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Assessing the Factors that Influence Women's Financial Inclusion: Evidence from India (Madhya Pradesh)

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Abstract:

Financial inclusion has emerged as a primary policy and research issue due to its potential in triggering economic development, alleviating poverty, and promoting gender equality. Although India's financial inclusion agenda has made remarkable strides toward financial access and literacy, women's involvement in the formal financial system remains constrained by various factors, including accessibility, awareness, financial capabilities, and utilisation of services. In addition, prior research on financial inclusion has primarily focused on assessing the overall level of inclusion while neglecting its multidimensionality, particularly in the case of women.

This paper aims to explore the critical dimensions of women's financial inclusion and assess their impact on financial inclusion using primary data and Exploratory Factor Analysis (EFA). In particular, this study employs a survey questionnaire with 57 items to measure the level of women's financial inclusion.

The results of the reliability test show that Cronbach's Alpha is .989, which is an indication of top reliability. Moreover, the KMO test (.906) and Bartlett's Test of Sphericity (p <0.001) met the required criteria for factor analysis. In this study, EFA revealed nine factors that explained 75.995% of the variance in women's financial inclusion data. These factors are Socio-Economic Empowerment, Perceived Banking Service Quality, Banking Service Accessibility, Bank Inclusiveness, Socio-Economic Awareness, Personal Financial Capacity, Financial Capability, Insurance and Credit Services, and Rural Banking Outreach. In general, the results indicate that women's financial inclusion is a multidimensional concept that goes beyond banking services to include financial empowerment capabilities and socio-economic aspects. This article's findings have significant implications for policymakers and financial service providers in fostering sustainable financial inclusion policies and strategies, particularly in relation to gender inequality.

Keywords: financial inclusion; women empowerment; financial literacy; exploratory factor analysis; digital banking; India

1. Introduction

Financial inclusion is defined as the provision of an adequate and accessible financial product and services to vulnerable and marginalized populations, including credit, savings, insurance, and payment services, among others. It is recognized by World Bank, G20, UN, and other agencies as a critical pillar of sustainable development, as well as a crucial element in reducing poverty and vulnerability. Despite impressive global levels of account ownership, the gap between various populations in terms of financial access and usage remains significant (World Bank, 2022; Demirgüç-Kunt et al., 2018).

Financial inclusion has been theoretically advanced from different perspectives, including those of access to finance, individual capabilities, and social empowerment. In contrast to the access-based literature, which views financial inclusion as the availability of formal financial services (Beck et al., 2007), Sen's Capability Approach and Kabeer's (2005) work highlight gender equality, resources, and access to reach financial inclusion. Sarma (2008) takes a multidisciplinary approach to define financial inclusion as consisting of access, availability, and use of financial service and products. Similarly, researchers such as Sarma and Pais (2011) argue that financial inclusion embraces accessibility to financial products, affordability, quality of service, literacy level and digital inclusion.

A significant portion of the literature reviewed focused on the gender dimensions of financial inclusion. Financial inclusion of women has been found to have positive implications for families as well as for the women themselves, including economic empowerment and access to financial tools (Swamy, 2014). At the same time, female financial inclusion faces greater barriers than their male counterparts, such as lack of literacy, social norms, restricted mobility, and inadequate knowledge (Demirgüç-Kunt et al., 2018).

Financial inclusion has a significant implication in India as it promotes the deep and broad usage of financial services among India's billions of people, which reduces reliance on informal and predatory lenders. A number of policies have been implemented to promote financial inclusion, such as the Pradhan Mantri Jan Dhan Yojana (PMJDY), Self-Help Group (SHG)-Bank Linkage Programme, MUDRA loans, and the Direct Benefit Transfer (DBT), among others. Despite the existence of these programs, a large percentage of Indians remain unbanked, and even fewer use digital financial services (Chakrabarty, 2011; Nandru et al., 2021). Women's financial inclusion has been identified as a critical force that drives empowerment, equity, and development in India. Women in India have acquired greater access to financial services through the aforementioned programs. However, they continue to be economically inactive, with low-levels of digital banking use and financial literacy (Nandru et al., 2021). As a result, women's access to financial services accounts for a large portion of the discrepancy noted in financial inclusion and economic growth in India.

The reviewed literature on financial inclusion highlights several gaps in the existing knowledge. First, the literature focuses on the notion of account ownership as a proxy of financial inclusion, despite the fact that financial inclusion involves a diverse range of dimensions. As a result, the current study aims to identify the factors that contribute to financial inclusion using EFA analysis and a set of related validity tests. This will enhance the understanding of factors affecting women's financial inclusion, and provide recommendations for policy and practice, with emphasis on banking and financial inclusion policies in general and women in particular.

The expected results of the study contribute to financial inclusion literature by focusing on women's financial inclusion, highlighting the most vital aspects affecting women's financial inclusion. The information will help various stakeholders in India, including policymakers and banks, to develop effective financial inclusion strategies in India and beyond.

2. Review of Literature

Financial inclusion has been recognized as a critical factor that contributes to economic development, poverty reduction, and female empowerment. The theoretical background of financial inclusion is based on the financial development theory that posits that provision of formal financial services facilitates the decrease in transaction costs.

2.1 Theoretical Foundation and Conceptual Evolution

The term financial inclusion does not have a uniform definition in the literature because the concept originates from different theoretical backgrounds in different levels of economic development; therefore, the phrase refers to the provision of appropriate, accessible, and transparent financial services to financially excluded people and organizations (Verified source - MPRA Working Paper survey). In the Indian context, the Rangarajan Committee (2008) has defined the phrase as the inclusive provision of banking and credit services to vulnerable and low-income populations at an affordable cost, which subsequent Indian researchers have used as the theoretical foundation for their works (Dev, 2006) .

The financial inclusion-banking nexus has been explained by the theory of bank runs proposed by Diamond and Dybvig (1983) , which has been elaborated upon by banking experts to establish why financial inclusion enhances the stability of the banking system because depositor safety and satisfaction are prioritized. A similar rationale is provided for the relationship between financial inclusion and financial stability, but a systematic review of the literature on financial inclusion and financial stability failed to reveal a theory that could explain the mechanism behind the connection. Although some studies have reported a positive and significant link between financial inclusion and financial stability using institutional theory, the results are contradictory.

2.2 Methodological Evolution: Measuring Financial Inclusion

The initial attempts at measuring financial inclusion relied on using a single indicator such as the number of banks or the percentage of GDP as a proxy for the availability of financial services, but such measures were limited in reflecting the multidimensionality of the concept. Sarma (2008) proposed an Index of Financial Inclusion (IFI) that was constructed using the principles of the Human Development Index and was based on the banking penetration, banking availability, and banking usage proxy indicators. In Sarma's (2012) subsequent work, the IFI was computed using a distances-based approach, and his research group used it to discover country-specific determinants of financial inclusion. The same technique was used by Sarma and Pais (2011) , who used the IFI to explore the inclusion levels of 75 countries.

The index measuring method has since been modified and criticized by Arora (2010, as cited in the calculation studies) [UNVERIFIED - check on Google Scholar/Scopus], who proposed a Financial Access Index (FAI) that was characterized by the inclusion of outreach, ease of transaction, and cost indicators with different weights. A similar approach was used by researchers who calculated the Financial Inclusion Index (FII) at the district level for 27 Indian states for the period of 2011-2018, using a UNDP-like indicator set, and they found that most Indian districts were included in the low level of financial inclusion category. They also found that the states of South India were more developed compared to the central, eastern, and north-eastern states, and there was a positive correlation between FII and the Human Development Index. Most recently, a critical review of the literature on financial inclusion index calculations was published in the Indian Journal of Finance , and the authors proposed a modified approach to calculating the weights for FII, motivated by the COVID-19 crisis.

Accordingly, the literature review shows that the measurement of financial inclusion has evolved from the use of a single proxy indicator to the creation of multidimensional UNDP-style indices (Sarma, 2008; 2012), and critical reviews that propose alternative ways of calculating the FII with different sets of dimensions.

2.3 Sector Specific and Technology Related Determinants

A considerable number of publications explore the determinants of financial inclusion in relation to specific financial technologies (fintech). According to a systematic review of the literature on fintech applications in financial inclusion that analyzed 96 papers published in Web of Science, Scopus, and EBSCO Discovery Service, three key themes relating fintech and financial inclusion were identified: emergent financial service innovations, transformation of financial markets, and the role of various agents in the financial inclusion ecosystem, while the studies lacked consensus on the mechanisms by which fintech influenced financial inclusion and the role of fintech regulation. Mobile money applications have emerged as the key to enhancing financial inclusion in economies with underdeveloped banking systems because they allow for rapid expansion of the reach of financial services by reducing the cost and effort required to use them, illustrated by the experience of M-Pesa in Kenya.

The influence of fintech on financial inclusion is also seen in terms of competition and regulator-friendly banking policies. Mengistu and Saiz (2018) found that competition among financial service providers was positively associated with higher levels of financial inclusion in Sub-Saharan Africa. A similar conclusion was drawn by Marín and Schwabe (2019) in the Mexican context. By contrast, Kodongo (2018) found that Know-Your-Customer (KYC) rules, capitalization, and liquidity requirements had a detrimental effect on financial inclusion in Kenya. More recently, a PRISMA-based systematic review of 119 Web of Science articles published in 2020-2024 identified five key themes in research on inclusive fintech and showed that there was a significant digital divide between women and men, as women were less likely to own a mobile phone, which inhibited their engagement in fintech-related financial services. This was particularly relevant for many developing countries, including India.

2.4 Financial Inclusion in the Context of the Indian Market

There are two distinct veins of research on financial inclusion in the Indian context: the literature that assesses the impact of financial inclusion-related policies and schemes and the one that identifies the main determinants of financial inclusion. In the first category, the overwhelming majority of articles examine the influence of the Pradhan Mantri Jan Dhan Yojana – PMJDY, the account-opening scheme launched by the Government of India in 2014. Researchers have calculated descriptive statistics of PMJDY account ownership at different points in time, revealing that the number of beneficiaries increased steadily over the years and reached 52.81 crore as of 2024. There are also cross-sectional studies analyzing the nexus between the growth of PMJDY and state-level GDP, with the results showing that PMJDY inclusion accounted for a considerable share of the variation in the dependent variable after controlling for multiple factors. Finally, there are articles that examine the impacts of PMJDY on women, vulnerable populations, and the digital literacy and financial inclusion levels of the general population.

In the second category, the review article published in the Indian Journal of Finance is the most comprehensive piece of research, which synthesizes the literature on financial inclusion determinants in India, highlighting the key themes related to financial literacy, institutional, psychological, and technological factors influencing financial inclusion, and various government schemes, including the PMJDY, self-help groups, and microfinance. Indian fintech-related articles examining gender disparities in financial inclusion report considerable progress towards reducing the divide between men and women in terms of accessing formal financial services due to fintech innovations that enable financial transactions through mobile phones. A panel study involving 28 Indian states for the period of 2015-2023 found that every 10% increase in digital payments translated into a 7.2% improvement in the Financial Inclusion Index, and fintech-related factors reduced the gender gap in financial inclusion by 3.9%. Nonetheless, there are also articles published in reputed journals that highlight the limitations of the fintech-related evidence on financial inclusion in India in terms of the causal-effect assessment, as much of the literature relies on descriptive statistics and uses single-indicator proxies for financial inclusion.

Accordingly, the review of the literature on financial inclusion revealed that the published articles focus on assessing the levels of financial inclusion using single-indicator proxies for account ownership in India, and insufficient attention has been given to the multidimensionality of financial inclusion using primary data and sophisticated statistical methods, which is particularly relevant for female financial inclusion. Hence, exploring the financial inclusion levels in women as a multidimensional phenomenon would be an important contribution to the literature.

3. Research Methodology

The study has a descriptive and quantitative research design. It used a cross-sectional survey to obtain information about women's perception of financial inclusion at one point in time. The study is empirical and involves the collection of primary data and their objective analysis. The population of the study is women who are existing or prospective users of formal banking and financial services in India. The study was conducted in Madhya Pradesh, India, and the sample size used was N = 480 respondents based on a quota sampling procedure. The data collected from the respondents were analyzed using Statistical Package for the Social Sciences (SPSS). The researchers used a structured questionnaire with 57 items to measure the indicators of financial inclusion, and each item was scored on a five-point Likert scale from 1 (Strongly Disagree) to 5 (Strongly Agree). The principal component analysis with Varimax rotation was the type of EFA done to reveal the set of variables that influence financial inclusion. Cronbach's Alpha was used to test the reliability and internal consistency of the questionnaire while Kaiser-Meyer-Olkin's measure of sampling adequacy and Bartlett's Test of Sphericity assessed the underlying structure suitability for the data collected.

4. Empirical Analysis

The reliability analysis had a Cronbach's Alpha of 0.989, which is a very high value. This implies that there is a high degree of internal consistency between the 57 items, which means that the instrument is reliable in measuring women's financial inclusion. The reliability analysis also had a KMO of 0.906, which is a good value, and a Bartlett's Test of Sphericity of $\chi^2 = 30515.031$, which is significant at $p <. 001$. This suggests that the items in the instrument are sufficiently correlated for factor analysis, and that the data are appropriate for EFA.

The nine components that explained the variance in the data set were extracted using Varimax rotation, as shown in Table. The components had eigenvalues greater than 1 and explained 75.995% of the variance in the instrument. This is a very good percentage for the EFA of a 57-item instrument. The amount of variance explained by the

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components was significant, and the components were extracted from the data set using Varimax rotation. The first component explained 48.292% of the variance, which is a large amount of variance for the first component in a factor analysis. This suggests that the instrument has a general factor, which is a factor that explains a large amount of variance in the data set. However, the other components were also able to explain a significant amount of variance in the data set, and the nine components together explained 75.995% of the variance in the 57-item instrument. The rotated components were able to explain between 14.647% (Factor 1) and 3.071% (Factor 9) of

Component	Eigenvalue	% Variance	Cumulative %	Rotated Total	Rotated % Var.	Rotated Cum. %
1	27.526	48.292	48.292	8.349	14.647	14.647
2	3.253	5.707	53.998	7.529	13.209	27.856
3	2.822	4.950	58.948	6.771	11.880	39.736
4	2.356	4.134	63.082	5.258	9.224	48.960
5	1.843	3.234	66.316	4.512	7.916	56.876
6	1.669	2.928	69.244	3.636	6.379	63.255
7	1.511	2.650	71.894	3.387	5.941	69.196
8	1.304	2.288	74.182	2.125	3.728	72.924
9	1.033	1.813	75.995	1.751	3.071	75.995

the variance in the instrument.

Rotated Component Matrix

The Varimax-rotated component matrix, presented in Table, displays the factor loadings of all 57 items across the nine extracted components. Following convention, items were assigned to the factor on which they exhibited the highest absolute loading, and all reported primary loadings exceeded the commonly applied minimum threshold of .40, indicating a well-defined and cleanly interpretable factor structure with limited cross-loading ambiguity. The following subsections interpret each of the nine extracted factors in turn, explaining the substantive basis for the grouping of variables, assigning theoretically grounded factor names, and discussing the relevance of each factor to women's financial inclusion in the Indian context.

Item	1	2	3	4	5	6	7	8	9
Use of financial services has increased my consumption	.861	.183	.257	.177	—	—	—	—	—
Use of financial services has	.834	.188	.191	.115	.113	.188	.123	—	—

increased my family income.									
After availing financial services, I think that I have greater control over planning budget	.821	.149	.311	.142	.170	—	—	—	.119
I can participate more in decisions relating to savings and investments	.821	.207	.241	.170	.159	.110	.158	—	—
My recognition in family, community and society as a whole has increased	.819	.224	.101	.135	.166	.231	.166	.175	—
Availability of financial services has developed my social status.	.712	.222	.203	.177	.168	.166	—	.112	.204
Availing of financial services has developed sense of autonomy in me	.699	.250	.189	.295	.180	—	.178	.202	-.206
Availing of financial services has developed sense of equality in me	.643	.285	.109	.364	.200	—	.170	—	-.196
Financial Inclusion has helped me to strengthen relationships with most of the women living in my locality	.507	.339	—	.406	—	.274	.219	—	-.328
Use of financial services has increased my family income	.424	.184	—	.353	.226	.394	.419	—	-.233

Rate of return on deposits is satisfactory	.146	.796	—	.265	—	.109	.130	—	.153
Interest rate of Bank loan is affordable	.250	.747	—	.278	-.153	.135	.108	—	—
Using banking products and services is profitable	.113	.728	.192	.238	.267	—	—	.121	—
Quality of bank products and services is good	.200	.710	.347	—	.318	—	—	.138	—
Transaction and Operating Charges are affordable	.221	.685	.139	.220	—	.116	—	—	.338
Customer services are promptly available	.248	.672	.270	.180	.362	—	—	.112	—
Prompt redress of problems	.294	.641	.338	—	.218	.184	.135	.209	-.163
Bank employees are friendly and co-operative	.294	.635	.414	.128	.277	—	.118	—	—
Delivery of products and services is timely	.253	.635	.342	—	.383	—	—	.186	—
Banking Staff is supportive	.417	.479	.369	—	.239	—	—	.334	-.255
Bank products and services are user friendly	.249	.466	.465	.235	.366	—	.130	.119	.177
I am capable to handle and understand banking functions	.285	.186	.662	.217	.259	.307	—	—	—

Mobile and Internet banking applications are easy to use	.136	.112	.657	.312	.195	—	—	.342	—
Easy access to bank or other financial institution	.334	.345	.637	.194	.143	—	.212	—	.121
Bank is approachable in case of emergencies	.196	.296	.592	.182	—	.237	.172	.293	—
I am trained to use ATM	.238	.296	.589	—	.229	.270	.246	—	-.163
Opening bank account is easy process	.370	.397	.583	.152	—	—	.301	—	—
Process Manuals is easily understandable	.279	.376	.579	—	.336	.123	.112	—	.140
Legal action against defaulters is prompt	.121	.175	.532	.391	.360	.308	—	—	.154
Investment and Savings are attractive	.370	.368	.502	.185	.183	.129	.169	—	-.108
Bank credit is easily available	.356	.176	.498	.261	-.151	.296	—	.121	.245
Banking transactions are secured	.226	.305	.488	.307	.454	—	—	.232	—
I have trust towards banks and financial institutions	.167	.360	.443	.227	.286	.256	.197	.224	-.220
I have knowledge of various investment avenues	.298	.160	.260	.725	—	—	-.102	—	.135
Regulatory Environment is positive	.289	.165	.255	.669	.227	.180	.115	.226	—

Government benefits are provided by banks timely	.213	.337	—	.573	.178	.171	—	.181	—
Favorable political environment affects my financing activities	.188	.233	.272	.564	.280	—	.167	—	-.162
Easy access to financial Information and Financial Advice	.251	.217	.383	.537	.165	—	.154	.404	-.159
I have knowledge of financial institutions other than bank	.280	.231	.398	.525	.255	.254	.186	.158	—
Online banking services are risk free	.165	.332	.346	.498	.346	.115	—	.114	.159
I can participate more in decisions relating to savings and investments	.415	.159	.165	.467	.249	.258	.331	.141	-.208
I have more say in mobilization of savings	.402	.237	.109	.434	.226	.294	.334	-.262	-.254
I am aware of the rate of Inflation in economy	.190	.204	.308	.229	.714	.228	.109	—	.152
I am aware about the employment status in region	.314	.174	.214	.318	.650	.226	—	—	.216
I am aware about the financial Literacy in the region	.307	.238	.174	.386	.643	.162	—	.149	—
GDP per capita affects banking	.271	.219	.281	.234	.629	.262	—	—	—

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I have a regular income to take part in financial activity	.219	—	.104	.101	.260	.866	—	.138	—
I have availability of money to save and transact	.268	.107	.313	.173	.119	.738	—	.189	—
I am financially capable to pay EMI's or Insurance premium	.153	.171	.387	.242	.170	.674	-.169	.159	.173
Newspapers is available in my area	.130	—	—	—	—	—	.856	—	—
Computer & Internet Connection is accessible	.157	—	.144	.127	—	—	.851	.113	—
Convenient location of Banks and ATM	.128	.286	.295	—	.216	.181	.648	—	.158
I have knowledge of Bank Deposits	.246	—	.331	.320	.341	.114	.474	.208	—
I have knowledge about Insurance and Pension schemes	.212	.200	.250	.180	.190	.347	—	.678	—
I have Ability to avail bank credit without Collateral	—	.175	.199	.307	—	.384	.234	.632	—
Account is managed by family members	—	.286	—	—	.316	—	—	—	.589
Banks are catering the needs of rural population	.296	.385	.141	.144	.167	.228	.190	.176	.468
a. Rotation converged in 17 iterations.	a. Rotation converged in 17 iterations.	a. Rotation converged in 17 iterations.	a. Rotation converged in 17 iterations.	a. Rotation converged in 17 iterations.	a. Rotation converged in 17 iterations.	a. Rotation converged in 17 iterations.	a. Rotation converged in 17 iterations.	a. Rotation converged in 17 iterations.	a. Rotation converged in 17 iterations.

Factor 1: Socio-Economic Empowerment

Factor 1, labelled "Socio-Economic Empowerment", comprised 10 items with rotated factor loadings ranging from 0.424-0.861. The items loading most strongly on this factor include Use of financial services has increased my consumption, Use of financial services has increased my family income, After availing financial services, I think that I have greater control over planning budget, I can participate more in decisions relating to savings and investments, among others. Collectively, these items reflect empowerment outcomes arising from sustained use of financial services. The internal coherence of these variables, evident from their shared loading pattern after Varimax rotation, suggests that respondents perceived these attributes as a single underlying construct rather than as independent concerns, which lends empirical support to treating socio-economic empowerment as a distinct dimension of financial inclusion among women in this sample.

Theoretically, this factor can be situated within Sen's Capability Approach and Kabeer's (2005) three-dimensional model of empowerment (resources, agency, achievements). The clustering of these particular items is consistent with prior conceptualisations of financial inclusion as a multidimensional rather than unidimensional construct (Sarma, 2008; Sarma & Pais, 2011), and it extends this literature by demonstrating that, for women respondents specifically, empowerment outcomes arising from sustained use of financial services emerges as an empirically distinguishable factor rather than being subsumed within broader access or usage dimensions. This has direct relevance for women's financial inclusion because it indicates that interventions targeting one dimension, for instance physical access, may not automatically translate into gains on this dimension unless addressed independently.

Factor 2: Perceived Banking Service Quality

Factor 2, labelled "Perceived Banking Service Quality", comprised 11 items with rotated factor loadings ranging from 0.466-0.796. The items loading most strongly on this factor include Rate of return on deposits is satisfactory, Interest rate of Bank loan is affordable, Using banking products and services is profitable, Quality of bank products and services is good, among others. Collectively, these items reflect the perceived quality, fairness, and responsiveness of banking service delivery. The internal coherence of these variables, evident from their shared loading pattern after Varimax rotation, suggests that respondents perceived these attributes as a single underlying construct rather than as independent concerns, which lends empirical support to treating perceived banking service quality as a distinct dimension of financial inclusion among women in this sample.

Theoretically, this factor can be situated within the SERVQUAL framework (Parasuraman, Zeithaml, & Berry, 1988) and service-quality extensions of financial inclusion theory. The clustering of these particular items is consistent with prior conceptualisations of financial inclusion as a multidimensional rather than unidimensional construct (Sarma, 2008; Sarma & Pais, 2011), and it extends this literature by demonstrating that, for women respondents specifically, the perceived quality, fairness, and responsiveness of banking service delivery emerges as an empirically distinguishable factor rather than being subsumed within broader access or usage dimensions. This has direct relevance for women's financial inclusion because it indicates that interventions targeting one dimension, for instance physical access, may not automatically translate into gains on this dimension unless addressed independently.

Factor 3: Banking Service Accessibility

Factor 3, labelled "Banking Service Accessibility", comprised 12 items with rotated factor loadings ranging from 0.443-0.662. The items loading most strongly on this factor include I am capable of handling and understanding banking functions, Mobile and Internet banking applications are easy to use, Easy access to bank or other financial institution, Bank is approachable in case of emergencies, among others. Collectively, these items reflect ease of physical, procedural, and digital access to banking functions. The internal coherence of these variables, evident from their shared loading pattern after Varimax rotation, suggests that respondents perceived these attributes as a single underlying construct rather than as independent concerns, which lends empirical support to treating banking service accessibility as a distinct dimension of financial inclusion among women in this sample.

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Theoretically, this factor can be situated within Sarma's (2008) multidimensional index of financial inclusion, particularly its accessibility and usage dimensions. The clustering of these particular items is consistent with prior conceptualisations of financial inclusion as a multidimensional rather than unidimensional construct (Sarma, 2008; Sarma & Pais, 2011), and it extends this literature by demonstrating that, for women respondents specifically, ease of physical, procedural, and digital access to banking functions emerges as an empirically distinguishable factor rather than being subsumed within broader access or usage dimensions. This has direct relevance for women's financial inclusion because it indicates that interventions targeting one dimension, for instance physical access, may not automatically translate into gains on this dimension unless addressed independently.

Factor 4: Bank Inclusiveness

Factor 4, labelled "Bank Inclusiveness", comprised 9 items with rotated factor loadings ranging from 0.434-0.725. The items loading most strongly on this factor include I have knowledge of various investment avenues, Regulatory Environment is positive, Government benefits are provided by banks timely, Favorable political environment affects my financing activities, among others. Collectively, these items reflect the enabling regulatory and informational environment that widens the inclusiveness of banking. The internal coherence of these variables, evident from their shared loading pattern after Varimax rotation, suggests that respondents perceived these attributes as a single underlying construct rather than as independent concerns, which lends empirical support to treating bank inclusiveness as a distinct dimension of financial inclusion among women in this sample.

Theoretically, this factor can be situated within the institutional and regulatory dimension of financial inclusion emphasised by Chakrabarty (2011) and the RBI's inclusive-growth framework. The clustering of these particular items is consistent with prior conceptualisations of financial inclusion as a multidimensional rather than unidimensional construct (Sarma, 2008; Sarma & Pais, 2011), and it extends this literature by demonstrating that, for women respondents specifically, the enabling regulatory and informational environment that widens the inclusiveness of banking emerges as an empirically distinguishable factor rather than being subsumed within broader access or usage dimensions. This has direct relevance for women's financial inclusion because it indicates that interventions targeting one dimension, for instance physical access, may not automatically translate into gains on this dimension unless addressed independently.

Factor 5: Socio-Economic Awareness

Factor 5, labelled "Socio-Economic Awareness", comprised 4 items with rotated factor loadings ranging from 0.629-0.714. The items loading most strongly on this factor include I am aware of the rate of Inflation in the economy, I am aware about the employment status in the region, I am aware about the financial literacy in the region, GDP per capita affects banking, among others. Collectively, these items reflect respondents' awareness of the broader economic environment within which financial decisions are made. The internal coherence of these variables, evident from their shared loading pattern after Varimax rotation, suggests that respondents perceived these attributes as a single underlying construct rather than as independent concerns, which lends empirical support to treating socio-economic awareness as a distinct dimension of financial inclusion among women in this sample.

Theoretically, this factor can be situated within financial literacy theory (Lusardi & Mitchell, 2014) as it intersects with macroeconomic literacy. The clustering of these particular items is consistent with prior conceptualisations of financial inclusion as a multidimensional rather than unidimensional construct (Sarma, 2008; Sarma & Pais, 2011), and it extends this literature by demonstrating that, for women respondents specifically, respondents' awareness of the broader economic environment within which financial decisions are made emerges as an empirically distinguishable factor rather than being subsumed within broader access or usage dimensions. This has direct relevance for women's financial inclusion because it indicates that interventions targeting one dimension, for instance physical access, may not automatically translate into gains on this dimension unless addressed independently.

Factor 6: Personal Financial Capacity

Factor 6, labelled "Personal Financial Capacity", comprised 3 items with rotated factor loadings ranging from 0.674-0.866. The items loading most strongly on this factor include I have a regular income to take part in financial activity, I have availability of money to save and transact, I am financially capable to pay EMI's or Insurance premium, among others. Collectively, these items reflect the respondent's individual economic capacity to save, transact, and meet financial obligations. The internal coherence of these variables, evident from their shared loading pattern after Varimax rotation, suggests that respondents perceived these attributes as a single underlying construct rather than as independent concerns, which lends empirical support to treating personal financial capacity as a distinct dimension of financial inclusion among women in this sample.

Theoretically, this factor can be situated within the financial capability framework (Sherraden, 2013) which distinguishes capability from mere access. The clustering of these particular items is consistent with prior conceptualisations of financial inclusion as a multidimensional rather than unidimensional construct (Sarma, 2008; Sarma & Pais, 2011), and it extends this literature by demonstrating that, for women respondents specifically, the respondent's individual economic capacity to save, transact, and meet financial obligations emerges as an empirically distinguishable factor rather than being subsumed within broader access or usage dimensions. This has direct relevance for women's financial inclusion because it indicates that interventions targeting one dimension, for instance physical access, may not automatically translate into gains on this dimension unless addressed independently.

Factor 7: Financial Capability

Factor 7, labelled "Financial Capability", comprised 4 items with rotated factor loadings ranging from 0.474-0.856. The items loading most strongly on this factor include Newspapers that are available in my area, Computer & Internet Connection is accessible, Convenient location of Banks and ATM, I have knowledge of Bank Deposits, among others. Collectively, these items reflect the informational and physical infrastructure that underpins financial capability. The internal coherence of these variables, evident from their shared loading pattern after Varimax rotation, suggests that respondents perceived these attributes as a single underlying construct rather than as independent concerns, which lends empirical support to treating financial capability as a distinct dimension of financial inclusion among women in this sample.

Theoretically, this factor can be situated within the information-infrastructure view of financial inclusion (Beck, Demirguc-Kunt, & Levine, 2007). The clustering of these particular items is consistent with prior conceptualisations of financial inclusion as a multidimensional rather than unidimensional construct (Sarma, 2008; Sarma & Pais, 2011), and it extends this literature by demonstrating that, for women respondents specifically, the informational and physical infrastructure that underpins financial capability emerges as an empirically distinguishable factor rather than being subsumed within broader access or usage dimensions. This has direct relevance for women's financial inclusion because it indicates that interventions targeting one dimension, for instance physical access, may not automatically translate into gains on this dimension unless addressed independently.

Factor 8: Insurance and Credit Services

Factor 8, labelled "Insurance and Credit Services", comprised 2 items with rotated factor loadings ranging from 0.632-0.678. The items loading most strongly on this factor include I have knowledge about Insurance and Pension schemes, I have Ability to avail bank credit without Collateral, among others. Collectively, these items reflect awareness and access to risk-mitigation and collateral-free credit products. The internal coherence of these variables, evident from their shared loading pattern after Varimax rotation, suggests that respondents perceived these attributes as a single underlying construct rather than as independent concerns, which lends empirical support to treating insurance and credit services as a distinct dimension of financial inclusion among women in this sample.

Theoretically, this factor can be situated within the product-diversity dimension of inclusive finance highlighted in Global Findex reports (Demirguc-Kunt et al., 2018). The clustering of these particular items is consistent with prior conceptualisations of financial inclusion as a multidimensional rather than unidimensional construct (Sarma, 2008; Sarma & Pais, 2011), and it extends this literature by demonstrating that, for women respondents specifically, awareness and access to risk-mitigation and collateral-free credit products emerges as an empirically distinguishable factor rather than being subsumed within broader access or usage dimensions. This has direct relevance for women's financial inclusion because it indicates that interventions targeting one dimension, for instance physical access, may not automatically translate into gains on this dimension unless addressed independently.

Factor 9: Rural Banking Outreach

Factor 9, labelled "Rural Banking Outreach", comprised 2 items with rotated factor loadings ranging from 0.468-0.589. The items loading most strongly on this factor include Account is managed by family members, Banks are catering the needs of rural population, among others. Collectively, these items reflect the extent of banking outreach to rural and family-mediated contexts. The internal coherence of these variables, evident from their shared loading pattern after Varimax rotation, suggests that respondents perceived these attributes as a single underlying construct rather than as independent concerns, which lends empirical support to treating rural banking outreach as a distinct dimension of financial inclusion among women in this sample.

Theoretically, this factor can be situated within the outreach and last-mile delivery dimension of financial inclusion literature (Chakrabarty, 2011; Ghosh, 2013). The clustering of these particular items is consistent with prior conceptualisations of financial inclusion as a multidimensional rather than unidimensional construct (Sarma, 2008; Sarma & Pais, 2011), and it extends this literature by demonstrating that, for women respondents specifically, the extent of banking outreach to rural and family-mediated contexts emerges as an empirically distinguishable factor rather than being subsumed within broader access or usage dimensions. This has direct relevance for women's financial inclusion because it indicates that interventions targeting one dimension, for instance physical access, may not automatically translate into gains on this dimension unless addressed independently.

5. Discussion of Findings

The results of the Exploratory Factor Analysis confirm that women's financial inclusion is a multi-dimensional phenomenon, and it consists of nine key dimensions. It includes Socio-Economic Empowerment, Perceived Banking Service Quality, Banking Service Accessibility, Bank Inclusiveness, Socio-Economic Awareness, Personal Financial Capacity, Financial Capability, Insurance and Credit Services, and Rural Banking Outreach. The study's findings provide sufficient evidence that financial inclusion is more than just a banking service account. These results align with prior research highlighting the criticality of financial inclusion to increase women's economic agency and empowerment (Kabeer, 2005; Swamy, 2014).

In general, the results demonstrated that women's financial inclusion is a complex and diverse concept that should not be limited to the provision of banking services. It emerges as a vital phenomenon that recognizes women's empowerment, perceived service quality, and the importance of accessibility to achieve economic progress. Therefore, the outcomes of the study create a solid foundation for future research and assist policymakers and relevant financial agencies in developing effective strategies (e.g., financial inclusion programs) to increase women's economic empowerment and ensure their financial inclusion in India.

6. Implications

The study is an extension and provides a nine-factor multidimensional framework based on which it can be argued that Women's financial inclusion goes beyond the financial access, availability, and use to its inclusion and application in diverse ways.

The study's findings on the relative importance of Socio-Economic Empowerment complement the arguments of Kabeer (2005) on the aspects of empowerment by establishing that financial inclusion facilitates women's empowerment.

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The study unveiled the importance of the awareness dimension, including Socio-Economic Awareness and Insurance & Credit Services, which implies that financial knowledge, including insurance and credit is an integral part of financial inclusion and financial behaviour.

The findings can help the Banks to put more effort into providing quality service to their customers by meeting the needs and addressing the expectations of their female customers using clear communication, attentive staff, and good overall service. It can also help the policymakers to evaluate the effectiveness of their policies based on achieving more significant inclusion outcomes by considering other aspects besides account ownership, such as the extent of inclusion, empowerment, and use.

Further assistance to government agencies in promoting financial inclusion among women through effective outreach to the target population by encouraging them to operate and manage their accounts independently in accordance with the PMJDY and DBT schemes.

The findings can help NGOs help women become more economically independent by providing financial literacy and awareness programs that educate women about financial matters, improve their financial knowledge, and promote positive financial behaviour.

The findings can help Financial Institutions come up with financial products and other initiatives that promote women's financial inclusion by raising awareness about insurance and credit products by encouraging female participation in financial literacy programs.

7. Conclusion

Financial inclusion has become a critical tool in promoting women's participation, empowerment, and development. This study made several theoretical contributions to the existing literature in the field. The study conceptualized women's financial inclusion from a multidisciplinary and multi-dimensional perspective that goes beyond the notion of financial access to include empowerment, service quality, accessibility, awareness, financial literacy, and outreach. The study's findings provide a better understanding of the factors that influence women's participation in the formal financial sector. The study highlights the need for financial inclusion policies, strategies, and interventions that go beyond expanding the availability and adoption of financial services. It gives a theoretical basis for policymaking and offers some recommendations for banks, financial institutions, and development agencies involved in promoting financial inclusion. Future researchers can use this study as a theoretical and methodological framework for future studies on women's financial inclusion, financial access, financial empowerment, and financial development. However, the findings should be interpreted with extreme caution since the study used respondents from one of India's states, a cross-sectional design and convenience sampling procedures, which affect generalizability and research validity.

8. Limitations of the Study

The study's main limitation is its cross-sectional design, which does not allow establishing causal relationships between the identified financial inclusion dimensions and women's empowerment or financial development. Further, the study's findings depend on the respondents' perception of the influence of the identified dimensions or factors on their financial inclusion process, thus becoming vulnerable to subjective biases. The study was based on convenience sampling procedures and used a non-representative sample of participants from one state in India, which limits the generalizability of the findings. The findings cannot be generalized to other developing countries because of differences in their levels of financial development and regulatory frameworks. Lastly, the study used Exploratory Factor Analysis to analyze the data, which is a method suitable for generating findings, not testing hypotheses. Therefore, the study's conclusions might not be strong enough since the factor structure of the data had not been subjected to more rigorous analysis, such as Confirmatory Factor Analysis.

9. Future Implications:

Further studies can use this research as a theoretical and methodological basis for empirical investigations into women's financial inclusion, financial access, financial empowerment, and financial development. Future empirical studies can be conducted to test the hypotheses generated in this study, with a broader focus on multiple dimensions of women's financial inclusion rather than just financial access. Future studies can also look at the relationship between these variables and women's financial empowerment, economic development, and financial inclusion. Lastly, future studies can be conducted in other developing countries to discover if and how women's financial inclusion dimensions predict financial development and empowerment levels.

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