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The Effect Of Financial Knowledge On Financial Behavioral Intention To Invest: Mediating Role Of Risk Perception And Attitude

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Abstract

This study investigated the influence of financial knowledge on the behavioral intention to invest in the presence of risk perception and attitude toward investment as a mediators in a serial mediation, while exploring the complication of decision making regarding financial matter among Pakistanis' adults. The study divided financial knowledge into objective or actual and subjective or self-rated knowledge. Data were collected through questionnaires from the 400 adults. The results of the study demonstrates a significant mediating effect of perception toward risk and attitude toward investment in the association between knowledge of finance and behavioral intention to invest. In decision making process, the importance of financial knowledge, the complexity existed in the relationship of knowledge and behavior are also explained by the study in the presence of risk and attitude.

Keywords: Behavioral Intention, Financial Knowledge, Serial Mediation, Risk Perception, Investment Behavior, Attitude

Introduction

It is a fact that past financial investment provide a base for decision making regarding financial matter in future, in line with the concept of individual routine and retirement financial planning. Like the previous generations, low gross domestic savings of about 8.69 percent (World Bank, 2016), majority of Pakistanis adults lack sound saving and investment prospects. These circumstances reveal the alarming state of their financial literacy and behavior. According to State Bank of Pakistan staff notes, majority of Pakistani youth spend more than their capacity to generate (Ali, 2016). Moreover lack of financial literacy is extensively documented as a critical attribute to financial mismanagement (Duasa & Yusof, 2013; Jariah, Husniyah, Laily, & Britt, 2004; Osman, Justine, & Lim, 2008; Sang, 2014). However due to the ethereal nature of financial products, difficulty of quantification in the quality of investment and outcome makes the financial decision making a risk and complex process.

It is explicitly assumed that there is a direct relationship between financial knowledge and financial behavior. Due to the diverse nature of financial products, an investor may develop higher tendency to protect their precious investments with the financial knowledge. The study investigates the impact of financial knowledge on financial behavioral investment intention among Pakistani young generation with the mediating role of attitude and risk perception to invest. The study contribute to the literature in three ways (1) that how financial behavior intention is affected by the subjective as well as objective financial knowledge, (2) the relationship is investigated in the presence of mediators i.e. perception toward risk and attitude toward investment, and (3) the financial behavioral intention of those participants which are below their prime-saving age.

Literature Review

Knowledge of finance basically comprises a set of systematically discovered and assembled financial related information (Alba & Hutchinson, 1987). In decision making process, the investors utilized their financial knowledge adequately, which depend on the strength of their existing financial knowledge. The one with superior financial knowledge lead to better financial decision making and select most favorable financial investment (Liebermann & Flint-Goor, 1996).

Generous studies are existed on the relationship of knowledge and behavior in finance. The findings of the previous studies are inconclusive and presented contradictory results. Particularly, the studies of Hilgert, Hogarth, and Beverly (2003), Robb and Sharpe (2009),

Lusardi and Mitchell (2008, 2011) and Robb (2011) revealed direct association between financial knowledge and financial behavior. These studies implied that higher financial know-how contribute to greater financial behavior. Objective and subjective knowledge propounded by Wang (2009) to represent financial knowledge, where respondents provide answer to a set of questions to captured the former, while the latter, is a subjective responses that are provided by the participants. Among financial knowledge and financial risk, a high correlation is revealed with the inclusion of subjective knowledge. Contrary, there is statistically insignificant association between financial knowledge and investor financial behavior (Jones, 2008). Regardless of possible direct relation between these variables, there is doubtfulness in the evidences regarding the intention and interpretation of financial knowledge and meaning into the anticipated financial behavior.

The relationship among financial knowledge, attitude and investors' behavior is complex and can be positive or negative (Fabrigar, Petty, Smith, & Crites Jr, 2006). Based on the concept propounded by Krosnick and Petty (1995), reiterated knowledge played an important role in shaping attitude as well as influencing the corresponding values or engagements. Thus operationally knowledge affect attitude and behavior. On the other side, Jorgensen and Savla (2010) and Sang (2014), manifested the doubtfulness of the direct relationship and demonstrated an indirect relation between knowledge and behavior having attitude as a mediator. This implies that financial knowledge affect financial attitude positively and thus leads to the awareness of positive financial behavior. Similarly Ki and Hon (2012), broached that how the behavioral intention of the individual affected by the perception of that individual. This indicate that capturing behavioral intention is adequate instead of actual behavior.

This study tend to operationalized and divided the financial knowledge into actual or objective and self-rated of subjective financial knowledge, combine with attitude toward investment to assiduously grasp the relationship among knowledge of finance , attitude and behavioral intention in the field of finance (Fabrigar et al., 2006). Subjective knowledge is considered as an indicator of an individual's level of confidence in the subject domain (Brucks, 1985). The study attempted to evaluate in risk taking circumstances, whether overconfidence concept in behavioral finance theory accounts for behavioral intention. After all, in decision making process, which shows that how an individual deals with the available information in the actual situation, is a risky and irrefutably complex phenomenon. Similarly in financial context, risk perception, attitude and behavioral intention is associated to how an individual demonstrate the investment intention. So, it is necessary to grab the perception of public with attitude to unfold the complication in the process of decision making.

Methodology of the study

This study employed non-probability purposive sampling technique among the respondents the province of Khyber Pakhtunkhwa, Pakistan using questionnaire survey. The respondents are the adults having working experience, the sample comprises 400 respondents having age ranging from 20 t0 42 years. This young adults are associated with the prime-saving years (Davis & Li, 2003; Poterba, 2001). Participants of the study was supposed that they were not in quest of for investments, saving, products and financial actively (Higgins, 1998). The study conducted a pilot study on the developed instrument among 100 respondents before the actual data collection.

In order to measure the financial behavioral intention to invest (BehInt), the study adapted six items developed by Lam and Hsu (2006) is comprises of 10 point likert scale having (1) represents strongly disagree while (10) denoted strongly agree. These items specifically represent the willingness of the investors to invest. Thus lower score indicates lower level of willingness to invest and vice versa. The items have a Cronbach's alpha of 0.91, indicating that the scale is highly reliable.

In this way, in order to assess objective knowledge (ObjKnow), the study adapted a scale developed by Van Rooij, Lusardi, and Alessie (2011), which comprises five questions about the basic financial knowledge based on time value of money, inflation, compound interest and money illusion. Similarly for measuring advanced financial knowledge, five questions are employed, which are based on the concept of functioning of stock market, mutual funds, risk associated with stock and mutual funds, risk horizon and diversification of risk. Scores are represented by the number of right answer as one point is represented by one right answer. Its value range from 0 (all answers wrong) and 10 represents all answers are correct. Similarly, the study uses six item developed by (Flynn & Goldsmith, 1999) to measure the subjective knowledge (SubKnow), comprises six point likert scale with lower value represent strongly disagree while higher value indicate strongly agree. The Cronbach's alpha value of 0.87 indicates that the scale has a good internal consistency. In the same way high level of financial knowledge is demonstrated by higher mean scores.

Similarly for measuring risk perception (RiskPer) the first mediator, the study adapted a four item scale of (Hoffmann, Post, & Pennings, 2013) having six point likert scale. The Cronbach's alpha value of 0.88 reflects internal consistency. The second serial mediator of the study is attitude toward financial investment (ATTI). To measure this financial investment of the respondents, the study utilized the five items scale of Lee (2009) and Ramayah, Rouibah, Gopi, and Rangel (2009). Internal consistency of the scale is reflected by the Cronbach's alpha value of 0.79.

In order to investigate the direct and indirect impact of financial knowledge i.e. objective or actual and subjective or self-rated financial knowledge on BehInt, the study integrated two serial mediators. The study supposed that the first mediator i.e. (M1) and second serial

mediator (M2) are affected by the independent variable (X) and thus the criterion or dependent variable (Y). Path directions among all the variables are illustrated by figure 1.

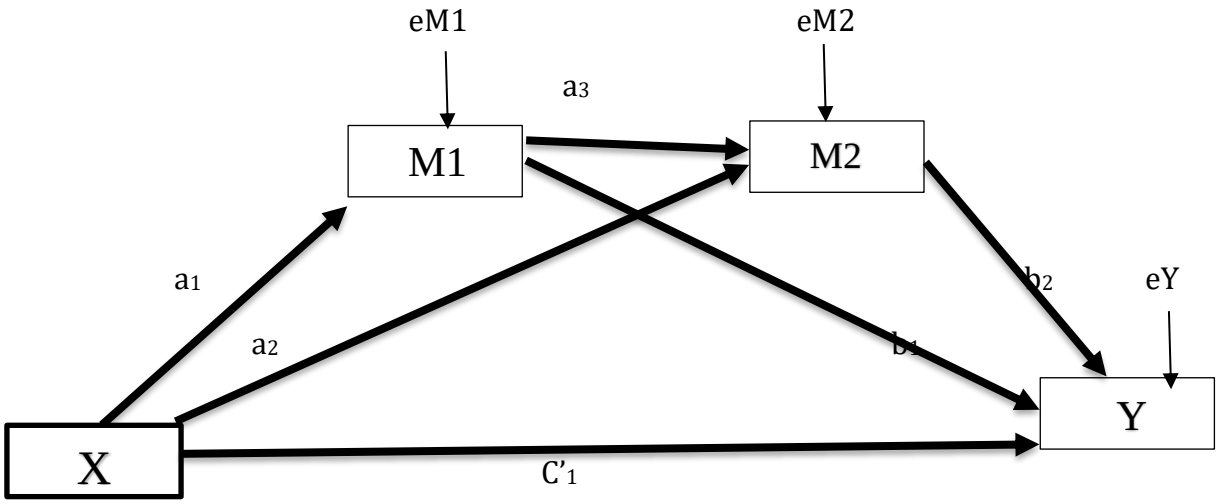

Figure 1: Serial mediation model having two serial mediators

The direct path in the figure is denoted by C′1 representing the effect of predictor on predicting variable. Similarly three indirect path from (X) to (Y) are (1) (X → M1 → Y) denoted by path a_1b_1, (2) (X → M2 → Y) denoted by path a_2b_2 and (3) (X → M1 → M2 → Y) denoted by path $a_1a_3b_2$. All these three indirect paths contribute to the total indirect effect of independent variable toward dependent variable ($a_1b_1 + a_2b_2 + a_1a_3b_2$). Total effect of (X) on (Y) is thus the summation of direct and total indirect effect i.e. C′1 and ($a_1b_1 + a_2b_2 + a_1a_3b_2$) respectively. Following are the econometric models representing the direct and indirect effect of (X) toward (Y) (Hayes, 2012, 2015).

$M_1 = \alpha + a_1X + \mu_1$ .....equation 1

$M_2 = \beta + a_2X + M_1 + \mu_2$ .....equation 2

$Y = \gamma + C'_1X + b_1M_1 + b_2M_2 + \mu_3$ .....equation 3

Where α, β and γ represent the intercepts, μ_1, μ_1 and μ_1 represent the error terms while a_1, a_2, a_3, b_1, b_2 and C'_1 represent the coefficient of regression.

Results

The descriptive statistics indicate the nature of different demographic variables. The average Age of the study's respondents is 32.12 with standard deviation of 5.29. The respondents have a mean monthly income of Rs. 40,456, with σ value of 15,302. Meanwhile the majority

of the respondents are male (81.4%) as compare to female. Most of the study respondents are self-employed (45.3%) while the remaining are either employed in public sector (35.2%) or belong to private sector. Before the actual analysis, the study conducted a pilot study to identify the issues related to normality, outliers, common method variance and data entry accuracy.

The objective and subjective knowledge was incorporated as a predictor variable in the study, so independent serial mediation model is employed for both of these predictors. In order to measure the mediating effect of these mediators and to simultaneously tested the following three hypotheses (1) H_1: Risk Perception mediates the association between objective knowledge and behavioral intention, (2) H_2: Attitude toward the investment mediates the relationship between objective knowledge and behavioral intention and (3) H_3: Risk perception and attitude toward investment mediates in this sequence mediates the relationship between objective knowledge and behavioral intention, the PROCESS macro (Hayes, 2012, 2017) was employed by the study to measure the direct, indirect and total effect of the study variables.

Table 1 illustrates the results of objective knowledge as an independent variable in the serial mediation model having three model equations. Similarly these coefficients are illustrated diagrammatically by the figure 2 below. Results indicates that ObjKnow has a significant effect on the BehInt (1.0269, t=25.727 and p=0.000). Similarly the direct (c'1=0.456, t= 5.572 and p=0.000). The positive direct effect of between financial knowledge and financial behavioral intention is significant.

The first indirect path of ObjKnow effects on BehInt ($ObjKnow \rightarrow RiskPer \rightarrow BehInt$) denoted by Ind1 in table 1 show positive and significant effect. Similarly the R-square and F (1, 399) for the first model (RiskPer=0.105+1.048 ObjKnow) is 0.738 and 1119.543 respectively with the significance level of 0.000, reaffirm the mediating effect of RiskPer in the association between ObjKnow and BehInt. On the other hand the bootstrap confidence interval did not contains zero, thus support the first hypothesis H_1. This indicates that the individual having high financial knowledge exhibit higher behavioral intention to invest in the presence of more favorable risk perception.

The second indirect path of the relationship between ObjKnow and BehInt ($ObjKnow \rightarrow ATTI \rightarrow BehInt$) represented by Ind3 in table 1. This relationship is also positive and significant based on the bootstrap lower and upper confidence level and thus support the second hypothesis H_2. Similarly as per equation 2 (ATTI=0.115+0.725ObjKnow+0.258RiskPer) the value of R-square and F (2, 398) is 0.665 and 393.22 respectively and thus assure the mediating role of ATTI in the association between ObjKnow and BehInt. This relationship indicates that higher financial knowledge

generate more favorable attitude toward financial investment which can further boost financial behavioral intention to invest.

Similarly, the third path as denoted by Ind2 in table 1 show the indirect effect of ObjKnow on BehInt ($ObjKnow \rightarrow RiskPer \rightarrow ATTI \rightarrow BehInt$). This relationship is also direct and statistically significant. The computed bootstrap lower and upper level of confidence interval (BootLLCI=0.1035, BootLLUI=0.2600) both are more than zero and does not contains zero. These results support the third hypothesis H_3. Similarly the value of R-square and F (3, 397) for the third equation (BehInt=-0.108+0.456ObjKnow+0.312RiskPer+0.246ATTI) are 0.675 and 274.525 respectively, strengthen the sequential mediating effect both RiskPer and ATTI on the relationship between ObjKnow and BehInt. Thus a higher financial knowledge of an individual generate more favorable perception toward risk, which leads to favorable attitude toward investments and ultimately have a higher financial behavioral intention to invest.

Table 1. Serial mediation model results ObjKnow as a predictor ($ObjKnow \rightarrow RiskPer \rightarrow ATTI \rightarrow BehInt$)

		Consequents									
Variables		M1 (Risk Perception, RiskPer)				M2(Attitude toward Investment, ATTI)				Y (Behavioral Intention to Invest, BehInt)	
		Coefficient	SE	t-value		Coefficient	SE	t-value		Coefficient	SE	t-value
X(ObjKnow)	a_1	1.048	0.03	33.46***	a_2	0.725	0.07	10.33***	c'_1	0.456	0.092	5.572***
M1 (RiskPer)					a_3	0.258	0.058	4.48***	b_1	0.312	0.061	5.104***
M2(ATTI)									b_2	0.246	0.052	4.728***
Y (BehInt)	α	0.105	0.12	0.919	β	0.115	0.132	0.874	ϒ	-0.108	0.137	-0.789
Model equation		RiskPer=0.105+1.048 ObjKnow				ATTI=0.115+0.725ObjKnow+0.258RiskPer				BehInt=-0.108+0.456ObjKnow+0.312RiskPer+0.246ATTI		
R Square=0.738 F(1,399)=1119.543***						R Square=0.665 F(2, 398)=393.22***				R Square=0.675 F(3, 397)=274.525***		

Serial mediators model ($ObjKnow \rightarrow RiskPer \rightarrow ATTI \rightarrow BehInt$)

Note: * means P<0.10, ** means P<0.05, *** means P<0.01

	Effect	Boot SE	Boot LLCI	Boot LLUI	t-value	p-value

Total Indirect	0.5710	0.0759	0.4227	0.7155		
Ind1: ObjKnow → RiskPer → BehInt	0.3265	0.0521	0.2209	0.4271		
Ind2: ObjKnow → RiskPer → ATTI → BehInt	0.1781	0.0407	0.1035	0.2600		
Ind3: ObjKnow → ATTI → BehInt	0.0663	0.0213	0.0286	0.1126		
Direct	0.4560	0.0819	0.2952	0.6170	5.572	0.0000
Total Effect	1.0269	0.0399	0.9486	1.1056	25.727	0.0000
C1: Ind1-Ind2	0.1484	0.0532	0.0213	0.2699		
C2: Ind1-Ind3	0.2602	0.0579	0.1409	0.3702		
C3: Ind2-Ind3	0.1118	0.0393	0.0423	0.1982		

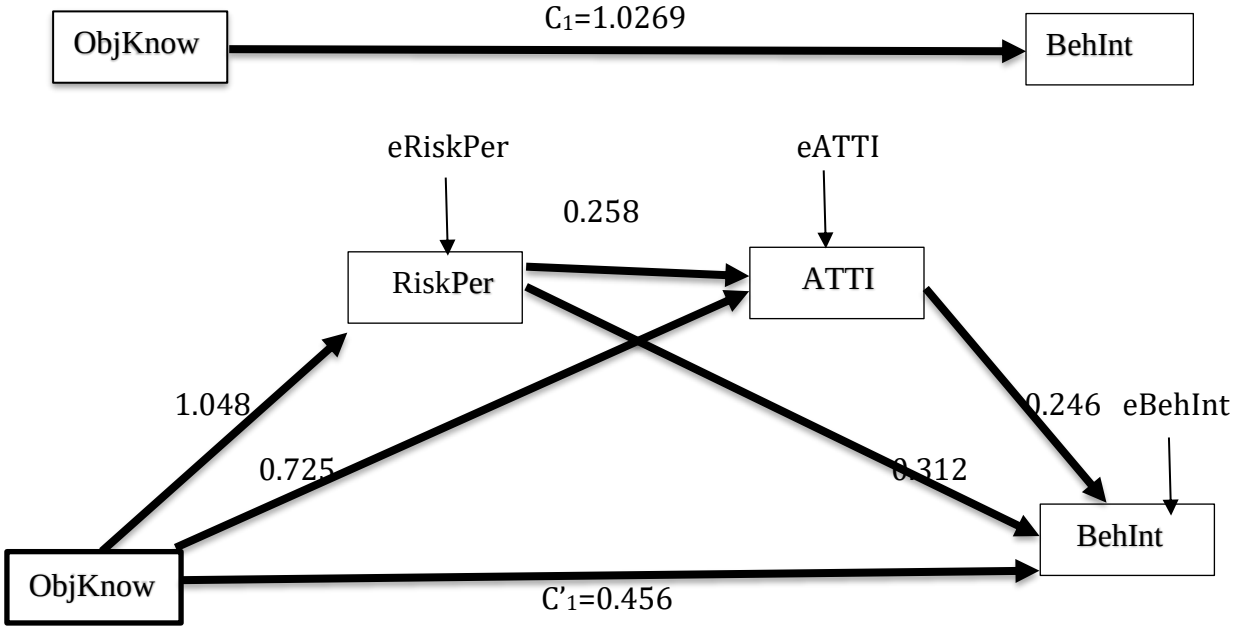

Figure 2: Serial mediation model with ObjKnow as independent variable (ObjKnow → RiskPer → ATTI → BehInt)

Similarly Table 2 illustrates the results of subjective knowledge as an independent variable in the serial mediation model having three model equations. Figure 3 indicate the graphical representation of these coefficients. Results indicates that SubKnow has a significant effect on the BehInt (0.9584, t=16.858 and p=0.000). Similarly the direct (c'1=0.2625, t= 4.3186 and p=0.000). The positive direct effect of between financial knowledge and financial behavioral intention is significant.

The first indirect path of SubKnow effects on BehInt (SubKnow → RiskPer → BehInt) denoted by Ind1 in table 2 show positive and significant effect. Similarly the R-square and F (1, 399) for the first model (RiskPer=1.0847+0.8631SubKnow) is 0.3833 and 247.406 respectively with a significance level of 0.000, reassure the mediating effect of RiskPer in the association between SubKnow and BehInt. On the other hand the bootstrap confidence interval did not contains zero, thus support the first hypothesis H_1. This indicates that the individual having high subjective financial knowledge exhibit higher behavioral intention to invest in the presence of more favorable risk perception.

The second indirect path of the relationship between SubKnow and BehInt (subKnow → ATTI → BehInt) represented by Ind3 in table 2. This relationship is also positive and significant based on the bootstrap lower and upper confidence level and thus support the

second hypothesis H_2. Similarly as per equation 2 (ATTI=-0.0154+0.5014SubKnow+0.5449RiskPer) the value of R-square and F (2, 398) is 0.6521 and 372.143 respectively and thus assure the mediating role of ATTI in the association between SubKnow and BehInt. This relationship indicates that higher subjective financial knowledge generate more favorable attitude toward financial investment which can further boost financial behavioral intention to invest.

Similarly, the third path as denoted by Ind2 in table 2 show the indirect effect of SubKnow on BehInt (SubKnow → RiskPer → ATTI → BehInt). This relationship is also direct and statistically significant. The computed bootstrap lower and upper level of confidence interval (Boot LLCI=0.0906, Boot LLUI=0.2007) both are more than zero and does not contains zero. These results support the third hypothesis H_3. Similarly the value of R-square and F (3, 397) for the third equation (BehInt=-0.137+0.263SubKnow+0.487RiskPer+0.284ATTI) are 0.6656 and 262.727 respectively, strengthen the sequential mediating effect both RiskPer and ATTI on the relationship between SubKnow and BehInt. Thus a higher self-rated financial knowledge of an individual generate more favorable perception toward risk, which leads to favorable attitude toward investments and ultimately have a higher financial behavioral intention to invest.

Table 2. Serial mediation model results SubKnow as a predictor (SubKnow → RiskPer → ATTI → BehInt)

		Consequents										
Variables		M1 (Risk Perception, RiskPer)				M2(Attitude toward Investment, ATT)				Y (Behavioral Intention to Invest, BehInt)		
		Coefficient	SE	t-value		Coefficient	SE	t-value		Coefficient	SE	t-value
X(SubKnow)	a_1	0.863	0.0549	15.7***	a_2	0.5014	0.0532	9.421***	c_1	0.2625	0.0608	4.3186***
M1 (RiskPer)					a_3	0.5449	0.0382	14.27***	b_1	0.4871	0.0485	10.046***
M2(ATTI)									b_2	0.2835	0.0518	5.471***
Y (BehInt)	α	1.0847	0.1808	6.0***	β	-0.0154	0.1438	-0.107	ϒ	-0.1373	0.1485	-0.925
Model equation		RiskPer=1.0847+0.8631SubKnow				ATTI=-0.0154+0.5014SubKnow+0.5449RiskPer				BehInt=-0.137+0.263SubKnow+0.487RiskPer+0.284ATTI		
		R Square=0.3833				R Square=0.6521				R Square=0.6656		
		F(1,399)=247.4059***				F(2, 398)=372.1428***				F(3, 397)=262.7266***		

Serial mediators model (SubKnow → RiskPer → ATTI → BehInt)

Note: * means P<0.10, ** means P<0.05, *** means P<0.01

	Effect	Boot SE	Boot LLCI	Boot LLUI	t-value	p-value

Total Indirect	0.6959	0.0606	0.5722	0.8112		
Ind1: SubKnow → RiskPer → BehInt	0.4204	0.0378	0.3437	0.4937		
Ind2: SubKnow → RiskPer → ATTI → BehInt	0.1422	0.0279	0.0906	0.2007		
Ind3: SubKnow → ATTI → BehInt	0.1333	0.0266	0.0843	0.1895		
Direct	0.2625	0.0608	0.1430	0.3820	4.3186	0.0000
Total Effect	0.9584	0.0569	0.8466	1.0702	16.858	0.0000
C1: Ind1-Ind2	0.2783	0.0457	0.1858	0.3540		
C2: Ind1-Ind3	0.2871	0.0487	0.1827	0.3778		
C3: Ind2-Ind3	0.0088	0.0248	-0.0407	0.0584		

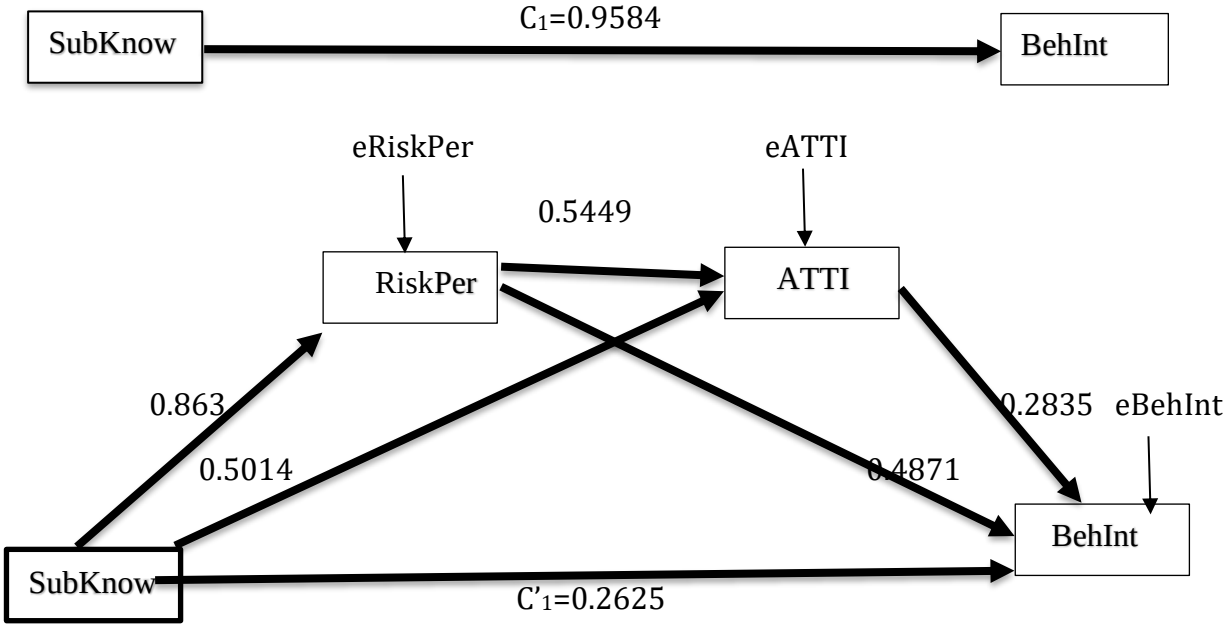

Figure 3: Serial mediation model with SubKnow as independent variable (SubKnow → RiskPer → ATTI → BehInt)

Discussion and Conclusion

The results of the study demonstrated the importance of attitude toward investment and perception toward risk as a mediators variables in the association between the financial knowledge and investor's financial behavioral intention to invest. Both RiskPer and ATTI exhibits mediating role by rejecting the null hypotheses and accepting the proposed hypotheses. It plays a crucial role in the decision making process about the investment and investment financial behavioral intention. Similarly in the financial behavioral assumption, both RiskPer and ATTI play an imperative cognitive role. This study reinforce the study of Fabrigar et al. (2006) which advocated the intricacy of financial knowledge, attitude and behavior.

The study results indicate the association of objective financial knowledge and investor behavioral intention with the mediating role of perception toward risk and attitude toward financial investments. The individual having greater knowledge of actual finance, have the tendency to develop more favorable perception toward risk and financial investment attitude and thus leads to higher financial behavioral intention to invest. The mediating role of RiskPer contribute larger effect as compare to ATTI in the relationship between ObjKnow and BehInt. These results suggest that the contents of ObjKnow triggered the perception

toward risk and attitude toward investment positively in the decision making process. The confirmation of the sequential relationship of ObjKnow, RiskPer, ATTI and BehInt unknotted the complexity of perpetual process in the decision making.

On the other hand, the subjective knowledge compared to objective knowledge, demonstrated more robust effect both direct and indirect in financial behavioral intention to invest among these investors. The self-rated financial knowledge have a higher explanatory power as evidenced by the empirical results. As above the mediating role of RiskPer and ATTI are once again proved to be significant in the relationship between SubKnow and BehInt. This further strengthen that both RiskPer and ATTI are mediators in the case of Subjective financial knowledge and indicate that those who possess higher self-rated financial knowledge have the ability of developing more favorable perception toward risk, leads to favorable attitude toward investment and at the last have higher financial behavioral intention to invest.

The results of the study presented above, highlighted a daunting apprehension, that subjective financial knowledge as compare to objective knowledge exhibits greater effect on the behavioral intention toward investment in the presence of risk perception and attitude toward investment. This indicate the decision making among these adults rely less on rationality with their limited resources and objective knowledge of the subject matter. As decision making involve self-rated financial knowledge, leads to higher risks and thus may result in undesirable outcomes. Though a positive significant relationship is present between subjective knowledge and behavioral intention to invest among these young Pakistani adults in the study. It is recommended for future study to investigate whether subjective knowledge or other probable factors contribute significantly in the unpreparedness and apprehension in the retirement and personal financial as well as increasing mismanagement in the young Pakistani investors.

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