



Measuring Female Leadership Competencies of SMEs

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT

Small and medium enterprises' (SME) success, performance, and growth are highly dependent on the competence of entrepreneurs. Competency theory is based on studying successful leaders by researching their behavior, attitudes, and skills into measurable aspects and looking for ways to bring them together to create individuals who demonstrate superior performance. Research related to competence is motivated by the aspiration to achieve excellent performance and business success. Female leadership competencies are performances of women's competence in leading a business. This study aims to evaluate the validity and reliability of the instrument measuring Female Leadership Competencies based on the concept of Cong & Thu (2020). The dimensions used as a reference in measuring tools consist of Strategic Visions, Operations Management, Professional Knowledge, Hands-on Experience, and Relationship Building in running a business. The respondents of this study were 100 women entrepreneurs in Batu City; the sample size was determined using the Slovin technique. This instrument was prepared using a Likert scale with five scales and Confirmatory Factor Analysis (CFA) techniques. The analysis showed that the measurement of Female Leadership Competencies was valid and reliable, with a Cronbach alpha score of 0.894. However, from the 29 items compiled, six items still need to be completed.

Keywords: Female leadership competencies; reliability; SMEs; validity; Batu city; Java; Indonesia.

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1. INTRODUCTION

Small and medium enterprises (SMEs) have a strategic role in the national economy and contribute to increasing gross domestic product, employment, and increasing exports, and federal investment. The increasing number of SMEs is expected to achieve the national target by growing 2% of the total entrepreneurs who are the key to the progress of a country. Data shows that more than 60% of SMEs are women, increasing by 8% yearly. The contribution of women entrepreneurs to economic and social development has grown rapidly in recent years. Women entrepreneurs are one of the main driving forces in global economic growth. The proportion of women engaged in entrepreneurship is increasing worldwide. Most women workers in developing countries enter the labor market through the SME sector, and most are involved in service and other small-scale industries [1].

The community needs to realize the increase in women's participation in SMEs. It is because the dual role of women as mothers and the archetype of female entrepreneurs are represented as a struggle to balance work and household responsibilities [2]. Reveal women entrepreneurs as women who are confident, innovative, and creative, can achieve economic independence on their own personal or in collaboration with others, and provide job opportunities for others through starting, building, and running businesses by keeping pace with their personal, family and social life [3]. The increasing role of women as SME owners proves that women should not only play feminine roles such as taking care of children, cooking, and doing other housework. The role of women in the economy can be seen in their involvement in various types of work. Work activities are an effort to earn a living and a survival strategy [4]. Women are generally motivated to work due to household economic pressures and the unfulfilled family needs of the husband's income, where increased needs are not matched by increased income [5].

Regarding, leaders/managers are important in increasing competitiveness, creating jobs, increasing employee income, and mobilizing social resources for business development investments [6]. Leaders shape business goals, strategies, and decisions [7]. It has been recognized that leadership competence is a determining factor for business success [1,6].

The leadership process means creating social influence to foster the voluntary participation of subordinates in carrying out the organization's vision, goals, and mission [3,6]. Leadership combines knowledge, skills, experience, behavior, and attitudes to transform an organization or company into a cohesive body to ensure successful competition in the market [7].

One of the factors causing SMEs to go bankrupt is the need for more management of human resources, especially the development of leadership competencies for the management team and managers. The lack of adequate consideration of this aspect makes it difficult for SMEs to develop [3]. As the main implementer of a company, SME managers must carry out comprehensive and practical leadership activities. Furthermore, they must directly execute production processes and business operations and carry out leadership activities in Human Resources management.

To carry out their role effectively, SME managers need strong leadership competencies, adequate knowledge and skills, attitudes, and qualities to lead effectively for himself, the team, and the whole organization. It serves the ultimate goal: to maintain and develop the company's position in the market and generate legitimate income for stakeholders and managers. This study aims to apply the theory of competitiveness analyze female leadership competencies that affect the competitiveness of SMEs. The results have practical implications for systematizing theoretical problems, investigating situations, and identifying competencies that constitute corporate leadership. Furthermore, this study offers recommendations on policies to improve the competitiveness of SMEs in the future.

1.1 Female Leadership Competencies

Carli (1999)'s systematic review concluded that "Women generally have greater difficulty exerting influence than men do, particularly when they use influence that conveys competence and authority". The problem of women in leadership is not their skills. The problem perhaps relates to the gender differences in power and their effect on social influence. Women's elevation to top leadership positions is still low because of a multitude of reasons. The feminine style of management is a management style generally characterized by more feminine quality soft skills and behaviors such as empathy, effective

communication, and a generally more democratic or team-styled work environment. The style is a growing trend within businesses and is characterized by a form of transformational leadership style. Soft skills are important skills in leadership; therefore, it is not accurate or fair to say "Women's leadership and skills are still low." [8]. Several real phenomena have been discovered. So far, the role and potential of women are still being debated. The essence is that women have problems in leadership. Even if women's capabilities are strong, there is no guarantee that women leaders will successfully manage the organization. In fact shows that a female leader can carry out her duties well, and her career as a leader continues to climb. She can complete a tough job but still be a wife and mother. Other female leaders can change the organizational climate to serve the community better [9].

Female Leadership Competencies in this study have several indicators [10], namely 1) Strategic Visions. This vision is easy to articulate, understand, and accepted by all parties in the organization. A vision understood and accepted by all parties will become a magnet that binds the organization. It is hoped that employees have a high and long-term commitment to the organization so that business decisions will be made and implemented more easily. 2) Operating Management is needed in a business to control production activities. A business requires the supervision of several elements supporting its activities. Finance, marketing, and production are included in operational activities. 3) Professional Knowledge, Professionalism in business will maintain the client's belief that they are working with people who can and will get the job done. Professional knowledge, in this case, can be in the form of knowledge in marketing, finance, and competitors. 4) Hands-on Experience is a real event or activity experienced during entrepreneurship, which has provided knowledge, knowledge, abilities, and skills that can be taken from the event. 5) Relationship Building is a trait a leader must own. A female leader needs relationship building to maintain client, customer, and employee/team relationships. Success at work requires us to make effective relationships – both inside and out.

2. METHODS

The population in this study consisted of SMEs in Batu City. The number of SMEs in this sector is

4,570 businesses. The sampling method uses a probability sampling technique and narrows the population by calculating the sample size using the Slovin technique. So to find out the research sample, with the following calculations:

$$\frac{4.570}{1+4.570(0,1)^2} = \frac{4.570}{46,6} = 98,06; \text{ The researchers adjusted this number to 100 respondents}$$

Based on the calculation above, the sample who became respondents in this study was 100 people. The results of the description of respondents based on the type of business, namely food by 13%, beverage by 13%, food and beverage by 53%, souvenirs by 9%, and agriculture by 12%. And the description of respondents based on the age of the business, namely in the range 1-3 years are 29%, range 4-6 years are 50%, range 7-9 years are 3, range 10-13 years are 13%, range 14-16 years are 5%. Respondents were dominated by entrepreneurs aged 36-43 years, namely 24%. While the least number of ages is in the age range of 60-67 years, as much as 12%. others aged 20-27 were 14%, ages 28-35 were 14%, ages 44-51 were 22%, and ages 52-29 were 14%. The results of the description of respondents based on marital status were 79% married and 21% still single. The results of the description of respondents based on the level of education are at most 35% at the strata one education level and at least 10% at the elementary/junior high school level. The rest at the high school/equivalent level is 34%, and the postgraduate is 21%.

The Female Leadership Competencies scale is prepared by referring to the opinion of Cong & Thu [10], which consists of Strategic Visions, Operations Management, Professional Knowledge, Hands-on Experience, and Relationship Building. This research method used partial least squares regression with SmartPLS3 software. The outer model test is carried out to measure the validity and reliability of the Female Leadership Competencies variable. The validity test consists of convergent and discriminant validity [11,12]. There are five dimensions of the Women's Leadership Competency variable with 29 items of indicators, each represented by one statement so that the number of statement items is the same as the number of indicators.

Table 1. Definition of variable operational

Variable	Dimensions	Indicators	References
Female leadership competencies	- Strategic visions	1. Identify business opportunities	(Cong & Thu, 2021), (Cong & Hai, 2015))
		2. Seize the opportunity to lead the company to success in business	
		3. Recognizing threats in the tourism business	
		4. Leading companies to address threats in business	
		5. Recognize the potential of the company's resources in business	
		6. Identify opportunities compared to competitors in the business	
	- Operations management	1. Establish organizational structure	(Cong & Thu, 2021), (Cong & Hai, 2015)
		2. Manage all units within the company	
		3. Leading the company	
		4. Directing the company	
		5. Make strategic decisions	
		6. Monitoring activities in the company	
		7. Evaluating activities in the company	
		8. Adjusting the company's line of business	
	- Professional knowledge	1. Business development	(Cong & Thu, 2021), [13]
		2. Market and competitors	
		3. Marketing	
		4. Globalization	
		5. integration into business	
		6. Society, community and environment	
	- Hands-on experience	1. Previously held many different management positions	(Cong & Thu, 2021) [14,15]
		2. Have experience helping overcome difficulties	
		3. Holding a leadership position in the previous business for a certain period	
		4. Enjoy your position as a leader	
	- Relationship building	1. Build internal relationships	(Cong & Thu, 2021) (Cong & Hai, 2015)
		2. Building relationships with strategic partners	
		3. Build relationships with customers	
		4. Build relationships with suppliers	
		5. Build relationships with administrative institutions	
SME competencies dan performance	Competencies and performance compared to competitors	1. The company has achieved more success than competitors	(Cong & Thu, 2021) (Cong & Hai, 2015)
		2. Our revenue is higher than competitors	
		3. Bigger market share than competitors	
		4. Higher profit than competitors	
		5. Higher profit margin than competitors	
		6. Higher return on investment than competitors	
		7. Our customer loyalty is higher than competitors	
	Competencies and performance from customer perspective	1. Customer loyalty is higher than ever	(Cong & Thu, 2021) (Cong & Hai, 2015)
		2. Customer satisfaction is higher than ever	
		3. Customers are increasingly attached to the company's products/services	
		4. Customers generate more returns to the company	

Variable	Dimensions	Indicators	References
		5. Customers are happier with the company's products/services	
		6. Customers are more interested in the company's products/services	
		7. Customers are more satisfied with the company's products/services	

3. RESULTS AND DISCUSSION

Construct validity test is done by looking at the value of convergent validity, which aims to measure how much correlation between variables. In addition, discriminant validity tests were also carried out to measure the correlation of latent variables with the construct by looking at the standardized factor loading. The terms of the validity test are provided with the loading factor value > 0.7 [16]. The following convergent validity and AVE values can be seen in Fig. 1 and Table 1.

Based on the tests, the results show that the Professional Knowledge (PK) dimension has the highest loading factor value of 0.935. In comparison, the dimension with the lowest loading factor value is the Relationship Building (RB) dimension, with a loading factor value of 0.726.

Based on the tests that have been carried out, the results show that the Strategic Visions dimension can be described by four items, namely SV1, SV3, SV4, and SV5, with The highest loading factor value is 0.853 on SV4 items, and the lowest loading factor value is 0.726 on SV3 items. The Operations Management dimension can be described with six items, namely OM2, OM2, OM3, OM4, OM5, OM6, and OM7, with the highest loading factor value of 0.940 on OM6 and the lowest loading factor value of 0.740 on OM2 items. In the Professional Knowledge dimension, six items are described, namely PK1, PK2, PK3, PK4, PK5, and PK6, with the highest loading factor value of 0.895 on PK3 items and the lowest loading factor value of 0.780 on PK4 items. The Hands-on Experience dimension is represented by three items, HE1, HE2, and HE4, with the highest loading factor value of 0.966 on HE2 items and the lowest loading factor value of 0.895 on HE1 items. The Relationship Building dimension is described by four items, namely RB1, RB2, RB3, and RB4, with the highest loading factor value of 0.924 on item RB1 and the lowest loading factor value of 0.786 on item RB4.

Based on the convergent validity test on the Female Leadership Competencies variable, the results obtained average variance extracted (AVE) > 0.5; this indicates that Female Leadership Competencies meet the requirements of construct validity in each dimension. More details of the AVE value can be seen in Table 4.

Based on the discriminant validity test on the Female Leadership Competencies dimension, it shows that the AVE root value of each dimension is higher than the average variance extract (AVE) root value which is higher than the other dimension values; this can be seen in Table 5.

Table 2. Loading factor value of female leadership competencies

Dimensions	Value of Information loading factor	
Strategic Visions	0.895	Valid
Operations Management	0.787	
Professional Knowledge	0.935	
Hands on Experience	0.836	
Relationship Building	0.726	

Source: SmartPLS 3 Output, 2022

Based on the reliability test was used to perform a construct analysis on the Female Leadership Competencies variable to determine the consistency of each item used to measure the latent variable. The provisions of the Cronbach alpha and composite reliability values are expected to be more than 0.7; the following is the Composite Reliability Cronbach alpha Table 6.

The validity and reliability test of the dimensions that measure Female Leadership Competencies shows that of the 29 items analyzed, 23 were accepted, and six failed on items SV2 (0.634), SV6 (0.429), OM1 (0.353), OM8 (0.620), HE3 (0.613), and RB5 (0.681) (Those items were with load factor < 0.7). The items compiled by the researcher can reflect all dimensions of Female Leadership Competencies. While the reliability test results obtained Cronbach's alpha value of 0.894 from 23 items, indicating that this scale can be used.

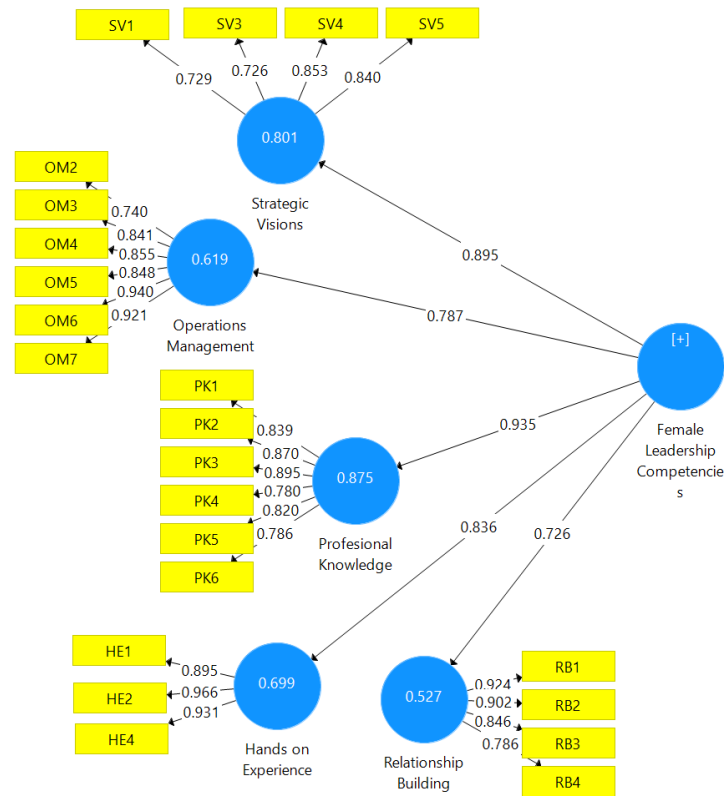


Fig. 1. Outer model of female leadership competencies

Table 3. Loading factor value of female leadership competencies dimension

Dimensions	Items	Value of loading factor	Information
Strategic Visions	SV1	0.729	Valid
	SV3	0.726	
	SV4	0.853	
	SV5	0.840	
Operations Management	OM2	0.740	
	OM3	0.841	
	OM4	0.855	
	OM5	0.848	
	OM6	0.940	
	OM7	0.921	
Profesional Knowledge	PK1	0.839	
	PK2	0.870	
	PK3	0.895	
	PK4	0.780	
	PK5	0.820	
	PK6	0.786	
Hands on Experience	HE1	0.895	
	HE2	0.966	
	HE4	0.931	
Relationship Building	RB1	0.924	
	RB2	0.902	
	RB3	0.846	
	RB4	0.786	

Source: SmartPLS 3 Output, 2022

Table 4. Average variance (AVE) value of female leadership competencies

Dimensions	AVE . value	Information
Strategic Visions (SV)	0.623	Valid
Operations Management (OM)	0.739	
Profesional Knowledge (PK)	0.694	
Hands on Experience (HE)	0.867	
Relationship Building (RB)	0.750	

Source: SmartPLS 3 Output, 2022

Table 5. Average Variance Extracted (AVE) root value for the female leadership competencies variable

Dimensi	SV	OM	PK	HE	RB
Strategic Visions (SV)	0.789	0.600	0.601	0.633	0.612
Operations Management (OM)	0.600	0.860	0.637	0.622	0.560
Profesional Knowledge (PK)	0.601	0.637	0.833	0.762	0.691
Hands on Experience (HE)	0.633	0.622	0.762	0.931	0.415
Relationship Building (RB)	0.612	0.560	0.691	0.415	0.866

Source: SmartPLS 3 Output, 2022

Table 6. Cronbach's alpha value and composite reliability female leadership competencies

Variables	Alpha cronbach	Composite reliability	Information
Female Leadership Competencies	0.894	0.923	Highly Reliable

Source: SmartPLS 3 Output, 2022

Entrepreneurial leadership emerged as an important issue in economic development [17]. Leadership ability is crucial for organizational success and sustainable competitive advantage [18]. Undeniably, in SMEs, the role of leadership is even more important and influential in decision-making. The owner's competence and leadership ability will greatly affect the performance and success of the company. Leadership and performance are related to the Resource-Based View (RBV) theory [19]. RBV argues that businesses with sufficient tangible and intangible resources (financial and social), entrepreneurial orientation, and networks will have different performances [19]. RBV focuses on the importance of financial, social, networking, entrepreneurial orientation, and human resources [20].

Competition in business encourages companies to look for new strategies to survive in the business world. One of the keys to success in a company cannot be separated from the role of a leader. Success depends on the organization's ability to manage talent and human capital. Managing and coordinating assets in the form of humans requires a leader [21].

In business, leaders must create a conducive working atmosphere, self-confidence, mutual

respect, and transparency with all employees. There is a shift in the entrepreneurship mindset, where women take many roles in entrepreneurial activities. The mindset of women is not only about the obligation to take care of the household but also about being a leader and owner of a business. They revealed that women entrepreneurs are intrinsically motivated. Achievement is one of the motivations for women to run a business [21]. Women business owners are motivated to grow their businesses both intrinsically and extrinsically. Intrinsic motivation is the need for achievement, independence, proving competence, and socio-cultural problems. Meanwhile, extrinsic motivation is in the form of financial problems and positive feedback from others. In particular, the research results show that the competitiveness and performance of the company from the customer's perspective are influenced by (1) direct experience; (2) strategic vision; (3) building relationships, (4) professional knowledge, and (5) operations management competence [21].

Some policy recommendations that can be made to improve the competitiveness of SMEs are to increase opportunities for SME managers to gain more experience. Knowledge related to experience, SME managers must attend training programs, seminars, and workshops. The next

recommendation is to increase opportunities for MSME managers to improve their strategic vision. Tourism SME leaders can systematically participate in training courses, seminars, and workshops for business leaders to equip strategies and knowledge related to vision, such as strategic thinking, creative thinking, strategic management, and strategic business development. SME owners can understand the importance of forming a vision for their business, how strategic management can determine success or failure in the market, know how to take advantage of opportunities and create competitive advantage, acquire and apply knowledge to build optimal strategies, to implement these strategies for each unit to ensure efficiency, to evaluate results and effectiveness as well as to adapt these strategies to adapt to changing conditions in the business.

SME owners can increase opportunities to expand business relationships. The ability to build relationships has a direct and positive effect on the competitiveness of SMEs. From a long-term perspective, the orientation of SMEs is to maintain a sustainable position and competitiveness; managers are required to form and develop a long-term strategic vision. It is very important to have a coherent strategy that focuses on improving service quality, building brand and customer perception, and increasing the ability to establish relationships with partners to increase supply chain value in services.

SMEs can increase opportunities for improving operations management competencies. SME owners must increase their awareness of their role to improve operations management competencies. Attend training courses, seminars, program exchanges, and joining associations to increase understanding and knowledge. The explanation above shows that in the results of this study, SME owners should have a more comprehensive view of the leading factors that affect the competitiveness of SMEs. It is necessary to focus more on the vital role of leaders. Currently, many companies believe that limited finances, human resources, and outdated technology are the main causes affecting the competitiveness of SMEs. On the contrary, the study results show that a leader plays a key role in every strategic decision.

4. CONCLUSION AND SUGGESTION

Based on the tests, the Female Leadership Competencies scale compiled by researchers

has high validity and reliability. However, of the 29 items compiled, six items were still dropped. Therefore, the Female Leadership Competencies scale requires development and testing to obtain a more appropriate psychometric scale. The dimensions of Female Leadership Competencies need to be tested to ensure contribution to measuring the Female Leadership Competencies construct.

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COMPETING INTERESTS

Authors have declared that no competing interests exist.

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