (Division of Household Work) – Anti-Image Correlation: 0.901 The correlation value indicates that household responsibilities are highly connected to the other factors influencing SME agility. X12 (Opportunities for Innovation and Business Development) – Anti-Image Correlation: 0.901 This variable is well-correlated, showing that opportunities for innovation are linked with other key factors. X13 (Loan and Funding Approvals) – Anti-Image Correlation: 0.900 A strong value, indicating that challenges in loan approvals are closely connected with other barriers faced by female SMEs. X14 (Difficulty Negotiating Business Deals) – Anti-Image Correlation: 0.902 The difficulty in negotiating business deals shows a strong correlation with the other variables, indicating its significance in understanding challenges in business agility. X15 (Access to Business Networks) – Anti-Image Correlation: 0.905 This value is high, showing that access to business networks is a critical factor correlated with other variables.

Communalities Test

Table 3. Communalities Test Results

	Initial	**Extraction**
X1	1.000	.714
X2	1.000	.643
X3	1.000	.579
X4	1.000	.601
X5	1.000	.665
X6	1.000	.724
X7	1.000	.682
X8	1.000	.465
X9	1.000	.480
X10	1.000	.578
X11	1.000	.524
X12	1.000	.621
X13	1.000	.642
X14	1.000	.526
X15	1.000	.510

Extraction Method: Principal Component Analysis.

The Communalities table in factor analysis represents the proportion of variance in each variable that can be explained by the extracted factors. Each variable starts with an initial value of 1.000, indicating that the total variance of the variable is accounted for. After extraction, the values (labeled as Extraction) show the amount of variance explained by the factors retained in the analysis. The explanation of each variable based on the Communalities Test Results:

X1 (Access to Loans) - 0.714

71.4% of the variance in "Access to Loans" is explained by the extracted factors. This suggests that a large portion of this variable's variance is accounted for by the factors, making it an important variable in the analysis.

X2 (Amount of Accessible Capital) - 0.643

64.3% of the variance in "Amount of Accessible Capital" is explained by the factors. This indicates a strong relationship with the extracted factors.

X3 (Loan Costs and Interest) - 0.579

57.9% of the variance in "Loan Costs and Interest" is explained by the factors, indicating that it contributes moderately to the overall factor structure.

X4 (Availability of Venture Capital and Investment) - 0.601

60.1% of the variance in "Availability of Venture Capital and Investment" is captured by the factors. This is a moderate level of variance explained, indicating its relevance in the analysis.

X5 (Access to Financial Programs and Services) - 0.665

66.5% of the variance in "Access to Financial Programs and Services" is explained by the factors, showing its importance in understanding the barriers faced by SMEs.

X6 (Participation in Education and Training Programs) - 0.724

72.4% of the variance in "Participation in Education and Training Programs" is explained, making it one of the more significant variables in terms of the variance explained.

X7 (Access to Education and Training Programs) - 0.682

68.2% of the variance in "Access to Education and Training Programs" is explained by the factors, indicating a strong role in the factor structure.

X8 (Quality of Education and Training Programs) - 0.465

46.5% of the variance in "Quality of Education and Training Programs" is explained by the factors, which is lower than other variables, suggesting that it has a weaker connection to the factors.

X9 (Access to Mentors and Business Consultants) - 0.480

48.0% of the variance in "Access to Mentors and Business Consultants" is explained. This lower value indicates that this variable might not be as strongly related to the underlying factors as others.

X10 (Participation in Business and Community Networks) - 0.578

57.8% of the variance in "Participation in Business and Community Networks" is explained, suggesting a moderate relationship with the factors.

X11 (Division of Household Work) - 0.524

52.4% of the variance in "Division of Household Work" is explained. This indicates that the factor structure moderately accounts for this variable.

X12 (Opportunities for Innovation and Business Development) - 0.621

62.1% of the variance in "Opportunities for Innovation and Business Development" is explained, indicating a strong connection to the factors.

X13 (Loan and Funding Approvals) - 0.642

64.2% of the variance in "Loan and Funding Approvals" is explained by the factors, showing that it is well-represented in the factor structure.

X14 (Difficulty Negotiating Business Deals) - 0.526

52.6% of the variance in "Difficulty Negotiating Business Deals" is explained, which shows a moderate connection to the underlying factors.

X15 (Access to Business Networks) - 0.510

51.0% of the variance in "Access to Business Networks" is explained, indicating that just over half of its variance is captured by the factors.

Variables like X1 (Access to Loans), X6 (Participation in Education and Training Programs), and X7 (Access to Education and Training Programs) have higher extraction values (above 0.7), meaning they are strongly associated with the factors and are well explained by the model.

On the other hand, X8 (Quality of Education and Training Programs) and X9 (Access to Mentors and Business Consultants) have lower extraction values (below 0.5), indicating that they are not as well explained by the extracted factors, suggesting they may have weaker relationships with the overall factor structure.

Component Matrix

Table 4. Component Matrix Results

	1
X1	.656
X2	.686
X3	.702
X4	.709
X5	.739
X6	.600
X7	.545
X8	.632
X9	.602
X10	.760
X11	.691
X12	.688
X13	.698
X14	.669
X15	.566
Extraction Method: Principal Component Analysis.	

The Component Matrix in Principal Component Analysis (PCA) shows the loadings of each variable on the extracted component or factor. These loadings represent how much each variable correlates with the component. In simpler terms, the component matrix shows how strongly each variable contributes to the factor(s) being extracted..

4. Discussion

The interpretation of the component matrix results for each variable (X1 to X15), Explanation of Each Variable's Component Loading:

X1 (Access to Loans) - 0.656

The loading of 0.656 means that "Access to Loans" has a moderately strong positive contribution to the first component. This suggests that access to financial resources is a meaningful part of the factor.

X2 (Amount of Accessible Capital) - 0.686

The loading of 0.686 indicates that "Amount of Accessible Capital" also contributes significantly to the first component. Access to sufficient capital is an important aspect being captured by this factor.

X3 (Loan Costs and Interest) - 0.702

The loading of 0.702 shows that "Loan Costs and Interest" has a strong contribution to the first component. This means that financial burdens related to loan costs are well represented by this factor.

X4 (Availability of Venture Capital and Investment) - 0.709

With a loading of 0.709, "Availability of Venture Capital and Investment" is strongly associated with the first component. This suggests that ease of access to investment capital is a significant part of the factor.

X5 (Access to Financial Programs and Services) - 0.739

A loading of 0.739 means that "Access to Financial Programs and Services" is one of the more significant contributors to the first component. It shows that access to financial support services plays a key role in this factor.

X6 (Participation in Education and Training Programs) - 0.600

A loading of 0.600 indicates that "Participation in Education and Training Programs" has a moderate contribution to the component. Education and training participation is somewhat important but not as strong as financial factors.

X7 (Access to Education and Training Programs) - 0.545

The loading of 0.545 shows a moderate contribution of "Access to Education and Training Programs." While important, it does not weigh as heavily as other financial factors.

X8 (Quality of Education and Training Programs) - 0.632

A loading of 0.632 suggests that "Quality of Education and Training Programs" moderately contributes to the component. It plays a role but not as dominant as financial accessibility.

X9 (Access to Mentors and Business Consultants) - 0.602

With a loading of 0.602, "Access to Mentors and Business Consultants" shows a moderate association with the component. Access to mentorship is somewhat relevant in explaining the factor.

X10 (Participation in Business and Community Networks) - 0.760

The highest loading, 0.760, indicates that "Participation in Business and Community Networks" is a very strong contributor to the first component. Business networking appears to be a critical element of the factor.

X11 (Division of Household Work) - 0.691

A loading of 0.691 suggests that "Division of Household Work" moderately contributes to the component, indicating that traditional household responsibilities are also linked to the main factor.

X12 (Opportunities for Innovation and Business Development) - 0.688

The loading of 0.688 indicates a strong contribution of "Opportunities for Innovation and Business Development" to the first component, suggesting that innovation opportunities are key to understanding this factor.

X13 (Loan and Funding Approvals) - 0.698

A loading of 0.698 shows that "Loan and Funding Approvals" is strongly related to the component. Accessibility to funding is a key aspect of the factor.

X14 (Difficulty Negotiating Business Deals) - 0.669

The loading of 0.669 indicates that "Difficulty Negotiating Business Deals" has a strong contribution, showing that challenges in negotiations are a meaningful part of the factor.

X15 (Access to Business Networks) - 0.566

A loading of 0.566 suggests that "Access to Business Networks" moderately contributes to the component. Business networking is relevant but not as dominant as some other factors.

The variables with the highest loadings (above 0.7) include: X5 (Access to Financial Programs and Services), X10 (Participation in Business and Community Networks), X4 (Availability of Venture Capital and Investment), and X13 (Loan and Funding Approvals). These variables contribute most strongly to the main factor extracted by the analysis, suggesting that access to financial resources and business networks are the most significant challenges or barriers faced by female-owned SMEs (Lin, 2015).

Variables with moderate loadings (between 0.5 and 0.7) still contribute to the component but are not as dominant. These include: X6 (Participation in Education and Training Programs), X9 (Access to Mentors and Business Consultants), and X15 (Access to Business Networks), among others. These factors play a role but are secondary compared to financial and network-related variables (Dutot et al., 2021).

5. Conclusions

These results of KMO Bartlett show that the data related to barriers for female-owned SMEs (including financial access, participation in education and training programs, access to mentors, and household responsibilities) is suitable for factor analysis. This means that the variables are significantly interrelated, and you can now proceed with further statistical analysis to identify key factors that may group together (e.g., financial access, social-cultural barriers, training opportunities) and explain the main obstacles faced by female entrepreneurs in Makassar (Larashati & Hariyat, 2021).

The Anti-Image Correlation matrix indicates that all the variables (X1–X15) are strongly correlated with each other, as all values are close to or exceed 0.9. This means that the selected variables are suitable for factor analysis, as they are sufficiently correlated with one another. The analysis suggests that variables related to financial access (e.g., loans, venture capital), education and training, social responsibilities (e.g., household work), and access to networks all play significant roles in understanding the barriers to agility for female-owned SMEs (Mahmood et al., 2013).

The Component Matrix in Principal Component Analysis (PCA) shows the loadings of each variable on the extracted component or factor. These loadings represent how much each variable correlates with the component. In simpler terms, the component matrix shows how strongly each variable contributes to the factor(s) being extracted, while the component matrix suggests that access to financial resources (e.g., loans, venture capital, and financial programs) and participation in business networks are the strongest contributors to the underlying factors in your analysis. These are the key areas where female SMEs face significant challenges, and they should be prioritized in any intervention strategies (Lambey et al., 2018).

The analysis reveals that the primary barriers to the agility of female-owned SMEs in Makassar are financial access and business networking opportunities. While education and social responsibilities also play a role, the most critical areas to address in order to improve the agility and success of female entrepreneurs are enhancing access to financial services and facilitating stronger participation in business networks. Efforts to improve financial literacy, streamline access to loans and venture capital, and create supportive business communities will likely have the most significant impact in overcoming the challenges these entrepreneurs face (Al Kausar et al., 2022).

Recomendations

Based on the analysis, several key recommendations can be made to address the barriers faced by female-owned SMEs in Makassar City. First, improving access to financial resources should be a priority. Financial institutions, both private and governmental, should simplify loan application processes for female entrepreneurs, reducing paperwork and offering more flexible collateral requirements. Additionally, financial products specifically tailored for female-owned SMEs should be developed, such as low-interest loans or micro-financing options to help mitigate financial constraints. Furthermore, enhancing the availability of venture capital and investment for women-led businesses can help bridge the funding gap.

Second, promoting participation in business and community networks is essential. Establishing mentorship programs and creating spaces for female entrepreneurs to connect, collaborate, and share experiences can empower women and foster business growth. Governments and NGOs can organize business networking events and support programs that facilitate these connections.

Third, there is a need to improve access to quality education and training programs. Developing targeted educational initiatives that focus on business management, financial literacy, and digital marketing will equip female entrepreneurs with the necessary skills to compete in an evolving market. Training should be made more accessible through online platforms and community-based programs, particularly for those who are time-constrained by household responsibilities.

Finally, addressing social and cultural barriers, such as the unequal distribution of household work, is crucial. Policymakers should consider implementing community awareness campaigns that promote gender equality and encourage the shared responsibility of household duties. By addressing both financial and social barriers, these recommendations will help improve the agility and success of female-owned SMEs in Makassar City.

Limitations

The results of the analysis provide valuable insights into the barriers faced by female-owned SMEs in Makassar City, but there are several limitations to consider. First, the study's findings may have limited generalizability. Since the focus is specifically on female entrepreneurs in Makassar, the results may not reflect the experiences of female SME owners in other regions with different economic conditions, cultural norms, or government policies. This limits the applicability of the conclusions to broader populations.

Second, the data likely relies on self-reported information from respondents, which can introduce bias. Participants may overstate positive behaviors or underreport certain challenges, particularly with sensitive topics like financial difficulties or household responsibilities. This could affect the accuracy and reliability of the data.

Third, the study focuses on certain key variables, such as financial access, education, and social barriers, but does not account for other important factors that may influence SME success, such as technology adoption, digital literacy, or market competition. The exclusion of these variables limits the comprehensiveness of the analysis.

.Lastly, the study's cross-sectional nature means it captures data from a single point in time, making it difficult to observe changes or trends over time. This limits the ability to understand how these barriers evolve or how interventions might impact female-owned SMEs in the long term. Addressing these limitations in future research could provide a more comprehensive understanding of the challenges faced by female entrepreneurs.

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