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### Analysis of level of knowledge of basic financial literacy: A comparative study

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#### Abstract

In the wake of global financial crisis, policymakers around the world have expressed deep concern about widespread lack of financial knowledge. Efforts are also underway to fill the gaps with specific programs to “identify individuals who are most in need of financial knowledge and the best way to improve that education. This study tries to analyze the level of financial literacy between the Jammu division and Kashmir division and for that purpose, percentage calculation, Inflation calculation and Interest calculation were used to prove it. After the analysis of data it was found that the Jammu division and Kashmir division do not differ significantly with respect to knowledge of percentage, Inflation and interest calculation. Moreover, the study has also revealed that financial literacy among the male is more than the female.

**Keywords:** Financial literacy, inflation calculation, percentage calculation

#### 1. Introduction

##### Financial literacy: An overview

The concept of financial literacy refers to the ability to understand and apply various financial skills effectively and efficiently, including personal financial management and savings. One of the goals of financial literacy is to make the people self-sufficient so that the target of financial stability can be accomplished. Financial literacy focuses on the ability to manage personal finance efficiently, which requires experience of making appropriate personal finance choices such as savings, insurance, budgeting, retirement and tax planning. One, possessing the knowledge of finance must be able to answer the questions like whether an item is required, whether it is accessible, whether it is an asset or a liability and so on and so forth.

In simple words we can explain the concept financial literacy as the ability to manage one's money. The main objective of financial literacy is to help in understanding financial concepts that will help them to manage and utilize their money properly. Financial literacy includes budgeting, insurance, investing, loans and the like. According to Organization for Economic Co-operation and Development (OECD, 2006) <sup>[19]</sup> “Financial Literacy is the combination of consumers/investors understanding of financial products and concepts and their ability and confidence to appreciate financial risks and opportunities, to make informed choices, to know where to go for help and to take other effective actions to improve their financial well-being”.

Lack of Financial Literacy is a common feature in both developed and developing countries including the United States [(Mandell, 2004) (J.M. Hogarth & Hilgert, 2002)] <sup>[18, 10]</sup>. Financial Literacy as per the analyzed comparable surveys is low everywhere, though much lower in low-income countries (Xu & Zia, 2012) <sup>[23]</sup>. In the last few years, however, a few papers have begun to examine the decision to acquire financial literacy and to study the links between financial knowledge, savings and Investment behavior [(Delavande, Rohwedder, & Willis, 2008) (Jappelli & Tullio, 2010)] <sup>[7, 12]</sup>.

There are many researchers who have studied the correlation of financial literacy with that of the demographic variables and found controversial and contradictory results. Some researchers have found the relationship between demographics and financial literacy, where others have not found any.

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**Table 1:** Demographics in Financial Literacy Studies

Demographics	Related	Not Related
Sex	(Kilic, Ata, Seyrek, 2015; Lusardi & Mitchell, 2011) <sup>[13, 15]</sup>	(Adeleke, 2013; Thapa & Nepal, 2015; Agarwalla et al., 2013) <sup>[2, 22, 3]</sup>
Age	(Thapa and Nepal, 2015; Lusardi & Mitchell, 2011) <sup>[22, 15]</sup>	
Country	(Agarwalla et.al, 2013) <sup>[3]</sup>	
Marital Status	(Agarwalla et.al, 2013) <sup>[3]</sup>	
Education	(Thapa & Nepal, 2015; Bayram, 2011; Lusardi & Mitchell, 2011; Chen & Volpe, 2002) <sup>[22, 4, 15, 6]</sup>	
Etnicity	(Mandell, 2008; Lusardi & Mitchell, 2008) <sup>[18, 14]</sup>	
Family Income	(Agarwalla et al., 2013; Lusardi et al., 2010) <sup>[3, 16]</sup>	(Homan, 2015) <sup>[11]</sup>
Family Education	(Lusardi et al., 2010) <sup>[16]</sup>	(Bayram, 2010; Homan, 2015; Ergun, Sahin & Ergin, 2015) <sup>[4, 11, 9]</sup>
Class	(Chen & Volpe, 2002; Homan, 2015) <sup>[6, 11]</sup>	(Kilic <i>et al.</i> , 2015; Bayram, 2010; Ergun <i>et al.</i> , 2015) <sup>[13, 4, 9]</sup>
Major	(Er, Temizel, Ozdemir & Sonmez, 2014; Chen & Velpe, 1998) <sup>[8, 6]</sup>	

### Financial Literacy: Measurement

The criteria of measurement of Financial Literacy is met by the three financial literacy questions developed by (Lusardi & O.S. Mitchell, 2008)<sup>[14]</sup>

- Suppose you had \$100 in a saving account and the interest rate was 2% per year. After 5 years, how much do you think you would have in the account, if you left the money to grow: [more than \$102; Exactly \$102; less than \$102; do not know; refuse to answer]
- Imagine that the interest rate on your savings account was 1% per year and inflation was 2% per year. After one year would you be able to buy [more than, exactly the same as or less than today with the money in this account; do not know; refuse to answer]
- Do you think that the following statement is true or false? “Buying a single company stock usually provides a safer return than a stock mutual fund” [True; False; Do not know; refuse to answer]

The first question measures numeracy or the capacity to do a simple calculation relating to compounding of interest rates. The second question measures understanding of inflation, again in the context of a simple financial decision. The third question is a joint test of knowledge about “stocks” and “Stock mutual funds” and of risk diversification, since the answer to this question depends on knowing what a stock is and that a mutual fund is composed of many stocks.

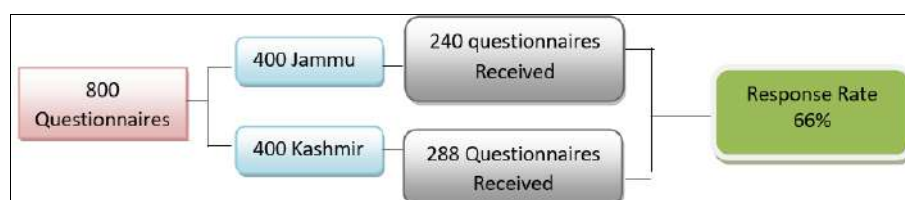
### Information Source of Financial Knowledge

No doubt, family and friend circle are the primary source of information of financial knowledge, but ultimately the knowledge of financial information is derived from formal and informal education. Social media is a new source of information. According to (A.C. Lyons & H. Roberts, 2006)<sup>[1]</sup> about 33% of high school and university students see the internet and financial media as a knowledge source. Government authorities, finance authorities and academics become financial knowledge resource via social network and media [(Berry, 2013) (Schiffrin & Fagan, 2012)]<sup>[5, 20]</sup>. In the study of (M.M. Gutnu & M. Cihangir, 2015)<sup>[17]</sup> discovered that television and the Internet are the most preferred media resource among university personnel by 91 percent and 25 percent stated they use these sources every day.

### Research design

#### Universe and distribution of sample size

The universe of this study comprises of all Government and non- Government employees of Jammu division and Kashmir division falling within the age group of 18-60 years. Moreover, the data set was obtained from the target respondents by a well administered questionnaire. In this connection, a total of 800 interview schedules were distributed among the respondents (400 to each division), out of which only 528 questionnaires were able for the evaluation, and hence the response rate was 66%. The following picture clearly depicts the fact:

**Fig 1: Sample size Distribution**

### Research Objectives and Hypotheses of Study

1. To understand the theoretical concept of Financial Literacy
2. To analyze the level of Knowledge of Basic Financial Literacy
  - a) **H0<sub>1</sub>:** The two divisions do not differ significantly with respect to the knowledge of Basic Financial Literacy
  - There is no significant difference between the two

divisions with respect to the knowledge of Percentage Calculation

- There is no significant difference between the two divisions with respect to the knowledge of Inflation Calculation
- There is no significant difference between the two divisions with respect to the knowledge of Interest Calculation

### Data Collection

Both Primary and Secondary data has been used in the study. The primary data was collected by a well administered questionnaire and the hypotheses were justified on the basis of the primary data collected from respondents via questionnaire. Moreover, the secondary data was also used in the study and was collected from Books, journals, research papers, articles, and internet and so on and so forth.

### Tools and Techniques

In order to test the main hypothesis, “The two divisions do not differ significantly with respect to the knowledge of Basic Financial Literacy” we have made the use of Chi Square test and percentage method for verifying and justifying the results. For basic financial literacy we took three main variables viz. Percentage calculation, Inflation calculation and Interest calculation and asked the questions

to respondents regarding them. The value of Chi square was manually calculated and was compared to table value of Chi square with appropriate level of significance and degree of freedom. We accept the hypothesis when table value of Chi square is more than calculated value and vice versa.

**Chi Square ( $\chi^2$ ) Test:** Chi Square test is a Non- Parametric test and is widely used i) to test the goodness of fit ii) test the significance of association between two attributes and iii) test the homogeneity or the significance of population variation. It is recommended that in Chi Square ( $\chi^2$ ) Test for which the degree of freedom are greater than 1, no more than 20% of the cells should have an expected frequency of less than 5 and no cell should have an expected frequency of less than 1 (Siegel & Castellan, 2002) <sup>[21]</sup> The formula for calculating the Chi Square test is as follows:

$$\text{Chi Square } ((\chi^2) \text{ Test}) = \frac{(\text{Observed Frequency} - \text{Expected Frequency})^2}{\text{Expected Frequency}}$$

$$\text{Where, Expected Frequency} = \frac{\text{Row Total} * \text{Column total}}{\text{Grand Total (i.e. total Observations)}}$$

### Discussion and Results

#### Basic Financial Literacy

Financial literacy is the ability to understand and effectively use various financial skills, including personal financial management, budgeting and investing. In other words we can say that financial literacy is the foundation of your relationship with money and it is a lifelong journey of learning. In order to know the basic financial literacy of respondents, we have asked them three questions and those three questions are related to Percentage calculation, Inflation calculation and Interest rate calculation.

- a) **H0<sub>1</sub>:** The two divisions do not differ significantly with respect to the knowledge of Basic Financial Literacy
- There is no significant difference between the two divisions with respect to the knowledge of Percentage Calculation
  - There is no significant difference between the two divisions with respect to the knowledge of Inflation Calculation
  - There is no significant difference between the two divisions with respect to the knowledge of Interest Calculation

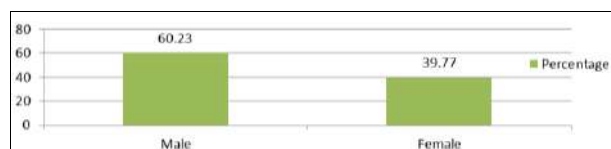
#### Gender wise Distribution of Respondents

The distribution of respondents on the basis of gender is given below in the following table:

**Table 2:** The distribution of respondents on the basis of gender

Gender	Frequency	Percentage
Male	318	60.23
Female	210	39.73

Source: Primary Source



**Fig 2:** Gender wise Distribution of Respondents

Out of the total number of respondents that were available

for evaluation 60.23% were male and the rest 39.77% were females. The above table and histogram clearly depicts the results.

#### Percentage Calculation

(Assume a person saves 20% of his salary (his monthly salary Rs 30,000), how much money he will save during the year)

**Table 3:** Response analysis regarding Percentage Calculation

Response Gender	Jammu Division 240 Respondents				Kashmir Division 288 Respondents			
	Correct %		Incorrect %		Correct %		Incorrect %	
Male	102	42.5	46	19.16	128	44.45	42	14.58
Female	84	35	20	8.34	90	31.25	16	5.56
	186	77.5	66	27.5	218	75.70	58	20.14

Source: Primary Source

**Table 4:** Chi square results with respect to Percentage calculation

Table value of Chi Square at 5% level of Significance with 3 degree of freedom= 7.815
Calculated value of Chi Square = 2.949
The hypothesis that There is no significant difference between the two divisions with respect to knowledge of percentage calculation stands rejected as the table value of Chi Square is more than the calculated value. Hence we have enough grounds to accept the hypothesis.

From the above table, it is quite clear that 42.5% (male) and 35% (female) of the total respondents of Jammu division gave correct answer while as 44.45% (male) and 31.25% (female) of the total respondents of Kashmir division gave correct answer. In the same way 19.16% (male) and 8.34% (Female) of the total respondents of Jammu division gave incorrect answer whereas 14.58% (male) and 5.56% (Female) of the total respondents of Kashmir division gave incorrect answer.

### ▪ Inflation Calculation

(Assume the yearly Interest rate of your time deposit

account is 10% and Inflation rate is 5%. How much can you buy with the money in the account?

**Table 5:** Response analysis regarding Inflation Calculation

Response Gender	Jammu Division				Kashmir Division			
	240 Respondents				288 Respondents			
	Correct	%	Incorrect	%	Correct	%	Incorrect	%
Male	58	24.17	90	37.5	76	26.39	94	32.64
Female	44	18.33	48	20	40	13.89	78	27.08
	102	42.5	138	57.5	116	40.28	172	59.72

Source: Primary Source

**Table 6:** Chi square results with respect to Inflation Calculation

Table value of Chi Square at 5% level of Significance with 3 degree of freedom= 7.815
Calculated value of Chi Square = 2.357
The hypothesis that There is no significant difference between the two divisions with respect to knowledge of Inflation calculation stands rejected as the table value of Chi Square (7.815) is more than the calculated value (2.357). Therefore, we can accept the hypothesis.

The above table clearly depicts that 24.17% (male) and 18.33% (female) of the total respondents of Jammu division provided correct answer while as 26.39% (male) and

13.89% (female) of the total respondents of Kashmir division gave correct answer. Likewise, 37.5% (male) and 20% (Female) of the total respondents of Jammu division gave incorrect answer whereas 32.64% (male) and 27.08% (Female) of the total respondents of Kashmir division gave incorrect answer.

### ▪ Interest Rate calculation

(Assume that you have Rs 1000 in your time deposit account and early interest rate is 10%. If you keep your money in the account for 5 years, how much money will be in your account?

**Table 7:** Response analysis regarding Interest Rate Calculation

Response Gender	Jammu Division				Kashmir Division			
	240 Respondents				288 Respondents			
	Correct	%	Incorrect	%	Correct	%	Incorrect	%
Male	88	36.67	56	23.33	97	33.68	77	26.74
Female	50	20.83	46	19.17	57	19.79	57	19.79
	138	57.5	102	42.5	154	53.47	134	46.53

Source: Primary Source

**Table 8:** Chi Square results with respect to Interest rate calculation

Table value of Chi Square at 5% level of Significance with 3 degree of freedom= 7.815
Calculated value of Chi Square = 1.645
The hypothesis that There is no significant difference between the two divisions with respect to knowledge of Inflation calculation stands rejected as the table value of Chi Square (7.815) is more than the calculated value (1.645). As a result, we have enough reason to accept the hypothesis.

It is quite obvious from the above table that 36.67% (male) and 20.83% (female) of the total respondents of Jammu division gave correct answer while as 33.68% (male) and 19.79% (female) of the total respondents of Kashmir division gave correct answer. Similarly, 23.33% (male) and 19.17% (Female) of the total respondents of Jammu division gave incorrect answer whereas 26.74% (male) and 19.79% (Female) of the total respondents of Kashmir division gave incorrect answer.

### Conclusion

In the modern era the financial literacy has become the need of the hour which focuses on the ability to manage personal finance efficiently, which requires experience of making appropriate personal finance choices such as savings, insurance, tax planning and the like. This study has find out that financial literacy is not very much impressive in the target area. However, this study has revealed that knowledge of interest calculation and percentage calculation

is comparatively higher than the Inflation calculation.

The gap of lack of financial literacy can be filled by communicating with the experts and the best way of such communication can be organized in the form of optional regular lectures. It is also essential that such lectures should focus on particular matters, in particular, instructing students how to understand and evaluate the information necessary to make sensible decisions and how to predict possible consequences of such decisions. The people should also be taught how to make informed judgments and manage their financial resources and how to apply their knowledge, skills and values when shopping and in other financial context, so as to achieve the goal of financial literacy in target area and whole world in particular and in general respectively.

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