

Effect of Demographic Factors, Financial knowledge and Financial Behavior on Financial Literacy of Teachers

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Abstract:

Financial literacy enables an individual to make corrective and effective decision for financial planning and in every monetary context. The present study aims to examine the impact on financial literacy through financial attributes and demographic variables. For financial attributes, we have opted the recommended factors suggested by OCED, that is, financial knowledge and behavior. The primary survey is conducted in Punjab, and 615 samples are collected from respected teachers of colleges and universities through self-structured questionnaire. The structure equation modelling results via SPSS AMOS verified marital status, age, designation level, years of service and annual income positively impact the financial attributes in teachers. It was found that SEM model is able to explain a total of 84.2% of the variation in financial literacy of teachers. The study examined a significant and positive role of demographic factors on the literacy levels in public and private colleges and universities of Punjab. The study may aid governments and policymakers in financial strategies by taking care the strong and influential demographic factors impacting the literacy level.

Keywords: *Financial Literacy; Demographic Factors; Financial Knowledge; Teachers; SEM AMOS*

JEL CODE: G53; J1; D8

1. Introduction:

Faster, sustainable and inclusive growth is the major objective of the Indian government. Financial inclusion has two pillars- financial access and financial literacy. Soon after Independence the government of free India laid emphasis on enhancing the network of financial institutions in the country so as to provide access to financial resources to everyone. However, financial literacy remained a neglected issue. Lack of adequate efforts on enhancing financial education in the past had led to people taking irrational decisions and improper management of financial resources which eventually lead them to a situation of financial distress. In the United Nations Report (2012) financial illiteracy has been identified as one of the primary bottlenecks of achieving financial inclusion and development across the world. In order to achieve the wider objective of faster, sustainable and inclusive growth, it is very important to ensure financial literacy in the country.

A teacher cannot perform better if his / her mind is preoccupied by the financial distress he/she is suffering. Therefore if the Ministry of Human Resource Development can offer personal finance education to teachers, it will convey a message to teachers that they are concerned with their long term welfare. Moreover, information from this study could serve as a guide to the Ministry of Human Resource and in addition the University Grants Commission (UGC) in fashioning out in-service training programmes to enhance teacher's knowledge about how they can do effective financial planning to ensure a better present and a safe future. The implications will also have an impact on the remuneration policies framed by the Ministry of Finance for university and college teachers. Consumers' responsibilities for retirement investment have grown, with the government encouraging citizens to move from public pensions into private pensions. Employers are also persuading employees to shift from defined-benefit plans into defined-contribution plans and responsibility for their own investment strategies, including choice of managed fund provider. Therefore, the insights from the study will serve as multi-faceted inputs for policy formulation and execution by different ministries of the government so as to improve the financial literacy of the population in general and of teachers in particular.

Therefore, the objective of the study is to determine the role of financial attributes (financial knowledge, attitude and behavior) and demographic factors of teachers on financial literacy. The paper is organized as section 2 demonstrates the literature review and hypothesis development. Section 3 narrates the sample size, survey instrument and research methodology adopted ; followed by empirical analysis of Structure Equation Modeling AMOS 22 in section 4. Finally section 5 depicts the discussion and conclusion.

2. Literature Review and hypothesis development:

2.1 Demographic Factors

Many researchers found that women have less financial literacy than men when they surveyed people's financial literacy (*Chen & Volpe, 2002; Goldsmith, 2006; Eckel & Grossman, 2002*). Women learn personal finance through their parents, according to *Chen & Volpe (1998)*, but they are less knowledgeable than men. According to Chen and Volpe, ordinary women are less knowledgeable about personal finance than males. In 22 of the 36 questions, women score lower than men, with only one question giving them a greater score.

They infer that women score lower because they either do not understand basic personal finance facts, vocabulary, or concepts, or they perform poorly on math-related tasks.

According to an *S&P survey* from 2014, India's financial literacy rate is 25%. In a research conducted by Visa, India is ranked 23rd out of 27 countries. Steps taken by the government and other organisations to increase financial literacy. *Agarwala et al. (2012)* conducted a survey of 3,000 persons in India and found that Indian financial literacy falls below international standards. Workers' and pensioners' financial behaviour and attitudes, on the other hand, remain upbeat. According to a study conducted by *Koshal et al. (2008)*, the grades of MBA students in India have no significant impact on their economic literacy scores. Employees are digitally savvy, but they are not financially literate, according to *Kalyani and Kavya Reddy (2018)*. *Sekar & Gowri (2015)* analyzed Gen Y employees and discovered that gender, education, income, age, and other characteristics influence financial literacy. According to *Saurabh Sharma's (2015)* research, young employees' financial knowledge is not encouraging. Male literacy is higher than female literacy, and it is linked to both education and income. In their study, *Hibbart et al. (2001)* backed up the claim that a lack of financial understanding can lead to financial issues for students. According to *J. P. Knapp (1991)*, improving financial literacy is a viable technique for improving people's quality of life. Positive attitudes are aided by increased financial information. It leads to better decision-making by allowing them to make better use of their assets in order to improve their level of living. According to *Lusardi, Mitchell, and Curto (2006)*, socio-demographic characteristics and family financial sophistication were substantially connected to financial literacy. Parents of a college-educated male student who had invested in stocks and put money aside for retirement were more interested in learning about risk diversification than women whose parents were less educated and less wealthy. While funding for financial education and literacy is increasing. While funding for financial education and literacy is increasing, studies by *Marcolin and Abraham (2006)*, *J Schuchardt et al. (2008)*, *Remund (2010)*, and *Huston (2010)* have found that there are still significant setbacks in reducing commonly distributed measures of financial literacy established by comprehensive psychometric analysis. *Mark Taylor (2011)* identified important financial literacy drivers in his research. He uncovered numerous major financial literacy determinants using a panel data model, including age, health, family size and structure, housing tenure, and the job status of person and other household members. According to *Michael (2009)*, a lack of financial literacy can impair people's ability to make financial decisions. As an alternative to financial awareness and literacy, financial guidance should be provided to persons who have financial decision-making difficulties.

In a study of 250 Cape Coast University UG and PG students conducted by *Ansong and Gyensare (2012)*, financial literacy was found to be positively associated to age, work experience, and mothers' education. Financial literacy is unaffected by study levels, occupation, parents' education, media access, education, or money. *Mandell (2008)* calculated the average accuracy rate of college students' financial literacy based on their specialization in what they were learning in their study. According to the study's findings, the average of all respondents was 61.9 percent. However, the accuracy percentage for the Business or Economics specialization was 62.4 percent, which was higher than the overall

average. Its share, however, was lower than that of Engineering (63.2%), Science (64.0%), and Social Science (64.0%).

Therefore, we can hypothesize:

Hypothesis 1: Demographic Factors are positively associated with financial literacy

2.2 Financial knowledge

The OECD addresses financial literacy in three dimensions namely, Financial Knowledge, Financial Behavior and Financial Attitude.

Financial knowledge refers to a person's level of knowledge of the core competencies and the conviction that financial knowledge will lead to financial wellbeing. Financial literacy is understood by the link from knowledge to skills, to attitudes, to behaviour and this link is important, because knowledge influences attitudes, which then manifests into particular types of behaviour. Attitudes include whether people live for today or for the future, or whether insurance is necessary or preferences for risk etc.

Working with the definition, it appears that individual traits such as cognitive ability (particularly numeracy), personality type, and preferences may affect financial knowledge and acquisition of skills, intrinsic motivation and confidence to make consequential financial decisions and thus impact on levels of financial literacy. Learning-by-doing generates an internal feedback loop – individuals update their knowledge, skills, motivation and confidence with more financial experience. A lack of financial literacy, therefore, all else equal, can both lead to and arise from differences in opportunities to gain knowledge and exposure to financial matters.

Therefore, we can hypothesize:

Hypothesis 2: Financial Knowledge is positively associated with financial literacy

2.3 Financial Behavior

Individual's actions and behaviour are what ultimately shape their financial situation and wellbeing, in both the short and long term. Some types of behaviour, such as, ignorance of planning future expenditures, choosing financial products without any evaluation or putting off bill payment, may impact negatively on an individual's financial situation and well-being. It is therefore absolutely necessary to assess financial behaviour to determine financial literacy.

DeVaney et.al. (1996) conducted an experimental study to examine cash flow and credit use three months after participants completed a series of women's financial information workshops. The results showed that 24% of the participants started to set up bill payment system as a practice after attending the workshop. This study found that age was positively related to the probability of using bill paying system. For creating and maintaining an emergency fund, 44% of the respondents started the practice after getting financial knowledge. Regarding obtaining credit, 22% of respondents reported making a change in obtaining credit on their own name. The only variable that was significantly related to adoption of this financial behaviour was marital status. Those not married were less likely to adopt this behaviour. One third of the participants indicated that they limited the number or use of credit cards after completion of workshop. While four out of ten participants began to save regularly or increased regular saving

Berhiem et.al. (1997) examined the effects of mandated financial curriculum in schools. They attempted to determine whether mandated financial education across the states and over the time in high school had any long term behaviour effect on adult decisions regarding savings. The data were collected in the month of November 1995, from the nationally representative sample of respondents between the ages of 30 and 49. By using regression analysis on variables related to consumer education in high school and adult financial behaviour, their results have shown mandates significantly increase the exposure to financial education, and has positively raised the rates of saving (a flow variable), and hence accumulate more wealth (a stock variable) during the adult lives . The results indicated that while the effects of this mandate have been significant, but the effect is gradual rather than immediate. They also found that the self reported rates of saving rise significantly with education and earnings. The results also show that individuals who received personal finance instructions had a saving rate 1.5 percent greater than individuals who received no instructions, and wealth is increased by an amount equal to earnings for one year within 15 to 20 years after graduation from high school. They also concluded that financial education can be used to stimulate personal savings.

Therefore, we can hypothesize:

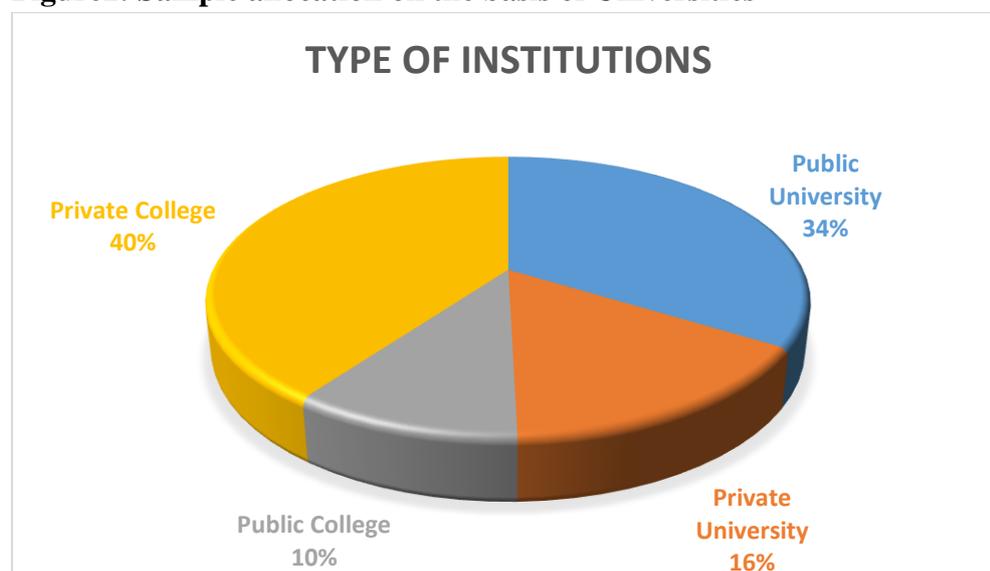
Hypothesis 3: Financial Behavior is positively associated with financial literacy

3. Research Design and Methodology:

3.1 Sample Size and Population

The primary data is collected from the sampled units of the population which was consisting of teachers from various universities and colleges in Punjab. Since the population of the selected location for the study is very large and cannot be approached for the data collection because of cost and time constraints, hence to study the financial literacy level, a sample of 615 (305 from universities and 310 from colleges) respondents would be drawn using multistage sampling technique. The details of samples are provided in figure 1. Focus is provided on equal basis of sample from public and private (colleges and universities) in total.

Figure1: Sample allocation on the basis of Universities



3.2 Survey Instrument:

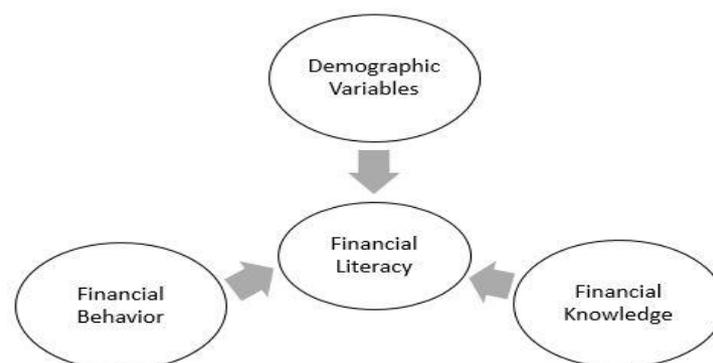
A self-structured questionnaire is prepared and distributed by post, by hand and sent through e-mails with two to four follow-up reminders among universities and colleges of Punjab. The questionnaire survey was designed based on the inputs from the prior literature (based on section 2) and some items were self-framed so as to cater to the specific needs of the study. During collection of primary data proper measures are taken to keep the errors at the minimum and avoid any kind of discrepancy so that it could be proved as representative of the population. For the purpose of data collection both online and offline medium was used to get the questionnaire filled up. Those questionnaires which were not filled up properly were discarded and new ones were being filled up in place.

The initial questionnaire survey was put to pilot testing and expert opinion was also sought to remove any ambiguity and hence increase the reliability of the instrument. The Cronbach alpha of the pilot study for all the variables came above 0.7 (for details refer Table1).

3.3. Research Methodology and conceptual model

Structural equation modeling is used to examine the relation between the latent and the observed/measured variables. The researcher can measure only the observed/measured variables and not the latent variables. Hence, the researcher develops a conceptual model (Figure 2) to identify observed/measured variables and is also able to express latent variables in terms of observed/measured variables. For developing the SEM framework SPSS AMOS 22 statistical software has been used for the measurement and structural model. The structural component models determine the relation between the latent variable constructs and the measurement component models and also explains how exogenous variables measure the latent variable constructs. Both the models, measurement, and structural model combine to create a holistic model that broadly describes the relation amongst the variables.

Figure 2: **Conceptual Model**



4. Empirical Findings and Results:

The aim of the study is to examine the role of demographic variables on the financial literacy. Further the impact of financial attributes [Financial Knowledge (FK); Financial Behavior (FB) and Financial Attitude (FA)] are examined on financial literacy through Structured Equation Modelling (SEM) via SPSS AMOS. Firstly, the descriptive statistics of all the factors are described in section 4.1. Then the model's statistical tests and properties are

provided to ensure validity and reliability, that is, the model fit- goodness of fit results of measurement model is provided in section 4.2. Finally, The measurement model results, that is, the empirical findings are provide in section 4.3

4.1 Descriptive Statistics

Table1 represents that the responses of teachers regarding financial literacy collected through survey based on questionnaire. Demographic variables used are age, marital status, annual income, designation and years of services spent by the teachers. The mean value for age (1.65) and designation (1.30) signifies that major age group is young, that is falling in 25-35 years and are at the post of assistant professors or lecturers. The income level of the respondents fall into the category of 5 to 10 lakhs per annum based on the value (1.66). Further, the years of services also signifies low time span (1.30),that is up to 5 years. As the age group is young and so do the designations they hold in universities and colleges.

Three parameters of financial attributes are utilized based on the literature review in section 2. These parameters are measured on the Likert Scale 1-5. The average value of all the attributes near to 4 signifies that all respondents agree for the same, that is, financial knowledge (3.877); financial attitude (3.548) and financial behavior (3.722). Later, financial literacy is assessed by framing statements in the questionnaire on the Likert Scale of 1 to 5. Majority of the responses are near to 4. The mean values signifies that teachers are particular about saving level (4.08) and the risks involved (4.06).

Lower the values of standard deviation and coefficient of variance reflect the much consistency in respondents' opinions regarding the impact of demographic variables and financial attributes on financial literacy. The study had good reliability as Cronbach alpha for all sections was greater than the acceptable range of 0.7.

Table 1: Descriptive Statistics of all dependent and independent variables

	N	Scaling	Mean		Std. Deviation	Cronbach Alpha
			Stats	Std error		
Demographic Variables:						0.880
Age	615	1 to 3	1.65	0.032	0.804	
Marital Status	615	1 to 2	1.02	0.020	0.485	
Income	615	1 to 4	1.66	0.030	0.808	
Designation	615	1 to 3	1.30	0.020	0.604	
Years of Service	615	1 to 3	1.03	0.038	0.943	
Financial Attributes:						0.772
Financial Knowledge	615	1 to 5	3.877	0.018	0.449	
Financial Attitude	615	1 to 5	3.548	0.019	0.476	
Financial Behavior	615	1 to 5	3.722	0.024	0.610	
Financial Literacy						0.876
Assessment of Risk	615	1 to 5	4.06	0.034	0.831	
Cautious	615	1 to 5	3.59	0.038	0.941	
Saving Level	615	1 to 5	4.08	0.032	0.783	
Scam	615	1 to 5	3.78	0.037	0.915	
Security	615	1 to 5	3.86	0.034	0.845	

Source: Authors compilation with SPSS

4.2 Model Fit- Reliability and Validity

The impact of demographic variables and financial attributes are evaluated on the financial literacy level of teachers via developing a model using Structured Equation Modeling (SEM). Firstly, we performed confirmatory factor analysis (CFA) on all the set of data collected through structured questionnaire which came satisfactory. CFA is applied before developing a structured equation modelling as suggested by Andersons and Gerbing (1998). Following the recommendation of Bollens, (1990); Muller (1996) and Hu and Benter (1995) multiple indices of model fit are taken into consideration. They recommended using chi-square statistics, CFI (comparative fit index), NFI (the normed fit index).

For the CFA model (**Figure 3 and Table 2**), the overall chi-square is significant, which is $\chi^2 = 61.949$, $df= 17$ and $p < 0.000$. The CFI, NFI are all near to 0.90, the basic criteria indicated for a good fit model (Bandalos, 1996). In addition, as suggested by Arbuckle and Wothke, (2001) the root square mean error (RMESA) is 0.066 (below 0.08) suggests model represents a good approximation.

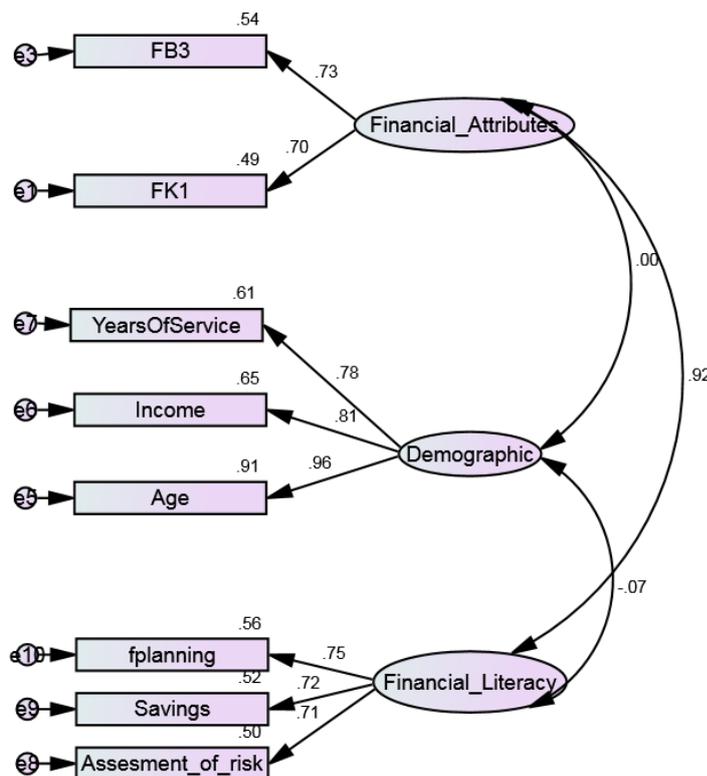
For measurement model (Table 2), the CMIN/df is below 5, that is 3.442; all the criteria of good model fit are met- CFI and NFI above 0.9 (CFI; 0.979 and NFI 0.971); RMESA is 0.063. It defines a good measurement model developed for the study.

Table 2 Model Fit- Goodness of fit results

Model	χ^2	Df	CMIN/DF	CFI	NFI	RMSEA	p-value
CFA	61.949	17	3.644	0.979	0.971	0.066	0.000
Measurement Model	61.955	18	3.442	0.979	0.971	0.063	0.000

Source: Authors compilation with AMOS

Figure 3: CFA model



4.3 Findings

Figure 4 and Table 3 states the findings of the study, the overall impact on financial literacy among teachers. The model represents that demographic variables influence the financial attributes (p-value: 0.072; loading value -0.048 and c.r= -1.800) and further financial attributes impact the financial literacy level (p <0.000; loading value 1.675 and c.r= 12.560). Financial attributes, that is financial behavior and financial knowledge and demographic variables are able to explain a total of **84.2% variation** in financial literacy in teachers.

Among the demographic factors, age (p <0.000; R²=0.914), income (p <0.000; R²=0.648, loading value 0.846 and c.r= 24.454) and year of services devoted (p <0.000; R²=0.615, loading value 0.961 and c.r= 23.544) of teachers play a crucial role in impacting the financial literacy. This implies with more experience and age the level of financial literacy rise.

Further among financial attributes- financial knowledge (p-value< 0.000; R² 0.492; loading value: 0.701) and financial behavior (p-value < 0.000; R² 0.540; loading value 1.937) plays a vital role in influencing financial literacy level.

All the demographic and financial attributes of the teachers impact the financial literacy in teacher at greater level. Teachers are cautiously plan (p <0.000; loading value 1.040 and c.r= 15.672; R² 0.750) about their savings and expenses. Further, the study evaluated that university and college teachers are aware about saving plans (p <0.000; loading value 1.025 and c.r= 15.215; R² 0.519) and in assessing the risk involved (p <0.000; loading value: 0.708; R² 0.501). Therefore, the objective 3: To study the influence of demographic factors on financial literacy is achieved.

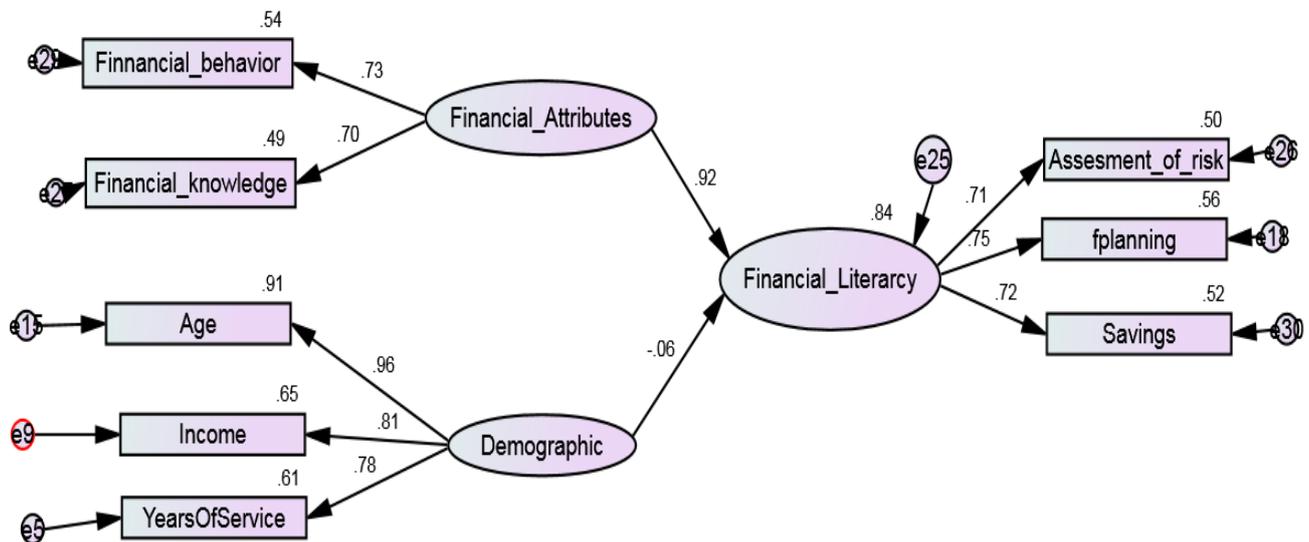
The analysis state that demographic variables have an impact on the financial literacy of teachers. Among them, their age, years of service and annual income has the direct impact.

Table 3: Measurement Model

Factors	Regressi on weights estimate	S.E.	C.R.	P-value	Standar dized Regressi on Weights	Squared Multiple Correlations
Financial Literacy ← Financial Attributes	1.675	0.133	12.560	0.000***	0.915	0.842
Financial Literacy ← Demographic	-0.048	0.027	-1.800	0.072*	-0.064	
Year of Services ← Demographic	0.961	0.041	23.544	0.000***	0.784	0.615
Income ← Demographic	0.846	0.035	24.454	0.000***	0.805	0.648
Age ← Demographic	1.000			0.000***	0.956	0.914
Savings ← Financial Literacy	1.025	0.067	15.215	0.000***	0.720	0.519
Assessment of Risks ← Financial Literacy	1.000				0.708	0.501
Financial Planning ← Financial Literacy	1.040	0.066	15.672	0.000***	0.750	0.562
FK ← Financial Attributes	1.000				0.701	0.492
FB ← Financial Attributes	1.937	0.139	13.932	0.000***	0.735	0.540

*** p<0.01 **p<0.05 *p<0.10 Source: Authors compilation with AMOS

Figure 4: AMOS-SEM model examining the impact of Demographic variables of teachers on Financial Attributes and Financial Literacy
 Source: Author' compilation



5. Conclusion

The basic aim of the research is to examine the role of demographic variables and financial attributes (financial knowledge, behavior and attitude) on the financial literacy of teachers. The primary survey done on the public and private colleges and universities of Punjab to achieve the objectives.

The notable findings of the study is that demographic factors impact financial literacy level in teachers. The empirical results state that with experience, that is, number of years of service provided by teachers, their age factor and the annual income, positively influence the literacy. Moreover the designation level, the higher the level, the more conscious the teachers are about their financial planning. The study further evaluated that financial knowledge and behavior also plays a crucial role in influencing the financial literacy level in teachers. Teachers are more aware in assessing the risk before any financial investments, they save more as they are much aware.

This study is very significant in view of the fact that teachers constitute a sizeable portion of workers in both public and private sector. The results from this study will be used to improve the financial decisions teachers take in the area of savings and investment, effective preparation for retirement and how to avoid accumulating unnecessary debts during their active working life. Lastly, to the society, teachers are the people who come into regular contact with children who are the most appropriate agents of social change. The success or failure of any policy on financial education largely depends on those who are entrusted with the mandate of educating the populace. As a result their financial position should be very sound. Therefore the issues to be considered in this study are of much relevant interest in today's economic and financial environment in the country.

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