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# Impact of SME Cluster Participation on Women Entrepreneurship: A Study in the SME Cluster of Bangladesh's Knitwear Industry

*Md. Al Amin[1]*, Mahathy Hasan Jewel[2], Jubayer Hossain Nowshad[3]*

## Abstract

*Small and medium-sized enterprises (SMEs) are crucial to the economic growth of both industrialized and emerging nations. Women are a key part of any nation, and it is significant to involve women in the economy. The research aims to determine the impact of participation in an SME cluster on women's entrepreneurship in the knitwear industry. The study utilized a quantitative research methodology to achieve the objective. Judgmental purposive sampling (JPS) was used to select the samples. A research framework comprising four elements-Organisational Impact (OI), Environmental Impact (EI), Technological Impact (TI), and Access to Finance (AF)-has been used. An investigation was conducted with 95 women entrepreneurs, and the collected data were analyzed using SmartPLS Structural Equation Modelling (SEM). The study's findings indicate that OI, EI, and AF in SME clusters positively influence women's entrepreneurship in the knitwear cluster. However, the participants did not consider the TI of the SME cluster on women's entrepreneurship to be significant. The outputs will be an invaluable tool for practitioners, policymakers, and leaders to develop strategies based on each cluster's contribution to women's entrepreneurship.*

**Keywords:** SME Cluster; Women Entrepreneurship; Financial Inclusion; Knitwear Industry

## 1. Introduction

In Bangladesh, small and medium-sized enterprises (SMEs) are the backbone of the country's economy (Islam & Mia, 2023; Rahaman et al., 2020). The concepts of SMEs differ across nations, depending on unique features such as sector criteria, hired labour, fixed assets, and their interrelationships (Sarker et al., 2022). In general, it refers to businesses with relatively few employees and moderate annual turnover, compared with well-established businesses (El Madani, 2018). Regarding SME Clusters, Michael Porter, the creator of the idea of industrial

[1] *Department of Marketing, Jagannath University, Bangladesh. E-mail: alamin@mkt.jnu.ac.bd

[2] Department of Marketing, Jagannath University, Bangladesh

[3] Department of Marketing, Jagannath University, Bangladesh

clusters, defined a cluster as a grouping of related companies and sectors in a given area. Similarly, SME clusters are those that has the following characteristics: businesses must be manufacturing or service units, and goods and services must be comparable, uniform, and connected. Clusters may include numerous communities, unions, small cities, or industrial zones that are dispersed within a radius of 3 to 5 kilometres, and there are at least 50 production units in the adjacent area (Abdin, 2018). Each of these groups representing the cluster makes a significant contribution to Bangladesh's economy. SME firms have been instrumental in expediting economic growth (Rahaman et al., 2021; Kumar et al., 2019). SMEs account for about 20.25% of Bangladesh's GDP, which is not optimal, but they have significant potential to contribute more (Begum et al., 2022; Hossain & Asheq, 2020. Bangladesh has been beset with many communal difficulties (Hossain, 2021), but SME clusters have significant potential to connect women in the economic sector. Considering the potential, the government estimates that SMEs' contribution to GDP will increase to 35% by 2030 (Ali & Islam, 2018).

Even though the number of SMEs worldwide has increased, most of these businesses are still owned by men (Maziku, Majenga, & Mashenene, 2014). On the other hand, most women-owned SMEs are concentrated in Dhaka and nearby cities, with about 33% of the 500 women-owned SMEs in the sample distributed across different clusters (Meng, Qamruzzaman, & Adow, 2021). Moreover, only 10% of SMEs in Bangladesh are owned by women, raising questions about gender equality in this sector (Asian Development Bank, 2022). It requires the attention of policymakers and the government, who can explore and improve the overall situation of women-led SME clusters. From the view of Nkwabi, Nkwabi, & Nkwabi (2020), women entrepreneurs in SME clusters tend to include more women than men, creating better opportunities for women. Therefore, a new class of women SME entrepreneurs has emerged in Bangladesh's rural and urban areas (Akter, 2020).

The ownership of SMEs by women is regarded as a potent means of empowerment, facilitating economic independence, enhancing decision-making abilities, and elevating social standing. In fact, Bangladesh is considered a relatively new phenomenon for women in industry or entrepreneurship. Although women are engaged in business across various challenging sectors, there are not many operating in Bangladesh (Dhar, Zaman, & Dhar 2024). Rahman et al. (2021) argued that the SME sector in Bangladesh creates a conducive environment for youth by offering multiple job opportunities, including for women. Interestingly, the majority of workers in the apparel sector are women, and as such, they are the primary contributors to the industry's annual foreign revenue generation. These workers are also willing to become new entrepreneurs in the knitwear industry,

depending on the entrepreneurship opportunities (Moni & Hasan, 2023). SMEs, which account for 6% to 8% of the economic growth rate over the past 10 years, comprise 80% of all industrial jobs (Shoma, 2019; Rahman & Khondakar, 2020). In these SME clusters, there are 26% female and 74% male employees, totalling 20 lakh employees. Approximately 11,000 workers are employed in 177 clusters, with an average of 28 workers per enterprise (The Business Standard, 2021). Therefore, the versatility of SME clusters has highlighted the need for robust research on the contributions of cluster-based initiatives, particularly in fostering women's entrepreneurship.

SMEs are frequently regarded as catalysts for employment generation, particularly for women in developing nations like Bangladesh; they also help alleviate poverty (Hossain et al., 2023). Nevertheless, women's involvement in SME clusters is very little due to various constraints, including restricted access to capital, societal conventions, insufficient business education, and regulatory impediments. While prior studies have examined the role of SMEs in economic advancements (Dhar et al., 2024), few have examined how SME clusters influence women's entrepreneurial participation, particularly in sectors such as knitwear. SMEs have diversified clusters, none of which is of equal significance. Therefore, the government needs to set priorities based on the employment-generating potential of a particular SME cluster, which underscores the need for this research. As the Bangladesh Garment Manufacturers and Exporters Association (BGMEA) reports, demand for the production of regular knitted items is rising rapidly. In the fiscal year 2024-25, about 53.76% of total exports from the ready-made garment (RMG) sector came from knitwear. Therefore, it emphasizes the importance of the knitwear cluster over any other clusters. Moreover, female entrepreneurs who own and operate SMEs face greater obstacles than their male counterparts, including gender discrimination and the challenge of juggling familial obligations. Addressing this gap is also crucial for designing better gender-responsive SME cluster policies in Bangladesh. This paper analyses the key factors that influence women's entrepreneurship, which can enhance SME clusters and generate employment for women, particularly in the knitwear cluster, given its contribution to earning foreign currency through value creation in RMG products.

## 2. Review of the Literature

### *2.1 SMEs*

SMEs differ from larger companies in unique features (Chen, Jaw, & Wu, 2016; Gonzalez-Varona et al., 2024), greater flexibility in responding to new events (Troise et al., 2022), and limited resources and specialised capabilities (Costa Melo et al., 2023). There are five categories of businesses: cottage, micro, small, medium, and big firms (SME Foundation Bangladesh, 2021). SMEs serve as

sources of competition and inspire entrepreneurial activity (Otache & Usang, 2022). Various studies have found that SMEs contribute to a nation's GDP and employment (Etale & Light, 2021). There is mounting evidence that these survival-focused SMEs could gain from adopting a more entrepreneurial approach in place of the conventional scarcity perspective (Morris, Santos, & Neumeyer, 2020). The World Bank report (2022) noted that SMEs account for 90% of all businesses and 50% of all jobs. However, SMEs face significant challenges and intense competition in the global market (Dixit et al., 2021; Otache, 2024). Acquiring a competitive edge is essential as it dictates the prospects of SMEs in an intensely competitive and demanding commercial landscape (Wang et al., 2023).

Bangladesh's economy notably relies on SMEs, which influence GDP, employment, poverty reduction, and exports (Hossain et al., 2023). Drawing on economic theory, Islam (2020) claims that the development of SMEs is inherently necessary to ensure inclusive economic growth and reduce poverty. SME businesses perform better in developing nations like Bangladesh, where unemployment, insufficient savings, and inadequate capital accumulation are common among the low-income population (Akter, 2020).

*2.2 Women Entrepreneurship*

Richard Cantillon first used the idea of entrepreneurship in 1755 to enhance economic activity (Adro et al., 2021). Yadav and Unni (2016) noted that women began entrepreneurship in the late 1970s, whereas men started in the 1930s. Bruni, Gherardi, & Poggio (2004) stated that a distinct analysis was unnecessary, given that prior studies on entrepreneurship had presumed that male and female entrepreneurs were fundamentally identical (Yadav & Unni, 2016). To expand the research presented in the Global Entrepreneurship Monitor (GEM) initiative of 2002, Minniti and Arenius (2003) examined female entrepreneurship. Authors claimed that men's participation rates are typically 50% higher than women's, which necessitated separate research on men's and women's entrepreneurship.

Entrepreneurship means identifying new business opportunities and raising capital to launch a new venture or expand an existing one while managing risks and uncertainties in the hopes of earning a profit as a private owner (Adenutsi, 2023; Miço & Cungu, 2023). Besides, entrepreneurship is the capacity of an individual to identify a business idea and bring it to fruition (European Commission, 2020). Moreover, Adenutsi (2023) further characterised employment creation as a means of generating revenue that is extended to other parties. From Nor's (2024) perspective, the growth of SMEs and entrepreneurial education and training is strongly associated with employment, revenue, and poverty reduction. Moreover, women-owned SMEs face challenges such as financial constraints, limited staffing, limited social networks, and disruptions to the economic and cultural

environments (Hafiz, Latiff, & Abd Wahab, 2021). Similarly, it is thought that female entrepreneurs are successful in advancing gender equality (Tundui & Tundui, 2021). On other fronts, the gender gap in entrepreneurship has started to reduce. The rate of females starting their own firms increased by 10% between 2014 and 2016, contributing to a 5% reduction in the gender gap in entrepreneurship. The prevalence of women operating their own enterprises has been consistently increasing, prompting heightened scholarly interest in women's entrepreneurship (Rosenbaum, 2023).

Schumpeter (2020) defines women entrepreneurs as those who possess innovation, proactivity, or a willingness to participate in entrepreneurial endeavours. The literature indicates that entrepreneurship has become the subject of numerous studies, accounting for approximately 10% of all related papers (Noor, Isa, Shafiq, 2022). Successful entrepreneurship is defined in the domains of business and finance as asset returns, revenues, job creation, and non-pension benefit metrics like performance and personal development (Noor et al., 2022). To prevent erroneous conclusions, the employment status and educational attainment of female entrepreneurs were included as control variables (Khan et al., 2021). Earlier research found that women's status affects a company's success in the global market. Typically, educated women make wise investment decisions that enhance business success (Khan et al., 2021). Therefore, several factors can motivate women entrepreneurs to participate in SME clusters.

*2.3 SME Cluster of the Knitwear Industry in Bangladesh*

Scholarly research indicates that the cluster creates a global economic advantage and serves as a catalyst for open innovation (McPhillips, 2020). The underdeveloped state of clusters in developing nations highlights the need for empirical evidence to validate their benefits and to promote greater policy support for cluster development in critical industries (Beraha, Đuričin, & Lazarević, 2023). The word "cluster" is derived from the English word, which is defined as an autonomous entity composed of several comparable parts, with accumulation and unique characteristics (Muhamadovich, 2023). Ostapenko, Africano, & Meneses (2024) characterized a cluster as a location-based concentration of interconnected businesses, targeted suppliers, service providers, enterprises in related sectors, and pertinent organisations (e.g., trade associations, educational institutions, and regulatory agencies) within a specific domain that engage in both collaboration and competition. Evolutionary economic geography (EEG), which recognises clustering as a regional phenomenon, has served as an inspiration for the creation of cluster dynamics (CLC) (Mobedi & Tanyeri, 2019), embracing some of its ideas, such as route development. The term "cluster" now has a broader, more nuanced definition than before. When clusters first emerged, they were primarily

defined in terms of company development according to geographic proximity (Ganau & Rodríguez-Pose, 2018).

Clusters boost productivity, reduce costs, innovate, and generate competitive resources, thereby increasing GDP and employment rates and encouraging wage workers to become entrepreneurs (Shakib, 2020). The critical function that clusters governance plays as a middleman in improving SMEs' ability to absorb new information and facilitating their assimilation into cooperative networks (Gonçalves, Poncet, & Mitkova, 2024). Clusters consist of two essential components: businesses within linked clusters situated in proximity to one another and readily identifiable as industrial areas (Kiryluk-Dryjska & Wieckowska, 2020). From an alternative viewpoint, three essential attributes of clusters are: (1) communality, wherein enterprises function within analogous or interconnected domains with a shared market orientation or collaborative endeavours; (2) concentration, where enterprises are clustered and capable of interaction; and (3) connectivity, where enterprises are interdependent, exhibiting diverse relational dynamics (Yigit Ozkan et al., 2019).

Small businesses can enhance growth through linking and clustering, where they compete while remaining autonomous, enabling cost sharing and potential developmental opportunities (Shakib, 2020). Cluster analysis of SMEs helps to identify development plans, enhances performance, and fosters creative, strategic forward-thinking for a sustainable future by identifying relevant variables (Kapoor, Goel, & Nagar, 2023). Bangladesh also divided its SME sector into 177 clusters based on different groups, like 1. Geographical clusters 2. Technological cluster 3. Linkage-wise clusters 4. Market-wise clusters 5. Growth-wise clusters 6. Industry clusters (SME Foundation, 2013).

The evolution of knitwear products differs significantly from that of woven products. Additionally, Cassidy (2017) suggested that the knitwear designer must also be aware of the properties of fibres, yarns, and stitch structures. Global knitwear and apparel consumption is expected to quadruple by 2050, if current demand patterns continue (MacArthur, 2019). Knitwear has a substantial impact on Bangladesh's export sector. The valuation of knitwear exports was USD 16.9 billion in the 2020–21 fiscal year and rose to USD 21.23 billion in the 2021–22 fiscal year (EPB, 2022). To meet the USD 100 billion RMG export objective by 2030, Bangladesh must export knitwear valued at almost USD 48 billion, assuming the current blend of knit and woven wear remains unchanged (TBS Report, 2022). Understanding the condition of the upstream distribution network for knitwear products is becoming increasingly essential (Alam et al., 2023). Furthermore, the knitwear sector is projected to grow at an average annual rate of 12.10% worldwide from 2021 to 2029, rising from $644.29 billion in 2021 to $1606.67 billion in 2029.

There are various studies on SMEs and their impact on employment creation (Inegbedion et al., 2024; Nor, 2024), the national economy (Musabayana, Mutambara, & Ngwenya, 2023), Innovation (Wang & Zhang, 2024), etc. However, very few studies have examined the effect of SMEs on women's entrepreneurship. It is crucial to understand how SMEs can deliver better results in women's entrepreneurship to motivate them to make a greater financial contribution to the GDP. There are very few studies that discuss specific clusters within SME (Tong et al., 2023). Considering a few studies on SMEs and women's entrepreneurship, both globally and in Bangladesh, this study focuses on the participation of SME clusters in women's entrepreneurship.

## 3. Hypothesis Formation & Theoretical Framework

### *3.1 Hypothesis Formation*

#### *3.1.1 Organisational impact (OI) of SME and women entrepreneurship*

An organisation's internal features, such as its workforce, size, employee turnover, managerial structure, and associated problems, are part of its organisational architecture (Lee & Chan, 2003). Steininger, Lorch, and Veit (2014) argued that capitalising on changing market situations and technological developments is crucial for SME clusters. From the perspective of Hsu, Ray, and Li-Hsieh (2014), understanding the relative benefits of an SME cluster can enhance information exchange and an organisation's overall success. Additionally, Barney (2001) found a favourable correlation between organisational success and the top management team. Because entrepreneurship fosters the expansion of a firm's operations and sales volume, it also contributes to social development. It is essential to consider the influence of senior managers' entrepreneurial choices and values on decision-making, particularly amid evolving competitive dynamics for SMEs (Qulati et al., 2020). The results of the Denktaş (2020) study, which included 121 Indian SMEs, strongly supported the notion that SME clusters foster an entrepreneurial mindset. Being involved in organisations, particularly in internal roles such as leadership, ownership, or management, motivates women to become entrepreneurs (Lee & Chan, 2003). Thus, organisations' internal connectivity is assumed to involve more women entrepreneurs:

*$H_1$: OI of SME cluster has positive effects on Women's entrepreneurship*

#### *3.1.2 Technological Impact (TI) of SME and Women's Entrepreneurship*

SME clusters possess several technological variables, including comparative advantage, efficiency, coherence, accessibility, and interaction, that affect their operations (Qulati et al., 2020). Hsu (2014) said that the comparative advantage of an SME cluster can enhance knowledge exchange and an organisation's overall

performance. For SMEs, accessibility means the strategic alignment between new technology and existing tech, needs, and values (Chatterjee & Kar, 2020). Cost-effectiveness is the process by which technology makes innovation viable and affordable to consumers. This component, which falls under the TOE framework, is regarded as one of the most critical elements for evaluating enterprise acceptance and has been used sparingly in the literature to date (Rana et al., 2019). Dsouza and Pankaje (2023) claimed that technological tools affect women's willingness to engage in business and improve performance. In general, female entrepreneurs seek to reduce costs and develop their skills within SME clusters, which is one of the reasons they are involved in SMEs. In the context of Bangladesh, Islam and Nasira (2017) found that technological impact is a key variable in SME development and entrepreneurship, which indicates the following hypothesis:

*$H_2$: TI of the SME cluster has positive effects on women's entrepreneurship*

*3.1.3 Environmental Impact (EI) of SME and Women's Entrepreneurship*

Understanding the variables influencing external environmental SME performance is aided by ecological factors (Haseeb et al., 2019). Previous research has considered factors such as vendor support, trade partner pressure, customer pressure, and competition enforcement (Abed, 2020). Three aspects of EI are examined in this work: the bandwagon effect, competitive pressure, and rivalry intensity (Ali Qalati et al., 2020). When an industry has many rivals and little room for expansion, competitive intensity increases (Diascanedo et al., 2020). Moreover, Lutfi et al. (2020) cited that SMEs today face global competition in a turbulent business climate.

When rivals sense pressure, the corporation is compelled to adopt new technology to survive. It is known as competitive pressure (Seo et. al., 2020). In the SME setting, it is said that performance will be affected in proportion to the number of businesses under competitive pressure (Tella, Ukwoma, & Kayode, 2020). The theory put forward by Geurin (2017) argued that strategic performance and competitive pressure are positively correlated, particularly in creating entrepreneurship. The bandwagon effect is a psychological phenomenon in which public opinion reinforces itself (Nagi et al., 2015). It was suggested that this effect occurs when a brand gains demand because others use it, or when a company uses a particular technology only because other companies do, rather than for strategic purposes (Jin & Hurd, 2018). In more volatile climates, the bandwagon effect is much more pronounced (Bocconcelli, Cioppi, & Pagano, 2017). Hence, the SME cluster has a strong bandwagon effect that can positively influence women to become entrepreneurs, suggesting the following hypothesis:

*$H_3$: EI has positive effects on women's entrepreneurship*

*3.1.4 Access to Finance (AF) of SME and Women's Entrepreneurship*

SMEs can grow their operations, invest in new technology, and gain a competitive advantage by accessing financial resources (Hoshino, 2024). For example, a structural equation modelling study by Gunasagar and Said (2022), identified substantial capital deficiencies throughout Malaysian SMEs, highlighting the necessity for enhanced financing systems to facilitate SME development. The financing sources distinguish between new and established funding sources to support entrepreneurial endeavours in the current modern day (Shaikh Tunio, & Qureshi, 2021). In line with Hoshino (2024), AF for SME clusters can be assessed using measures including credit availability, loan accessibility, and financial assistance from diverse institutions. The SME foundation and the government have a priority policy for women, providing financial access at a low interest rate (2% lower for women) and flexible terms for credit facilities so that women can become entrepreneurs. Moreover, the Bangladesh Bank gives underdeveloped clusters more loans than the developed areas. It is crucial to test whether financial access is positively associated with women's entrepreneurship within a specific SME cluster.

*$H_4$: AF of the SME cluster has positive effects on women's entrepreneurship*

*3.2 Theoretical Framework*

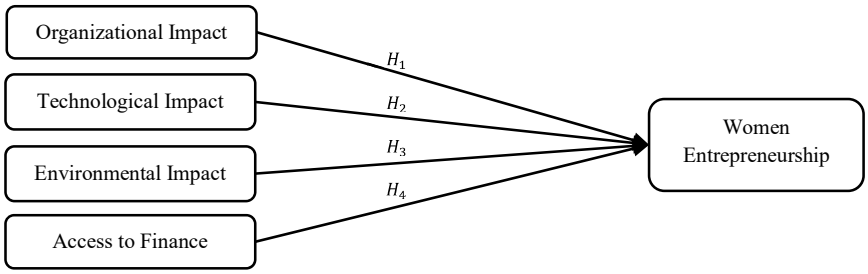



**Figure 1: Relationship between SME Cluster Involvement and Women Entrepreneurship**

*3.3 Research Objective*

The broad research objective is to determine the influence of SME Cluster involvement on women's entrepreneurship in Bangladesh's knitwear cluster.

*3.3.1 Specific Objectives*

- To assess the organizational, technological, and environmental effects of SME clusters on women entrepreneurs.
- To examine access to finance for the development of women entrepreneurs.
- To assess the women's greater opportunity to do SME and what is better for better entrepreneurship

## 4. Research Methodology

*4.1 Research Design*

The quantitative research design was adopted to empirically examine the association between SME cluster involvement and women's entrepreneurial participation in Bangladesh's knitwear cluster. Quantitative analysis allows for objective measurement of relationships among variables and supports statistical generalisation, making it suitable for testing hypotheses derived from prior theoretical frameworks. Moreover, the quantitative technique is more effective for measuring human perception and motives regarding particular factors. Therefore, a quantitative research tool was used to measure women's perceptions of entrepreneurship.

*4.2 Sampling Techniques, Sample Size, and Population*

Hence, the population comprises all women from various rural, urban, and suburban areas, including Netrokona, Narsingdi, Mymensingh, Dhaka, and Sylhet. This research used judgmental purposive sampling (JPS), as there is no official record of women involved in SME clusters in these areas. Malhotra and Dash (2011) proposed that JPS is a viable sampling technique when a formal population list is unavailable. Hulland, Baumgartner, and Smith (2018) argued that nonprobability sampling, such as JPS, is an effective method to test theoretical hypotheses while maintaining proper measurement instruments and research context. As this research focuses on testing existing theoretical hypotheses, with all constructs and items drawn from previous literature, JPS is a more effective sampling method. Moreover, Sarker and AL-Muaalemi (2022) argued that non-probability sampling, such as JPS, can yield representative results when the research techniques are implemented wisely and guided by the research scope and aim. Considering this statement, the study initially contracted with two employees from the SME Foundations to assist with sample selection and selected three different districts of Bangladesh accordingly to avoid bias. Finally, the study

focused only on women entrepreneurs because the Knitwear industry accounted for 65% of the 1.9 million direct jobs in the FY 2022-23 (BKMEA, 2024).

For sample size determination, the paper used the 10-times rule and a priori power analysis. Firstly, according to the 10-times rule for PLS-SEM, this study requires a sample of 50 women (5 × 10) (Hair, Ringle, & Sarstedt, 2014). However, the study collected data from 95 women, almost double the required sample size. Secondly, from the perspective of a priori power analysis of multiple regression with five predictors and $\alpha = 0.05$ (two-tailed), the process indicated 80% power to detect an effect size of $f^2 \approx 0.088$, suggesting that 95 samples are sufficient for this study.

*4.3 Data Collection*

A systematic questionnaire was utilized to gather primary data. The poll comprised 17 questions addressing four independent variables-Organisational Impact, Environmental Impact, Technological Impact, and Access to Finance-and one dependent variable: Women's Entrepreneurship. The survey was conducted using an offline questionnaire and an online Google Form. As data were collected from both online and offline sources, young women entrepreneurs were more open and interested in the survey, particularly the online survey. Consequently, the majority of respondents were in the youth demographic.

*4.4 Data Analysis & Test of Validity and Reliability*

The study employed PLS-SEM to examine the influence of involvement in the SME cluster on the advancement of women's entrepreneurship. A professor from a public institution, specializing in the SME sector, evaluated the questionnaire's validity. Furthermore, the reliability of the statistical data was assessed using Cronbach's alpha, with item values required to exceed 0.70 (Guilford, 1950; Zikmund et al., 2017).

*4.5 Multicollinearity Analysis*

Common method bias (CMB) was assessed using VIF values and Harman's single-factor analysis to avoid multicollinearity (Kyriazos & Poga, 2023). Furthermore, Knock (2015) claimed that VIF values below 3 indicate no multicollinearity. In this study, the VIF value varies from 1.328 to 2.771 (see Appendix 1). The Harman single-factor analysis suggests that 57% of the variation is explained by the initial component (see Appendix 2), indicating no CMB issue.

*4.6 Research Instrument*

The research employed a structured questionnaire as the data collection instrument. The first part has five enquiries, and the demographic composition of the respondents is examined. The second half comprises 17 questions that concentrate

on specific constructs, including OI, EI, TI, AF, and WE. Thus, there are three comparable items for each of the four independent variables (OI, EI, TI, AF), whereas five items have been used to clarify the dependent variable (WE). Moreover, a pilot study was conducted to assess the questionnaire's primary appropriateness among 5 participants. The questionnaire was revised based on the pilot survey results and included the following items and constructs (see Table 1).

**Table 1: List of items and constructs with sources**

| Serial | IVs | Serial | Items | Source |
|---|---|---|---|---|
| 1 | Organizational Impact (OI) | i | Internal Characteristics | Lee and Chan (2003); Qulati et al (2020) |
| | | ii | Organization's Performance | |
| | | iii | Competitive Environment | |
| 2 | Environmental Impact (EI) | i | Intensity of rivalry | Qulati et al (2020) |
| | | ii | Pressure on competition | |
| | | iii | Bandwagon effect | |
| 3 | Technological Impact (TI) | i | Relative advantage | Ahmed et al., (2019) |
| | | ii | Cost effectiveness | |
| | | iii | Compatibility | |
| 4 | Access to Financial (AF) | i | Adequacy of credit | Ahmad, Abu Bakar, & Ahmad (2020) |
| | | ii | Ease access to loan | |
| | | iii | Funding supports | |
| 5 | Women Entrepreneurship (WE) | i | Need for Achievement | Swain & Olsen (2011); Akhtar et al., (2020) |
| | | ii | Risk-Taking | |
| | | iii | Self-confidence | |
| | | iv | Economic factors | |
| | | v | Socio-cultural factors | |

### *4.7 Demographic Data*

The demographic profile of participants includes:

**Table 2: Demographic Data (n=95)**

| Particulars | | Percent |
|---|---|---|
| Gender | Female | 100% |
| | Male | 0% |
| Age | 18-24 | 81.18% |
| | 25-30 | 7.84% |
| | 31-35 | 10.98% |
| | 36-40 | 0.00% |
| | Above 40 | 0.00% |

## 5. Data Analysis and Interpretation

### *5.1 Output of the Measurement Model*

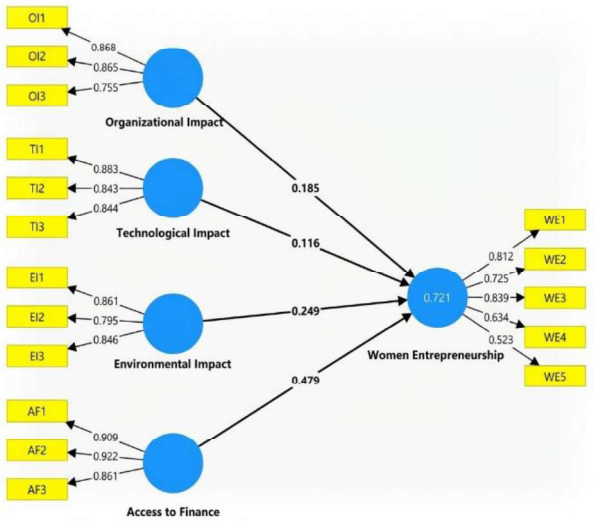



**Figure 2: The results of the research model**

Table 3 presents indicators of convergent validity, including loadings, Cronbach's alpha, and the extracted average variance (AVE). Chin (2010) posited that loading scores should attain a minimum threshold of 0.50 to guarantee convergent validity. The figure indicates that all constructs above the 0.50 threshold, demonstrating that the developed model possesses convergent validity. Furthermore, the AVE values for OI, EI, TI, AF, and WE are 0.805, 0.697, 0.690, 0.734, and 0.513, respectively, thereby reinforcing convergent validity.

**Table 3: List of items for convergent validity**

| Variables | Items | Loading score | CR | AVE | Cronbach's Alpha |
|---|---|---|---|---|---|
| Organisational Impact (OI) | OI1 | 0.868 | 0.925 | 0.805 | 0.879 |
| | OI2 | 0.865 | | | |
| | OI3 | 0.755 | | | |
| Environmental Impact (EI) | EI1 | 0.861 | 0.873 | 0.697 | 0.783 |
| | EI2 | 0.795 | | | |
| | EI3 | 0.846 | | | |
| Technological Impact (TI) | TI1 | 0.883 | 0.869 | 0.690 | 0.774 |
| | TI2 | 0.843 | | | |
| | TI3 | 0.844 | | | |
| Access to Financial (AF) | AF1 | 0.909 | 0.892 | 0.734 | 0.819 |
| | AF2 | 0.922 | | | |
| | AF3 | 0.861 | | | |

| Variables | Items | Loading score | CR | AVE | Cronbach's Alpha |
|---|---|---|---|---|---|
| Women Entrepreneurship (WE) | WE1 | 0.812 | 0.837 | 0.513 | 0.755 |
| | WE2 | 0.725 | | | |
| | WE3 | 0.839 | | | |
| | WE4 | 0.634 | | | |
| | WE5 | 0.523 | | | |

Tables 4 and 5 illustrate discriminant validity through the HTMT and Fornell-Larcker criteria. All HTMT values are below the cutoff except for two scores, 0.903 and 0.935 (Hair et al., 2014), indicating discriminant validity. Furthermore, all item values were within an acceptable range according to the Fornell-Larcker criteria, thereby ensuring discriminant validity.

**Table 4: Outputs of Discriminant Validity**

| | AF | EI | OI | TI | WE |
|---|---|---|---|---|---|
| AF | | | | | |
| EI | 0.800 | | | | |
| OI | 0.439 | 0.545 | | | |
| TI | 0.591 | 0.879 | 0.593 | | |
| WE | 0.976 | 0.983 | 0.721 | 0.785 | |

**Table 5: HTMT - List**

| HTMT ratio | |
|---|---|
| EI <-> AF | 0.796 |
| OI <-> AF | 0.434 |
| OI <-> EI | 0.535 |
| TI <-> AF | 0.596 |
| TI <-> EI | 0.888 |
| TI <-> OI | 0.586 |
| WE <-> AF | 0.903 |
| WE <-> EI | 0.935 |
| WE <-> OI | 0.718 |
| WE <-> TI | 0.799 |

In this study, the influencing factors of the SME cluster are exogenous, and women's entrepreneurship is an endogenous construct. The structural model was assessed using VIF, path coefficients, and R2. The VIF results indicate no collinearity; all VIF values are less than 3.0 (see Appendix 1). The R2 value for women entrepreneurship is 0.721, indicating a strong relationship among OI, EI, TI, AF, and WE (Hair et al., 2011). From Table 6, it is evident that AF, EI, and OI are significantly correlated with women's entrepreneurship, suggesting that their inclusion will enhance women's participation in entrepreneurship.

**Table 6: Output of Path Model**

| | Sample mean (M) | Standard deviation (STDEV) | T statistics (\|O/STDEV\|) | P values | Decision |
|---|---|---|---|---|---|
| AF -> WE | 0.482 | 0.090 | 5.348 | 0 | Supported |
| EI -> WE | 0.244 | 0.105 | 2.372 | 0.018 | Supported |
| OI -> WE | 0.193 | 0.080 | 2.310 | 0.021 | Supported |
| TI -> WE | 0.111 | 0.089 | 1.294 | 0.196 | Not Supported |

## 6. Discussion on Findings

The paper examined the influence of SME cluster participation on women's entrepreneurial intentions in Bangladesh's knitwear sector. The findings indicated robust positive relationships among three factors-organisational influence, access to financing, and environmental impact-consistent with the observations of Andriamahery & Qamruzzaman (2022), Leitch, Welter, & Henry (2018), and Niethammer et al. (2007). As the study was conducted in the knitwear industry, organisational factors-such as internal characteristics and performance-may drive overall SME performance and influence women's decisions to start businesses. The outcome also makes significant contributions to the availability of finance and to the macro-environmental effects on women's entrepreneurship. The key advantage of an SME cluster is that it provides opportunities and ways for people with less capital to do business. That is why women entrepreneurs are affected by access to finance. If there is a lack of access to finance-such as loans, microcredit, etc.-it is crucial to motivate and enrich women's entrepreneurship through SMEs. SME clusters also have environmental impacts, such as increased competition intensity and pressure, and the bandwagon effect, which strongly affect women's entrepreneurship decisions. Though women contribute 24 to 76% of entrepreneurs in SMEs, the scenario is changing day by day; especially in the knitwear industry, women are more involved. Environmental impacts drive women's entrepreneurship in a positive direction; women make decisions based on competition, pressure, and external factors. Similarly, the bandwagon effect drives women to do more business and to establish more SME clusters inspired by the SME environment.

However, Technological Impact poses a negative correlation with women's entrepreneurship. It may make SMEs more effective and efficient, but does not affect women's perspective on starting and doing business in Bangladesh. According to Mehta et al. (2021), women-owned SMEs adopt open innovation practices rather than relying on technology. SMEs don't have enough capital to work with advanced technologies or develop technologically advanced products. Technology does impact formal R&D and large manufacturers (Yunitarini & Santoso, 2018). In Indonesia, women-empowered SMEs are affected by

technology adoption, with financial inclusion acting as a mediator. The availability of technology to women entrepreneurs may also play a role here. Therefore, more extensive research is needed on technological adoption and the mediating role of financial inclusion to reach a robust conclusion.

In summary, to explore women entrepreneurs in the SME sector, more comprehensive internal organisational opportunities, positive environmental supports, and financial facilities are more influential than other factors. Thus, the research concludes that these factors should be appropriately addressed to increase women's contributions as entrepreneurs in SME clusters.

## 7. Implication of the Research

Overall, the SME cluster influences women to start businesses and take one step forward toward contributing to the economy, driven by financial factors such as easy credit facilities, supportive environmental conditions, and organisational atmosphere. However, women are still lagging behind their male counterparts. So, it is crucial to find out what is affecting their entrepreneurship and decision-making. This study will give the policymaker an idea of how knitwear clusters of SMEs are creating more women entrepreneurs. For example, by increasing access to finance and improving the business environment, women will be more involved in SMEs and other businesses. As a result, a separate policy is needed to address cluster diversification, particularly in the underdeveloped cluster. This study also provides social scientists with greater insight into how women think about business and entrepreneurship. The output of this research also implies that women are motivated by their surroundings when positive environmental factors are present. Therefore, it will also help them develop more concrete social structures to ensure women contribute more to the economy.

Furthermore, policy related to gender-sensitive SME financing programs can motivate women to participate in this sector. The government can integrate women's entrepreneurship into the national SME policy to ensure that the problems faced by women entrepreneurs are adequately addressed. It will result in better development and more opportunities for women. To create a better organisational environment, policymakers can improve working conditions by providing community childcare centres and flexible work arrangements.

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During the preparation of this manuscript, the author(s) used [Grammarly, Qillbot to assist in improving language clarity and grammar. The author(s) reviewed, edited, and revised the content. All ideas, analysis, and conclusions are entirely the author's own, and the author(s) take full responsibility for the integrity and accuracy of the manuscript.

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## Appendix:

**Appendix 1: VIF Values**

| VIF | |
|---|---|
| AF -> WE | 1.846< 3.000 |
| EI -> WE | 2.771< 3.000 |
| OI -> WE | 1.328< 3.000 |
| TI -> WE | 2.178< 3.000 |

**Appendix 2: Results of Harman Single Factor Test**

| Total Variance Explained | | | | | | |
|---|---|---|---|---|---|---|
| Component | Initial Eigenvalues | | | Extraction Sums of Squared Loadings | | |
| | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % |
| 1 | 2.891 | 57.825 | 57.825 | 2.891 | 57.825 | 57.825 |
| 2 | .792 | 15.834 | 73.659 | | | |
| 3 | .544 | 10.877 | 84.536 | | | |
| 4 | .427 | 8.539 | 93.075 | | | |
| 5 | .346 | 6.925 | 100.000 | | | |
| Extraction Method: Principal Component Analysis. | | | | | | |