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Research paper

Financial Inclusion As A Tool for Citizen Upliftment: Development of A Measurement Model Based on Citizen Perception

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Abstract

Financial inclusion is a key aspect for social inclusion and inclusive growth for citizen upliftment. Effective financial inclusion is important for enhancing the involvement and access to financial services. Inclusive finance is necessary for effective, reliable, and cost-effective payments towards financial services. The current study aims to determine factors and to develop a financial inclusion measurement scale for citizen upliftment. The current study is a descriptive research with data collected from 405 responses by using non-probability convenience sampling. The data was collected using structured questionnaires with a Likert five-point rating scale and Dichotomous questions. The results revealed 6 prominent factors under financial inclusion, which were Awareness, Access and Usage, Challenges, Impact, Causes, and effectiveness of financial inclusion. The multiple regression model yielded an R Square value of 0.695, explaining 69.5% of the variance. This indicates that the Challenges, Impact, and Causes of Financial Exclusion variables have a significant impact on the output variable, which is the Effectiveness of Financial Inclusion. The provision of the Financial Inclusion Measurement Scale satisfies the promise of generalising the study findings to the stakeholders of the country. The established framework offers ideas and methodology to the appropriate government, civil society, and stakeholders, adding to the insights of the financial inclusion projects.

Keywords: *Awareness; Citizen Upliftment; Financial Inclusion; Financial Services.*

1. Introduction

In 2008, the Rangarajan committee submitted a Financial Inclusion report, which stated that "The process of providing access to financial services and availing timely and sufficient credit where required by weaker sections and the low-income groups at an affordable cost is called financial inclusion" and at the same time they investigated different barriers intended for financial solutions in India (Rangarajan, 2008). The Financial Inclusion (FI) programme has been successfully offering financial solutions to the under-privileged segments with no incidence of unfairness and equal treatment (Mishra et al., 2020; Khaki, 2018). The primary way of the financial inclusion programme is to raise the vulnerable segment as well as low-income earners (Simon, 2020). Financial inclusion is a key aspect for social inclusion and inclusive growth for citizen upliftment. Effective financial inclusion is important for enhancing the involvement and access to financial services. Inclusive finance is necessary for effective, reliable, and cost-effective payments towards financial services (Jungo et al., 2021; Khaki, 2018).
The Government of India has introduced a few financial inclusion schemes. There are subsequent schemes made to help the economically and socially insecure citizens of this country (Irshad & Shahid, 2019; Bhatia & Singh, 2019).

- Pradhan Mantri Jan Dhan Yojana
- Pradhan Mantri Suraksha Bima Yojana
- Atal Pension Yojana
- Stand Up India Scheme

- Jeevan Suraksha Bandhan Yojana
- Sukanya Samriddhi Yojana
- Varishtha Pension Bima Yojana
- Pradhan Mantri Mudra Yojana
- Pradhan Mantri Vaya Vandana Yojana
- Credit Enhancement Guarantee Scheme (CEGS) for Scheduled Castes (SCs)
- Venture Capital Fund for Scheduled Castes under the Social Sector Initiatives

The Financial Inclusion (FI) schemes expressively target to improve the economically deprived communities and uplift their income level to some extent in Tamil Nadu (Irshad & Shahid, 2019). The determinants of financial inclusion programmes have been offered by various financial institutions such as the banking sector, the insurance sector, micro finance institutions, and other institutions (Kavita & Suman, 2019). Financial inclusion helps educate and uplift individuals, which helps them to evaluate various financial schemes and services available to the different sections in society, which validates the need for the financial inclusion scheme (Antwi et al., 2024; Sundaram & Sriram, 2018). Financial inclusion through the post office leads to wide connections and involvement of various underprivileged groups of the economy, such as the low-income group, rural people, and female participation. Post office service has a huge prevalence in our nation, and it is considered a crucial financial service that aids and benefits the individuals (Mala & Vasanthi, 2016).

The post office plays a very significant role in providing financial access to individuals by aiding citizens in opening new bank accounts. It leads to an increase in efficiency, productivity, and growth of the nation, and at the same time, it elevates the lives of every individual in the country (Mayilvaganan & Pavalaarasan, 2023; Amala & Akilessh, 2015). Individuals need more financial knowledge about banking and financial services, thus raising the need for an effective financial inclusion programme. Service providers need more service centres to implement the financial inclusion scheme, the need for which came to the attention of the appropriate government (Murugan et al., 2017). The lack of banking services and less knowledge about financial inclusion schemes have led to poor access in backward communities and the government is trying to overcome the practical difficulties for using financial inclusion schemes by helping towards the development of the country (Bhuvana & Vasantha, 2016). An individual's life is associated with banking services as they are estimated to increase the bank branching and banking solutions in backward places. The effective banking services have led to a better life for everyone (Damane & Ho, 2024; Koorse & Kavitha, 2015). A roadmap to financial inclusion is witnessing self-improvement in an individual based on their ability to know the financial services, analyse training skills, and manage proper education (Usha & Hari, 2017).

1.1. Research objectives

1) To understand the demographic characteristics of the participants using the Financial Inclusion Programme
2) To study the design of a data model using the financial inclusion measurement scale for citizen upliftment.
3) To determine the factors and to develop a financial inclusion measurement scale for citizen upliftment.

2. Review of Literature

Financial inclusion as an area has experienced a swift change due to digitalization, fintech, and artificial intelligence. The latest evidence on the topic globally revolves around the idea that financial access has increased, but digital disparities remain, especially in rural and underserved regions (Kumar et al., 2024). The World Bank Global Findex (2025) launched the Digital Connectivity Tracker, which highlights the relationship between mobile penetration and the use of financial products. Bibliometric analyses (Kamboj & Sharma, 2025) suggest that contemporary research is focused on topics of digital financial inclusion, fintech adoption, and AI-driven personalization. Research like Jena (2025) is relevant in the Indian setting, as they employ theories such as the Technology Acceptance Model and Theory of Planned Behaviour to explain the adoption of fintech in the rural context, and it brings out the importance of trust, readiness, and the cultural setting. The examples of local innovations that could be used to illustrate a practical application and the latest innovations in the field define the role of India's UPI voice transactions in addressing the knowledge gaps. This not only makes the study relevant and timely, but it also puts global trends in the context of citizen-centered approaches, so this does not make the study any less important.

The appropriate government has taken huge efforts for the improvement of the vulnerable groups, leading to easy accessibility of finance inclusion schemes (Sujlana & Kiran, 2018). Financial inclusion policies have direct and indirect effects on the nation's development, along with infrastructure development, which has been considered by the Government of India (Ambarkhane et al., 2016). However, the government is more specific on connecting various types of financial institutions for developing infrastructural facilities or improving individuals' lifestyles through financial inclusion schemes (Murugan et al., 2017). The financial choices of the individuals clarify the financial decisions about financial inclusion programmes and empower them to invest their capital in appropriate platforms. Financial inclusion programme educates citizens in terms of their financial choices and therefore empowers them to achieve 'social inclusion and social upliftment' (Bhuvana & Vasantha, 2016).

Awareness about financial inclusion schemes is very effective in disseminating knowledge among individuals and increasing inclusive financing (ElDeeb et al., 2021; Kumar & Jeyaprabha, 2021; Maroor et al., 2016). Similar arguments exist for awareness of financial inclusion towards financial literacy, Fintech, Information Communication and Technology, and other technology drivers. It also supports various schemes and initiatives taken by the government to work towards economic and social development (Joshi & Rajpurohit, 2016). A proper financial system providing access to financial inclusion schemes will benefit and encourage underprivileged segments with the provision of a platform to avail such schemes, thereby highlighting the huge efforts taken by the government (Tampuri et al., 2021). The financial inclusion programme is online with certain subjects in terms of changes based on the nature of the scheme, implementation agencies, and target group (Sibi & Ananth, 2016; Jegadeeshwaran & Basuvaraj, 2020). The major challenges of digital financial inclusion are identified as financial, social, and health inclusion, which can be grouped into Inclusive society (Malladi et al., 2021).

Lack of awareness, geographical division, financial illiteracy, gender divide, and lack of trust/confidence are significantly adding to the challenges of financial inclusion (Barugahara, 2021). Financial institution like the banking sector and postal sector is considered major factors to overcome the financial inclusion challenges (Mala & Vasanthi, 2016). The level to which an individual can manage and access financial inclusion schemes or social participation helps to recognise financial literacy as a necessary element in endorsing financial inclusion (Antony et al., 2021; Rastogi et al., 2021; Dam & Hotwani, 2018). In financial inclusion, individuals who do not have accessible basic services and schemes by financial institutions due to a lack of understanding, geographical bias, infrastructure, social environment, fear of the difficulty of using services, safety, and personal characteristics are more likely to be reasons for causing financial exclusion (Klus et al., 2021; Ren et al., 2018). The shift towards an economic phase ensuring the effectiveness of marginalized underprivileged individuals involved in the financial inclusion scheme, confirming financial literacy is substantially established in the literature, thereby providing evidence towards the empowerment of human, financial, and social development (Palamalai et al, 2021; Arshad et al, 2021).

2.1. Research gap

Based on previous studies, it is inferred that stakeholders like the citizens and the government play a major role in carrying out the financial inclusion schemes for the upliftment of poor individuals (Sharma & Gulati, 2016). Not many individuals are aware of the financial inclusion scheme, but they must know some schemes under the financial inclusion program (Irshad & Shahid, 2019). This current research plays a major role in developing a financial inclusion measurement scale for citizen upliftment in backward areas, exploring the elevation of both rural and urban people (Kumar & Jeyaprabha, 2022). This research study provides insight for the policy makers, explaining the usage of the financial inclusion measurement scale for citizen upliftment. The best choice for executing the Financial Inclusion (FI) scheme is to gather evidence for Citizen Upliftment (Gomathy, 2015).

3. Proposed Methodology and Hypothesis Framework

Table 1: Research Methodology

Research Methodology	Description	Reference
Research design	Descriptive Research	Gutti, 2020; Thomas & Subhashree, 2020; Manchanda & Sukhija, 2019;
Sample Size and Target Population	405 responses residing in Tamil Nadu	Kumar & Jeyaprabha, 2022; Vaid et al., 2020; Bawre & Kar, 2019
Sampling Technique	Non-probability sampling using convenience sampling	Bawre & Kar, 2019
Instrument development	Structured Questionnaires	Gutti, 2020
Questionnaire Type	Likert five-point rating scale, Dichotomous questions	Vaid et al., 2020; Bawre and Kar, 2019
Data Collection	• Primary Data: Structured Questionnaire using survey method • Secondary Data: Literature Review, journal publications, magazines, and other sources available online.	Gutti, 2020; Manchanda & Sukhija, 2019; Krishnakumare & Singh, 2019;
Data Analysis	IBM SPSS software	Manchanda & Sukhija, 2019
Statistical Technique	• Descriptive Analysis • Independent Sample T-Test • Analysis of Variance • Multiple Linear Regression	Gutti, 2020

The hypotheses of this research study are stated below:

Table 2: Hypothesis Development

Independent Sample T Test	H1: Whether gender and geographical location significantly affect the Financial Inclusion Measurement Scale (FIMS) Approach
One-Way ANOVA	H2: Whether Age, Qualification, Annual Income, and Occupation significantly influence the Financial Inclusion Measurement Scale (FIMS) Approach
Chi Square	H3: Whether there are significant associations among the Demographic Profile influencing the Financial Inclusion Measurement Scale (FIMS) Approach
Multiple Linear Regression	H4: Awareness of the Financial Inclusion Scheme will have a significant effect on the Effectiveness of Financial Inclusion.
	H5: Access and Usage of Financial Inclusion Scheme will have a significant effect on the Effectiveness of Financial Inclusion.
	H6: Challenges of Financial Inclusion will have a significant effect on the Effectiveness of Financial Inclusion.
	H7: Impact of financial literacy will have a significant effect on the Effectiveness of Financial Inclusion.
	H8: Causes of Financial Exclusion will have a significant effect on the Effectiveness of Financial Inclusion.

The hypotheses used in this research (H1-H8) are mainly based on the research conducted by Kumar and Jeyaprabha (2022), which empirically proved that socio-demographic factors, financial awareness, accessibility, and literacy are key determinants of financial inclusion in rural Tamil Nadu. Their research gave a solid theoretical as well as empirical ground to frame these relations. But Kumar and Jeyaprabha (2022) investigated solely rural groups, but the hypotheses of the present study are applied to both rural and urban backgrounds, thus adding a new dimension to them. In urban regions, financial inclusion is influenced by various structural and behavioural processes, including increased levels of digital adoption, heterogeneous occupational patterns, and income distributions, which were not considered in the previous study. This research will validate, compare, and increase the external validity of those relationships by applying the same constructs in a mixed rural-urban population.

The originality is that (a) hypotheses can be applied to urban locations, (b) urban factors, including digital infrastructure and varying financial behaviours, need to be included, and (c) a cross-context comparison is made. This will enable the research to not only validate the relevance of the constructs that Kumar and Jeyaprabha (2022) identified but also provide new evidence on the functioning of financial inclusion among various segments of the population.

Additionally, the model corresponds to the socio-cultural reality of Tamil Nadu, which is not well represented in international data. The localized method offers policy-makers and practitioners a handy intervention targeting tool. Furthermore, it is possible to use FIMS as an additional framework to global models, which allows comparative evaluations without losing sensitivity to the contextual. In this way, the innovation can be described as two-fold: methodological (applying citizen perception into quantifiable constructs) and practical (delivering region-specific knowledge with global adaptability).

4. Results and Discussion

This Research probes into the necessary steps to design a unique model for the Financial Inclusion Measurement Scale (FIMS) with the intention of citizen upliftment. The study results expose the structure of a financial inclusion measurement scale for citizen upliftment. Descriptive statistics, ANOVA, Independent sample t-test, and Multiple linear regression were used to prove the hypothesis

Table 3: Demographic Profile of the Respondents (N = 405)

Parameter	Target Group	Sample size	Percent
Gender	Male	239	59.1%
	Female	166	40.9%
Age	Less Than 25 Years	185	45.6%
	26-45Years	113	28.0%
	46-60Years	70	17.3%
	61 Years Above	37	9.1%
Qualification	No Education	12	3.0%
	School Level	63	15.5%
	Bachelor Degree	184	45.4%
	Master's Degree & Above	146	36.1%
Annual Income	Less Than 1,50,000	127	31.3%
	1,50,001 - 2,50,000	72	17.8%
	2,50,001 - 3,50,000	90	22.2%
	3,50,001 - 4,50,000	77	19.1%
	Above 4,50,000	39	9.6%
Occupation	Unemployed	92	22.8%
	Self-employed	84	20.7%
	Government Employee	73	18.1%
	Private Sector	104	25.6%
	Professional	52	12.8%
Geographical Location	Urban	244	60.2%
	Rural	161	39.8%

Table 3 discloses the demographic summary of the respondents. From the table, it was revealed that most of the participants are male (59.1%). The majority of the participants are under 25 years of age (45.6%). Most of the participants hold a bachelor's degree (45.4%), and the majority of the respondents have an annual income of Less Than 1,50,000, corresponding to 31.3%. Most of the respondents are employed in the private sector (25.6%). When it comes to geographical location, 60.2% belong to the urban area, while the remaining 39.8% belong to the rural area.

Table 4: Descriptive Statistics of Financial Inclusion Measurement Scale (FIMS) (N = 405)

Scale	Criterion	Very High	High	Neu-tral	Low	Very Low	Mean µ	S.D σ	Rank №
Awareness of Financial Inclusion Scheme	Pradhan Mantri Jan Dhan Yojana	21.7%	35.8%	30.6%	5.2%	6.7%	3.61	1.086	I
	Pradhan Mantri Mudra Yojana	20.5%	34.1%	29.6%	8.6%	7.2%	3.52	1.125	III
	Pradhan Mantri Suraksha Bima Yojana	20.5%	36.5%	26.7%	8.4%	7.9%	3.53	1.142	II
	Pradhan Mantri Vaya Vandana Yojana	18.5%	33.6%	29.1%	10.2%	8.6%	3.43	1.158	V
	Atal Pension Yojana	18.8%	28.9%	35.6%	9.4%	7.4%	3.42	1.120	VI
	Varishtha Pension Bima Yojana	17.0%	34.3%	29.6%	10.2%	8.9%	3.40	1.149	VII
	Stand Up India Scheme	20.2%	32.4%	27.4%	11.6%	8.4%	3.44	1.179	IV
	Sukanya Samriddhi Yojana	18.5%	30.9%	21.7%	15.8%	13.1%	3.26	1.291	IX
	Jeevan Suraksha Bandhan Yojana	17.3%	32.6%	24.2%	14.6%	11.3%	3.30	1.238	VIII
	Credit Enhancement Guarantee Scheme for Scheduled Castes	14.1%	27.6%	29.4%	16.8%	12.1%	3.15	1.214	X
	Venture Capital Fund for Scheduled Castes under the Social Sector Initiatives	13.6%	31.6%	23.0%	19.2%	12.6%	3.14	1.241	XI
Access and Usage of Financial Inclusion Scheme	Pradhan Mantri Jan Dhan Yojana	22.2%	30.6%	24.2%	9.4%	13.6%	3.39	1.299	VI
	Pradhan Mantri Mudra Yojana	12.6%	32.6%	31.4%	11.1%	12.3%	3.22	1.179	IX
	Pradhan Mantri Suraksha Bima Yojana	20.0%	34.6%	24.7%	8.1%	12.6%	3.41	1.251	V
	Pradhan Mantri Vaya Vandana Yojana	23.7%	36.0%	19.3%	8.9%	12.1%	3.50	1.277	II
	Atal Pension Yojana	20.2%	35.6%	19.8%	11.6%	12.8%	3.39	1.284	VII
	Varishtha Pension Bima Yojana	22.7%	38.0%	19.3%	8.4%	11.6%	3.52	1.254	I
	Stand Up India Scheme	17.5%	33.1%	28.9%	9.4%	11.1%	3.37	1.200	VIII
	Sukanya Samriddhi Yojana	19.8%	35.8%	25.1%	7.7%	11.6%	3.44	1.223	III
	Jeevan Suraksha Bandhan Yojana	20.0%	38.0%	19.8%	10.1%	12.1%	3.44	1.256	IV
	Credit Enhancement Guarantee Scheme for Scheduled Castes	14.1%	30.4%	29.9%	12.3%	13.3%	3.20	1.220	XI
	Venture Capital Fund for Scheduled Castes under the Social Sector Initiatives	15.8%	29.4%	29.4%	11.8%	13.6%	3.22	1.242	X
Challenges of Financial Inclusion	Inadequate Infrastructure	16.5%	40.7%	30.6%	6.9%	5.3%	3.57	1.014	IV
	Poor Connectivity	16.8%	38.3%	29.9%	9.4%	5.6%	3.51	1.057	V
	Convenience and Relevance	21.0%	46.7%	21.7%	6.4%	4.2%	3.74	0.998	I
	Socio-Cultural Barriers	21.5%	39.5%	26.9%	8.6%	3.5%	3.67	1.017	II
	Product Usage	14.7%	34.1%	34.1%	11.9%	5.2%	3.41	1.044	VI
	Payment Infrastructure	19.0%	44.0%	25.7%	6.9%	4.4%	3.66	1.006	III
Impact of Financial Literacy	Financial Educability	26.2%	36.3%	29.4%	4.4%	3.7%	3.76	1.007	I
	Financial Behaviour & Attitude	17.3%	44.6%	27.2%	7.4%	3.5%	3.64	0.965	IV
	Financial Confidence	21.2%	41.5%	27.4%	5.9%	4.0%	3.70	0.996	III
	Financial Socialization	17.5%	39.0%	33.6%	5.9%	4.0%	3.60	0.973	V
	Financial Reengineering	20.5%	44.7%	25.4%	5.7%	3.7%	3.72	0.973	II

Causes of Financial Exclusion	Lack of Surplus Income	24.2%	42.0%	23.6%	6.7%	3.5%	3.76	1.002	I
	Not Suitable for the customer's requirement	16.8%	37.5%	29.6%	10.7%	5.4%	3.49	1.061	VI
	Lack of Requisite Document	17.8%	39.5%	29.4%	8.4%	4.9%	3.56	1.033	III
	Lack of Awareness about the services	22.7%	35.3%	25.4%	11.9%	4.7%	3.59	1.103	II
	Lack of Trust	19.0%	34.1%	28.4%	13.1%	5.4%	3.48	1.104	VII
	Remoteness of Service providers	17.3%	38.5%	29.6%	10.9%	3.7%	3.54	1.017	IV
	Poor quality of services rendered	18.3%	34.3%	33.8%	9.9%	3.7%	3.53	1.018	V
Effectiveness of Financial Inclusion	Cashless Transaction	30.1%	35.8%	21.5%	7.4%	5.2%	3.78	1.111	II
	Paperless Layer	23.7%	47.4%	19.5%	5.7%	3.7%	3.81	0.980	I
	Financial Stability	21.2%	41.2%	25.9%	7.7%	4.0%	3.68	1.017	VI
	Citizen Empowerment	22.5%	44.4%	22.0%	8.1%	3.0%	3.75	0.989	III
	Economic Empowerment	22.0%	41.3%	26.9%	5.4%	4.4%	3.70	1.011	IV
	Social Inclusion and Empowerment	21.2%	42.0%	25.4%	7.7%	3.7%	3.69	1.007	V

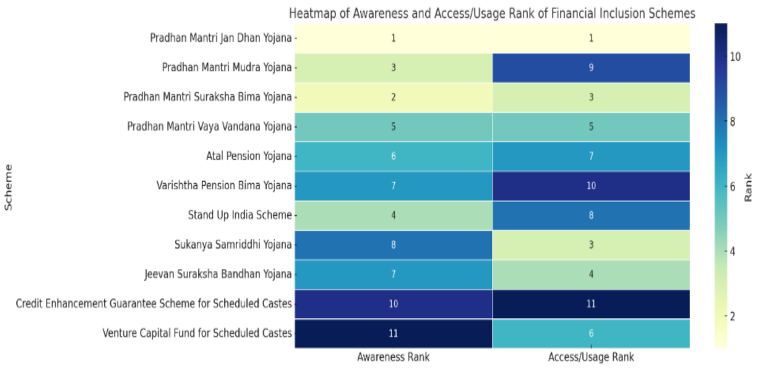

Fig. 1: Heatmap Rank Matrix.

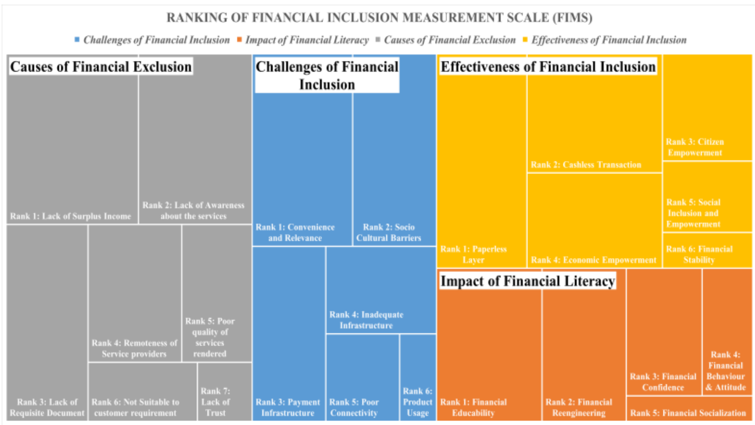

Fig. 2: Treemap Dimensions by Rank.

Table 4 determines the descriptive Statistics of the Financial Inclusion Measurement Scale. The purpose of the table is to simplify the evidence using mean score value and standard deviation, and to understand the type of response provided by the participants to the Financial Inclusion Measurement Scale (FIMS) items. Table 4 presents the ranking of the various dimensions of the Financial Inclusion Measurement Scale as follows (i) Awareness of Financial Inclusion Scheme ranked Pradhan Mantri Jan Dhan Yojana (μ=3.61, № 1), Pradhan Mantri Suraksha Bima Yojana (μ=3.53, № 2) and Pradhan Mantri Mudra Yojana (μ=3.52, № 3), (ii) Access and Usage of Financial Inclusion Scheme ranked Varishtha Pension Bima Yojana (μ=3.52, № 1), Pradhan Mantri Vaya Vandana Yojana (μ=3.50, № 2) and Sukanya Samriddhi Yojana (μ=3.44, № 3), (iii) Challenges of Financial Inclusion ranked Convenience & Relevance (μ=3.74, № 1), Socio Cultural Barriers (μ=3.67, № 2) and Payment Infrastructure (μ=3.66, № 3), (iv) Impact of Financial Literacy ranked Financial Educability (μ=3.76, № 1), Financial Reengineering (μ=3.72, № 2) and Financial Confidence (μ=3.70, № 3), (v) Causes of Financial Exclusion ranked Lack of Surplus Income (μ=3.76, № 1), Lack of Awareness about the services (μ=3.59, № 2) and Lack of Requisite Document (μ=3.56, № 3), (vi) Effectiveness of Financial Inclusion ranked Paperless Layer (μ=3.81, № 1), Cashless Transaction (μ=3.78, № 2) and Citizen Empowerment (μ=3.75, № 3). Figure 1 and 2 outlines the ranking of various dimensions of the Financial Inclusion Measurement Scale framework of the study.

Table 5: Reliability Test for the Financial Inclusion Measurement Scale (FIMS) (N = 405)

Scale	μ	σ	α
1. Awareness of Financial Inclusion	37.21	10.11	0.730
2. Access and Usage of Financial Inclusion	37.08	11.05	0.755
3. Challenges of Financial Inclusion	21.56	4.58	0.742
4. Impact of Financial Literacy	18.44	4.04	0.754
5. Causes of Financial Exclusion	24.99	5.40	0.762
6. Effectiveness of Financial Inclusion	22.43	4.91	0.763

Note: N=405; α Cronbach's Alpha; μ Mean; σ Standard Deviation.

Table 5 determines the reliability analysis using the Cronbach alpha value. From the table, it was found that all the constructs have a Cronbach alpha value greater than 0.7, thereby confirming the internal consistency of the constructs.

Table 6: Independent-Sample T Test for the Financial Inclusion Measurement Scale (FIMS) (N = 405)

Demographic Profile	Scale	Male (N=239)		Female (N=166)		T	P
		Mean μ	S. D σ	Mean μ	S. D σ		
Gender	1. Awareness of Financial Inclusion	36.80	10.51	37.81	9.50	2.914	0.049*
	2. Access and Usage of Financial Inclusion	36.95	10.96	37.29	11.21	0.010	0.919
	3. Challenges of Financial Inclusion	21.35	4.79	21.86	4.27	0.196	0.658
	4. Impact of Financial Literacy	18.31	4.03	18.64	4.06	0.006	0.940
	5. Causes of Financial Exclusion	24.81	5.56	25.25	5.16	0.708	0.401
	6. Effectiveness of Financial Inclusion	22.50	5.06	22.33	4.69	0.158	0.691
		Urban (N=244)		Rural (N=161)		T	P
		Mean μ	S. D σ	Mean μ	S. D σ		
Geographical Location	1. Awareness of Financial Inclusion	37.06	10.80	37.45	8.97	4.303	0.039*
	2. Access and Usage of Financial Inclusion	36.28	11.86	38.31	9.60	11.14	0.001**
	3. Challenges of Financial Inclusion	21.56	5.03	21.55	3.82	5.474	0.020*
	4. Impact of Financial Literacy	18.41	4.29	18.50	3.64	3.403	0.066
	5. Causes of Financial Exclusion	25.29	5.44	24.53	5.31	0.007	0.935
	6. Effectiveness of Financial Inclusion	22.52	5.06	22.30	4.69	0.127	0.721

The analysis in Table 6 shows a significant gender-based difference in awareness towards financial inclusion, with a t-value of 2.914 and statistical significance at a 5 percent significance level. However, no evidence of a significant gender difference was revealed among males and females in the other variables being studied. However, in terms of geographical location, it was found that a statistically significant difference was found among people residing in the urban and rural areas in terms of the awareness towards financial inclusion and challenges faced to ensure financial inclusion, with t values 4.303 and 5.474, which are statistically significant at a 5 percent significance level. While access and usage of the financial inclusion program varied in terms of geographical location, with a t-value of 11.14, significant at the 0.01 level of significance. From this interpretation, the researcher partially rejects the null hypothesis.

Table 7: One-Way ANOVA Summary for the Demographic Profile on Financial Inclusion Measurement Scale (FIMS)

Demographic Profile	Scale	F	P
Age	1. Awareness of Financial Inclusion	0.986	0.399
	2. Access and Usage of Financial Inclusion	3.130	0.026*
	3. Challenges of Financial Inclusion	1.337	0.262
	4. Impact of Financial Literacy	0.986	0.399
	5. Causes of Financial Exclusion	1.197	0.311
	6. Effectiveness of Financial Inclusion	0.492	0.688
Qualification	1. Awareness of Financial Inclusion	0.822	0.482
	2. Access and Usage of Financial Inclusion	0.806	0.491
	3. Challenges of Financial Inclusion	0.821	0.483
	4. Impact of Financial Literacy	1.844	0.139
	5. Causes of Financial Exclusion	2.668	0.047*
	6. Effectiveness of Financial Inclusion	3.189	0.024*
Annual Income	1. Awareness of Financial Inclusion	1.394	0.235
	2. Access and Usage of Financial Inclusion	4.093	0.003**
	3. Challenges of Financial Inclusion	1.551	0.187
	4. Impact of Financial Literacy	0.883	0.474
	5. Causes of Financial Exclusion	0.367	0.832
	6. Effectiveness of Financial Inclusion	0.213	0.931
Occupation	1. Awareness of Financial Inclusion	1.832	0.122
	2. Access and Usage of Financial Inclusion	3.931	0.004**
	3. Challenges of Financial Inclusion	0.339	0.852
	4. Impact of Financial Literacy	0.855	0.491
	5. Causes of Financial Exclusion	0.433	0.785
	6. Effectiveness of Financial Inclusion	0.281	0.890

Note: $^{**}p<0.01$; $^{*}p<0.05$.

Table 7 provides an overview of the significant difference between Age group, Qualification, Annual Income, and geographical location with the different dimensions of the Financial Inclusion Measurement Scale (FIMS). The researcher rejects the null hypothesis at $\alpha = 0.05$ as the p-value falls below this threshold. This provides evidence of a significant difference across the individuals of different Age groups and Access and Usage of Financial Inclusion ($F = 3.130$, $p = 0.026$); Qualification level and Causes of Financial Exclusion ($F = 2.668$, $p = 0.047$) & Effectiveness of Financial Inclusion ($F = 3.189$, $p = 0.024$). Between the different Age groups with the other dimensions, no significant difference was found.

With $p<0.01$, the result is considered statistically significant, leading to the rejection of the null hypothesis at the 1% level. Hence, highlighting a difference among Annual Income and Access and Usage of Financial Inclusion ($F = 4.093$, $p = 0.003$); Occupation level and Access and Usage of Financial Inclusion ($F = 3.931$, $p = 0.004$) are statistically significant. Moreover, no notable difference in the Annual Income of the participants as well as the level of Occupation with respect to other dimensions being studied, due to $p>0.05$, the null hypothesis remains accepted.

Table 8: Chi-Square Test Value for Financial Inclusion Measurement Scale (FIMS)

Variable.	Demographic Profile	Chi-Square value	Sig. Value
Awareness of Financial Inclusion	Gender	0.339	0.124
	Age	0.493	0.385
	Qualification	0.481	0.580
	Annual Income	0.612	0.001**
	Occupation	0.589	0.008**
	Geographical Location	0.280	0.792
Access and Usage of Financial Inclusion	Gender	0.274	0.813
	Age	0.488	0.389
	Qualification	0.465	0.764

	Annual Income	0.614	0.001**
	Occupation	0.588	0.006**
	Geographical Location	0.278	0.780
Challenges of Financial Inclusion	Gender	0.208	0.634
	Age	0.410	0.049*
	Qualification	0.386	0.229
	Annual Income	0.486	0.002**
	Occupation	0.442	0.132
	Geographical Location	0.262	0.048*
Impact of Financial Literacy	Gender	0.191	0.700
	Age	0.367	0.272
	Qualification	0.378	0.164
	Annual Income	0.419	0.195
	Occupation	0.424	0.150
	Geographical Location	0.189	0.722
Causes of Financial Exclusion	Gender	0.199	0.893
	Age	0.417	0.197
	Qualification	0.427	0.112
	Annual Income	0.520	0.001**
	Occupation	0.497	0.015*
	Geographical Location	0.275	0.128
Effectiveness of Financial Inclusion	Gender	0.223	0.514
	Age	0.382	0.373
	Qualification	0.428	0.023*
	Annual Income	0.402	0.772
	Occupation	0.411	0.657
	Geographical Location	0.254	0.181

Note: **p<0.01; *p<0.05.

In terms of Table 8, at 1% significance level, Awareness of Financial Inclusion & Access and Usage is associated strongly with Annual Income as well as Occupation. However, the other study variables did not show a statistically significant association with qualification, gender, age, or geographical location. Subsequently, the Challenges of Financial Inclusion show a good association with annual income at a 1 percent significance level, with age and geographical location significant at a 5 percent significance level. On the other hand, no significant association was found between the study variables and the demographic factors gender, qualification, and occupation.

Gender, age, qualification, occupation, annual income, and geographical location do not show any statistically significant association with the variables of Impact of Financial Literacy. Furthermore, Causes of Financial Exclusion are strongly associated with Annual Income at a 1 percent significance level and Occupation at a 5 percent significance level. However, gender, age, qualification, and geographical location did not show a significant association with the variables of Causes of Financial Exclusion. At a significance level of 5%, the Effectiveness of Financial Inclusion is strongly associated with qualification, but gender, age, occupation, annual income, and geographical location are not showing a significant association with the Effectiveness of Financial Inclusion.

As shown in Table 9, the multiple regression model yielded an R Square of 0.695, implying that the predictors Awareness of Financial Inclusion, Access and Usage of Financial Inclusion, Challenges of Financial Inclusion, Impact of Financial Literacy, and Causes of Financial Exclusion collectively explain 69.5% of the variability in Effectiveness of Financial Inclusion.

Table 9: Summary of Multiple Linear Regression Predicting Effectiveness of Financial Inclusion

Variable	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std.Error	Beta		
(Constant)	5.360	1.103		4.858	.000
Awareness of Financial Inclusion	.035	.026	.073	1.383	.168
Access and Usage of Financial Inclusion	.012	.024	-.026	-.481	.631
Challenges of Financial Inclusion	-.149	.058	.139	2.573	.010**
Impact of Financial Literacy	.415	.063	.341	6.612	.000**
Causes of Financial Exclusion	-.214	.044	.235	4.807	.000**
R Square	0.695				
Adjusted R Square	0.688				

Note: **p<0.01.

The p-value of the three independent variables (Challenges of Financial Inclusion, Impact of Financial Literacy, and Causes of Financial Exclusion variables) is found to be less than the 0.01 level of significance, which shows that predictor variables have a significant impact on the output variables (Effectiveness of Financial Inclusion), hence H6, H7, and H8 are supported. But, the p-value of two predictor variables (Awareness of Financial Inclusion and Access and Usage of Financial Inclusion) is greater than 0.05, which means that these two variables do not have any significant impact on the Effectiveness of Financial Inclusion, hence H4 and H5 are not supported.

5. Research Implication

The results obtained and inferred from the dataset were specifically aimed towards developing and analysing the financial inclusion measurement scale for citizen upliftment. Each construct was developed thoroughly via a literature review and thereby led to the identification of the constructs, which were used to apprehend the implications in the study. A few of the individuals are actively engaged and have been familiar with financial inclusion schemes, allowing hands-on experience of applying financial inclusion schemes in day-to-day practice. This research study recommends that the Financial Inclusion Measurement Scale will push the initiatives across all the segments of society towards empowerment, economic progress of individuals and increasing the standard of living. Financial Inclusion Measurement Scale proposed for citizen upliftment has made a profound impact on the engagement towards the financial inclusion scheme. The current research also helps the government to make individuals feel self-assured for accessing financial inclusion schemes by enhancing saving habits through the banking and postal sector, educating financial knowledge, encouraging social media platforms for promotional activities, periodical inspection by top government officials, and people's representatives. This will ensure citizen upliftment and engagement through financing and social inclusion. Furthermore, this study will be an enlightening initiative for the implementation of a financial inclusion model for the stakeholders because of the data and information given by the individuals who strive to achieve citizen upliftment.

6. Conclusion and Future Research Direction

The provision of the Financial Inclusion Measurement Scale holds the promise of generalising the study findings to the stakeholders of the country. It is stated that the framework offers ideas and methodology to the appropriate government, civil society, and stakeholders, adding to the insights of the financial inclusion projects. As individuals become self-reliant and knowledgeable about financial inclusion schemes, it will induce continuous change towards a better, more inclusive society and sustainable development. The present research shows that the limitation of the study is the sampling technique, sampling method, such as convenience sampling, and the population of the study was not adequate to define the entire state of Tamil Nadu. Convenience sampling is biased since the sample is picked based on populations that are conveniently accessible, which might be underprivileged groups or those who reside in rural areas and have low access to digital financial services. Knowledge of these limitations enhances the integrity and transparency of the study. Further studies are required to use multi-stage or stratified sampling to obtain an extra sample. The stratification might be based on the following demographic features: age, gender, occupation, geographic (urban vs. rural districts), or digital literacy level. Multi-state sampling based on cross-regional comparisons would also allow a greater depth of understanding of the variations in financial inclusion manifestation within the different socio-economic contexts of India. The strategies would not only remove selection bias but would also improve external validity. Importantly, the design of the FIMS model remains robust as it is, although a broader scope of sampling in subsequent research will render it more policy and practice-relevant both on a state and a national level. The study also establishes itself as a valid and future-oriented contribution to the literature on financial inclusion through direct articulations of such limitations and the methodological enhancements that the study proposes. Research in the future can be done by mobile-based financial services such as e-wallet apps and digital platforms with a Fintech Approach, Block-chain Technology & Artificial Intelligence on social inclusion and rural upliftment of underprivileged groups. Further, this research work can initiate in-depth research that can be generalized to an entire nation, and the performance of the financial inclusion scheme shall be done within various states in India. The current study strongly emphasizes that with the usage of the Financial Inclusion Measurement Scale (FIMS), the government of Tamil Nadu can effectively aid in citizen upliftment

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Data Availability Statement

The data supporting the findings of this study are available from the corresponding author upon reasonable request.

Conflict of Interest Statement

The authors declare that there is no conflict of interest related to this study.

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