

Influence of financial inclusion on financial literacy a study in rural Tamil Nadu

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ABSTRACT : This study has assessed the influence of financial inclusion on financial literacy among the rural households of Tamil Nadu based on the data collected from 640 respondents during the year 2018. The study used the components of financial literacy viz. *financial attitude, financial behaviour and financial knowledge* as dependent variables and financial inclusion as an independent variable. One way Multivariate Analysis of Variance (MANOVA) was employed to investigate the differences among dependent and independent variables. When MANOVA was executed to investigate financial inclusion differences in financial literacy, the study have found a statistically significant impact of financial inclusion on the combined dependent variable. When the dependent variables were considered separately, the results have shown that financial inclusion has a significant impact on all the components of financial literacy.

Key words: Combined effects, financial inclusion, financial literacy, financial attitude, financial behaviour, financial knowledge,

Financial literacy is the base and primary step for financial inclusion. It provides knowledge on merits and demerits of financial products and services. Based on the acquired knowledge, an individual can select the right product which suits his/her needs. Financial literacy plays a vital role in financial inclusion, inclusive growth and sustainable prosperity. It ensures that the financial services should be reached to the unreached sections of the society.

Despite its importance, many studies around the world indicated that much of the world's population still suffers from financial illiteracy. (Lusardi & Mitchell, 2011; Atkinson & Messy, 2012; Brown & Graf, 2013; Thaler, 2013; World Bank, 2014). For adopting effective financial literacy strategies, initially there must be a model that allows the researcher in determining the individuals' financial literacy level.

Although research in the financial literacy field had increased over the years, there is little consistency in the way how it was defined, as several authors addressed the topic differently, assigning different connotations to it (Hung *et al.* 2009). Also, studies highlighted the ambiguous use of financial literacy, especially in grasping the differences between those constructs, i.e. financial knowledge or financial education. Robb *et al.* (2012) made a distinction between the terms by claiming that the main focus of financial education was

knowledge, while financial literacy involves, in addition to knowledge, the individuals' behavior and financial attitude.

A significant aspect related to the issue of financial literacy would be the identification of its relationship with socio-economic and demographic variables. Several studies sought to identify these relationships. Results shown by Chen and Volpe (2002), Lusardi and Mitchell (2011), Atkinson and Messy (2012), the OECD (2013), Brown and Graf (2013) and Jeyaram and Mustapha (2015) pointed out that women have lower financial literacy levels than men.

Chen and Volpe (1998) found out that college students had an inadequate knowledge level, especially in relation to investments. In turn, Thaler (2013), Homan (2015), and Agarwalla *et al.* (2015) suggested that financial literacy was highly correlated with other factors and, among them higher education might be the key. Atkinson and Messy (2012) observed that financial literacy tends to be higher among adults in the middle of their life cycle, and it was usually lower among young and elderly individuals. Results reported by Arora (2016) suggested that single women were significantly more likely to have higher financial literacy than married women. Monticone (2010) and Atkinson and Messy (2012) found that low income levels are associated with low financial literacy levels. The objective of the present study was to assess the influence of financial inclusion on

financial literacy among the rural households of Tamil Nadu.

MATERIALS AND METHODS

In line with the objective stated above, Tamil Nadu has been selected as the area of study, because of its high credit-deposit ratio as compared with other states, as on March 2017 (Basic Statistical Returns of Scheduled Commercial Banks in India, RBI, various issues). In addition to the highest credit-deposit ratio, the state's literacy rate is higher than nation's average literacy rate, i.e. 80.09 per cent (Census, 2011). Also, it is the second largest contributor to the nation's Gross Domestic Product (Economic Survey, 2017). Tamil Nadu comprises of four regions namely Central, North, South and Western regions. Two districts were selected from each region of the state having the highest and least literacy rate as per Census 2011. Then from each selected district two taluks

were chosen based on the same criteria used in order to select the districts. Likewise, two villages have been picked from each selected taluks. Then, 20 respondents from each selected villages have been surveyed. On the whole, eight districts, 16 taluks, 32 villages and 640 respondents were selected (Table 1).

A sample of 640 respondents has been surveyed based on simple random sampling technique. Lists of all households in each of the selected villages were prepared and the respondents were selected by lottery method. Primary data were collected from the sample respondents of rural households in the study area by personal interview method. Using well-structured interview schedule, the details were collected during June – November 2018. This study used Multivariate Analysis of Variance to investigate the difference between dependent and independent variables.

Table 1: List of selected districts, taluks and villages

	Districts	Taluks	Villages	No. of Sample
Central	Ariyalur	Udayarpalayam	Dharmasamudram Venmankondan	40
		Sendurai	Ponparappi Vanjinapuram	40
	Tiruchirapalli	Manachanallur	Koothur Thiruppangali	40
		Manapparai	Vaiyamalaipalayam Mohavanur	40
North	Kancheepuram	Tambaram	Mudichur	
		Madurapakkam	Vilangadu	40
		Maduranthakam	Vilagam	
	Villupuram	Tindivanam	Ural Thengapakkam	40
Ulundhurpettai		Odayanandal Poondi	40	
South	Kanniyakumari	Agasteeswaram	Azhagappapuram Marangoor	40
		Thovalai	Esanthimangalam Poigaimalai	40
	Dindigul	Dindigul	Tamaraikulam Sakkiliankodai	40
		Vedasandur	Kulathur	40
West	Coimbatore	Coimbatore south	Dhalipatti Seerapalayam Boluvampatti	40
		Pollachi	Kulathur Rasichettipalayam	40
	Dharmapuri	Dharmapuri	A.Jettihalli Vathalaimalai	40
		Pennagaram	O.Goundanahalli Vattuvanahalli	40
	8	16	32	640

Multivariate Analysis of Variance

In Multivariate Analysis of Variance (MANOVA), instead of a univariate F value, we would obtain a multivariate F value (Wilks' lambda) based on a comparison of error variance/covariance matrix. Although we only mentioned Wilks' lambda here, there were other statistics that might be used including Hotelling's trace and Pillai's criterion. The 'covariance' here was included because the two measures were probably correlated and we must take this correlation into account while performing the significance test.

MANOVA use multiple dependent variables and an independent variable. The dependent variables used would be linear combinations of the measured dependent variables. If the overall multivariate test is significant, then the respective effect is significant. In fact, after obtaining a significant multivariate test for a particular main effect or interaction, customarily one would examine the univariate F tests for each variable to interpret the respective effect. In other words, one would identify the specific dependent variables that contribute

to the significant overall effect. Partial eta squared = Effect size; According to Vacha-Haase and Thompson (2004), if the effect size was greater than 0.14, then the variables had a strong relationship. The effect size indicated that the percentage of variance of dependent variables was accounted for by the difference between the two groups and it confirmed that there was a strong relationship between the independent factors and dependent factors.

RESULTS AND DISCUSSION

MANOVA was executed to investigate financial inclusion differences in financial literacy. Preliminary assumption testing was conducted to check for normality, linearity, univariate and multivariate outliers, homogeneity of variance-covariance matrices and multicollinearity with no serious violations noted. The study have found a statistically significant difference between financial inclusion on the combined dependent variable (Wilk's lambda=.86; F=31.95; p=0.000; partial eta squared=0.135) (Table2).

Table 2: Multivariate Tests

	Effect	Value	F	df	Sig.	Partial eta ²
Intercept	Pillai's Trace	.517	218.234	3.000	.000	.517
	Wilks' Lambda	.483	218.234	3.000	.000	.517
	Hotelling's Trace	1.070	218.234	3.000	.000	.517
	Roy's Largest Root	1.070	218.234	3.000	.000	.517
Financial Inclusion	Pillai's Trace	.135	31.945	3.000	.001	.135
	Wilks' Lambda	.865	31.945	3.000	.000*	.135
	Hotelling's Trace	.157	31.945	3.000	.001	.135
	Roy's Largest Root	.157	31.945	3.000	.001	.135

*Significant at 1 percent level

Table 3: Test of Between Subject Effects

Source	Dependent variable	F	Df	Sig.	Partial eta ²
Intercept	Financial attitude	239.493	1	.000	.281
	Financial behaviour	258.010	1	.000	.296
	Financial knowledge	602.123	1	.000	.495
Financial Inclusion	Financial attitude	38.077	1	.002	.058
	Financial behaviour	77.220	1	.004*	.112
	Financial knowledge	61.162	1	.003	.091

*Significant at 1 percent level

Table 4: Descriptive Statistics

Source	Dependent variable	Mean	Std. deviation
Financial attitude	Financially included	1.656	.64145
	Financially excluded	2.166	.61918
Financial behaviour	Financially included	1.525	.67527
	Financially excluded	2.234	.59502
Financial knowledge	Financially included	1.989	.36407
	Financially excluded	2.223	.42145

When the results for the dependent variables were considered separately (Table 3) for each dependent variables viz. financial attitude, financial behaviour and financial knowledge, the difference to reach statistical significance, using a Bonferroni adjusted alpha level of 0.017 was financial attitude ($F=38.07$; $p=0.000$; partial eta squared=0.058), financial behaviour ($F=77.22$; $p=0.000$; partial eta squared=0.112) and financial knowledge ($F=61.16$; $p=0.000$; partial eta squared=0.09). An inspection of the mean scores indicated that respondents being financially included reported a higher level of financial attitude (Mean=2.16, SD=.62), financial behaviour (Mean=2.23, SD=.59) and financial knowledge (Mean=2.22, SD=.42) (Table 4).

CONCLUSION

This study has assessed the influence of financial inclusion on financial literacy among the rural households of Tamil Nadu based on the data collected from 640 respondents during the year 2018. The study used the components of financial literacy viz. *financial attitude, financial behaviour and financial knowledge* as dependent variables and financial inclusion as an independent variable. When MANOVA was executed to investigate financial inclusion differences in financial literacy, the study have found a statistically significant impact of financial inclusion on the combined dependent variable. When the dependent variables were considered separately, the results have shown that financial inclusion has a significant impact on all the components of financial literacy.

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