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Financial Literacy and Behavior of Small Borrowers in Nepal[#]

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ABSTRACT

Financial literacy is an emerging personal financial agenda, which concerns how an individual understands and manages limited financial resources. This study uses the framework of theory of planned behavior and social cognitive theory to explain measurement of the contribution of financial literacy on behavior of small borrowers in Nepal. The theory of planned behavior states that the literacy i.e. knowledge and skill in financial matters will develop attitude, and if attitude is positive, the persons will behave accordingly. The social cognitive theory reveals that the literacy alone can also affect financial behaviors. In this study, sample survey is carried out with 393 small borrowers of Cooperatives in Nepal. Multi-stage systematic random sampling method is applied for the sample selection. Logistic regression is used for the data analysis. The study reveals that level of financial literacy contributes positively both on the personal and institutional financial behavior. The study concludes that financial education and literacy have significant contribution on behavior and thereby well-being of small borrowers. Implication of the study is that proper financial education contributes financial behavior of small borrowers and thereby personal financial well-being.

JEL Classification: G21, G29

Key Words: Financial literacy, financial behavior, small borrowers

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I. INTRODUCTION

Managing money is an integral part of financial civilization across the globe. Managing limited personal financial resource was challenging for everyone in the past and it is challenging also these days. Basic reasons for this challenge are the scarce nature of money and difficulty to manage it. Money is the center of income and borrowing, vital in valuing and storing personal properties. Often, people try to achieve financial better-off and prosperity with money. Bolanos (2012) describes money as medium of exchange, as the exchange is one of the functions of money. People desire to earn and manage money or personal income more secretly than other ordinary goods and behaviors. Tyson (2010) argues that money is a personal and confidential matter. Individuals always desire to protect the amount of money they have and desire to increase its volume in the days to come. Here, the skill of money management is important. Management of money and personal finance falls under the subject of economics broadly and under finance particularly. The previous studies explored that a financially aware and skilled person can better understand and manage money. Therefore, financial literacy is a combination of knowledge and skill in managing money.

In this, Lionel Robbins (as cited in Mulligan, 2009) defines economics in relation to personal financial issues and as the science of human behavior which revolves around ends and scarce means. Here, managing limited personal resources is more significant than how much an individual earns. In this context, Drexler, Fischer and Schoar (2014) claim that the role of money management between income and consumption goes side by side. But, Bodie, Treussard and Willen (2007) defend the financial life-cycle model in reconciling two opposite aspects of limited income and consistent consumption spending throughout the life of people. From the perspective of the life-cycle hypothesis, increase in income does not necessarily go side-by side in different phases of human lives. Here, reviewing the evolution of the concept of financial literacy is useful to link financial literacy and money management.

Primarily, the study aims to measure financial literacy and behavior of small borrowers in Nepal. Secondly, the paper also measures the probabilistic contribution of financial literacy on financial behavior. The measurement of the contribution helps to know the reason for improving the level of financial literacy of small borrowers. Small borrowers are those who borrow a limited amount of money from formal financial settings for business purpose at a given time. In this paper, the behaviors are classified into the personal and institutional financial activities. However, there may be other informal and non-formal financial understandings and activities in practices.

II. REVIEW OF LITERATURE

Evolution of Financial Literacy Concept

Broadly, the evolution of the concept of financial literacy is close to human financial civilization and is also linked with the evolution of money, trade, exchange and ownership of properties. In this sense, financial literacy is not an emerging concept in practice. Globally,

the financial literacy is lately prioritized in educational and financial policies, whereas in Nepal, it is yet to consider in national policies. For example, Nepal Rastra Bank (2011) prioritizes financial literacy in supplying financial services and in policy framework. Similarly, Nepal Rastra Bank (2018a) mentions that financial literacy is appropriate to assure financial inclusion and increase financial access. In this, Nepal Rastra Bank (2018b) mentions that a draft of financial literacy strategy has been drafted and sent to the Ministry of Finance for approval. Moreover, financial literacy is also a new educational invention of twenty-first century. Organization for Economic Cooperation and Development (2005) claims itself as a first international comprehensive study on financial education. This claim shows that financial literacy is an emerging educational issue in the world.

However, Sarigul (2014) mentions that the concept of financial literacy was first explored in 1997 by Jumpstart Coalition as a personal financial literacy survey. But, Remund (2010) argues that the interpretation and research on financial literacy began in 2000. Similarly, the focus of financial literacy is also closely linked with global financial crisis of 2007-09 and the policy agenda in the financial sector. “The aftermaths of global financial distress stimulated the area of financial literacy for policy makers across the globe” (Gupta & Kaur, 2014). Wagner (2015) opines that the global financial crisis raised the issue of financial literacy with higher priority. One of the reasons of the global financial crisis was poor financial literacy of financial consumers. Though, the concern of money management is closely linked with human financial civilization, but it is difficult to pinpoint the date and context of the beginning.

Financial literacy revolves around the knowledge, skill, attitude and behavior of the individuals in financial matters. Ultimately, it contributes financial well-being of individuals. But there are some backward and forward linkages of the four dimensions of financial literacy. The linkages show that the dimensions of financial literacy are neither exogeneously determined, nor these are the destinations. Financial education, experiences, learning and contexts are some of the backward linkages, which are influencing on financial knowledge, skill, attitude and behavior. Similarly, financial attitude, behavior, well-being and consistency of financial achievements are some of the forwards linkages of the factors.

Financial Education and Literacy

Drawing a line of demarcation between financial education and literacy is relevant but sometimes it is difficult. These two are similar but not the same concepts. Zadeh and Dahmardeh (2013) opine that financial education and financial literacy are interchangeably used. But, Horwitz (2015) asserts that financial education is the source of financial literacy. In fact, financial education helps in making the people financially literate, where knowledge is a part of the literacy. However, there are several other sources of financial literacy rather than education, such as experience, mass media, family and colleagues. Moreover, Consumer Financial Protection Bureau (2014) mentions that financial literacy and financial capability are similar concepts that contain financial knowledge, skill and behavior. Durband and Britt (2012) argue that the goal of financial education goes beyond financial literacy. However, they fail to mention what lies beyond the goals of financial education. Therefore, financial

education is one of the sources of financial literacy, whereas financial knowledge and skill are basic attributes of financial literacy.

Financial Attitude, Behavior and Well-being

Financial attitude of a person shows a psychological and mental judgment of financial matters and situation. World Bank (2013) presents attitude of a person as a psychological factor that directly affects human behavior. It shows behavioral implication of financial attitude. Similarly, financial knowledge has implications on attitude as well. But, President's Advisory Council on Financial Capability (2012) mentions that merely the financial attitude is insufficient to influence financial behavior. Here, financial attitude is subject to change in improved financial literacy of persons. Moreover, Bolanos (2012) argues that financial knowledge increases financial beliefs of students and thereby contributes to financial well-being. Therefore, financial behavior is an immediate target and primary goal of financial knowledge, skill and attitude.

Horwitz (2015) opines that adequate financial literacy only can influence one's financial behavior. However, it is difficult to find an adequate level of financial literacy for each person. The subject, quality and quantity of financial literacy is contextual. It implies that a little financial knowledge cannot change one's financial behavior significantly. In practice, the people have two types of financial behaviors, personal and institutional. In personal financial behavior, they use money and income far from financial institutional settings. Such behaviors are buying and selling of properties, make their future financial budgeting, maintain regular expenditures, etc. In institutional financial behavior they borrow from and save in formal financial settings.

Financial education has well-being implication by changing one's financial literacy, attitude and behavior respectively. Investing in financial education provides the opportunity to increase financial literacy to reduce the likelihood of making costly financial mistakes and thereby increasing the likelihood of improved financial well-being (Huston, 2012). Similarly, Consumer Financial Protection Bureau (2015) states financial well-being as an ultimate destination of financial literacy. It implies that financially literate people may have greater possibility of better financial well-being. This relationship helps to draw a conclusion that, other things remaining the same, financial education, literacy, attitude, behavior and well-being have a heirarchical relationship to each other. However, there are some time lags and conditions to satisfy this chain relationship.

Theoretical Premises of Financial Literacy and Behavior

Theory of Planned Behavior: Attitude and intention of a person are important to influence behavior. The first one is the judgment of the situation and the second one is about the readiness for action. The theory of planned behavior stood on line of hierarchy among attitude formation, conversion of attitude into intention and thereby the behavior is influenced. Moreover, Armitage and Conner (2001) argue that perceived behavior control could better predict intention and behavior. The perceived behavioral control factor is also

understood as self-efficacy or self-confidence of doing some actions. Knowledge and skill are some of the factors to influence self-efficacy. This indicates that financial behavior would be more sustainable when the small borrowers show their financial behavior by financial analysis. The analysis is a part of attitude formation and thereby increases the possibility in showing rational behavior.

Social Cognitive Theory: Besides, social cognitive theory postulates a short-term cognitive decision of individuals while demonstrating some behaviors. Bandura (1999) argues that environmental influence becomes a decisive factor in determining human behavior in short-run. In this theory, there is no role of attitude and intention formation. It shows that the people can behave as they learn from others' behaviors and environments. The environment of learning may include friends, neighbors, media effects etc. Bandura (1999) also introduces the inborn skill of individuals that also affect the human behavior. According to him, cognitive effects, i.e. knowledge and skill, are responsible in changing human behaviors. People learn everything from outside and they follow it, sometimes unknowingly. Thus, people first learn, behave and, if necessary, they think. Thinking is linked with their attitude, which may not necessarily prevailed. In financial behavior, mainly for small borrowers, this theory is more applicable because most of the participants learn their financial behavior from their family, peers, environment, society and institutions. The theory highlights that the learning of behavior is based on social contexts, peer reciprocal, environment and socio-economic phenomena.

III. RESEARCH METHODOLOGY

Measurement of data includes financial literacy and behavior of financial matters. Moreover, the financial behaviors are further classified into personal and institutional while measuring the contributions. Objective type of questions are asked in measurement of financial literacy and behavior, where there are ten questions each for measuring financial knowledge and skill. Here, financial literacy is a sum of financial knowledge and skill responses. Twenty questions are used for measuring financial behaviors. To measure the financial knowledge and skills, binary options scale of yes/no, correct/incorrect and don't know are used. Yes or correct responses are scored 1 for each and zero for no, incorrect and don't know responses. The level of financial literacy in this study is categorized in line with Mireku (2015). The ordinal categories of financial literacy are; high (score above 16 or 80 percent), medium (score 12 to 15 or between 60 percent and 79 percent) and low (below 12 or 60 percent).

Moreover, multiple options/scale questions are used to measure personal and institutional financial behaviors of the participants. Lusardi (2015) used multiple-choice questions to avoid the potential measurement bias. In the same way, among the twenty financial behavioral questions, 11 personal and 9 institutional financial behavioral questions are asked. In both the dimensions, the responses are categorized into good, moderate and poor financial behavior. In other words, good financial behaviors are normal and expected behaviors which are relatively preferable. The moderate financial behaviors fall in between good and poor financial behaviors. Financial behavior is categorized into three: good, moderate and poor. Now, such ordinal scale data demands non-parametric tests.

Population and Samples: Representative sample size from the population is calculated as 393 from the population size of 20,586 small borrowers of two cooperatives located in Kathmandu and Kavrepalanchok district. Multi-stage systematic random sampling technique contains more than one stages, systems and randomness to select the samples from the population units. In multi-stage, two cooperatives are selected among fifteen through more than one stages. Selection of the institutions are the fundamental to select the sample units, i.e. small borrowers, because the borrowers are related to the financial cooperatives. Similarly, the sample units, i.e. small borrowers are selected systematically and randomly from the institutional/branch strata.

Hypothesis and Measurement: The research hypothesis in measuring the contribution is: Improved financial literacy of small borrowers is more likely to exhibit good personal and institutional financial behaviors. To measure the contribution, financial behavior are divided into personal/institutional financial attitude and personal/institutional financial behavior. To measure the probabilistic contribution of independent variables to dependent variable, the binary logistic regression model is applied. To test the hypothesis, the following are the logistic models developed in this study. First, when the personal financial behavior is dependent, financial literacy is independent and sex, marital status, income level are the control variables. Here, the expected model is as follows:

$$\text{Model 1: } \log [p/(1 -p)] = \log (p) = B_0 + B_1 (\text{Sex}) + B_2 (\text{marital status}) + B_3 (\text{income level}) + B_4 (\text{financial literacy}) + e_i \dots\dots\dots (1)$$

Logit (p) ranges between 0 and 1.

- Where, p= the probability of a small borrower who has good personal financial behavior;
- Sex= 1 if the participant is male, 2 for otherwise;
- Marital status= 1 for married participants, 2 for otherwise;
- Income level= 1 for less than monthly income NPR 6500, 2 for otherwise;
- Financial literacy = in percentage of total score;
- ei = error term that helps to keep all the effects than the mentioned independent variables to dependent variables and remain constant for the time.

Second, when the institutional financial behavior is dependent financial literacy is independent and sex, marital status, income level are the control variables. Here, the expected model is as follows:

$$\text{Model 2: } \log [p/(1 -p)] = \log (p) = B_0 + B_1 (\text{Sex}) + B_2 (\text{marital status}) + B_3 (\text{income level}) + B_4 (\text{financial literacy}) + e_i \dots\dots\dots (2)$$

Where, institutional financial behavior=1 for good institutional financial behavior, and 0 for otherwise

IV. DATA ANALYSIS

This section presents measurement of financial literacy and probabilistic contribution of financial literacy on behavior of small borrowers. Self-reporting response method is used to measure both of financial literacy and behavior in this research. The financial literacy level is categorized into three, i.e. high, medium and low. Scoring technique is used to measure financial literacy. In this technique, the total score is divided into particular categories. The aggregate financial literacy result is shown in Annex I. The result indicates that the number of participants and the financial literacy level are increased simultaneously. In this, more participants fall under higher level of financial literacy. Measurement of financial knowledge and skill are based on ten questions each. In this study, financial literacy is a sum response of financial knowledge and skill. Score one is given for correct and zero for otherwise responses.

The finding of financial literacy level shows that the number of participants scoring high, medium and low level of financial literacy are 180 (45.80 percent), 150 (38.17 percent) and 63 (16.03 percent) respectively. It shows that significant number of participants, i.e. 330 out of 393 (84 percent) score 60 percent and above in financial literacy. The reason for the result is a rigorous process of tools formation for capturing status of financial literacy of the small borrowers more realistically. Similarly, these days, the cooperatives counsel, provide orientations and educate their members about financial matters, services and institutions that helps them for financial knowledge.

In a Cambridge research, by National Bureau of Economic Research (NBER), Clark, Lusardi and Mitchel (2015) also find an average of 80 percent of financial knowledge of the employees which is relatively high score. They survey among 3360 employees through email by using five item questions with binary and multiple options. Their finding of high financial literacy shows that when the participants have less diversity, in terms of occupation, the participants can respond the questions correctly, if the questions are contextual.

Similarly, Klapper, Lusardi and Oudheusden (2014) mention that a global study on financial literacy, conducted by Standard and Poor, reports 71 percent of financial literacy level in Denmark, Norway and Sweden. The same study reports only 18 percent Nepali youths as financially literate. The survey study uses five questions about understanding and management of money for all the 140 countries including developed, developing and underdeveloped countries like Nepal. It provides two messages: the financial literacy score is high if the questions are contextual and closer to the people's everyday business and financial practices. Moreover, when the questions are familiar and comfortable for developed countries, it is not necessarily effective for the other countries, places and professionals.

For the purpose of analyzing the degree of the contribution of financial literacy on behavior, two different contributions are measured: First, contribution of financial literacy on personal financial behavior, and second, contribution of financial literacy on institutional financial behavior. Reed and Wu (2013) suggest the following three common assumptions to fulfill

while using the logistic regression to measure the prediction of independent variables to dependent variables.

1. Dependent variable necessary to be of dichotomous categorical (nominal, ordinal) data
2. The dichotomous categories necessary to be mutually exclusive and exhaustive
3. Larger sample size for maximum likelihood coefficients

For the measurements, all of the above assumptions are satisfied in this study. For the analysis, the percent of financial literacy score is used. The initial three point categorization of financial behaviors are re-categorized into good and poor on the basis of median value 1.35. It means that those who responds the median value 1.35 and below exhibits good financial behavior and above the median value 1.35 exhibits poor financial behavior. Now, new categorization of the financial behavior as good and poor are derived to apply the binary logistic regression. The percentage of financial literacy score is used as the independent variable. Similarly, sex, marital status and income level of participants are used as control variable. The measurement of contributions are as follow.

Contribution of Financial Literacy on Personal Financial Behavior

As a model summary, Omnibus test of model coefficient shows that the model is fit ($p=.00$) in establishing the relationship between the dependent and independent variables. Similarly, Nagelkerke R square validates the relationship between predicted variable, i.e. personal financial behavior of small borrowers with selected predicting variables. Nagelkerke R square value is 0.19 that indicates 19 percent predictability of independent variables to dependent variable. The summary of logistic regression is presented in Annex 2.

The table presents the result of logistic regression in measuring the degree of probabilistic contribution of financial literacy and some of the demographic variables on personal financial behavior. The result shows that marital status and income level are statistically insignificant, where sex has significant relationship ($p=.01$) with personal financial behavior. The result indicates that the financial literacy of male small borrowers is more influencing in personal financial behavior than that of female small borrowers. However, financial literacy is significant ($p=.00$) with personal financial behavior. The data shows that one percent improvement in financial literacy increases the odds of improving good personal financial behavior of small borrowers by 1.05 times. In other words, if the financial literacy of the small borrowers is improved by 10 percent, the probability of improving good personal financial behavior of small borrowers is 10.5 times. Here, the standard error less than 2 in each independent variable shows the model free from multi-collinearity. Therefore, the hypothesis as improved financial literacy of small borrowers is more likely to exhibit good personal financial behavior is retained from the above analysis. Now, the logistic regression model is: $\text{Logit}(p) = -3.34 - .90(\text{Sex}) - .69(\text{marital status}) - .35(\text{income level}) + .05(\text{financial literacy}) + e_i \dots (1)$. The model depicted that, other things remaining the same, the degree of improvement in personal financial behavior of small borrowers towards good depends on their increase in financial literacy score.

Contribution of Financial Literacy on Institutional Financial Behavior

As a model summary, Omnibus test of model coefficient shows that the model is fit ($p=.00$) in establishing the relationship between the dependent and independent variables. Similarly, Nagelkerke R square validates the contribution of financial literacy on predicted variable, i.e. the institutional financial behavior of the small borrowers. Nagelkerke R square value 0.23 indicates 23 percent predictability of independent variables to dependent variable. The summary of logistic regression analysis is presented in Annex 3.

The result shows that the control variables such as marital status and income level are statistically insignificant but sex is significant ($p=.00$) to show the relationship of the variable with institutional financial behavior. The result indicates that the financial literacy of male small borrowers is more influencing in institutional financial behavior than that of female small borrowers. Similarly, the financial literacy is significant ($p=.00$) in contributing the institutional financial behavior. In this model, one percent change in financial literacy indicates that the odds of improving good institutional financial behavior by 1.05 times. Thus, the standard error less than 2 in each independent variable shows the model free from multicollinearity. The logistic regression model is: $\text{Logit}(p) = -2.99 - .99(\text{Sex}) + .10(\text{marital status}) - .19(\text{income level}) + .05(\text{financial literacy}) + e_i \dots (2)$. The model depicts that, other things remaining the same, the degree of improvement in good institutional financial behavior of small borrowers depends also on their increased financial literacy percentage.

The summary of the measurement of contribution is presented in Annex 4. Here, PFB, IFB, FL, Y and M.S. stand for personal financial behavior, institutional financial behavior, financial literacy, income level and marital status, respectively. Similarly, p value is the measured coefficient that shows the significance of the relationship between independent and dependent variables. R-square is the nagelkerke R-square value and $\exp(b)$ indicates the odds ratio. The table shows that the models are significant to demonstrate the probabilistic contributions of financial literacy on personal and institutional financial behavior of the small borrowers. The coefficients of exponential beta (B) displays positive contribution in the behavior with one percent improve in the financial literacy and one point change in financial attitude respectively.

There are several studies consistent with this finding. Shim, Barber, Card, Xiao and Serido (2009) find that financial knowledge contributes financial behavior directly rather through financial attitude and perceived behavior control. In this study, knowledge is the major content of financial literacy. However, knowledge only is unable to estimate the degree of change in behavior with financial literacy. The finding of this study is also consistent with Bayrakdaroglu and San (2014), which also finds that a point increase in financial literacy level increases 1.1 times of probability of stock participation behavior. This positive and better index of probability of contribution shows that financial literacy of the participants is a decisive factor to contribute financial behavior.

V. CONCLUSION AND IMPLICATIONS

Conclusion

This study concludes that there are theoretical and empirical interconnections between financial literacy and behavior. Financial awareness and understanding of people depends on time, context, level of financial development of the country and need of the people. However, a minimum level of financial awareness and skill are necessary for everyone, which fall under functional education. Therefore, the gold standard of any contribution of financial education to literacy, attitude, behavior and well-being may be imaginary. Other things remaining the same, improved financial education contributes in financial well-being of the small borrowers by improving their financial literacy, attitude and behavior. Normally, financial education, literacy, attitude, behavior and well-being have a hierarchical and mechanical pathway. However, it is difficult to develop a universal line of formula and index to join these aspects. In other words, it is difficult to find a typical width, degree and maturity of those aspects as a gold standard. Similarly, the nominal contribution index of financial literacy on behavior asserts that financial literacy is necessary but not sufficient condition to change one's financial behavior.

Implications

This study has multi-fold implications: for the government, financial service suppliers, financial service users and researchers. The government includes ministry of education and the central bank for this concern. A curriculum-based financial educational program has long-term and sustainable effects to the students for educating them about financial matters and thereby improve their financial attitude and behavior. The students of today will be the human capital for the days to come. They will be the entrepreneurs, business persons, politicians, policy makers, bureaucrats, etc.

Similarly, the financial service suppliers are very close to the service consumers rather than the policy makers and others. Educating and counseling the people comprise the corporate social responsibility and the social obligations of the financial service suppliers as well. Therefore, this study will be helpful for the service suppliers to establish the rationale of financial education to their clients. Moreover, the researchers can explore the local financial spectrums and traditional financial inter-connections in this agenda. Economics and finance are the wider area for researching in which the researchers can search the root causes of financial scenarios. On the ground, the study suggests to follow several avenues around financial literacy agenda by using exploratory and explanatory studies in future.

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LIST OF ANNEXES**Annex 1***Overall Financial Literacy Level of Small Borrowers*

Statistics	Low	Medium	High	Total
Financial Literacy	63	150	180	393
Percentage	16	38.2	45.8	100

Source: field data (compiled by researcher)

Annex 2*Summary of Financial Literacy Contributing Personal Financial Behavior*

Predictor	B	S.E.	Wald	df	Sig.	Exp(B)
Sex	-.90	.32	7.76	1	.01	.41
Marital status	-.69	.48	2.08	1	.15	.50
Income level	-.35	.25	2.04	1	.15	.70
Financial Literacy (%)	.05	.01	30.64	1	.00	1.05
Constant	-3.34	.90	14.15	1	.00	.04

Source: Field data (compiled by the author)

Annex 3*Summary of Financial Literacy Contributing Institutional Financial Behavior*

Predictor	B	S.E.	Wald	df	Sig.	Exp(B)
Sex	-.99	.31	10.62	1	.00	.37
Marital status	.10	.51	.04	1	.84	1.11
Income level	-.19	.25	.57	1	.45	.83
Financial literacy (%)	.05	.01	45.26	1	.00	1.05
Constant	-3.00	.79	14.20	1	.00	.05

Source: Field data (compiled by the author)

Annex 4*Summary of Logistic Regression Analysis*

S.N.	Predicted variable	Predicting variable	Control variables	Items	P	R-Square	Exp (B)
1	PFB	FL	Y, M.S. and Sex	11	.00	.19	1.05
2	IFB	FL	Y, M.S. and Sex	6	.00	.23	1.05

Source: Field data (compiled by the author)