

Financial Inclusion Impact on Economic Empowerment and Economic Inequality on Tribal Population of Jammu and Kashmir

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Abstract: *This study intended to construct an integrated model to examine the linkages between drivers of financial inclusion and economic inequality and empowerment to fill a gap in the existing research and contribute to the development of financial inclusion in Jammu and Kashmir. The current research relied on primary data collected from top tribal districts of the Jammu and Kashmir (India) regions through a questionnaire. PLS-SEM is applied for hypotheses testing. Results demonstrated that financial inclusion had a significant impact on economic empowerment and economic inequality. The findings of this study have immediate implications for policymakers, banks, and other service providers, and they also have a significant impact on the researchers working in the field of financial inclusion.*

Keywords: *Financial inclusion, Economic empowerment and Economic inequality*

Introduction

In international development, financial inclusion has become one of the most well-known and highly discussed areas of focus. Financial inclusion concerns everyone, not just a particular economic or demographic category. Financial inclusion fosters economic empowerment, which leads to greater economic and social inclusion by facilitating simple, affordable access to financial goods and services. The advancement of low-income rural populations is crucial for any developing country's economic development, just as it is for high-income urban population. One of the essential methods for assisting the poor in escaping poverty is financial inclusion. The inclusion of historically marginalized and underserved groups in the official financial

system seeks to reduce poverty and inequality by facilitating easy access to financial services. Financial services reduce extreme poverty, increase shared prosperity, and encourage inclusive and sustainable development.

In India, the issue of financial exclusion is pervasive among traditionally oppressed groups such as scheduled castes (SCs) and scheduled tribes (STs). India is home to more than 104 million indigenous and tribal people, making about one-third of the world's total indigenous and tribal population. The Reserve Bank of India promulgated this drive for financial inclusion, and it involves banks promoting the partaking of every household at the district level via savings accounts for the "unbanked". Access to credit

may make it easier to meet the first Sustainable Development Goal (SDG) to end extreme poverty by allowing individuals to finance investments that will lead to businesses that generate income, further education and skills training, or improved housing. In other words, it may make it easier to achieve SDG 1. This goal was established to help achieve the Millennium Development Goals (MDGs). The availability of financial services makes it possible for people and businesses to capitalize on business possibilities, invest in education, save for retirement, and insure themselves against hazards.

People in rural areas are less aware of the benefits of availing banking services, and the population in rural districts does not have access to adequate financial services. The union territory of Jammu and Kashmir is of political and geographical importance for the country. Its geographical location and difficult terrain make providing access to banking services difficult. Additionally, internet connectivity is poor in rural areas. It is essential to have an understanding of the vulnerability of tribal people due to the fact that, in comparison to the mainstream population, they have fewer assets and are illiterate. Because they have been cut off from the rest of society for such a long time and have been denied basic economic opportunities, tribal people are among the most vulnerable members of society.

Hypotheses Development

From the discussion above, the following hypothesis have been formulated;

H1: There is a direct relationship between access and financial inclusion.

H2: There is a direct relationship between availability and financial inclusion.

H3: There is a direct relationship between usage and financial inclusion.

H4: There is a direct relationship between quality and financial inclusion.

H5: There is a direct relationship between affordability and financial inclusion.

H6: There is a direct relationship between financial inclusion and economic empowerment.

H7: There is an inverse relationship between financial inclusion and economic inequality.

Study Method

Measurement of constructs

The questionnaire for this survey included 49 items for eight constructs which are presented in

Table 1. All the scale items for this study were adopted from previously validated instruments. The measures of perceived access comprise eight variables which were adapted from Kumar et al. (2020), Prabhakar et al. (2020), Amidžic, et al. (2014), Rajani Guptea et al. (2012), and Nandru et al. (2021). Seven variables are used to measure the concept of availability, which were derived from Vaid et al. (2020), Nandru and Rentala (2020), Beck et al. (2007), Gupta et al. (2012) and Nandru et al. (2021). The six items of usage were adopted from Nandru and Rentala, (2020), and Nandru et al. (2021), while the seven items of quality were retrieved from Thorat, (2010), World Bank (2014), Khan et al (2023), and Beck et al. (2009). The concept of affordability was measured using seven questions developed and modified by Nandru and Rentala (2020) and Nandru et al. (2021) that were adopted and used to measure affordability. The variable of financial inclusion was measured using five questions adopted and modified from previous studies like Rastogi & E, R. (2018). Demirgüç-Kunt, et al. (2015), and Okello et al. (2016). Economic empowerment was measured using seven questions developed and changed by Lal (2020), Senyo et al. (2021), and Bhatia and Singh (2019). Lastly, economic inequality was tested using two items retrieved from Budría (2010).

Data source and sampling procedure

The current research relied on the data from tribal communities of the Jammu and Kashmir regions of Anantnag, Bandipora, Rajouri, and Poonch. These are the most prominent tribal districts in Jammu and Kashmir. The questionnaire was used to acquire primary data. According to India's 2011 Census, the total tribal population of Anantnag, Bandipora, Rajouri, and Poonch was 116006, 75374, 232815, and 176101, respectively. Krejcie and Morgan's (1970) approach has been used to select the sample. The present study's criterion was 380 respondents (Krejcie & Morgan, 1970). Considering the margin of error, a convenient sampling strategy was used to survey 500 residents. This data collection approach has a high response rate. The complete responses from 416 respondents were obtained.

Models used

The present study applied variance-based Partial Least Squares-Structural Equation Modeling (PLS-SEM). It is a series of ordinary least squares

regressions with more statistical power than covariance-based SEM (Hair, Risher, Sarstedt, & Ringle, 2019). The primary statistical approach utilized to evaluate the hypothetical model in this study is structural equation modeling (SEM). This second-generation data analysis technique is sophisticated and commonly used to test complicated models using data (Hair et al., 2019). It combines the features of factor analysis with multiple regression, which enables the simultaneous investigation of direct and indirect effects of exogenous and endogenous variables. Thus, PLS-SEM permits the construction of complicated models (Bhat, Majumdar, & Mishra, 2020). The path model is computed using SmartPLS 4 in this investigation. Additional bootstrapping was utilised to assess the importance of the loadings. The SEM method enables researchers to concurrently model relationships between multiple independent and dependent variables to address specific research problems. PLS-SEM is useful for assessing models with complex latent variables (Hair et al., 2019).

Hair et al. (2019) state that studying complex higher-order models has a strong predictive capacity. PLS-SEM offers the benefit of analysing latent constructs using path analysis and stressing the explanation of variation in dependent variables while assessing a structural model. PLS-SEM is advantageous when dealing with complicated models, including composites, without assuming goodness-of-fit estimates due to its casual-predictive character (Chin, 2010). As a non-parametric analytic technique, PLS-SEM overrules multivariate normality in the data (Hair et al., 2019). The PLS-SEM enables researchers to use non-normal and small datasets. PLS-SEM suggests a two-step analytic approach for data analysis. In the first step, the model was measured to determine the reliability and validity of the study's constructs (Hair et al., 2019). To identify the construct, content, convergent, and discriminant validity of the observed measures and the underlying components for all variables under consideration, measurement models are developed using PLS. In the second step, investigations were carried out into the relationships between the structural model and the research hypotheses, using significant levels (Bhat et al., 2020; Chin, 2010). The second stage,

which is the structural model, is analyzed by determining the value of R square, the effect size, the predictive relevance of the model, the GoF of the model, and the path coefficient through the use of bootstrapping to test the hypotheses of the research (Bhat et al., 2020). The bootstrapping method with 5,000 replicated samples was used so that we could check for statistical significance.

Results

Results of skewness and kurtosis

Before looking at the results of the PLS-SEM analysis, normality tests were performed in this study. To determine whether or not the data were normal, the Kolmogorov-Smirnova and Shapiro-Wilk tests were carried out. The data do not adhere to a normal distribution because it was found that the findings were significant at the level of 5 per cent. However, the formulation of these two tests only permits the acceptance or rejection of the null hypothesis when given regularly distributed data (J. Hair, Anderson, Babin, & Black, 2010). The other two statistical measures skewness and kurtosis — are computed to determine the degree of data deviation from normality. For skewness and kurtosis, the acceptable value is " $\leq \pm 3$ " (Hung, Sirakaya-Turk, & Ingram, 2011; W. Kim, Jun, Walker, & Drane, 2015). All of the items in this study had skewness that fall within the range of " $\leq \pm 3$ " exceptive items of access, three items from affordability, one item from availability, all items from economic empowerment and financial inclusion and two items from usage demonstrated kurtosis over the band of " $\leq \pm 3$ " (Table 1), minor non-normality being displayed. The excess kurtosis variables were kept for future analysis rather than converted or eliminated in the present study this being the right thing to do (Tabachnick, Fidell, & Ullman, 2007). Theoretical rationale and additional norms have been carefully considered, and it is determined that PLS-SEM is the most appropriate approach for the current study (J. F. Hair et al., 2019). PLS-SEM does not need any assumptions on the data distribution since it is non-parametric (J. F. Hair et al., 2019). In order to analyse non-normal difficult qualitative data with so many components, PLS-SEM is the best method that demonstrates enhanced resilience (J. F. Hair et al., 2019). Consequently, PLS-SEM is an acceptable approach for this study since it does not rely on data distribution assumptions.

Table 1: Results of skewness, kurtosis and factor loadings

	Excess kurtosis	Skewness	Loadings Before	Loadings After Deleted Items
Access				
Access 1	3.137	-1.353	0.937	0.936
Access 2	3.225	-1.383	0.969	0.973
Access 3	3.223	-1.373	0.966	0.971
Access 4	3.531	-1.323	0.913	0.918
Access 5	3.174	-1.248	0.887	0.888
Access 6	2.712	-1.689	0.253	Deleted
Access 7	2.523	-1.632	0.229	Deleted
Access 8	2.219	-1.554	0.178	Deleted
Affordability				
Afford 1	2.598	-1.015	0.806	0.841
Afford 2	2.65	-1.074	0.716	0.772
Afford 3	3.978	-1.308	0.773	0.796
Afford 4	4.094	-1.359	0.714	0.741
Afford 5	2.728	-1.137	0.683	Deleted
Afford 6	2.805	-1.227	0.859	0.855
Afford 7	4.446	-1.491	0.91	0.892
Availability				
Availa 1	2.776	-1.184	0.369	Deleted
Availa 2	2.927	-1.034	0.895	0.97
Availa 3	1.947	-0.936	0.883	0.953
Availa 4	3.511	-1.196	0.866	0.932
Availa 5	1.911	-0.871	0.881	0.971
Availa 6	1.969	-0.829	0.906	0.986
Availa 7	0.968	-0.685	0.424	Deleted
Economic Empowerment				
EcoEmp1	5.37	-1.937	0.922	0.936
EcoEmp2	5.95	-1.969	0.927	0.933
EcoEmp3	5.89	-1.895	0.917	0.923
EcoEmp4	5.894	-1.882	0.952	0.965
EcoEmp5	4.957	-1.392	0.542	Deleted
EcoEmp6	3.407	-0.976	0.52	Deleted
EcoEmp7	1.301	-0.582	0.5	Deleted
Economic Inequality				
Ecolneq1	1.725	1.622	0.965	0.965
Ecolneq2	2.034	1.613	0.957	0.957
Financial Inclusion				
FinInc1	89.417	5.726	0.768	0.768
FinInc2	3.537	-1.686	0.951	0.951
FinInc3	3.332	-1.645	0.949	0.949
FinInc4	3.748	-1.726	0.949	0.949
FinInc5	3.748	-1.726	0.951	0.951
Quality				
Quality 1	3.712	-1.682	0.861	0.884
Quality 2	6.306	-1.995	0.901	0.909
Quality 3	6.119	-1.936	0.903	0.913
Quality 4	6.328	-1.929	0.903	0.923
Quality 5	3.03	-0.847	0.454	Deleted
Quality 6	3.053	-0.916	0.485	Deleted
Quality 7	3.113	-1.008	0.398	Deleted
Usage				
Usage 1	0.162	-0.117	0.824	0.824
Usage 2	0.132	-0.179	0.828	0.828
Usage 3	0.174	-0.099	0.859	0.859
Usage 4	6.942	-1.406	0.834	0.834
Usage 5	3.521	-0.897	0.794	0.794
Usage 6	1.818	-0.54	0.72	0.72

Evaluation of the Measurement Model

Cronbach's alpha is a way to figure out how reliable a model is. For the factor-based approach, Cronbach's alpha and CR values are about the same (Kock, 2015). Most of the time, its value is between 0 and 1. As the alpha value gets closer to 1, the data sets on a scale become more reliable from the inside. Based on the criteria, all of the values in this study are more than 0.8, which is a pretty good score. The CR coefficient is used to measure construct reliability (Hair et al., 2019;

Kock, 2015). The CR coefficient must be greater than 0.7 for construct reliability to be proven. (Hair et al., 2019). Table 2 shows the CR values that were found for this study. Table 2 shows that the coefficient of reliability (CR) for each construct is more than 0.9. These numbers tell us how reliable the measurement model can be (Hair et al., 2019). The AVE is often used to determine whether convergence is valid (Chin, 2010; Hair et al., 2019). For convergent validity to be considered good, AVE must be greater than 0.5. (Bagozzi & Yi, 1988; Chin, 2010; J. F. Hair et al., 2019).

Table 2: Reliability and Validity of the Model

Parameters	Before	After	Before	After	Before	After
	Cronbach's alpha	Cronbach's alpha	Composite reliability	Composite reliability	Average variance extracted (AVE)	Average variance extracted (AVE)
Access	0.90	0.97	0.89	0.97	0.57	0.88
Affordability	0.93	0.92	0.92	0.92	0.62	0.67
Availability	0.94	0.98	0.91	0.98	0.61	0.93
Economic Empowerment	0.90	0.90	0.91	0.93	0.61	0.74
Economic Inequality	0.92	0.92	0.96	0.96	0.92	0.92
Financial Inclusion	0.95	0.95	0.96	0.96	0.84	0.84
Quality	0.86	0.93	0.88	0.95	0.54	0.82
Usage	0.90	0.90	0.92	0.92	0.66	0.66

For the model's reliability to be evaluated, the maximum allowed loading for each item on the latent variable it is related to should be greater than 0.7. (J. F. Hair et al., 2019). If the result is lower than 0.4, the item in the situation should be removed; similarly, if a loading of 0.4-0.7 items raises the CR & AVE to a level that is higher than the threshold, the item in the situation should be removed (J. F. Hair et al., 2019). Except the 12 items, every item of aid for financial inclusion, economic empowerment, and economic inequality has a loading of greater than 0.7, as indicated in Table 1. Because their values ranged from 0.4 to 0.7, the 12 factors supporting access, affordability, availability, and quality of financial goods and services and economic empowerment were deleted. As seen in Table 2, once these 12 items

were eliminated, the CRs and AVEs values for those items increased, indicating good reliability.

The square root of the AVE for each variable in the model has to be higher than the strongest correlations that variable has with any of the other variables in the model (Chin, 2010; J. F. Hair et al., 2019; Kock, 2015). The correlations between the LVs and the square roots of the AVEs for the LVs are shown in bold font in Table 3. According to the findings, the square roots of the AVE for each variable in the model have a higher value than their strongest correlations with the other variables in the model. According to the findings of the first stage of the PLS-SEM analysis, the model's validity and reliability have been validated. Taking out the phase involving structural analysis in the second stage is appropriate.

Table 3: Discriminant Validity

Parameters	Access	Affordability	Availability	Economic Empowerment	Economic Inequality	Financial Inclusion	Quality	Usage
Access	0.938							
Affordability	-0.029	0.818						
Availability	-0.011	0.008	0.963					
Economic Empowerment	0.337	-0.055	-0.048	0.863				
Economic Inequality	-0.014	-0.018	-0.05	0.078	0.961			
Financial Inclusion	0.224	0.058	-0.058	0.232	-0.249	0.916		
Quality	-0.047	0.069	0.038	-0.017	-0.198	0.341	0.907	
Usage	-0.028	-0.03	0.012	-0.069	-0.085	0.207	0.232	0.811

Evaluation of structural model

Two tests are required to evaluate the structural model: path coefficient importance and R2 (Chin, 2010; J. F. Hair et al., 2019). R2 might vary based on the study topic (J. F. Hair et al., 2019). R2 values of 0.67, 0.33, and 0.19, respectively, indicate extensive, moderate, and poor levels of R2 (Chin, 2010). In behavioral research, however, an R2 of 0.20 is considered adequate (J. F. Hair et al., 2019; Kock, 2015). In this research, the R2 values for economic empowerment, economic inequality, and financial inclusion were 0.05, 0.06, and 0.20, respectively. Each predicted association in the model has an estimated path coefficient and accompanying p-value. The R2 coefficient for financial inclusion in our model for the endogenous construct is 0.19, which is a reasonable value for behavioral studies.

The second step of PLS-SEM, also known as the evaluation of the structural model and the outcomes of hypothesis testing, is shown in Table 4 and Figure 1. Both Hypothesis 5 ($\beta_5 = 0.05$, $p = 0.55$) and Hypothesis 2 ($\beta_2 = -0.07$, $p = 0.10$) had associated p-values that were more than 0.05, as seen in the table. Because of this, the hypotheses were shown to have no meaningful relationship and were thus rejected. It was expected that H1 ($\beta_1 = 0.24$, $p = 0.00$), H6 ($\beta_6 = 0.23$, $p = 0.00$), H4 ($\beta_4 = 0.32$, $p = 0.00$), and H3 ($\beta_3 = 0.14$, $p = 0.00$) would all be positive, and the data supported these hypotheses considerably, having a p-value that was less than 0.01. The related p-values of H7 ($\beta_7 = -0.25$, $p = 0.00$) were less than 0.01. However, the sign is negative, which varies from the predicted association. Although it was predicted that the interactions outlined in H7 would have a favourable effect, the findings show that they have a substantial adverse effect instead.

Table 4: Results of Path Relationships

Hypotheses	Coefficient	Standard deviation	t-statistics	p-values
H1: Access -> Financial Inclusion	0.24	0.06	3.96	0.00
H2: Availability -> Financial Inclusion	-0.07	0.04	1.65	0.10
H3: Usage -> Financial Inclusion	0.14	0.04	3.21	0.00
H4: Quality -> Financial Inclusion	0.32	0.06	5.16	0.00
H5: Affordability -> Financial Inclusion	0.05	0.08	0.60	0.55
H6: Financial Inclusion -> Economic Empowerment	0.23	0.07	3.37	0.00
H7: Financial Inclusion -> Economic Inequality	-0.25	0.06	4.38	0.00

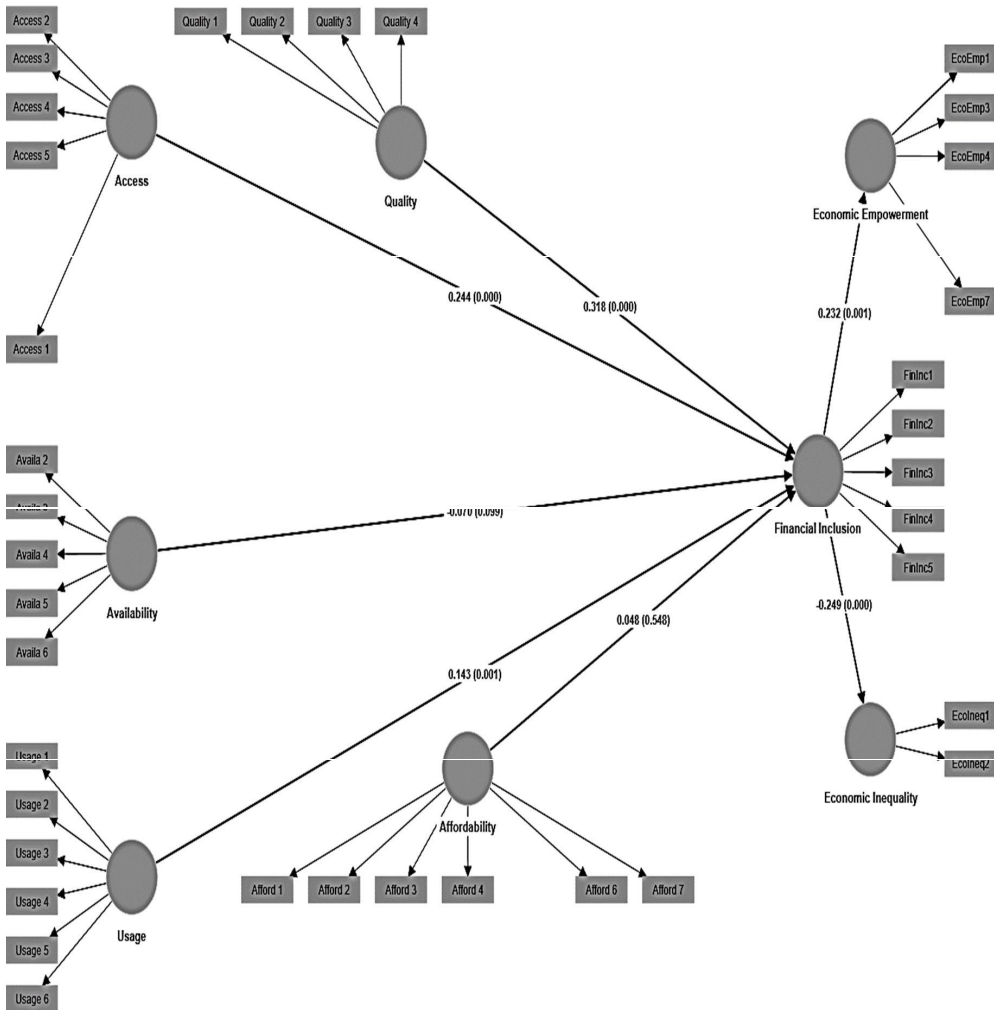


Figure 1: Path Model

Discussion

According to Hypothesis 1, there is a positive association between access and financial inclusion. This implies that while the introduction of innovative practices and technological advancements in banking services to facilitate financial inclusion can be seen as one side of the coin, its success is also dependent on the accessibility of these financial services by the targeted population, which primarily consists of local masses including low-income, marginalised, and tribal groups in terms of awareness, reach, and interest to participate. Consequently, we may

infer that an increase in the access rate to financial services by targeted clients such as low-income, disadvantaged, and indigenous groups leads to an increase in financial inclusion.

The second hypothesis asserts a positive link between availability and financial inclusion; however, the path coefficient reveals that the opposite—a negative relationship—does exist in this particular research. These peoples live in extremely backward areas where there are nearly no resources to facilitate or support banking services like a lack of electricity, communication, transportation, internet connection, and bank

branches or banking institutions. The results demonstrate that there is a lack of availability of financial services among low-income, marginalized, and tribal groups; because of this, the reason for this is that these peoples live in areas where there are almost no resources that can facilitate or support banking services.

According to hypothesis 3, there is a positive association between usage and financial inclusion. Developing cutting-edge technology in the banking industry has simplified the processes and procedures for everyone to access financial services, resulting in less paperwork since nearly everything is quickly moving to paperless. Additionally, we may see a very high reaction and degree of customer satisfaction for adopting cutting-edge financial services. Consumers' use of banking services on the ground, particularly low-income, marginalized, and indigenous groups, has multiplied, which may also be seen as a significant indicator of expanded financial inclusion. Therefore, we may conclude that greater use of financial services is directly and favorably related to economic growth.

According to hypothesis 4, there is a positive relationship between quality and financial inclusion. The findings demonstrate that as times change, the general public uses new and advanced technology to apply financial services in an increasingly advanced manner, streamlining eligibility requirements and facilitating universal access to banking services, which in turn encourages the provision of higher-quality financial services. Therefore, it can be said that the improvement in financial or banking services can be seen as encouraging low-income or tribal groups to participate more actively at the local level. This is because the processes for receiving services have become simpler, leading to increased financial inclusion.

Hypothesis 6 shows a positive link between financial inclusion and economic empowerment. This means that both government and private institutions are making more people aware of the need for local banking services, which will help the country's people and economy. Their main

goal is to get everyone connected to banking services so that financial inclusion can be promoted on a large scale. This will help low-income, marginalized, and tribal groups in backward areas become more economically stable and secure. So, we can say that there is a positive link between economic empowerment and financial inclusion because if economic empowerment goes up, financial inclusion will go up, and vice versa.

According to hypothesis 7, there is a statistically significant inverse link between economic inequality and financial inclusion. This suggests that when financial inclusion in tribal communities develops, there is little economic disparity. This suggests that income gaps contribute to economic inequality, and low-income people's engagement in economic activities is still relatively constrained due to their widespread poverty. This becomes the main cause of their inadequate level of financial activity engagement, which harms their financial inclusion. The substantially diminishing financial inclusion rate among low-income, excluded, and ethnic communities may thus be attributed to economic inequality.

Conclusions and Limitations

The findings of this research led to the development of an integrated model that includes aspects of economic inequality, financial inclusion, and economic empowerment. It was revealed that financial inclusion affects both economic empowerment and economic inequality. The findings of this study have immediate implications for policymakers, banks, and other service providers, and they also have a significant impact on the researchers working in the field of financial inclusion. Primary data were used in the current investigation. The research looked at the most important tribal districts in the UT of Jammu and Kashmir, which were Rajouri and Poonch from the Jammu area, Anantnag and Bandipora from the Kashmir region, and they were all included. For the chosen samples, convenient sampling was carried out using a previously tested questionnaire. For the purpose of

quantifying the qualitative responses, a Likert scale with five points was utilized. In order to verify the hypothesis, PLS-SEM was used.

The most important finding of this research was that financial inclusion significantly impacts economic inequality. This finding can play a significant part in the inclusive growth of the economically disadvantaged and underprivileged parts of the economy by increasing the amount of money that can be spent easily in tribal households. Inclusion in the financial system significantly and negatively impacts economic inequality. The tribal population has a particularly significant manifestation of inverse financial inclusion and income inequality. Financial education-based policies may be designed by the government and financial service providers to address the issue of economic inequality. These policies are intended to enhance the socioeconomic situation of the tribal community in Jammu and Kashmir. Inclusion in financial markets and empowerment in economic decision-making has been shown to have a strong and beneficial link. Because of this, appropriate financial decisions may lead to more efficient operation of business activities. However, the choices that tribal populations make about their finances are more likely to include applying financial resources to their businesses, which eventually results in a better degree of financial well-being. Because of its lack of statistical significance, the tribal population must be prioritized by policymakers in terms of accessibility to affordable economic determinants and the availability of such determinants. As a result, authorities and the banking industry may be able to bring more individuals who do not even have a basic understanding of finance into the formal banking system. It has been shown once again that financial inclusion may be improved by increasing both the number of people who have access to and the quality of the financial services they use. The number of initiatives that are now being planned to enhance financial inclusion for individuals currently excluded from accessing financial resources suggests that these findings

should be of significant relevance to policymakers in developing nations. The government of India has taken a number of steps over the years in recognition of the wide-ranging positive effects that financial inclusion can have on economic growth. However, a significant portion of the country's population still lacks access to even the most basic financial services, contributing to the perpetuation of the cycle of poverty. Suppose policymakers can boost financial inclusion among marginalised or tribal populations by even a tiny amount. In that case, it has the potential to be beneficial in lowering income disparity, and it also has the potential to contribute to greater standards of life in these areas.

The findings of this research were determined by the information obtained from the members of the tribal people. As a result, further research might acquire data from other disadvantaged populations who have been financially excluded. The scope of the study was limited to determining relationships between financial inclusion, economic empowerment, and economic inequality; however, the interrelationships between the determinants of financial inclusion, economic inequality, and economic empowerment were not investigated. The study focused on establishing relationships between financial inclusion, economic empowerment, and economic inequality. As a result, work that will be done in the future on study may be expanded to investigate the interaction among these components.

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