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Impact of Financial Literacy and Self-Control on Financial Well-Being: A Mediating Role of Financial Behavior

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Abstract: *The study intends to investigate the impact of financial literacy and self-control on the financial well-being of individuals in a developing country like Pakistan, where we are facing certain peripheral issues such as a dense youth population and feeble financial outreach of the community. Henceforth, having substantial youth and the inability of the formal financial sector to cope with their growing needs the need of making rational financial decision making becomes imperative for the individual's well-being. Precisely, we have highlighted the relationship and effect of financial literacy and self-control on the financial well-being of university students through the mediating role of financial behavior. Furthermore, the data was collected through a modified questionnaire comprising 26 items. The results of the study affirm the importance of financial behavior and financial literacy on the financial well-being of individuals particularly, university dealing youth.The outcomes of the study suggested that financial literacy is important for human well-being, henceforth, the study should be done at a wider scale by including the most sophisticated psychological constructs in the measuring scale.*

Keywords: *Financial Behavior,Financial Literacy, Financial Well-Being,Self-Control, Pakistan, PLS-SEM*

Introduction

Financial literacy normally plays a pivotal role in enhancing knowledge and skills for managing obvious routine financial decision-making in daily life. Although, financial literacy refers to a person's basic understating regarding efficiently analyzing and communicating better financial planning for his material well-being (Tavares and Almeida, 2020). However, at the macro level nations build their material well-being by absorbing an abundance of financial literacy to handle general financial conditions and transactions in the marketplace. Contrarily, financial well-being often gets hunched by making inefficient financial choices due to a lack of financial literacy. As Huston (2010), stated that precisely, financialliteracy is the barometer for understanding the basic financial principles to efficiently channel borrowing and saving of individual disposals. The generally defining parameters of financial literacy include a basic understanding of generally acceptable economic principles for making better financial decision-making, which ultimately leads to higher economic well-being. Whereas, low levels of financial literacy in individuals clearly, indicate that the basic units of society are not well prepared enough to cope with the growing needs of modern society (Hilgert, Hogarth, & Beverly, 2003; Lusardi & Mitchell, 2007).
The extent of financial literacy in individuals varies to the origin, race, culture, norms and country inwhich the aforesaid is residing. In developed countries financial literacy and financial well-being are closely well-connected because of the rigidness of the native financial system. While for, in developing countries poor

financial behavior may survive far due to low levels of financial literacy and economic foresightedness (OECD, 2011). For instance, it is worth mentioning the fact that an individual's learning propensity mostly depends on his self-control. Disposing and retaining financial cash flows often rely on extant self-control and belief about the uncertainty of future outcomes. It enables people to postpone responding right away, maintaining an adaptive behavior (Baumeister, 2002). It means by having more self-control an individual can be more focused and may be able to resist distracting thoughts by controlling emotions while having the most challenging outcomes to face. Ultimately, an individual having more self-control has better financial behavior and resultantly, may take care of his good financial wellbeing (Kiyosaki, 2012). Normally, they do not spend lavishly which makes them the leader of their empire with good financial well-being (Kahnemann, 2011). Literarily, financially confident can be categorized as *planners* and *doers*. The formal ones are concerned with lifetime utility whereas the later ones are selfish and myopic (Thaler and Shefrin, 1981). The ultimate goal of self-controlled people is to be financially literate and have wealthy, healthy and strong financial life. Normally, it has been observed that self-controlled and financially well-being people are more anxious and wiser while spending their money (Oechssler et al., 2009). Financial behavior and well-being are also well connected through the degree of optimism in individuals.

Optimistic individuals are more concerned about their financial well-being consequently; they work hard to get the work done smoothly. Whereas, the extent of financial well-being is positively related tothe degree of optimism, lower or moderately optimistic people may not get desirable financial results in life (Puri et al., 2007). The rational thinking of an individual depends more on financial factors rather than non-financial factors. Therefore, the aforesaid psychological factors affect self-control and financial behavior leading to financial well-being. In this study, the authors intend to investigate the impact of self-control and financial literacy on financial behavior and self-control. Henceforth, people without financial literacy may not be able to make rational decisions just because of having an inferior acquaintance of information.

Particularly, in Pakistan the literacy rate is a bit lower as compared to the region and the rest of the world as well. Moreover, the financial well-being of Pakistan's nation is pivotal important due to the holistic prevalence of poverty and deprivation among the people. This study looks at how financial literacy influences the financial behavior of Pakistani households. Pakistan makes for an intriguing case study for two reasons in particular. First, compared to other wealthy nations, Pakistan has lower levels of financial literacy. Secondly, this study will reduce the gap in self-control and financial literacy for the financial well-being of Pakistani students. This research aims to check the impact of financial literacy and self-control on financial well-being with financial behavior as a mediating variable. In this study, we look at how financial literacy influences the financial behavior of university students in Pakistan. Pakistan is the 5th largest populated country in the world having a substantial "*youth bulge*" approx. 60 % of the population falls in the youth age. Additionally, the country also enclavesan underdeveloped financial system wherever most of its population is away from a formal financial system. However, approx. 500,000 students are enrolled in technical & vocational education, and 2 million students are enrolled in degree-awarding colleges and universities. It is estimated that in Pakistan there areover 200 universities and 3,000-degree colleges working across the country. Meanwhile, having substantial youth and a weak financial system the financial wellbeing of the students is very pathetic because they do not have adequate financial literacy. Resultantly, not only do our students suffer from poor financial shocks but also their families feel the heat as well. Therefore, the current study aims to investigate the impact of financial literacy and self-control on the financial well-being of students enrolled in Pakistani Universities. Precisely, Pakistan is a highly populated country, furthermore, most of her population consists of youth. In that case, it is the need of the hour to study how our youth make financial decisions. Therefore, the target population of the said study is youth who is involved in university education.

Literature Review

The literature has long recognized that financial literacy and psychological traits influence financial decisions. Studies showing that people with higher levels of financial literacy and knowledge may make better judgments, organize their consumption and savings better, and create better plans throughout their lifetimes have caused the topic of financial literacy to acquire relevance. These people also make better financial decisions for their families, which enables them to increase their financial security, stability and well-being. Many studies have discussed the relationship between financial literacy, self-control and financial well-being (Fernandes, Lynch and Netemeyer, 2014; Stromback, Lind, Skagerlund, Vastfjall and Tinghog, 2017; Amagir, Groot, Maassen van den Brink and Wilschut, 2018; Bharucha, 2019; Bapat, 2020). Financial literacy is a hot topic in academic research works because Huston (2010) and Opletalov (2015) believe that a person can master the administration of their finances as an intellectual empowerment tool for more responsible decision-making. People are supposed to oversee ensuring their long-term and short-term financial security. Nonetheless, there is considerable evidence that people are unable or unwilling to accomplish it (Fernandes et al., 2014; Shephard et al., 2017; Cronqvist et al., 2018). Financial literacy is the capacity to read, analyze, manage, and communicate financial matters that affect everyday decisions and material well-being (Tavares and Almeida, 2020).

Scholars and financial analysts also see financial self-control as a way to predict how people handle money and how well they do financially. Self-control influences the financial behavior of all economic agents. When it comes to self-control, an individual is regarded as an organization (Thaler and Shefrin, 1981). Taft, Hosein &Mehrizi (2013) tried to figure out how financial literacy, financial well-being and financial concerns are related to each other. A questionnaire was made, and people were chosen at random to fill it out by using correlation test, Independent two-sample test and regression were used to look at the data. The results showed that financial literacy and financial well-being are linked to age and education. Moreover, married people and men know more about money than single people. Jiang, Liao, Wang and Xiang (2020) carried out a study on mutual fund investors in China regarding financial literacy and financial welfare through a survey. They expressed that male investors have more financial literacy and experience as compared with female investors in China.

Self-control is seen as a key part of how humans have changed over time. In line with this idea, many studies have shown that self-control is important for humans to function and that it leads to better work and school performance, better relationships, and overall healthier and happier lives. People with greater self-control exhibit better financial behavior and can better manage their financial resources. They make the best use of their resources. Lone and Bhat (2022) examined financial well-being and financial literacy and the study also examined how financial self-efficacy mediates financial literacy and well-being. They gathered data from 203 business school faculty members through simple random sampling and used confirmatory factor analysis and structural equation modeling. They concluded that financial literacy improved financial self-efficacy and well-being and found that financial literacy partially mediates financial well-being through financial self-efficacy.

Noor, Batool and Arshad (2020) investigated how financial literacy and self-efficacy affect financial account ownership by gathering data from 564 through a questionnaire and they used a binary logistic regression model which predicted that financial account ownership is based on financial literacy and self-efficacy. They also said that financial self-efficacy does not affect the account ownership model. The study concluded that gender, marital status, education, occupation, and income also affect Pakistani account ownership behavior and reached the conclusion that financial literacy is essential for economic equity. According to Mallick and Debasish (2021), the primary goal of a human being in their household is to achieve financial well-being, because well-being is linked to mental satisfaction. They studied financial

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behavior, well-being, and self-control. According to the findings, socioeconomic well-being has a significant impact on finance, financial knowledge, financial status, and marital status. Moreover, the financial intervention has a significant impact on financial literacy, financial behavior and financial welfare enforcement.

H1: There is a positive relationship between financial literacy and financial well-being.

H2: There is a positive relationship between self-control and financial well-being.

Most recently, Kumar, Pillai, Kumar and Tabash(2023) figured out the relationship between digital financial literacy and financial well-being. They collected data from 512 respondents from India and employed PLS-SEM modeling. The results revealed that financial literacy positively impacts financial well-being. Moreover, Rafik and Rahayu (2020) examined how financial literacy, cognitive factors like self-control and MSMEs affect financial behavior and well-being, including financial security and anxiety. In the study, control variables include gender, age, and educational background, length of MSMEs involvement, industry, and monthly sales turnover. A questionnaire was distributed and Partial Least Square-Structural Equation Modeling (PLS-SEM) was used by collecting data from 155 respondents. The findings of the study suggested that financial literacy and self-control explain financial behavior, security, and anxiety. Financial behavior also improved financial security and anxiety. Thus, improving MSMEs' actors' personal financial management skills can improve their financial well-being.

She, Rasiah, Turner, Guptan and Nia (2021) examined how psychological beliefs affect financial well-being and how financial behavior mediates this relationship and 500 Malaysian working adults were surveyed. They used PLS-SEM and found that subjective financial knowledge, attitude, and locus of control positively affect financial behavior and well-being. Financial behavior mediates the relationships between financial attitude, locus of control, and financial well-being.Recently, Rahayu, Ali, Aulia and Hidayah (2022)have studied the relationship between the level of financial well-being and financial behavior to check the saving behavior and spending behavior in Indonesia. They used data from 741 respondents and the results showed that there is a positive relationship between financial literacy and financial well-being.

Vukovic and Pivae (2021)examined whether self-control directly affect financial security or indirectly through good financial behavior. A sample of 494 respondents was surveyed and structural equation modeling was tested. They found that financial behavior significantly mediates the relationship between self-control and financial security. Sajuyigbe (2022) has studied financial well-being and financial self-control. He used credit discipline, savings and investment, and financial awareness to measure financial behavior. The structural equation model (SEM) found that financial behavioral parameters positively and significantly affect financial self-control and financial well-being. The study also concluded that financial well-being is strongly correlated with financial self-control. To ensure financial stability and long-term financial well-being after retirement, civil servants must be financially rational. Iramani and Lutfi (2021) developed a model expressing the role of financial behavior in the financial well-being of the family. A sample of 1158 people fill out a structured questionnaire to get the information. Structural equation modeling is used to find out how the way people handle their money affects their financial well-being. The results show that financial knowledge and financial behavior significantly influence financial well-being. Moreover, they indicated that there is a need to start the campaign to increase financial awareness in the people for their financial well-being.

Recently, Zhang and Chatterjee (2023) made a study in the United States to explore the role of financial literacy in obtaining financial well-being. In this regard, they collected data from US state institutions and found that financial literacy is positively associated with financial well-being. Rahman, Isa, Masud, Sarker and Chowdhury (2021) intended to examine the relationship between financial behaviors, financial literacy and financial well-being in Malaysia by gathering a sample of 412 respondents. They applied PLS-SEM and found that financial literacy and financial behavior play a significant role in predicting financial well-being. They suggested that financial literacy must be increased in low-income group people for their financial well-being. Moreover, earlier another study was made in Malaysia by Sabri and Zakaria (2015) to investigate the level of relationship between financial literacy and financial well-being among employees. They distributed a questionnaire among 508 employees of the public and private sectors by using multistage sampling. The outcomes of the study revealed that the employees having financial literacy are financially well and strong. The results indicated that financial literacy significantly influences the financial well-being of employees in Malaysia.

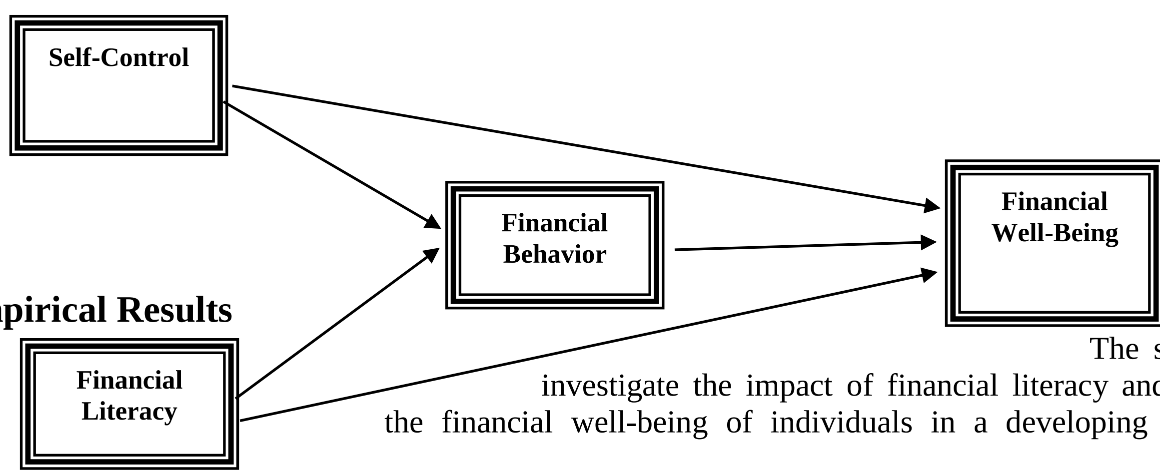
H3: There is a positive relationship between financial literacy and financial well-being through the mediating role of financial behavior.
H4: There is a positive relationship between self-control and financial well-being through the mediating role of financial behavior.

Methodology

In this study, we have highlighted the relationship and effect of financial literacy and self-control on the financial well-being of university students through the mediating role of financial behavior. In this perspective, financial literacy and self-control have been discussed as independent variables and financial well-being has been used as dependent variables. The data were collected through a modified questionnaire which was comprised of 26 questions and adopted by (Tangney, Baumeister and Boone, 2004; Fernandes et al. 2014; Ramalho, 2017). In this study, the questionnaire consisted of two sections where the profile of respondents was the first section to get information about the students and the main questions regarding the variables were asked in a later section. Six questions have been asked to measure financial literacy and seven questions have been put for the measurement of self-control. Moreover, financial behavior has been measured through seven questions and financial well-being by six questions. A sample of 500 students from different universities in Gujranwala, Gujrat, Sialkot and Lahore was selected and distributed questionnaires through a convenience sampling technique. But, a total of 375 students responded to the questionnaires in this regard. In this study, partial least square-structural equation modeling has been employed.

Figure 1 represents that financial literacy affects the financial well-being of the students directly as well as indirectly through the financial behavior of the students which varies from time to time. Moreover, self-control also has a direct effect on financial well-being and financial behavior plays a mediating role in this regard.

Figure 1: Theoretical Framework



Empirical Results

The study intends to investigate the impact of financial literacy and self-control on the financial well-being of individuals in a developing country like

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Pakistan. Precisely, Pakistan is the 5th largest populated country in the world, furthermore, most of her population consists of youth. It is also worth mentioning the fact that with each passing the phenomena of *"youth bulge"* is surpassing the rock. In that case, it is the need of the hour to study how our youth make financial decisions. Therefore, the target population of the said study is youth who is involved in university education. To establish generalize ability in results 5 different hypotheses have been formulated and tested with the use of the most sophisticated statistical tools such as Smart PLS (Joseph, Hair, Marko and Ringle, 2017).The information gathered is evaluated and given significance through data analysis;the following are the major chunks of data analysis and investigations.

Demographic Analysis: The main characteristics of the population are known first for proper generalization of results; therefore,Table No. 01 shows the results of demographic analysis. Hence, the gender disparity is a bit lower and around 32.6 percent of the respondents are male andthe rests of it are female.Concerningemployment, the numbers are interesting and only 17.4 percent of respondents are employedand the remaining 82.6 percent are unemployed. The survey has also probed that most of the respondents approx. 71.2 percent live in urban areas and the remaining are rural areas. Whereas,concerning age most of our respondents are young having age group81.2 percent of 18-23 years, 15.9 percent fall into the 24-29 group and 2.9 percent and the remaining are 30 years and above group. In compliance with the age group, most of our respondents are undergraduates and only 30 percent or odd have higher education.

Table No. 01: Demographics Statistics

Gender	**No. of Respondents**	**%**
Male	122	32.6%
Female	253	67.4%
Total	375	100%
Employed	**No. of Respondents**	**%**
Yes	65	17.4%
No	310	82.6%
Total	375	100%
Area	**No. ofRespondents**	**%**
Urban	267	71.2%
Rural	108	28.8%
Total	375	100%
Age	**No. of Respondents**	**%**
18-23	304	81.2%
24-29	71	15.9%
30 and above	10	2.9%
Total	375	100%
Education	**No. of Respondents**	**%**
Undergraduate	261	69.4%
Graduate	78	20.9%
Master/MS	36	9.7%
Total	375	100%

Confirmatory factor analysis: Here comes the main course where we have to probe: *Construct Validity*,*Reliability*&*Discriminant Validity* and *Confirmatory factor analysis* the most of all arts Smart PLS

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has made use of it for the said tasks. The below-mentioned tables are showing the details of Structural Equation Modeling (SEM) results and the loadings of most of the factors are more than the threshold level i.e., 0.40 with AVE above 0.50, which means the outer loadings results are acceptable. Whereas, the internal consistency of items is also vital for effective inferencesvalues of internal consistency (Cronbach Alpha) should be higher, higher the better (Cronbach and LJ, 1971) but it is suggested that Composite Reliability (CR) should be used for measuring internal consistencybecause Cronbach Alpha negates the assumption of relevancy (Werts, 1974).Although, composite reliability is also integral for valid estimations the said values should be in the range of 0.70 to 0.90. Average Variance Extracted (AVE) also explains the variance in constructs there should be moderate variance among the items approx. 0.50. That is very much impeccable in our case. However, R^2 shows the impact of independent variables (IV) on the dependent variable (DV) and moderator. In the said case the overall impact of independent variables on the dependent variable is very much pronounced, although, the role of the moderator is significant but upto less extent.

Table No. 02: Construct Reliability and Validity composite

Items	**Outer**	**Cronbach's**	**Reliability (CR)**		**Average**	**VarianceR^2**
	Loadings	**Alpha**			**Extracted (AVE)**	
SC2	0.59		SC1		0.43	0.86
SC3	0.53				0.44	
SC4	0.60				0.18	
SC5	0.50				0.21	
SC6	0.55					
SC7	0.04					
FL1	0.46		0.71	0.79		0.21
FL2	0.58		0.79	0.88		0.42
FL3	0.34		0.81	0.86		
FL4	0.56					
FL5	0.51					
FL6	0.51					
FB1	0.32					
FB2	0.60					
FB3	0.46					
FB4	0.65					
FB5	0.49					
FB6	0.54					
FB7	0.01					
FW1	0.58					
FW2	0.61					
FW3	0.67					
FW4	0.55					
FW5	0.53					
FW6	0.26					

Discriminate Validity: The ratio of **Hetero-trait-Mono-trait** (HTMT) shows the probable relationships between the variables (Henseler, Ringle and Sarstedt, 2015).To extract good logical results from inferences

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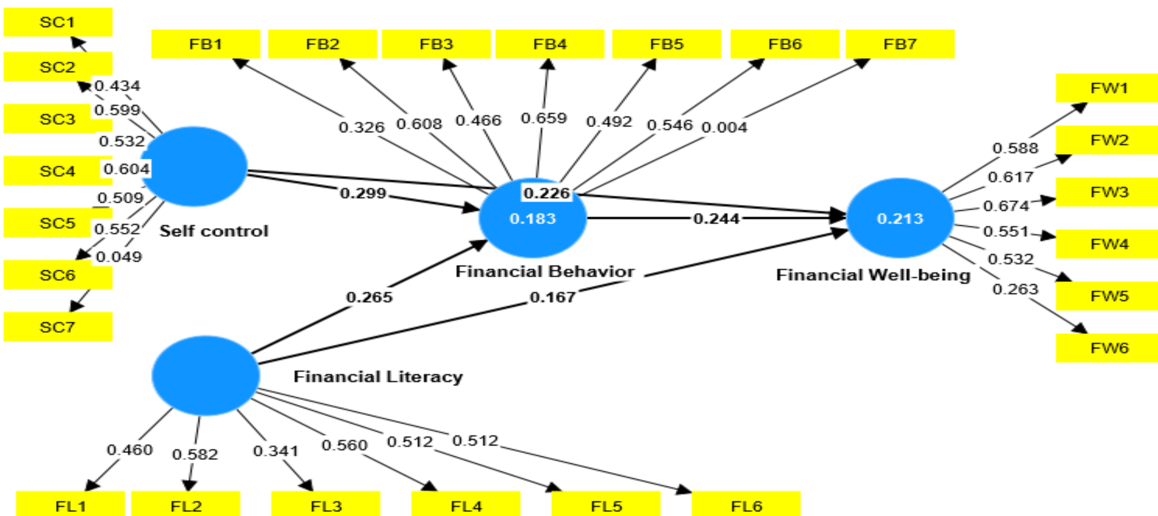
the correlation coefficients among the variables should be rational limits lower than .80 marks (Kline, 2011). Fortunately, the correlations among the variables are neither significant nor above the stated threshold. Exceptionally, the constructs of financialliteracy are heavily correlated with financial behavior. Whereas, rest of the variables have obvious correlations but these are not threatening though.



Confirmatory Factor Analysis

Figure No. 02

Bootstrapping: After the examination of the reliability and validity contents of data the next step is the validation of formed hypotheses are tested by using the bootstrapping tool in Smart PLS (Sarstedt, Ringle and Hair, 2017). The inferred results show that financial behavior and financial literacy have a direct impact on financial well-being. Financial literacy and self-control affect the financial well-being of a person through financial behavior. Furthermore, to ascertain the validation of hypotheses certain inner model tests were also performed in good faith. However, the threshold of each hypothesis is t-statistics at certain values. Meanwhile,financial behavior has a beneficial effect on financial well-being it may also be validated through the stipulated value of 3.74 a t-statistic which ultimately asserted the validation of formed (H1) postulation.

Table No. 04: Bootstrapping Summaries

		Original Sample	**Sample Mean (M)**	**Standard Deviation (STDEV)**	**T Statistics (O/STDEV|)**	**P Values**	**Supported?**
Financial Behavior	_>Financial Well-Being	0.24	0.25	0.06	3.74	0	Yes
Financial Literacy	_>Financial Behavior	0.26	0.27	0.05	4.52	0	Yes
Financial Literacy	_>Financial Well-Being	0.16	0.16	0.06	2.45	0.01	Yes
Self-Control	_>Financial Behavior	0.29	0.31	0.05	5.22	0	Yes
Self-Control	_>Financial Well-Being	0.22	0.23	0.05	4.08	0	Yes

Additionally, the results of testing the second hypothesis (H2) demonstrate that financial literacy has a beneficial impact on financial behavior nevertheless, in the said case the t-statistic of 4.52is quite higher than the parameter. The findings of the third hypothesis (H3) also indicate that financial literacy has a significant impact on financial well-being similarly, in the aforesaid case the t-statistics of 2.45 is the mare proof of conclusion. Additionally, the results of testing the fourth hypothesis (H4) demonstrate that self-control has a beneficial impact on financial behavior. This result expresses that the self-control of an individual defiantly influences his financial well-being.

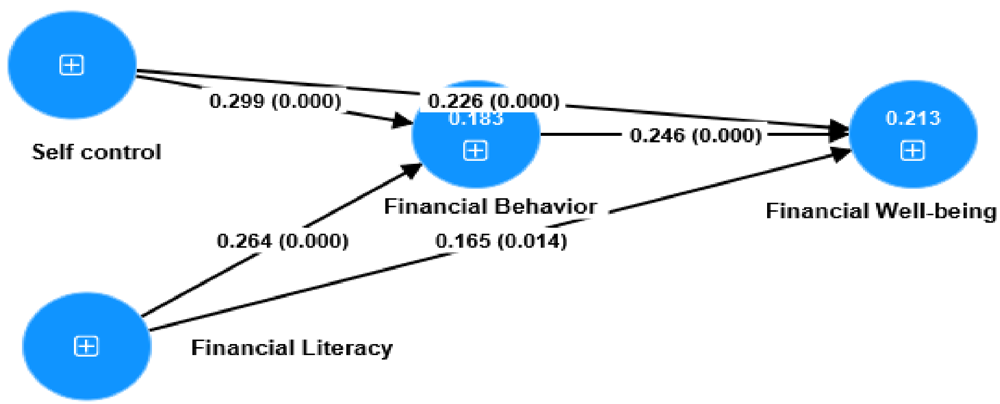


Figure No. 03

Conclusion

Pakistan is the 5th largest populated country in the world having a substantial "*youth bulge*" approx. 60% of the population falls in the youth age. Additionally, the country is also enclaving an underdeveloped financial system wherever most of its population is away from formal financial systems. Henceforth, having substantial youth and the inability of the formal financial sector to cope with their growing needs the need of making rational financial decision making becomes imperative for the individual's well-being. Henceforth, the study intends to investigate the impact of financial literacy and self-control on the financial well-being of individuals in a developing country like Pakistan. Precisely, we have highlighted the relationship and effect of financial literacy and self-control on the financial well-being of university students through the mediating role of financial behavior. Furthermore, the data was collected through a modified questionnaire comprising 26 items and the instrument has two sections formal one for the profile of respondents and the rest of the questionnaire for the scaling of coastal variables (Tangney, Baumeister and Boone, 2004; Fernandes et al. 2014; Ramalho, 2017; Stromback, Lind,Skagerlund, Vastfjall,Tinghog, 2017).The analysis is said to be the most important component of research because it serves as the foundation for the findings of the entire investigation. The information gathered is evaluated and given significance through data analysis with the most sophisticated techniques of all time such as Smart PLS and so. The results of the study confirm that financial behavior and financial literacy have a direct impact on financial well-being. Financial literacy and self-control affect the financial well-being of a person through financial behavior. Moreover, financial literacy has a beneficial impact on financial behavior nevertheless,financial literacy has a significant impact on financial well-being similarly, through the impact of financial behavior on financial well-being. The outcomes of the study suggested that financial literacy is

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important for human well-being, henceforth, the study should be done at a wider scale by including the most sophisticated psychological constructs in the measuring scale. It is an obvious fact thatpeople with good self-control and financial literacy have more chances of success as compared to the rest becauseof having more confidence to handle their financial risks properly.

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