

Chapter 6 Measurement of Financial Inclusion: Index of Financial Inclusion

6.1 Index of Financial Inclusion for Rural Population in Haryana

The extent of financial inclusion can be measured by using multiple dimensions such as number of bank account (per 1000 population), number of bank branches (per 100,000 population), amount of credit and deposit, geographical ATM penetration, demographical ATM penetration, loan income ratio, deposit income ratio, cash deposit ratio, credit and deposit accounts etc. The index is an important tool to measure the level of financial inclusion across the districts, states, countries and so on so.

In the present research, the composite Index of Financial Inclusion (IFI) is computed on the basis of three dimensions such as banking penetration (D_1), availability of bank branches (D_2) and usage of banking services in term of deposit and credit (D_3). The number of bank accounts per 1000 population in rural area has been used to measure the index of banking penetration in present composite IFI for rural population. The number of bank branches per 1,00,000 population in rural area has been used as an indicator of availability of branches to measure the extent of financial inclusion in rural areas of Haryana. The sum of deposit and credit amount per 100,000 population has been used as an indicator of usage of banking services in present index. The observed maximum and minimum value have been taken as maximum and minimum values in order to compute all three dimension indices and composite index has been constructed on the basis of

these three dimension indices by using index methodology that has been elaborate in chapter-3 Research methodology.

Table 6.1 figures out composite index for rural population in Haryana by using data on above mentioned three dimensions (D_1 , D_2 and D_3). The composite index of financial inclusion has been constructed along with three indices of banking penetration (D_1), availability of bank branches (D_2) and usage of financial services in term of deposit and credit (D_3). In this study, values of composite index are presented between zero to one. The index value one represents highest level financial inclusion, whereas zero value represents lowest level of inclusion among all districts of Haryana. Table shows that Bhiwani district has highest value in composite index of financial inclusion (0.73) for rural population. On the other hand, Palwal district has lowest financial inclusion with value 0.001 in composite IFI. Bhiwani district has first rank in bank branches opened by banks and bank accounts opened by rural population, but stands at second position in usage of financial services (D_3). Sonipat district stands at top position (0.50) in index of usage of financial service i.e. credits and deposits. It has second position (0.36) in composite IFI. According to composite IFI Sonipat, Kurukshetra and Gurgaon district have second, third and fourth rank, respectively. It can be observed that 3 out of four highest rank districts lie in the NCR. Palwal and Jind districts have 20th and 21st rank in composite. Palwal is located in socially and economically backward region of southern Haryana. This region has been neglected since independence, thus people in this region are financial excluded. Recently, government has taken some steps such as establishment of education institutions. It will certainly enhance financial and social inclusion of particular this region.

Table 6.1 Index of Financial Inclusion

Districts	D₁	D₂	D₃	IFI
Ambala	0.247	0.120	0.054	0.221
Bhiwani	1.000	0.500	0.171	0.732
Faridabad	0.097	0.018	0.053	0.088
Fatehabad	0.013	0.047	0.000	0.024
Gurgaon	0.232	0.127	0.169	0.252
Hisar	0.093	0.041	0.011	0.079
Jhajjar	0.122	0.061	0.039	0.115
Jind	0.001	0.000	0.003	0.002
Kaithal	0.031	0.055	0.011	0.043
Karnal	0.115	0.100	0.025	0.117
Kurukshetra	0.331	0.233	0.085	0.321
Mahendragarh	0.152	0.052	0.011	0.120
Mewat	0.072	0.041	0.006	0.064
Palwal	0.000	0.003	0.000	0.001
Panchkula	0.081	0.031	0.042	0.079
Panipat	0.078	0.052	0.021	0.076
Rewari	0.091	0.013	0.014	0.069
Rohtak	0.051	0.041	0.018	0.053
Sirsa	0.035	0.031	0.009	0.037
Sonipat	0.280	0.204	0.500	0.364
Yamunanagar	0.153	0.063	0.030	0.132

Source: Researcher's calculation

6.1.1 Level of Financial Inclusion in Rural Haryana

This section presents the level of financial inclusion across the districts in three categories like high financial inclusion, moderate financial inclusion and low financial inclusion. The level of financial inclusion is categorized in three categories based on various noted research works:

1. $0.5 \leq \text{IFI} < 1$ high financial inclusion
2. $0.3 \leq \text{IFI} < 0.5$ moderate financial inclusion
3. $0.0 \leq \text{IFI} < 0.3$ low financial inclusion

The present index shows three level of financial inclusion such as high financial inclusion, moderate financial inclusion and low financial inclusion. Table 6.2 reveals the district-wise ranks in D_1 , D_2 , D_3 and composite index (IFI). Table shows that out of 21 districts, only Bhiwani district has highest rank in composite index of financial inclusion. Sonipat district has highest rank in index of D_3 . It shows that banking institutions are at top rank in disbursing credit to rural households in Sonipat district. Bhiwani district has also highest rank in index of D_1 and D_2 . It shows that rural population of Bhiwani district have opened more banks accounts in comparison with rest of the districts. On the point of view of supply side, the scheduled commercial banks have also opened more bank branches in rural areas of Bhiwani district. Thus, villages of Bhiwani district have more bank branches in comparison to rest of the districts of Haryana. Two districts have moderate level of financial inclusion in rural area namely Sonipat and Kurukshetra. Rest of the districts have low level of financial inclusion according to composite index of financial inclusion such as Gurgaon, Ambala, Yamunanagar, Mahendergarh, Karnal, Jhajjar, Faridabad, Hisar, Panchkula, Panipat, Rewari, Mewat, Rohtak, Kaithal, Sirsa,

Fatehabad, Jind and Palwal. Sonipat, Kurukshetra and Gurgaon districts have second, third and fourth rank in composite IFI respectively. Being close to Delhi, the rural areas of Gurgaon and Sonipat districts have more prospects for high financial inclusion in comparison with rest of the districts except Bhiwani and Kurukshetra in Haryana.

Table 6.2 District-wise Ranks of IFI

Districts	Rank of D₁	Rank of D₂	Rank of D₃	Rank of IFI
Ambala	4	5	5	5
Bhiwani	1	1	2	1
Faridabad	10	18	6	10
Fatehabad	19	12	20	19
Gurgaon	5	4	3	4
Hisar	11	14	15	11
Jhajjar	8	8	8	9
Jind	20	21	19	20
Kaithal	18	9	14	17
Karnal	9	6	10	8
Kurukshetra	2	2	4	3
Mahendragarh	7	11	16	7
Mewat	15	13	18	15
Palwal	21	20	21	21
Panchkula	13	17	7	12
Panipat	14	10	11	13
Rewari	12	19	13	14
Rohtak	16	15	12	16
Sirsa	17	16	17	18
Sonipat	3	3	1	2
Yamunanagar	6	7	9	6

Source: Researcher's calculation

6.2 Estimation of Step Wise Regression Model

The stepwise regression model has been employed to find out the major contributor variables among all dimensions of composite Index of Financial Inclusion (IFI). The results of stepwise regression model are presented in table 6.3. It is found by applying step wise regression model that D_2 (Banking Availability) is the major contributor variable in the level of IFI across the districts of Haryana. The availability of financial services variable explains 90 percent variance in level of IFI. Moreover, 1 percent increase in availability leads to .663 percent increases in the value of IFI. The step wise regression model also presents that second important contributor variable in level of financial inclusion is D_3 (Usage). The Model II presents that 1 percent increase in usage leads to .246 percent increases in the value of IFI. Moreover, the stepwise regression method depicts that D_1 (Bank Penetration) is third important leading determinant of the level of financial inclusion. Thus, expansion of bank branches leads to financial inclusion among rural households. Therefore, governments (State and Centre) and banking institutions should make plan to extend the network of bank branches in bankable areas, but still unbanked. So that every citizen of India above eighteen years old can open an individual, full-service, safe and secure electronic bank account by January 1, 2016 as per the recommendation of Mor committee on comprehensive financial services.

Table 6.3 Estimated Coefficients of Step wise Regression Model

Dependent Variable: IFI			
No. of Districts: 21			
Sample Period: March, 2013			
Independent Variable	Model- I Coefficients	Model- II Coefficients	Model- III Coefficients
Constant	0.022 (1.520)	0.015* (2.696)	0.016* (3.392)
D2	0.663* (13.069)	0.529* (22.445)	0.314* (4.258)
D3	-	0.246* (10.335)	0.266* (12.796)
D1	-	-	0.222* (3.029)
R Square	0.900	0.986	0.991
Adjusted R Square	0.895	0.984	0.989
Std. Error	0.05102	0.01987	0.01648
F –Statistics	170.798	616.503	600.718

Source: Researcher's calculation by using SPSS 20

Note: * indicates significant at 1 percent level of significance and figures in parenthesis indicate t- value.

Chapter 7 Findings of the Study and Conclusion

The objective of “inclusive growth” in eleventh plan followed by the objective of “faster, more inclusive and sustainable growth” in the twelfth plan have positively influenced the life of a common man. Financial inclusion is an imperative for inclusive and sustainable growth. Over the last five to seven years, efforts of government and RBI have definitely brought more inclusion in financial system. Access and availability of financial services to masses especially vulnerable sections such as poor people, people living in rural and unbanked areas have remarkably enhanced.

This chapter presents major findings and conclusion of the study based on results of primary survey and secondary data. It covers various facets of financial inclusion such as financial literacy, tools of financial awareness, demand and supply side challenges in financial inclusion, tools for measurement of financial inclusion etc.

7.1 Findings of the Study

- ❖ After the submission of Dr Rangrajan Committee recommendations (2008), Government of India and RBI have taken vigorous efforts to bring more inclusivity in the financial system. Efforts have been made to influence both demand side and supply side factors of financial inclusion. These efforts have definitely brought laudable results in terms of increased access of financial services to the common man belong to vulnerable sections of society. Status of financial inclusion has been studied from macro perspective as well as through the primary survey of respondents in rural area of Haryana. Total number of bank

outlets in villages increased from 67,694 as on year ending March 2010 to 383,804 as on year ending March 2014 in India. Total number of bank branches of scheduled commercial banks (SCBs) in India has reached to 1,16,450 as on year ending March 2014. These efforts have resulted in 1,04,51,04,595 number of deposit accounts and Rs. 70,12,620.36 crore amount deposited in all scheduled commercial banks in India as on year ending March 2013. The number of credit accounts and amount of credit disbursed by all scheduled commercial banks in India is 12,82,86,291 and Rs. 55,25,317.03 crore respectively as on year ending March 2013. The banks issued about 33.79 crores KCCs in India by March 2013 to farmers for meeting their credit requirements.

- ❖ Under the Pradhan Mantri Jan Dhan Yojana, About 1276 lac bank accounts have been opened with deposit amount of Rs. 1092,814.16 lac by scheduled commercial banks including Regional Rural Banks (RRBs) as on January 31, 2015.
- ❖ The Primary survey revealed that about 94 percent of respondent households had bank accounts in Haryana, but it is observed that more than 33 percent of them do not usually make transactions. About 50 percent of respondent bank account holders make transactions only once a month. There are more than 30 percent of bank account holders in Haryana, who operate their bank accounts quarterly and some of them never operate their bank account due to various barriers such as unawareness, bank staff behaviour, 'not found suitable' products according to their needs etc. By applying ANOVA, it is found that there is statistically

significant difference between behaviour of rural households for using bank accounts in different selected districts in Haryana.

- ❖ It is observed that 75 and 14 percent of respondent rural households had bank accounts in public and private sector banks, respectively. Respondents cited the reasons for relaxing the condition of minimum balance in no-frill accounts and various government schemes as a major motivator in opening bank account in public sector banks.
- ❖ Post offices may be an important agent to bring more financial inclusion due to its vast network but unfortunately it has declined over the period of time as it has not kept pace with changing time and technology. Only 14 percent of total respondent households have accounts in post office saving banks and they deposit their savings in post offices. It was observed by interacting with SCB officials and POSB officials that usage of POSB account is continuously declining because SCBs offer better saving plans, credit schemes, better service quality and better 'feel good' than the Post offices.
- ❖ It is found by applying ANOVA that there is a statistically significant difference between the purpose of rural households for opening bank account in different selected four districts in Haryana due to their requirements and location difference.
- ❖ There are different purposes of opening bank account. About 60 percent of respondents opened their bank account for saving purpose whereas about 32 percent of them opened their bank account for the purpose of availing credit and getting salary. The field survey shows that only 36 percent of total respondent

households have fixed deposits with formal financial system. The field survey reveals that about 58 percent of total respondent households have never ever availed the credit from formal financial system in Haryana due to various reasons.

- ❖ There are around 22 percent households, who have never availed credit from formal financial system due to long processing time in loan application, while about 14 percent of respondents have never availed loan from formal financial system due to high rate of interest on credit amount. Around 9 percent of respondents don't avail credit due to easy availability of credit from their relatives and village money lenders. Around 15 percent respondents have never availed credit from formal financial system due to corruption among bank officials. They face the problem of demanding money for providing credit from financial institutions. About 23 percent of total respondent households feel no need of credit from formal financial system in rural area of Haryana, because they can meet their financial requirements by their own arrangement. It is observed by interacting with rural population that there are two major reasons for not availing credit such as long time period in application processing and secondly 'no need', because they can meet easily their money requirements from local money lenders within very short period of time.
- ❖ It is observed by interacting with rural people, village Panchs and Sarpanchs that landlord farmers in rural area usually avail credit on very low rate of interest (4 percent) on their KCCs from formal financial system and they lend the money to small farmers and deprived families on very high rate of interest.

- ❖ The field survey shows that only 36 percent of total respondent households have fixed deposits with formal financial system. The primary survey shows that about 37 percent of total respondent households never ever have/had insurance policy in rural area of Haryana due to lack of awareness about the importance of insurance policy and investment plans in insurance companies.
- ❖ SHGs Bank Linkage Programme supported by NABARD is an important tool of microfinance, but only 6 percent of total households have membership with SHGs. Thus, it seems that somehow NABARD and other financial institutions have not been able to communicate this important aspect of SHG Bank Linkage Programme to rural households in Haryana.
- ❖ Financial illiteracy is a major demand side obstacle for financial inclusion. In order to enhance level of financial literacy, government, RBI, SEBI, Commercial banks have taken many steps such as Project financial literacy by RBI etc. About 56,985 outdoor activities were conducted by Financial Literacy Centres (FLCs) during the year ending March 2014 where around 38,26,068 persons participated and benefited. But primary survey revealed that these efforts are not enough and there is widespread ignorance in rural areas of Haryana. In the primary survey it was found that about 46 and 38 percent household were not aware about No frill account and ATM/ Debit card. About 35 percent respondents were unaware about internet banking, mobile banking, DBT scheme and interest rates of banks.
- ❖ The study reveals that friends and relatives play an important role in disseminating the awareness of financial products and services in addition to government drives. About 58, 64, 64, 42 percent of respondent households came

to know about opening no frill bank account from their friends and relatives in rural area of Mahendergarh, Fatehabad and Karnal and Gurgoan respectively. Government literacy drives through various agencies are not effective in many instances.

- ❖ Technology plays a major facilitator in enhancing financial inclusion in unbanked far flung areas, especially rural areas. In the last two decades, technology (ICT) has changed the banking industry in a big way. As on 31st March 2013, total Number of ATMs of Scheduled Commercial Banks including all old & new private sector banks and foreign banks in India were 1,14,014 out of which 11,564, 27,710, 36,611 and 38,629 ATMs were located in rural, semi urban, urban and metropolitan areas respectively.
- ❖ The primary survey results revealed that only 11 percent of total households have internet banking and only 9 percent of total households have mobile banking. In rural area of Haryana, 63 percent of total respondent households have ATM cum Debit card. Out of those who have ATM cum Debit card, about 65 percent use it five times and 22 percent use it ten times a month. On the other hand about 15 percent of total ATMs/Card holders usually do not use ATMs in rural area of Haryana. Frequency of usage of internet and mobile banking is very low.
- ❖ Measurement of the level of financial inclusion through construction of an Index is very useful for researchers, banks and policy makers. It is found by constructing IFI that Bhiwani district has the highest value in composite index of financial inclusion (IFI value = 0.73) for rural population. On the other hand, Palwal district has the lowest financial inclusion with value 0.001 in composite

IFI. Bhiwani district has the first rank in bank branches opened by banks and bank accounts opened by rural population, but it stands at second position in usage of financial services (D_3). Sonipat district stands at top position (0.50) in index of usage of financial services i.e. credits and deposits (D_3). It has second position (0.36) in composite IFI. According to composite IFI; Sonipat, Kurukshetra and Gurgaon district have second, third and fourth rank, respectively.

- ❖ The results of stepwise regression approach revealed that D_2 (Banking Availability) is the major contributor variable in the level of IFI across the districts of Haryana. The availability of financial services variable explains 90 percent variance in level of IFI. Moreover, 1 percent increase in availability of bank branches leads to .663 percent increase in the value of IFI. The step wise regression model also presents that second important contributor variable in level of financial inclusion is D_3 (Usage). The Model II presents that 1 percent increase in usage leads to .246 percent increase in the value of IFI.
- ❖ The results of Logit model reveal that all socio-economic variables except household income have positive impact on decision of household regarding opening bank account. The null hypothesis that there is no relation between income of household and decision of opening bank is rejected at 10 percent level of significance, whereas income of household has a positive impact on odd ratio in favour of opening bank account at 10 percent level of significance. It is observed by conducting field survey that in certain cases respondent household head does not disclose real household income. The null hypothesis that there is no relationship between education of household head and decision of opening bank

account is rejected at 5 percent level of significance and alternative hypothesis is accepted, whereas educational qualification of household head has positive impact on decision of opening bank account at 5 percent level of significance. The null hypothesis that there is no relationship between occupation and decision of opening bank account is rejected and alternative hypothesis is accepted, whereas occupation of household head has positive impact on decision of opening bank account decision at 5 percent level of significance. The null hypothesis that there is no relationship between land holding and decision of opening bank account is rejected at 5 percent level of significance, whereas land holding by household head has significant positive impact on decision of opening bank account at 5 percent level of significance.

7.2 Recommendations

- ❖ Although there have been many efforts to enhance financial literacy among rural households, at many instances it is observed that these literacy campaigns are superficial. Therefore; Government, RBI and banking institutions should design financial literacy programs very effectively and cautiously which suits the local people of a particular area.
- ❖ In rural area of Haryana, there are very few accounts in private sector banks. Private sector banks should take it as an opportunity i.e. *fortune at the bottom of pyramid* not as an RBI mandate. They should use technology and innovative business model to reach unbanked rural masses.
- ❖ It is observed during the field survey that some of the rural households don't feel secure to use ATM/ Debit card because of many instances of robbery at ATM

premises as well as other frauds. Therefore, it is recommended that banking institutions should provide adequate security at ATM premise.

- ❖ The study may recommend that the state and centre government should take initiatives for promoting microfinance through SHG in rural areas of Haryana, quite effectively.
- ❖ It is observed by interacting with Gram Panches/Sarpanches and rural households that Primary Agriculture Cooperative Society (PACS) is one of the key sources of credit from financial institutions for the rural masses in rural areas of Haryana, but these are not serving efficiently to public. The post office saving banks (POSBs) are not performing well and their services are declining continuously in rural areas due to inadequate financial services/product according to the rural masses. The scheduled commercial banks (SCBs) are providing better financial services/products to public as compared to POSBs. Thus, the present research recommends that capacity building initiatives for revival of PACS and POSBs may be very useful for financial inclusion of rural areas.
- ❖ By applying step-wise regression model, it is found that the expansion of bank branches leads to financial inclusion among rural households. Therefore, it is recommended that governments (State and Centre) and banking institutions should make plan to extend the network of bank branches in unbanked rural areas. So that every citizen of India above eighteen years old can open an individual, full-service, safe and secure electronic bank account by January 1, 2016 as per the recommendation of Mor committee on comprehensive financial services.

- ❖ Throughout the research, it is realized that banking institutions should provide financial services/products according to customers' choice, needs and requirements, so that every citizen of the country can be part of inclusive financial system.

7.3 Conclusion

Global financial Development report 2014 reveals that around more than 2.5 billion adults (around half of world adult population) have no bank account both on account of demand and supply side barriers. Many countries including developed one such as USA and Australia have realized that structured efforts are required to enhance financial literacy for financial inclusion. Around 50 countries set targets of financial inclusion in their formal development plans. Today it is increasingly realized that the idea of financial inclusion is key not only to a statutory compliance but it is also a profitable and sustainable business proposition based on the popular philosophy of *fortune at the bottom of pyramid*. India has invested considerable amount of resources to extend the banking network to offer financial services to unbanked people.

After the submission of Dr Rangrajan Committee recommendations (2008), Government of India and RBI have taken vigorous efforts to bring more inclusivity in the financial system especially in rural areas. Efforts have been made to influence both demand side and supply side factors of financial inclusion. Since last census of 2001, percentage of households having bank account have increased from thirty to around fifty five percent in rural India. During the last five years new branches opened in rural area are three times that of urban areas. Banks have been permitted (since 2006) to use intermediaries as

business correspondents and business facilitators to provide financial services in far flung unbanked rural areas. In such areas, 50,000 ultra small branches have been set up by March 2013.

Haryana, being geographically adjoining to the capital of India, has many opportunities as well as challenges for realizing the goal of financial inclusion. It being a small state it has geographical, social and economical diversities. This is evident from the study that there is vast disparity in financial inclusion front. According to number of bank offices in urban area, Gurgaon stands at the top position and Bhiwani holds top position in number of bank offices in rural areas, whereas Palwal and Jind hold in last position.

The study assessed the level of financial literacy among rural households in Haryana. It is found that there is widespread ignorance on financial matters among rural households. Major sources of financial awareness are friends and relatives. Thus there is huge potential for financial institutions to capture the untapped opportunity of providing financial services. It was also revealed that there is very low level of usage of technology including internet banking, mobile banking and ATM in banking sector among rural households. About one tenth of total respondent households use internet banking and mobile banking. Main reasons for low usage of technology are lack of capabilities and security concerns in the use of technology. Usage of other financial services like insurance is abysmally low. Frequency of usage of financial services is also very low. It is also revealed that many accounts are almost dormant which do not serve the cause of inclusion.

The study analyzed the impact of socio-economic variables on the decision of households regarding opening bank account. Logistic regression analysis revealed that education, income and occupation have significant impact on decision to open bank account by respondent households. The study developed an Index of Financial Inclusion (IFI) to measure the level of financial inclusion in various districts of Haryana. IFI revealed that Bhiwani district has the highest value in composite index of financial inclusion for rural population. On the other hand, Palwal district has the lowest financial inclusion. These results indicate that districts with more social and economic empowerment have performed better in inclusion front. IFI Stepwise regression approach revealed that D_2 (Banking Availability) is the major contributor variable in the composite IFI across the districts of Haryana.

Although the financial inclusion initiatives of government and RBI have delivered encouraging results in financial inclusion, there is huge untapped potential lying in rural unbanked areas in Haryana. Effective programs for financial literacy and capacity building are required to tap this fortune at the bottom of pyramid. Banking institutions should design, develop and deliver tailor made financial services which suite to the customers' choice and requirements, so that every citizen of the country participates in inclusive financial system. All stakeholders in inclusion drive should take it as a sustainable and profitable business proposition rather than a mandatory compliance.