RESEARCH ARTICLE

Financial Education as Part of High School Syllabus

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Abstract: An analysis of poverty on district level, by Benazir Income Support Program (BISP) reported that found that district Kohat (KPK) stands among the poor districts of Pakistan. Hence the financial behavior of citizen of District Kohat needs to be investigated. The paper focused on improving financial behavior through improvement in financial literacy. The paper proceeded with an objective to check the efficacy of teaching financial education at the school level and analyzing the improvement in financial behavior through financial literacy. A sample of 306 respondents from District Kohat was investigated in terms of respective financial behavior, financial literacy subject to gender and degree of education. Proceeding with principal component analysis, OLS is applied to estimate the relationship. It was found that due to higher preference of males toward finances, financial behavior of male participants is better than those of female. Also those having a degree in business or finance related subject, behave financially better than others. A direct and significant relation is found between financial behavior and financial literacy. The paper suggest that financial education should be included as a compulsory subject to the syllabus of high schools.

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1   Introduction

It is a critical time on a global scale to reshape our understanding of finance. Insufficient financial awareness leads to reduced savings for difficult times (Lusardi 1999; Thung et al., 2012). Poor financial literacy, alongside other personal characteristics, significantly contributes to suboptimal decision-making (Perry 2008; Grohmann 2018). Those with greater financial knowledge typically avoid poor financial choices (Agarwal & Muzamdar 2013; Kadoya & Khan 2017). Braunstein and Welch (2002) emphasized the utmost importance of financial literacy (FL) for improved financial behavior (FB). FL has become an essential requirement for active participation in the modern world. Researchers are examining individuals' financial behavior and seeking ways to enhance saving habits, considering the increasingly complex lifestyles and expanding array of expenses.

Financial decisions have long-term implications for individuals, their families, and society as a whole (NIBUD Report 2015). According to Xiao and Porto (2017), FL is a significant determinant of FB and serves as a supportive factor. In other words, individuals who are financially educated tend to exhibit responsible behavior and effectively manage their assets.

The already available literature supports the positive correlation of financial behavior (FB) and financial literacy (FL). The effect of FL on FB is gradual, rather immediate (Bernheim, Garrett, and Maki 2001). Mandell (2008) while supporting idea of gradual impact stated that learning in childhood stays in mind and can be recalled in latter age whenever there is a need. Analyzing FB of student from different backgrounds, Mandell and Klein (2009) found that full time college graduates appeared to be more financial sane as compare to others.

The Organization for Economic Co-operation and Development (OECD) initiated a program called the Program for International Student Assessment (PISA) in 2012 and found that that in British Colombia, a modified curriculum includes financial education as mandatory subject within math courses at every grade level. Andrey Bokarev[1] while intimating the importance of financial; education, quoted as:

"We should help schools train and encourage teachers and parents to provide financial education for children and youth in order to equip the next generation with better knowledge and skills to make effective and responsible choices and decisions in the complex reality of the 21st Century."

An analysis, by BISP, reporting regarding poverty profiles of Pakistan[2] , grouped the districts in to five categories. It was reported that around 27.8% of the total households in Pakistan can be considered as poor. Additionally, it was reported that around 33% of the total population in District Kohat stands below poverty line and it stands in the category of "Poor Districts". This financial situation of people in District Kohat provoke us to know about the FB of the citizens of District Kohat.

"One of the reasons the rich get richer, the poor get poorer and the middle class struggles in debt is because the subject of money is taught at home, not at school." Stated Robert Kiyosaki[3].

The current study focuses on the positive association of FB and financial literacy. Accepting the hypothesis of dormant knowledge given by Mandell (2008) the study in hand would analyze if the financial literacy has an impact on molding financial behavior. While proceeding to achieve these objectives, current study would test two hypotheses: there exist positive correlation between FB and financial literacy, and Inclusion of financial education as a compulsory subject on high school level will enhance the FB of people in District Kohat through improvement in financial literacy.

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2 Theoretical Framework

Piaget (1976) explored cognitive side of individual's development and presented a theory known as Piaget Theory of cognitive Development. This theory presented 4 stages of cognitive development[4] ; a newly born baby has to pass through. The theory stated that evolution of knowledge and wisdom as an inherently active process. Mental capabilities, based on observation and surrounding environment, get evolved with time. Primarily this research was conducted for new born children only and it was not related to education and skills. As newly born baby's mind is a free from everything, so he adopts the qualities from the environment he is living in. However, later on this theory also applied to learning, teaching and educational aspects. Hence it confirms the association of learning and education with certain human behavior.

"*Consumer Economic Socialization Theory*" given by Cram & Ng (1999) is a generalization of Piaget Theory. The stated theory is basically an amalgamation of psychological and marketing perspective of consumer socialization. The theory states that a child absorb knowledge from surrounding environment and attains financial skills from culture, society, and educational system. Therefore, individual FB is a result of these skills assimilated during childhood. The figure given bellow shows the conceptual framework of the current study.
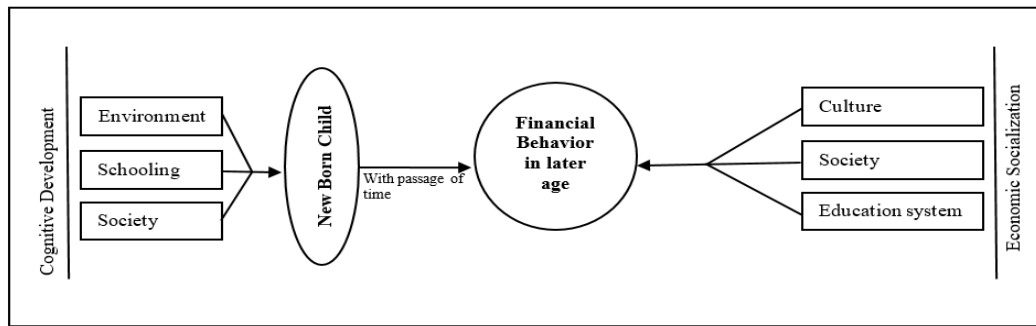

Figure 1: Conceptual Framework

2.1 Financial Behavior and Financial Literacy

The relationship between financial literacy and financial behavior has been extensively studied, with growing evidence of its significance in shaping individuals' financial outcomes. In the context of Pakistan, several studies have explored this relationship, shedding light on the specific dynamics within the country. Choden et al, (2021) conducted a study that examined the impact of financial literacy on saving behavior among individuals. The findings revealed a positive relationship between financial literacy and savings, indicating that individuals with higher financial literacy levels tend to save more effectively. This suggests that improving financial literacy can encourage individuals to adopt better saving habits, leading to enhanced financial security and resilience. In a similar vein, (Hamza and Arif, 2019 & Shaik et al, 2022) investigated the impact of financial literacy on investment behavior. The study found that individuals with higher levels of financial literacy were more likely to engage in investment activities and make informed investment decisions. Financially literate individuals demonstrated a better understanding of investment concepts, risk management, and portfolio diversification, resulting in improved investment outcomes. Abdullah et al, (2019) conducted research on

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[4]*https://www.verywellmind.com/piagets-stages-of-cognitive-development-2795457 retrieved on 23 July 2018.*

the relationship between financial literacy and debt management in Pakistan. The study revealed that individuals with higher financial literacy were more likely to manage their debt responsibly, make informed borrowing decisions, and exhibit better debt management practices. Financially literate individuals were more aware of interest rates, repayment terms, and the potential consequences of excessive debt, leading to improved financial well-being. Furthermore, (Ghafar and Sharif 2016; Ahmad et al, 2021) examined the impact of financial literacy on financial decision-making among Pakistani individuals. The findings demonstrated that individuals with higher financial literacy made more informed and rational financial decisions, considering various factors such as risk, return, and future implications. As women have to spend more time in widowhood, Koenen et al, (2017) was of the view that women should be wiser financially. Also, in 2009 a questionnaire consisting of three questions about interest rate, inflation and risk aversion. Based on the questionnaire, the paper found that more men responded correctly as compare to women. It was found that the gender gap in terms of FL exists in all three countries and it also affect financial decision making. To overcome this lack of FL they consult financial advisor for financial decisions. However according to (Loibl and Hira, 2006 & Ozli, 2021) women are reluctant to seek financial advices. It was concluded those having high FL are more likely to have better cost/benefit analysis. Also, they have a better plan for retirement and wealth accumulation. The paper suggested that improving women's FL will be helpful to prepare retirement plan and stimulating financial security. Gale et al., (2012) and Junobi & Abad (2013) found that FL improves saving behavior. While, Bhabha et al., (2014) found that majority of working women in Pakistan are financially illiterate to take better financial decision making. Amponsah and Barbara (2016) & Kaiser and Menkhoff (2020) suggested that educational curriculum for basic and elementary schools should be designed inclusive of financial literacy. Also, financial institutions should organize trainings and seminars to improve FL level of the workers. Chu et al., (2017) also came up with coherent results. Moreover, Behrman et al, (2012) & Kaiser and Menkhoff (2020) projected that schooling could be more effective if done in together with financial literacy. Also, the study stated that FL effects the household wealth vigorously. Financial literacy equipped individuals with the necessary knowledge and skills to evaluate options and select suitable financial products. These studies collectively highlight the positive impact of financial literacy on financial behavior in Pakistan, emphasizing the importance of enhancing financial literacy programs and addressing the specific needs and challenges faced by individuals in the country.

3   Data and Methodology

The study has been conducted through survey from mature population of District Kohat, having age not less than 30 years. Based on stratified sampling technique, a sample of 306 individuals (147 females and 159 males) has been deployed. District Kohat comprises of two Tehsils: Tehsil Lachi and Tehsil Kohat. Furthermore 2 union councils of Tehsil Kohat: Nusrat Khel and Kohat City, has been selected. One village from each union council: Nasrat khel and Mian Khel has been surveyed randomly. The study followed the stratified sampling technique. The stated sampling technique first divides the whole population in to strata. Later on random sampling is applied on all stratas. The division in to strata prior to data collection overcomes the problem of random sampling. In this way, the stratified sampling technique insures the correct representation of all categories of population. Following stratified sampling technique, the study surveyed the sample through a well-organized questionnaire designed by Kadoya and Khan (2019). The questionnaire comprises of questions related to demographic characteristics, FL and financial behavior.

3.1 Descriptive Statistics

Descriptive characteristics for the sample are given in table 1.

Table 1

Sample characteristics	(n:306)
Gender	
Female respondents	146
Male respondents	159
Age (years)	
30-39	188
40-49	79
Above 49	40
Degree type	
No degree	9
Business degree	63
Science degree	138
Others	96

3.2 Measure of Financial Behavior

In order to analyze FB of certain individual in District Kohat, 10 questions related to variant dimensions of FB are added to the questionnaire (appendix). The questions asked are related to payment of bills on time, keeping record of monthly expenses, staying or expansion of budget according to need, vanishing credit card in each month, regular and emergency saving fund, contribution to retirement accounts, bonds stock and mutual funds, and saving for long term goals. The responses are analyzed on 5-point Likert scale i.e., 1- 5 as: not at all, some time, uncertain, most of the time, and always respectively. The questions asked for measuring FB are in accordance to Stromback et al, (2017).

3.3 Measure of Financial Literacy

The sample is investigated for FL through 9 questions based on information about financial matters. The purpose of these questions is to evaluate the general FL of the people in District Kohat. The questions asked comprises of information related to awareness about credit cards, insurance, taxes, saving accounts, prize bonds, inflation, and interest rate. Based on the complex questions given by Lusardi and Mitcheal (2009) and Carpena et al, (2011), the questions are generalized to assess general financial literacy. All the questions are considered at 3-point Likert scale i.e., 1- 3 as: not at all, some time, and always respectively.

3.4 Chronbach Alpha Test

Reliability of data is checked through Chronbach alpha test. It talks about the internal connectivity of variable as a whole. Chronbach alpha value ranges between 0 and 1. The value for a reliable and consistent data stands above 0.5.

3.5 Kaiser-Meyer-Olkin (KMO) Test

Kaiser Meyer Olkin test is applied to analyze the adequacy of sample for index generation. Henry Kaiser (1970) is the pioneer of Measure of Sampling Adequacy (MSA). After a little modification by

Kaiser and Rice (1974) it is now known as KMO Test, and is considered as a standard to check if the sample is adequate for analyzing the relation. The value for KMO test ranges between 0-1[5]. Any value equal or above 0.5 confirms the correlation among variables. The null hypothesis of KMO is as there is no correlation among variables. Any value equal or above 0.5 would reject the null hypothesis of no correlation.

3.6   Principal Component Analysis

Recent studies such as Stromback et al., (2017) have created indices for FB and financial wellbeing, by taking mean value of all the responses for certain individual. However, Lever et al., (2017) while explaining the significance of PCA, stated that PCA reduces the dimensions and summarize the data. Hence it reduces the chances of errors. PCA can be under taken in case where sufficient amount of correlation exists among variables. KMO Test is applied to confirm the existence correlation; hence PCA is suitable method to create an index.

The Table 2. given bellow is PCA for multi dimension of financial behavior. chronbach alpha value i.e. 0.72 confirms the reliability of scale while KMO value shows a high correlation among variables. Hence making it suitable for PCA it also confirms the sample adequacy for index creation. The PCA given bellow is constructed on the basis of Eigen value qualifying the Kaiser's (1960) criteria[6].

Table 2

FB (Saving Behavior)	KMO value 0.73 a =0.72
Eigen value: 3.02 Variance explained (%) : 30.2	Comp loading
1. Do you pay all your bills on time?	0.15
2. Do you keep a written or electronic record of your monthly expenses?	0.28
3. Do you expand your budget according to your need?	0.37
4. Do you stay within your budget plan?	0.32
5. Do you pay all your credit card balance in each month?	0.2
6. Do you maintain an emergency saving fund?	0.36
7. Do you save money from monthly earning?	0.43
8. Do you contribute money to your retirement account?	0.36
9. Do you spend money on purchase of bond, stock or mutual fund?	0.29
10. Do you save money for any long term goal?	0.25

$$\begin{aligned} \textbf{Index of financial behavior} = {}& \text{Bills}(0.15)^2 + \text{monthly expenses } (0.28)^2 + \text{expansion}(0.37)^2 \\ & + \text{stay within budget plan}(0.32)^2 + \text{credit card balance at the end of month}(0.20)^2 \\ & + \text{emergency saving}(0.36)^2 + \text{monthly savings}(0.43)^2 + \text{retirement account}(0.36)^2 \\ & + \text{purchase of assets}(0.29)^2 + \text{long term savings}(0.25)^2 \quad (1) \end{aligned}$$

Based on criteria the following PCA has been constructed for financial literacy (Table 3). The KMO value and Chronbach alpha value surpasses the scale reliability and sample adequacy criteria. Hence, data reliability and sample adequacy for PCA has assured.

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[5]$https://www.ibm.com/support/knowledgecenter/en/SSLVMB_24.0.0/spss/tutorials/fac_telco_kmo_01.html$
[6]*Eigen value for a component to be retained in PCA, must be higher than 1*

Table 3

Financial Literacy (FL)	KMO value=0.84 a=0.81
Eigen value: 3.7 Variance explained (%): 41	Comp loading
1. Do you think of yourself as a financially literate person?	0.32
2. Do you use a credit card?	0.24
3. Do you have knowledge of insurance?	0.34
4. Do you have knowledge of taxes?	0.37
5. Do you have any knowledge of saving and saving accounts?	0.4
6. Are you aware about prize bonds?	0.33
7. Are you aware of the concept of inflation?	0.35
8. Do you have concept of interest?	0.22
9. Do you know why prices increase?	0.33

Index of financial literacy $=$ self-literacy$(0.32)^2$+credit card user$(0.24)^2$+knowledge of insurance $(0.34)^2$+taxes information$(0.37)^2$+knowledge of saving accounts$(0.40)^2$+know-how of prize bonds $(0.33)^2$+knowledge of inflation$(0.37)^2$+knowledge of interest$(0.22)^2$+why prices increase$(0.33)^2$

$$(2)$$

4   Impact of Financial Literacy on Financial Behavior

Applying least square regression the impact of FL on FB is analyzed for the sample of 306 individuals. A threshold point is added at a medium level of FB i.e. 2.9. Following Stromback et al. (2017), the individuals for whom the value of FB index is above 2.9 holds good FB while the others i.e. having index value $\leq$ 2.9 holds bad financial behavior.

Table 4: Effect of financial literacy (FL) on financial behavior FB

Variable		Financial behavior
Finlit		0.76***
Gender		-0.21**
Age		0.001
	Business	0.61**
Degree	Sciences	0.85***
	Others	0.78***
R-square		0.27
Observation		306
Hypothesis		There exists positive correlation between FB and financial literacy, and Inclusion of financial education as a compulsory subject on high school level will enhance the FB of people in District Kohat through improvement in financial literacy.

Note: *=10% significance, **=5% significance, ***=1% significance.

It is evident from the results in table 4 that FL is linked positively to FB of people from District Kohat. An increase in the index of FL improves the index of financial behavior. In other words, financially literate individuals show better FB as compare to financially illiterate individuals. The FL as an encouraging determinant for FB is also evident form literature. The parallel association of both determinants is coherent to Hilgert, et al., (2003), and Mandell and Klein (2009). Here, the study accepts the first hypothesis of positive relation between FB and financial literacy. A threshold point is added at the average level i.e. 2.25 of FL to define financially literate and financially illiterate individuals. Individuals having FL index value higher than 2.25 are stated as financially literate while others have indexed value less than average are called as financially illiterate. Figure 2, given below, shows that financially literate people also stand above the threshold value for FB. In other words, financially literate individuals possess good financial behavior.
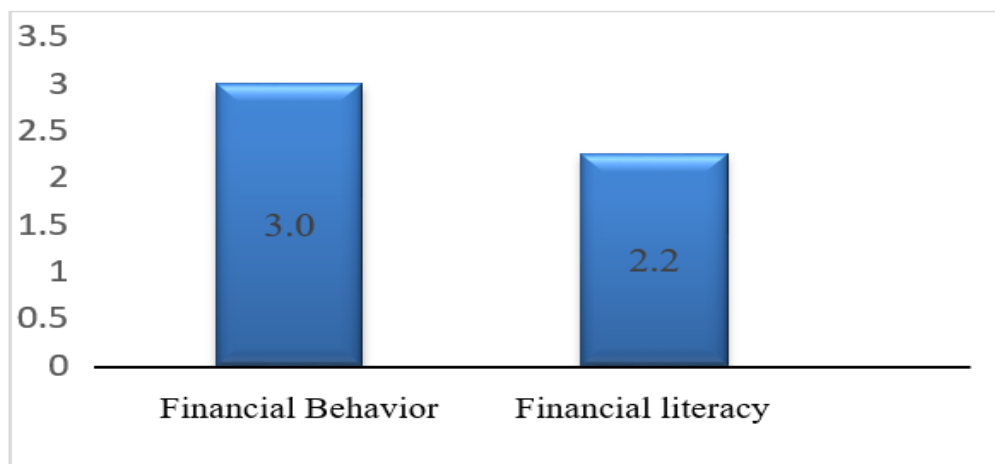

Figure 2: Financial behavior and Financial Literacy

Degree type is a used as a categorical variable in the regression. 4 categories are assigned to the degree type of the respondent: no degree (0), business degree (1), sciences degree (2) and any other type of degree (3). The coefficient of interest i.e. business degree, is 0.6, significant at 5 percent error. If a change is introduced, compare to the illiterate individuals, the change in FB of business degree holders is smaller than other degree holders. This lower change in FB of financial degree holders may be due to their already higher level of financial literacy.

The R square shows that the model captures 27% of the total variance. Based on the results the given hypothesis of inclusion of financial education as a subject on high school level; is accepted.

4.1   Business Degree and Financial Behavior

The objective of the section is to compare the FB of those having degree in business related subjects and others. While others include: illiterates, having degree in sciences subjects, or any other subject.

Figure 3 given bellow shows the FB and FL of the business degree holders. As mentioned in previous section that any value above 2.99 on the index of FB represents good FB. It is shown that all those respondents who possess a degree in business related subjects stands above the cut off point for both FB and FL i.e. 2.25.
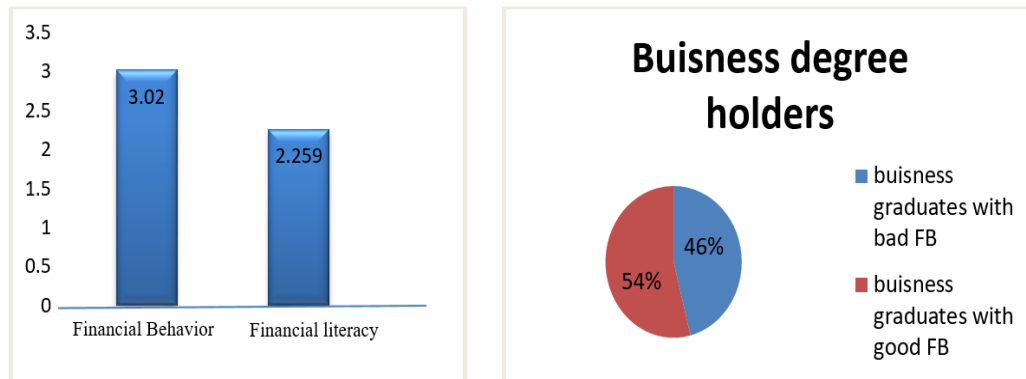
Figure 3: Financial behavior of Business Degree Holders

Figure 3 is a description of FB of business degree holders. The figure splits the behavior of business graduates into good and FB. It is shown that 54% of the total business graduates stands above the threshold value (2.99) for financial behavior, showing good financial behavior. Rest of the 46% of the sample does not qualify for the good financial behavior. The reason that business studies improve the FL makes it pertinent that FL should be studied on school level to improve financial behavior.

4.2 Gender and Financial Behavior

Following the stereotype, Mathematics is not a subject for women, the female representation in business studies is very low. Kou (2016) stated that low math confidence in girls make them to avoid STEM [7] disciplines[8]. Hence the participation rate of women in STEM studies is very low (Christie, 2017). According to OECD Gender equality report (2017) founds that only 1 out 20 girls dares to opt STEM as a field of study. Also, it was concluded that a quarter of girls decide not to study mathematics in their final years of high school.

The figure 4(a) given below compares the FB and FL of male and female respondents from District Kohat. It is clearly shown that the average value of index of FB for male has a higher value than the average value of FB for females. The average index value of FL is also higher for male respondents.

Figure 4 (b) is the graphical representation of all the respondents for whom the value of FB index stands above the threshold value (2.99). It is shown that the value of FB index for male respondents is higher as compare to those female respondents. Similarly, the index value of FL for male respondents is bit higher as compare to those of female respondents.

Differentiating on gender bases, it is evident from figure bellow that 51% of the respondents with good FB are males while rests of the 49% are females. This lower FB of female respondents is subject to the low interest of girls in business studies. For that reason, female possess low FL and portray bad financial behavior.

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[7]*Science, technology, engineering and mathematics*
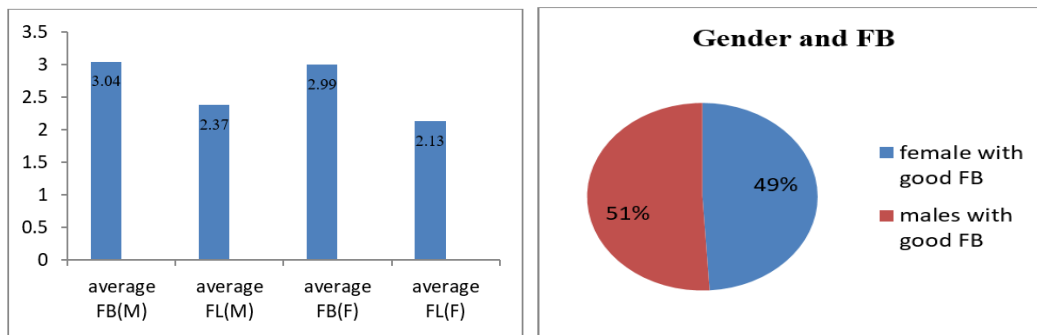[8] *10.1126/science.caredit.a1600110*

Figure 4a: Financial Behavior of Males vs Females   **Figure 4b: Individual with higher Financial Behavior**

Keeping in view all the facts given above, the study also accepts the second hypotheses of including FL as a subject in high school level. The study supports the statement that adding financial education in high school syllabus would enhance FB through improving financial literacy.

5   Conclusion

The study of consumer behavior has long been a captivating area of interest for researchers. Several researchers Agarwal and Muzamdar (2013), Kadoya and Khan (2017) and specifically analyzed the FB of individual. According to Sotiropoulos and Astous (2013), there is a tendency for certain individuals to struggle with striking a balance between their present and future consumption patterns. The results showed that FL is associated positively to financial behavior. An increase in FL leads to better financial behavior. The FB of those who possess a degree in business related subjects is better than non-business degree holders. Also, it was found that FB of females is worse than FB of males. As it is found that FL improve FB hence it is predicted that including financial education as a compulsory subject on high school level would enhance the FB of people in District Kohat in this way people of District Kohat would be able to better manage their assets and arrange finances more properly. Ultimately improving FL would take District Kohat from list of poor districts to list of least poor districts. The impact of financial education on FL is slow but sure. Lusardi and Mitchallii (2007) while analyzing the consequences of financial education on certain financial security recommend that saving campaigns, courses related to retirement plans and other financial management courses should be undertaken. Improving financial education would improve FL and FB subsequently. Also, Mandell and Klein (2009) reported that financial education does not improve the FB at once rather it's a continuous process of learning. Bruhn et al, (2016) conducted an experiment through control trial over a sample of 25000 students and found that financial education at school and college level improve thee grades as well as awareness related to financial matters. Supporting this statement, INFE[9] "financial education in schools" suggested that financial education should be started in school as soon as possible. Moreover, Kaiser and Menkhoff (2017), supported the statement that FL is an outcome of financial education. Those having financial education also have better FL and also portray better financial behavior.

The study recommends that government should introduce a course of FL to the course content of high schools. It will make our upcoming generation to coup up financial matters in a better way. Also,

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[9]*International network on financial education study, available at :*
https://www.oecd.org/finance/financial-education/FinEdSchoolweb.pdf

organizations should organize training, seminars and workshops on the agenda of financial literacy. It will help the working employs to deal with finical matter in a smart way. It is recommended that the government proactively initiate psychological training programs and workshops to raise awareness among the general population about the significance of non-cognitive abilities. Furthermore National Association of State Boards of Education Commission on Financial and Investor Literacy also recommended that financial literacy should be introduced to schools (NASBE 2006:NCEE 2008).

References

Abdullah, N., Fazli, S. M., & Muhammad Arif, A. M. (2019). The relationship between attitude towards money, financial literacy and debt management with young worker's financial well-being. *Pertanika Journal of Social Sciences & Humanities*, 27(1).

Agarwal, S. & Mazumder, B. (2013). Cognitive abilities and household financial decision making. *American Economic Journal: Applied Economics*, 5(1):193–207.

AMPONSAH, B. (2016). *Assessing the effect of financial literacy on saving behaviour: A Case Study of Small Scale Miners in Manso Atwere in Amansie West District.* PhD thesis.

Behrman, J. R., Mitchell, O. S., Soo, C. K., & Bravo, D. (2012). How financial literacy affects household wealth accumulation. *American Economic Review*, 102(3):300–304.

Bernheim, B. D., Garrett, D. M., & Maki, D. M. (2001). Education and saving:: The long-term effects of high school financial curriculum mandates. *Journal of public Economics*, 80(3):435–465.

Bhabha, J. I., Khan, S., Qureshi, Q. A., Naeem, A., & Khan, I. (2014). Impact of financial literacy on saving-investment behavior of working women in the developing countries. *Research Journal of Finance and Accounting*, 13(5):118–122.

Braunstein, S. & Welch, C. (2002). Financial literacy: An overview of practice, research, and policy. *Fed. Res. Bull.*, 88:445.

Bruhn, M., de Souza Leão, L., Legovini, A., Marchetti, R., & Zia, B. (2016). The impact of high school financial education: Evidence from a large-scale evaluation in brazil. *American Economic Journal: Applied Economics*, 8(4):256–295.

Bucher-Koenen, T., Lusardi, A., Alessie, R., & Van Rooij, M. (2017). How financially literate are women? an overview and new insights. *Journal of Consumer Affairs*, 51(2):255–283.

Carpena, F., Cole, S. A., Shapiro, J., & Zia, B. (2011). Unpacking the causal chain of financial literacy. *World Bank Policy Research Working Paper*, (5798).

Choden, T., Wangdi, D., Tenzin, J., Khandu, P., Dema, P., Dema, S., Wangmo, R., & Choden, Y. (2021). Impact of financial literacy on saving behavior among the iii year students of four colleges under royal university of bhutan. *International Journal of Innovative Science and Research Technology*, 6(12):350–364.

Christie, M., O'Neill, M., Rutter, K., Young, G., & Medland, A. (2017). Understanding why women are under-represented in science, technology, engineering and mathematics (stem) within higher education: a regional case study. *Production*, 27.

Chu, Z., Wang, Z., Xiao, J. J., & Zhang, W. (2017). Financial literacy, portfolio choice and financial well-being. *Social indicators research*, 132:799–820.

Cram, F. & Ng, S. H. (1999). Consumer socialisation. *Applied Psychology*, 48(3):297–312.

de Clercq, B. (2009). Do our children know anything about money? an exploratory study. *Meditari Accountancy Research*, 17(1):1–13.

for Economic Co-operation, O. & Development (2013). *Strengthening health information infrastructure for health care quality governance: good practices, new opportunities and data privacy protection challenges*. OECD Publishing.

for Economic Co-operation, O. & Development (2017). *PISA 2015 Results (Volume IV): Students' Financial Literacy*. OECD Publishing.

Gale, W. G., Harris, B. H., & Levine, R. (2012). Raising household saving: Does financial education work. *Soc. Sec. Bull.*, 72:39.

Ghaffar, S. & Sharif, S. (2016). The level of financial literacy in pakistan. *Ghaffar, S., & Sharif, S.(2016). The level of Financial Literacy in Pakistan. Journal of Education & Social Sciences*, 4(2):224–235.

Grohmann, A. (2018). Financial literacy and financial behavior: Evidence from the emerging asian middle class. *Pacific-Basin Finance Journal*, 48:129–143.

Hamza, N. & Arif, I. (2019). Impact of financial literacy on investment decisions: The mediating effect of big-five personality traits model. *Market Forces*, 14(1).

Hilgert, M. A., Hogarth, J. M., & Beverly, S. G. (2003). Household financial management: The connection between knowledge and behavior. *Fed. Res. Bull.*, 89:309.

Hussain, B., Ullah, K., Haider, S., et al. (2021). Determinants of financial behavior and financial wellbeing in district kohat. *PalArch's Journal of Archaeology of Egypt/Egyptology*, 18(18):1667–1690.

Jonubi, A. & Abad, S. (2013). The impact of financial literacy on individual saving: An exploratory study in the malaysian context. *Transformations in Business & economics*, 12(1):28.

Kadoya, Y. & Khan, M. S. R. (2018). Can financial literacy reduce anxiety about life in old age? *Journal of Risk Research*, 21(12):1533–1550.

Kaiser, H. F. (1970). A second generation little jiffy.

Kaiser, H. F. & Rice, J. (1974). Little jiffy, mark iv. *Educational and psychological measurement*, 34(1):111–117.

Kaiser, T. & Menkhoff, L. (2017). Does financial education impact financial literacy and financial behavior, and if so, when? *The World Bank Economic Review*, 31(3):611–630.

Kaiser, T. & Menkhoff, L. (2020). Financial education in schools: A meta-analysis of experimental studies. *Economics of Education Review*, 78:101930.

Lever, J., Krzywinski, M., & Altman, N. (2017). Points of significance: Principal component analysis. *Nature methods*, 14(7):641–643.

Loibl, C. & Hira, T. K. (2006). A workplace and gender-related perspective on financial planning information sources and knowledge outcomes. *Financial Services Review*, 15(1):21.

Lusardi, A. (1999). Information, expectations, and savings for retirement. *Behavioral dimensions of retirement economics*, 81:115.

Lusardi, A. & Mitchell, O. S. (2017). How ordinary consumers make complex economic decisions: Financial literacy and retirement readiness. *Quarterly Journal of Finance*, 7(03):1750008.

Lusardi, A. & Mitchelli, O. S. (2007). Financial literacy and retirement preparedness: Evidence and implications for financial education: The problems are serious, and remedies are not simple. *Business economics*, 42:35–44.

Mandell, L. (2008). Financial literacy of high school students. Em *Handbook of consumer finance research*, pgs. 163–183. Springer.

Mandell, L. & Klein, L. S. (2009). The impact of financial literacy education on subsequent financial behavior. *Journal of Financial Counseling and Planning*, 20(1).

Ozili, P. K. (2021). Financial inclusion research around the world: A review. Em *Forum for social economics*, volume 50, pgs. 457–479. Taylor & Francis.

Perry, V. G. (2008). Is ignorance bliss? consumer accuracy in judgments about credit ratings. *Journal of Consumer Affairs*, 42(2):189–205.

Piaget, J. (1976). Piaget's theory.

Shaik, M. B., Kethan, M., Jaggaiah, T., & Khizerulla, M. (2022). Financial literacy and investment behaviour of it professional in india. *East Asian Journal of Multidisciplinary Research*, 1(5):777–788.

Sotiropoulos, V. & d'Astous, A. (2013). Attitudinal, self-efficacy, and social norms determinants of young consumers' propensity to overspend on credit cards. *Journal of Consumer Policy*, 36:179–196.

Strömbäck, C., Lind, T., Skagerlund, K., Västfjäll, D., & Tinghög, G. (2017). Does self-control predict financial behavior and financial well-being? *Journal of behavioral and experimental finance*, 14:30–38.

Xiao, J. J. & Porto, N. (2017). Financial education and financial satisfaction: Financial literacy, behavior, and capability as mediators. *International Journal of Bank Marketing*, 35(5):805–817.