International Research Journal of Innovations in Engineering and Technology (IRJIET)

ISSN (online): 2581-3048

Volume 6, Issue 5, pp 100-111, May-2022

https://doi.org/10.47001/IRJIET/2022.605013

COVID-19 Pandemic: Microfinance and Social Sustainability of Grameen Bank Borrowers in South-West Bangladesh

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***Abstract* - As important as social sustainability is to the sustainable development agenda, there is a lack of research to clearly define and operationalize the concept. The purpose of this research is to add to the existing body of knowledge by developing a comprehensive scale for evaluating social sustainability and microfinance at the vulnerable level. A multidimensional concept of social sustainability, we argue, incorporates equity, diversity, social cohesion, and quality of life as well as democracy and governance. An incomplete picture of social sustainability may result if these dimensions are ignored. Factor analysis is used to examine the scale's validity, reliability, and dimensionality. Using microfinance as a case study, we demonstrate how the social sustainability scale can be put to use in practice. Women microfinance users in rural and coastal areas in Satkhira District of Bangladesh's southwest were surveyed for this paper using data from a questionnaire survey that included 223 respondents from rural and coastal areas (Shyamnagar and Kaligonjupazillas). Improved microfinance has a positive and significant impact on various aspects of social sustainability and overall social sustainability, according to this new research.**

Keywords: COVID-19, Pandemic, Microfinance, Social Sustainability, Grameen Bank, South-West Bangladesh.

I. INTRODUCTION

Among policymakers, practitioners, researchers, and the general public, the pursuit of "sustainable development" has become common discourse and practice. The concept of what "sustainability" is and how it might be attained is a hotly debated topic. Hence, a widely used term for low-income financial services that are provided in various banking and financial service methods, including microcredit, micro insurance, micro-savings, and money transfers, is known as "Microfinance."*(van Rooyen et al., 2012).*It is now considered an excellent tool for international development, particularly for alleviating poverty (Yunus,1999) and affects sustainable development directly and indirectly *(Busch et al., 2016). However,* there are very few conceptual arguments that exist.

On the other hand, Microfinance programs can potentially achieve equitable and sustainable development (*Rahman, 1999; Stevens and Morris, 2001*). For these lucrative specialties and in consideration of importance, microfinance has been targeted as research content for the last few decades.

In the world's largest banking market, *Microfinance* is considered as a high growth industry in consideration of serving the customers *(Mersland et al., 2013).*Microfinance offers financial services to poor and low-income customers who are not served by the conventional banking sector for the last three decades. For instance, in the present world, 62% of adult populations have a bank account on average, 51% in 2011. At that time, 2.5 billion adults were with no bank account, and at present, the number of no bank accounts adult is 2 billion. The increase in bank account holders has been 20% since 2011 *(Kunt et al., 2015).*

The concept of *Sustainable development* lies in the connection among financial, environmental quality, and social development *(Rogers,P.P et al., 2005).* Economic Sustainability refers to yielding sufficient revenue to cover the total expenses *(Mia, M. A., Nasrin, S., &Cheng, Z. 2016).* But in some cases, the microfinance specialists believe that the microfinance institutions are giving more importance to financial sustainability by which the main aim (social development) of microfinance is de-emphasized *(Louis et al., 2013).* This paper seeks to contribute in this regard.

However, the primary objective of microfinance was related to economics, but later it shifted to the social and after then development perspective *(Copestake, J. 2007).* But in recent years, microfinance specialists have disagreed with these objectives and emphasized "environmental" as the third objective (*Hall et al., 2008*). Consequently, "Green Microfinance" comes forth,

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which always tries to meet these objectives by ensuring environmentally (Green) friendly products *(loan and services)* and technical assistance to the poor, low and moderate-income people. Reducing poverty and financial exclusion *"Green Microfinance*" immensely affects environmental protection, energy efficiency, and slowing down environmental degradation. Moreover, because it is observed that low-income customers of microfinance have a strong dependency on these natural resources, which results in the depletion of natural resources, by availing of the *"Green Microfinance,*" they can gradually fill up the shortage and sustain their businesses. In this way, microfinance ensures well-being to the environment, people, and humanity. *(Rammaswamy A., Krishnamorty A., 2016).*

But for Microfinance, there is still an ongoing discussion and debate between the recent financial orientation and better financial access for the root level people termed as a social mechanism (Atahau et al., 2020). On the other hand, by extending financial services to poor people, microfinance has also claimed to be an effective tool for developing the grassroots level for several years (Hudak, 2012). But it is observed that the higher authorities of microfinance institutions are socially driven in most cases, whereas almost all the officers supposed to provide credit are financially oriented (Serrano-Cinca et al., 2015). Such shifting of motive from social to financial orientation is broadly termed the mission drift (Mia and Lee, 2017). Due to massive loan funding from traditional banks and financial institutions, microfinance institutions focus more on commercial objectives than serving the poor, leading to this mission drift. So, it is needed to find empirical studies between microfinance and social sustainability to address the evidence gap. This paper also seeks to contribute in this regard.

Since the 1980s, Social Sustainability has been almost an overlooked aspect of three-pillar sustainable development that has discoursed economic, environmental, and social Sustainability (Shirazi and Keivani, 2018). But in recent years, the concept, area, and ideas of social sustainability are least defined and ambiguous. Unfortunately, though, the development of the concept and definition of social sustainability was sidestepped from time to time. Still, the theories of social sustainability have been outlined as "added-on" for the development and measurement of environmental (natural resources) and economic sustainability (the basic human needs) (Magis and Shinn, 2009). However, after reviewing social sustainability literature, researchers have discovered two significant shortcomings: the first of these shortcomings is the theoretical deficiencies in considering the areas and the definition of the social sustainability concept and another deficiency in operationalization and integration into planning projects (Vallance et al., 2011).

This article seeks to figure out the relationship between socialsustainability (equity, diversity, social cohesion, quality of life, and democracy and governance) and microfinance among Bangladesh rural microfinance customers. The data is collected during the covid period by obeying the covid safety rules from the Grameen Bank (Noble prize-winning microfinance providing institution) customer in Satkhira, situated in the southwest part of Bangladesh. This area is a good location anda research field to examine the linkages between the variables. Bangladesh has a pulsating microfinance field and is the most climate-changing country worldwide *(Fenton et al., 2017). The country* suffers from multiple environmental and natural climate hazards, mainly flooding, affecting many countries *(MoEF, 2008*).

II. LITERATURE REVIEW AND JUSTIFICATION OF THE STUDY

Poor people and communities do not have enough food, clothing, shelter, and medical care to maintain a basic level of well-being (Kanellopoulos, 2011). To alleviate poverty, microfinance is expected to help those in need by increasing their standard of living. There is a wide range of views on whether or not microfinance interventions have been successful or unsuccessful in promoting sustainable growth among the poor. According to the literature, a substantial increase in micro-finance services effectively alleviates poverty and empowers the poor (Dunn, 2002; Cohen, 2002). The popular belief that the poor are passive recipients of financial services is a misconception in microfinance. The idea that poor people are "unbankable" was also debunked by this study (Woller, 2002). Microfinance has a long history of successes, but there have been reports of cases where the sustainability of its programs was questioned by customers. In fact, researchers have discovered several reasons why these interventions have failed to achieve long-term success. These findings are based on research conducted in various countries. Among the issues raised were those money laundering, gender inequality, interest rates, and inter-village strife (Hulme, 2007, Haasan 2002, Snow and Buss, 2001, Floro and Dymski, 2000). Another reason why microfinance has failed to achieve its goals is that the product has not been blended to consider local needs and preferences (glocal approach) (Rugimbana et al., 2005). Consumers have been accused of misusing funds intended for microfinance companies, leading to underperformance. This necessitates further research that could lead to a successful business model. Given the size of the stakes, both successful and unsuccessful strategies must be clearly identified. In this way, the best strategies could be adopted and the worst ones eliminated.

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This study will examine the effectiveness of the formal financial sector's strategies for sustainable growth of bottom-of-the-pyramid customers in Bangladesh's rural microfinance programs.

2.1 Alleviation of poverty and improving lifestyle through microfinance

Over the past two decades, microfinance has progressed from being a charitable activity to becoming an effective tool for poverty alleviation (Carlin, 2006). It has also developed into profitable business activity, with an average repayment rate of more than 90 percent, demonstrating its success. Microfinance has evolved from a "novel" concept to a concept that has won the Nobel Peace Prize for its contribution to alleviating poverty (Rogaly, 1996; Carlin, 2006). In part because of microfinance's low default rates and its emphasis on women's empowerment, it has given the impression that poverty in low-income countries can be gradually eliminated by assisting customers at the bottom of the economic pyramid to obtain small loans for business purposes (Develtere and Huybrechts, 2005). Contrary to popular belief, some research has shown that microfinance has a negative impact on poverty; the burden of debt placed on poor families has resulted in them becoming poorer as a result of the debt (Hulme and Mosley, 1996; Hulme, 2007). In the vast majority of studies, microfinance has a negligible effect on economic development (Dichter, 1996).

Well-established financial institutions are pursuing microfinance as part of their Corporate Social Responsibility (CSR) efforts. Their firm belief is that it will result in long-term benefits for both consumers and service providers. Having access to formal financial services allows consumers to borrow money to start their own businesses and break out of poverty, which is a significant benefit to consumers. By pursuing the aforementioned strategies, these financial institutions claim that people will be more likely to adhere to corporate values and that their initiatives will better meet the needs of the organization and its stakeholders. It is critical for a financial institution to maintain credibility and long-term viability in order to remain competitive in today's economy. Researchers, on the other hand, have expressed skepticism about microfinance initiatives.

2.2 Criticism on Microfinance

2.2.1 The absence of sustainable practices

Microfinance programs face increasing criticism as their popularity rises. The critics agree that microfinance institutions can and should become financially viable. – The critics the effectiveness of microfinance as an instrument for alleviating poverty and ensuring long-term viability has been called into question in numerous locales. Given that a wide range of institutions, ranging from the richest to the poorest, engage in microfinance lending, it begs the question of whether lessons learned from one context can be applied to another. Furthermore, because they are frequently heavily subsidized, the majority of micro lending programs are heavily reliant on donations (Adams and Von Pischke, 1984, Morduch, 1999). Microfinance programs, even if they focus on the poor, may not be cost-effective or even worth supporting as a means of transferring resources.

2.2.2 An absence of customer-centered strategies

Furthermore, the micro-enterprises that these programs support can only grow at such a rapid pace that they have little impact on the poor. Microfinance programs, according to their critics, cause the poor to become economically dependent on the program (Bouman et al., 1989). Some microfinance loans may not reach the poorest of the poor due to credit rationing in microfinance programs, which includes inequalities in benefits and loan sizes as well as restricted access to service (Baydas et al., 1997, Joseph, 1993). As a result, microfinance institutions (MFIs) in some parts of the world have been accused of failing to target the appropriate customers. Through the efforts of the microfinance movement, poor households are encouraged to take out loans that they may not be able to pay back (Snow and Buss, 2001). Many people, according to Gonzalez Vega (1998), questioned the goals and expectations of the microcredit summit. While these objectives are commendable in principle, they are flawed in practice because they fail to recognize the difficulties associated with broadening the financial sector to include the less fortunate.

2.2.3 Social and Economic problems created by microfinance

Some studies have pointed to several social and economic problems in some of the programs. Some of these are:

- Personal use of money taken from microfinance ventures. (Hume, 2007, Bichanga and Aseyo, 2013).
- High rates of interest (Hassan, 2002).
- Risk of being trapped in a debt-to-debt cycle (Snow and Buss, 2001).

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- The vulnerability of households reliant on credit (Floro and Dymski, 2000).
- The possibility of free-riding as well as conflicts between villagers and between men and women (Hassan, 2002).

There appears to be a lot of disagreement about the potential of the microfinance movement based on the results of various studies. An investigation into the matter is necessary. In spite of all of the criticisms about microfinance, this sector is growing, particularly in countries like Bangladesh, where the majority of people are living below the poverty level. Since microfinance has so many potential customers, testing its effectiveness in a country like Bangladesh is critical given its inconclusive research findings.

2.3 Microfinance institutions in Bangladesh

The 'Jobra' experiment of Mohammad Yunus and a number of government-led microfinance institutions emerged in Bangladesh in the early 1970s. Following these initiatives, a number of MFIs have sprung up in the country to serve the needy. Despite being around since the 1970s, MFIs began to proliferate in the 1990s, and they quickly spread across the country. This sector's rapid expansion has also been widely acknowledged around the world. The microfinance industry's rapid expansion necessitates the establishment of a regulatory framework to ensure its long-term viability. In the absence of regulation, Microfinance Institutions engaged in numerous fraudulent activities against small depositors, leading to operational inefficiency. Weak liquidity management and a lack of transparency and reporting mechanisms also damaged the MFI's reputation.

There has been a lot of discussion about how to regulate microfinance, and scholars from all over the world have come up with a variety of options, including soft regulation, self-regulation, and prudent regulations (appropriate regulation that are able to guide and control microfinance operation sustainably). There is strong evidence that both self-regulation and special regulation failed to achieve the expected growth in the microfinance industry. Sustainable development can be achieved through prudential regulation. Furthermore, it is difficult to attract capital without proper regulation. While adopting prudent regulation, however, developing countries face challenges due to a lack of proper information and data collection, weak accounting standards, and reporting mechanisms, lack of professionalism, and political interference, among other things. [16]

PKSF, Bangladesh Bank's Microfinance Research and Reference Unit (MRRU) since the 1990s and later in the 2000s, has been supervising, monitoring, and providing guidance to NGO-MFIs in the country. Until 2006, regulation was seen as a stumbling block to this sector's growth. On July 16, 2006, the Bangladeshi government finally passed the "Microcredit Regulatory Authority Act, 2006." Under the Act, no MFI can operate without a license from MRA. Only a small number of the 4236 potential microfinance institutions were chosen in 2007 due to the requirement of either having 1,000 borrowers or owing 40 lacs on their loans. [17].

2.4 Microfinance and Social Sustainability

On the other hand, social sustainability factors consist of social equity, diversity, social cohesion, quality of life, and democracy and governance (Fernández-Pérez, V., & Peña-García, A., 2021).

Figure 1: Social factors in the broader social sustainability context

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III. RESEARCH DESIGN

3.1 Data Collection

We designed a questionnaire named "microfinance and your social experience during covid 19 periods" for surveying the microfinance customers for this study. This survey's primary purpose is to use the data as the primary data source for evaluating microfinance and social sustainability. We believe it is needed for quality and best research judgments to collect data from the respondents who live in the rural society because the individual's interpretations and values may vary for many factors from individual to individual (Dave, 2011).

For evaluating our question validity measures, we scrutinized our questionnaire's initial version of our questionnaire by academic experts who have sound knowledge of microfinance and social sustainability. We checked and corrected our questionnaire based on their review, comments, and suggestions. In addition, before starting our data collection, we conducted a pilot survey among 20 respondents to evaluate our questionnaire's mistakes, clarity of instructions, assessing survey terminology, and response format.

A total of 300 questionnaires were distributed among the women microfinance users of the rural and coastal areas of Satkhira District (Shyamnagar and Kaligonjupazilla) of the southwest part of Bangladesh during the Covid period to maintain Covid safety rules. As a result, we received 235 questionnaires from the respondents that correspond to the 78.33% response rate. In addition, among the questionnaires received, there were 12 questionnaires unusable as missing data, which results in a usable rate of response of 74% (questionnaires).

The location was selected based on questionnaire surveys indicating the factor relation. It was a typical region, subjected to flooding, relief, and assistance supplied by Government and Non-government financial institutions, data available and safe, and participants were at low danger of fatigue from studies. Data is collected to obtain a thorough examination of the context-specific nature of vulnerability and adjustment. For acquiring familiarity and confidence of study respondents, qualitative techniques and extended local existence were needed (Fenton, A., Tallontire, A., & Paavola, J. 2017).

Table1: Response Category Interval

Scale Level	Interval	Answer category
1	1-1.99	Strongly Disagree
2	2-2.99	Moderately Disagree
3	3-3.99	Disagree
4	4-4.99	Neutral
5	5-5.99	Agree
6	6-6.99	Moderately Agree
7	7	Strongly Agree

Source: Author's Calculation

3.2 Methodology

In this study, there are two parts to the data analysis. Social sustainability scale development is the subject of the first section. As recommended in the literature, we followed standard procedures for scale development (e.g., De Vellis, 2016; Hair et al., 2010). EFA and CFA are used in this section of the study to develop the social sustainability scale and evaluate its validity, reliability, and scale dimensionality. Related figures in the supplementary material depict the scale-development process in greater detail. The application of the proposed social sustainability scale in Bangladesh is the focus of the second part of the data analysis. Multiple regression analysis is used to investigate the relationship between Microfinance and social sustainability.

3.3 Measurements

3.3.1 Measuring social sustainability

After reviewing the literature widely for defining social sustainability, this paper figures out five important factors: Equity, Diversity, Social Cohesion, Quality of Life, and Democracy and Governance. Each factor is defined in the context of relevant variables and each of the variables reflected on the survey questionnaire. For designing the questions, we have used a 7-point Likert scale in which each respondent's answer to a statement is asked to be listed in one of 7 categories, ranging from strongly

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disagree (rating of 1) to agree (rating of 7) strongly. For social sustainability, each variable is derived from existing literature and earlier surveys (Bacon et al., 2012; Rani, 2012; Smith, 2011).

Fig 2: Social Sustainability factors

Source: Author's Calculation

3.3.2 Measuring the Sustainability of Microfinance

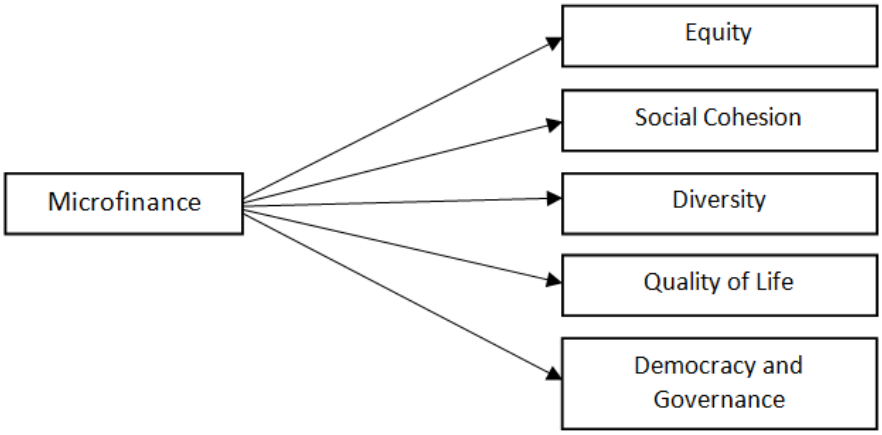

Figure 3: Conceptual Model

Source: Author's Calculation

There are many factors for determining the contribution of microfinance (Allet and Hudon, 2013). But especially in the country's countryside regions, the social, economic, environmental, and demographic factors mainly affect the development of microfinance. Demographic factors consider age, gender, and occupation of the local population (Elsayed and Paton, 2009).

3.3.3 Measuring sustainability factors between microfinance and social sustainability

Depending on the previous literature, this paper uses the social variables as social sustainability factors with microfinance. Depending on the existing findings, the researchers recommend the following hypotheses:

Hypothesis 1. There is a significant relationship between Microfinance and Social equity.
Hypothesis 2. There is a significant relationship between Microfinance and diversity.
Hypothesis 3. There is a significant relationship between Microfinance and Social cohesion.
Hypothesis 4. There is a significant relationship between Microfinance and the quality of life.
Hypothesis 5. There is a significant relationship between Microfinance and Social democracy and governance.

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IV. RESULTS AND DISCUSSIONS

4.1 Modelling social sustainability

Results of exploratory factor analysis (N=222)				
Factors and Items	**Factor loading range**	**Eigenvalues**	**% Variance explained**	**Cronbach's alpha**
Democracy and Governance (Items: DG1, DG2, DG3, DG4 DG5, DG6)	0.786-0.838	3.780	14.540	0.872
Social Cohesion (Items: SC1, SC 2, DG3, DG4 DG5, DG6)	0.621-0.786	3.165	12.172	0.810
Diversity (Items: DV1, DV2, DV3, DV4, DV5, DV6)	.729-.821	3.068	11.802	0.824
Quality of Life (Items: QL1, QL2, QL3, QL4, QL5)	0.710-0.771	2.770	10.654	0.802
Equity (Items: EQ1, EQ2, EQ3, EQ4, EQ5)	0.624-0.849	2.484	9.555	0.795
Extraction method: principal component analysis; Rotation method: Varimax with Kaiser normalization. KMO=0.736; Bartlett spherical test=2368.685; significance= 0.000.				

Source: Author's Estimation

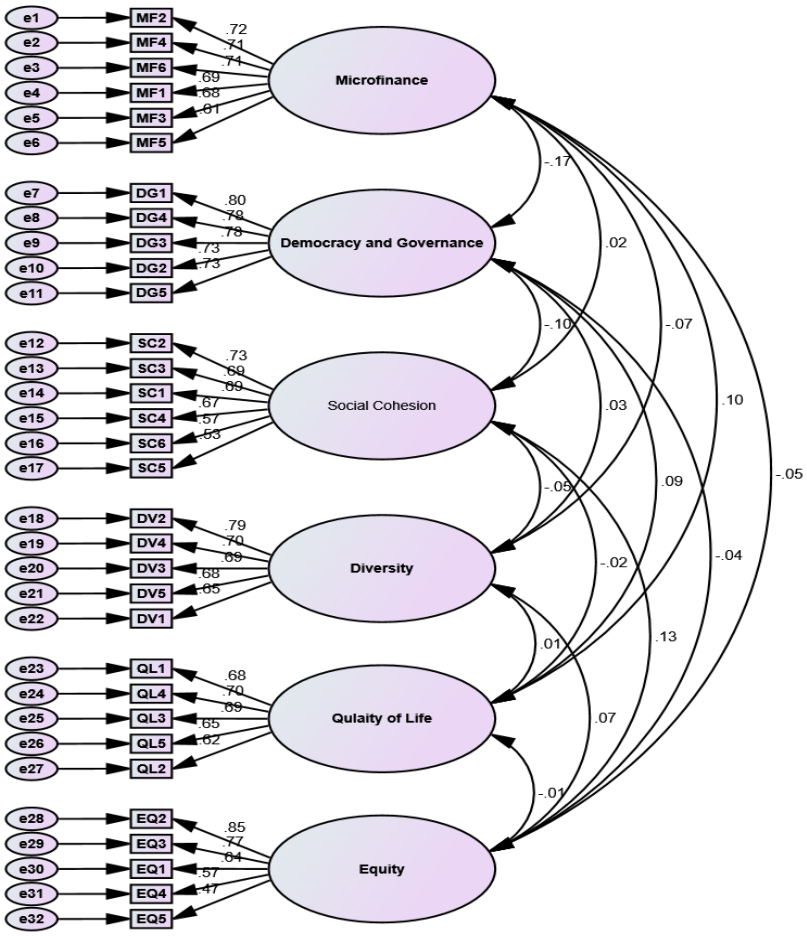

Figure 4: The structural model results

Source: Author's Estimation

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4.2 Exploratory Factor Analysis (EFA)

For studying the social sustainability factorial structure, an exploratory factor analysis (EFA) is employed to explore the nature and number of the factors allied with the variables that have been observed (Hair et al., 2010). In line with Hair et al. (2010) and DeVellis (2016), we have measured the overall dimensions of the social sustainability scale, and then we refined the item pool.

The results of Table 3 show the EFA factor loadings, percentage of variance explained, and factor reliability values (i.e., Cronbach's alpha values) for the refined scale. When viewed, it can be seen that all of the variables have acceptable loadings, with none having loadings less than 0.5. (Hair et al., 2010). Factor loading illustrates the degree to which each variable plays a significant role in the dimension under consideration. For every individual dimension that a particular variable represents, the higher the factor loading for that dimension, the more accurate that variable will be in describing it. When it comes to establishing the reliability of the various dimensions, the results show that Cronbach's alphas all exceed the accepted threshold of 0.7, with the exception of the measure of place, with an alpha of 0.69, which is just above the accepted threshold to be acceptable (Hair et al., 2010).

4.3 Confirmatory Factor Analysis (CFA)

A confirmatory factor analysis (CFA) is done to assess the factorial validity of the Five-dimensional model with 26 variables that were discovered through an earlier evaluation process known as an extraction fluency analysis. This method is done in AMOS (Arbuckle, 2006). The path diagram of the finalized social sustainability scale measurement scale's factorial structure is depicted in Figure S2 in the online Supplementary Material. Numerous indices of overall model adequacy (fitness-of-fit) indicate that the social sustainability scale fits the data well: CMIN/DF= 1.438, NFI=0.795, CFI=0.926, RMSEA= 0.44, GFI= 0.853, AGFI=827. These Five-dimensional social sustainability measurement scale measurements are all within the accepted threshold (Hair et al., 2010), which supports the findings that the scale measurements fit the data very well. All file dimensions have a CR between 0.87 and 0.62, confirming their reliability and consistency, all of which lie above the 0.60 thresholds (Bagozzi and Yi, 1988). Additional support for a one-dimensional model is given by the large and significant standardized loadings of each variable on its intended dimension.

Additionally, to evaluate the validity of the social sustainability scale, we performed convergent, content, and discriminant validity tests. Ensuring content validity, in this case, calls for applying a model that draws on a thorough review of relevant literature (Hair et al., 2010). A comprehensive review of the literature was employed to construct the social sustainability scale's variables and dimensions. In addition, the pilot test performed before data collection serves to validate the content of the developed scale.

There is convergent validity because each variable's standardized loading has a large and significant effect on the intended dimension. The validity of convergent results is accepted when factor loadings are greater than 0.5, and t coefficients are significant, which is to say, when their values are greater than 1.96 (Hair et al., 2010). In the first two tables, the two dimensions are highly correlated, suggesting strong convergent validity. The discriminant validity analysis checks to see if two dimensions and their variables can differentiate each other (Bagozzi and Yi, 1988). Hair et al. (2010) found that discriminant validity, measured as the individual variable factor loadings, was 0.50 or above, indicating that it has better measurement properties than other dimensions in the measurement scale. We also applied the AVE test, which was first introduced by Bagozzi and Yi (1988). Discriminant validity is confirmed for all the dimensions as the square root of AVE is greater than the correlation coefficient with any other factor. Overall, the results show that the model's parameter estimates are strongly associated with the variable loadings (defined by the numbers assigned to each variable in the social sustainability scale), and the five dimensions (the variables themselves) explain over 58.72% of the total variance, indicating a strong model fit.

V. RESULTS DISCUSSION

The relationship between Microfinance and social sustainability

The social sustainability model developed at the previous stage of analysis provides useful inputs for exploring the effects of quality of design on social sustainability. Ordinary least squares (OLS) regression modeling is applied for this part of the analysis because it is considered to be a suitable technique for providing empirical evidence on the nature and direction of the relationship between microfinance and social sustainability. In total, seven separate sets of multiple regression analyses were conducted using

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SPSS (version 26) to investigate the relationship between microfinance and each dimension of overall social sustainability. The possible effects of the personal factors, social equity, diversity, social cohesion, quality of life, and democracy and governance on each dimension of social sustainability are also investigated. Descriptive statistics and ordinary least squares regression results are shown in the Table.

Discussion

The Social Sustainability scale, which was created and validated as part of this research, is a comprehensive and multidimensional indicator of social sustainability. For our second-order concept, social sustainability was defined as encompassing social equity and diversity as well as fostering social cohesion, quality of life and democratic governance. The goodness of fit results shows that the model fits the data well and that the concept of social sustainability is accurately represented by five dimensions, as previously mentioned. As a result, this result contradicts hypotheses 1, 2, 3, 4, and 5 that suggested different dimensions of social sustainability. Social equity, cultural diversity, and community cohesion are not strong enough to stand on their own in the context of microfinance, according to our findings.

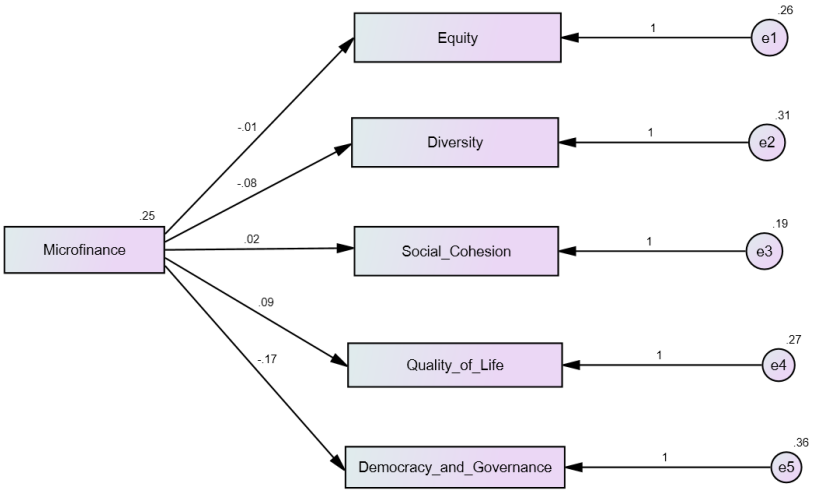

Figure 5: The Structural Model Results

Source: Author's Estimation

Regression Weights: (Group number 1 - Default model)

Path			Estimate	S.E.	C.R.	P	Results
Equity	<---	Microfinance	-.005	.069	-.074	.941	Rejected
Diversity	<---	Microfinance	-.078	.075	-1.041	.298	Rejected
Social Cohesion	<---	Microfinance	.015	.058	.264	.792	Rejected
Quality of Life	<---	Microfinance	.088	.070	1.260	.208	Rejected
Democracy and Governance	<---	Microfinance	-.172	.081	-2.114	.035	Accepted

Notes: P-value < 0.05
Source: Author's Estimation

Only democracy and governance, one of the five pillars of social sustainability, has a direct bearing on microfinance. Finally, we discovered a strong link between democratic governance and social well-being. The findings of this study confirm the crucial role played by strategies aimed at improving democracy and governance in fostering a society where people can live happily now and in the future.

VI. CONCLUSION

The concept of social sustainability, which is an important part of sustainable development, has been studied in numerous contexts and disciplines. There is still a lack of clear definition, conceptualization, and contribution to microfinance from the literature review (Colantonio, 2016; Shirazi and Keivani, 2018). Using the SS scale as a comprehensive measurement model for

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https://doi.org/10.47001/IRJIET/2022.605013

analyzing social sustainability at the vulnerable level and testing its reliability and validity using a systematic and rigorous statistical approach, this study contributes to filling this gap in the literature. It also examines how the proposed SS scale might be used to assess risk in a more vulnerable population. Additionally, we looked into the impact of less-studied urban form factors like equity, diversity, social cohesion, quality of life, and democracy and governance on Social Sustainability.

Our knowledge of social sustainability is furthered by this paper, which also adds to the body of work already available on the subject. Social Sustainability is a multifaceted concept, and the proposed SS scale can help to unify and consolidate its various aspects into a single framework from an academic perspective. However, despite previous studies examining individual dimensions and variables of the SS scale, they have not been studied together. We argue that ignoring any of these dimensions could result in an incomplete understanding of social sustainability as a multifaceted and complex phenomenon. Social sustainability measures used in previous studies have not been rigorously validated, reliable, or dimensionally analyzed. This study addresses this issue. It is possible to use the SS scale to investigate how social sustainability affects vulnerable populations in the future. Until now, these studies have received little attention and need to be explained further.

It also has a practical application in that it provides a more comprehensive and fine-grained view of the various social sustainability issues that affect vulnerable populations. Use the SS Scale to identify the strengths and weaknesses of vulnerabilities in terms of social sustainability across various dimensions.

For vulnerable people, microfinance has a significant and positive impact on five dimensions of social sustainability as well as the overall social sustainability of the population. There is a lot of significance in these findings.

This study, like all others, has some limitations that can be exploited in the future. As a first possible limitation, this study's data collection of household surveys was restricted to the vulnerable people context, which could limit the model's generalizability to countries with similar coastal area contexts. It is necessary to replicate this study in other countries to test its generalizability because social sustainability is affected by cultural, social, and environmental factors that can be found in other countries.

A measurement scale for social sustainability has never been attempted before. A comprehensive scale has been developed that incorporates and categorizes the most frequently used dimensions in the literature under a single umbrella, despite the fact that we cannot claim to have fully captured all dimensions of social sustainability. We encourage researchers to conduct interviews or focus groups in order to uncover additional variables that may have been overlooked in this study in order to continue improving the SS scale.

Third, our review of the literature shows that social sustainability is a dynamic phenomenon that has evolved from traditional hard dimensions to more soft and intangible dimensions over time. A static and cross-sectional research design may not fully capture the complexity of the social sustainability concept and its constituent dimensions, we argue in this regard. It is, therefore, possible to extend the current study by conducting an in-depth analysis of social sustainability by using a long-term approach.

To conclude, we recommend that future research on the relationship between microfinance and social sustainability use a mixed-methods approach. An approach that incorporates qualitative as well as quantitative data analysis helps to shed light on what quality of design can do for people's lives and how they perceive social sustainability and quality of life. This helps social planners and policymakers better understand people's perceptions and expectations of the quality of their lives and living and helps them address these needs more effectively and efficiently in the future plans of socially sustainable localities.

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ISSN (online): 2581-3048
Volume 6, Issue 5, pp 100-111, May-2022
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Citation of this Article:

Prof. Mihir Kumar Roy, Ph.D., Uday Shanakar Sarkar, MBA, Md Shakil, MBM, "COVID-19 Pandemic: Microfinance and Social Sustainability of Grameen Bank Borrowers in South-West Bangladesh" Published in *International Research Journal of Innovations in Engineering and Technology - IRJIET*, Volume 6, Issue 5, pp 100-111, May 2022. Article DOI https://doi.org/10.47001/IRJIET/2022.605013

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