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THE INFLUENCE OF FINANCIAL KNOWLEDGE ON FINANCIAL BEHAVIOR OF RURAL BREADWINNERS: THE MEDIATING EFFECT OF VALUE PERCEPTION

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Abstract. *The paper studies the financial behavior of rural breadwinners in Hebei Province. The framework is based on the Theory of Planned Behavior (TPB), which constructs the measurement index system of financial knowledge, value perception, behavioral intention, and financial behavior. The paper used the Structural Equation Model (SEM) to analyze the questionnaire of 731 rural breadwinners in Hebei Province and examined the influence mechanism of rural breadwinners' financial behavior. The results showed that behavioral intention had a significant positive impact on financial behavior. The level of behavioral intention would be enhanced with the improvement of financial knowledge and value perception. Further studies showed that it is a chain effect among financial knowledge, value perception, behavioral intention, and financial behavior. In this chain path, value perception was a mediator between objective financial knowledge (or subjective financial knowledge) and behavioral intention, and the behavioral intention was a mediator between value perception and financial behavior.*
Keywords: Financial knowledge, Value perception, Behavioral intention, Financial behavior

1. **Introduction.** The household is the micro-subject of economic activities, and the core of the household is often the breadwinner in rural areas. Traditional economic theory holds that rational economic behavior should be based on all the resources it has to maximize the utility of the whole life cycle. However, a large number of social phenomena and studies have found that there are irrational behaviors in many aspects of economic activities. For example, there are a large number of rural households or breadwinners who lack sound retirement planning, have no insurance awareness, and are keen on private loan sharking and other transactions. The irrational or wrong financial behavior of the breadwinner will bring huge economic losses to individuals and even the whole household. So, what causes breadwinners to make poor decisions about financial behavior? Scholars have tried to explain this phenomenon, and a growing number of studies have shown that lack of financial knowledge is an important reason for the irrational financial decisions of breadwinners. In addition, existing study pointed out those rational investors would

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choose services and products based on practical principles to meet their own needs [1]. The overall evaluation of product quality and service experience in this decision-making process is value perception. And investor's value perception promotes the formation of behavioral intention.

Review the existing literature, panel data studies are mostly conducted on macro-level Chinese household financial survey, but regional differences are not taken into account and the research content is relatively broad, which cannot guide the financial behavior of rural breadwinners. Besides, traditional financial behavior research is mostly based on the demographic characteristics sociology or economic variables, but rarely involves the perspective of financial knowledge, and the existing research is one-sided in defining the concept of financial knowledge, without considering the influence of individuals' subjective knowledge. So, the paper based on TPB, introduced financial knowledge (independent variable) and value perception (intermediary variable) to build the breadwinner's financial behavior model. The paper conducted a questionnaire survey among 731 breadwinners in Hebei Province. SEM and Bootstrap analysis are used to study the influence of financial knowledge on behavior. And the results showed that behavioral intention had a significant positive impact on financial behavior. Financial knowledge influences financial behavior through behavioral intention, and value perception was a mediator between objective financial knowledge (or subjective financial knowledge) and behavioral intention. Meanwhile, the paper found the effect chain among the variables. Finally, the contribution of the paper is to verify the relationship between financial knowledge and financial behavior, enrich the study of rural breadwinner's financial behavior, and is a beneficial supplement to the theory of behavioral finance.

2. **Literature Review and Research Hypothesis.**

2.1. **Financial knowledge.**

Lack of financial knowledge can lead to ineffective behavior. Financial knowledge is information that people learn, organize, express, and store in memory. Investors can retrieve, use and update their financial knowledge and apply it to financial decisions [2]. Perry and Morris showed that financial knowledge has the greatest influence on inducing reasonable financial behaviors [3], while Wang confirmed that financial risktaking, objective knowledge and subjective knowledge are related [4]. Subsequent studies also showed that both objective financial knowledge and subjective financial knowledge can influence financial decision-making behaviors [5,6]. Philosophical and sociological research also shows that two types of knowledge were the best results for human understanding of society. Based on the above viewpoints, the paper divides financial knowledge into objective knowledge and subjective knowledge.

In the existing literature, the measurement of objective financial knowledge usually includes interest rate calculation, inflation knowledge, risk prevention, control, etc. Use objective financial questions to examine investors' financial knowledge level. It should be noted that household investors with a high level of financial knowledge tend to have more active behavioral intentions and will invest in risk assets more actively [7]. In addition, the increase of financial knowledge would improve the probability of successful borrowing [8], increase the participation of commercial insurance [9], and promote the participation of financial activities [10]. From the perspective of psychology, the premise for investors with high financial knowledge to actively invest is that they recognize that financial behavior brings them higher benefits, and the greater the benefits are, the higher their value perception level will be. Therefore, the following assumptions are made.

H1a: Objective financial knowledge has a significant positive effect on the value perception of breadwinners.

H1b: Objective financial knowledge has a significant positive effect on the behavioral intention of breadwinners.

Subjective knowledge refers to an individual's subjective evaluation of the amount of product-related information stored in memory [11] or an individual's self-reported knowledge. Even more, it is related to product-related experience and whether consumers are confident in their ability to make effective decisions [12], that is, people who think they know more are more confident. People with high subjective knowledge tend to amplify their value perception and show great behavioral intention and initiative in dealing with financial problems, even though they know little. Therefore, investors with a high level of subjective knowledge tend to have higher behavioral intention and value perception, and then actively participate in financial activities. Based on the above review, the following assumptions are made.

H2a: Subjective financial knowledge has a significant positive effect on the value perception of breadwinners.

H2b: Subjective financial knowledge has a significant positive effect on the behavioral intention of breadwinners.

2.2. **Value perception.** Value perception originated from the study of customer perceived value, and the study of customer perceived value began in the 1970s and took it as the important research content in social psychology [13]. Customer perceived value was a comprehensive evaluation of the products or services; meanwhile, value perception was also a balance between perceived value and perceived cost [1]. Researchers studied the influence of value perception and its dimension, satisfaction, and behavioral intention, and the results showed that value perception is the key factor affecting behavioral intention [14]. With the deepening of value perception research, its research tended to multi-level and multi-dimensional characteristics. The higher the value perception level of the breadwinner, the stronger the behavioral intention [15]. With the development of financial markets, financial knowledge, and individual cognition, people's value perception will increase, prompting people to have a stronger intention to participate in the financial market. Based on the above analysis, the following assumptions are made.

H3a: Value perception has a significant positive effect on behavioral intention.

H3b: Value perception plays a mediating role in the relationship between objective financial knowledge and investment intention.

H3c: Value perception plays a mediating role in the relationship between subjective financial knowledge and investment intention.

2.3. **Behavioral intention and financial behavior.** Intention refers to the subjective probability that an individual is willing to engage in a particular thing. Behavioral intention originated from the theory of rational behavior, which reflects the strength of an individual's preference for a particular behavior. Meanwhile, behavioral theories believe that behavioral intention is a direct factor determining actual behavior [16]. In this paper, financial behavior refers to all the financial activities that the breadwinner participates in, and it is investigated from three dimensions of frequency, amount, and time. Financial behavioral intention refers to the subjective probability that individuals purchase certain products or services [17]. In the process of making investment decisions, individuals first need to clarify their own investment needs, collect information, and finally produce financial behaviors [18]. TPB also supports this view. The behavioral intention can be understood as the propensity of the breadwinner to invest. The stronger the behavioral intention is, the easier it is to lead to actual financial behavior. Therefore, the following hypothesis is proposed.

H4: Behavioral intention has a significant positive effect on financial behavior.

Based on the hypothesis, the paper adopts the Theory of Planned Behavior to build a theoretical model (as shown in Figure 1) and then studies the breadwinner's financial behavior.

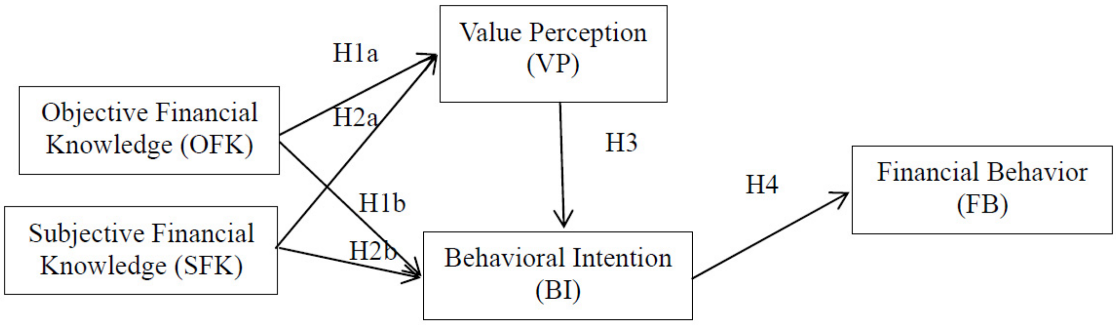

Figure 1. Theoretical model framework

3. **Methods.** The measure variables used in this paper were objective financial knowledge, subjective financial knowledge, value perception, behavioral intention, and financial behavior. All variables were derived from previous studies, which were designed to ensure data quality. Besides, considering the differences between Chinese culture and Western culture as well as the limitations in time and language, the objective knowledge scale was measured using the exploratory factor analysis to ensure the scale was suitable. As for the questionnaire, apart from the direct measurement of objective knowledge, other variables were observed using multiple questions and measured using the Likert-5 scale. The respondents were rural breadwinners in Hebei Province, and purposive sampling was employed in this paper. The survey included an online questionnaire and face-to-face interviews. The study sent out 800 questionnaires, 757 were recovered, and 731 were effective, with an effective recovery rate of 91.4%. In this survey data, female interviewees accounted for 47.9%. The age range was 21 to 59. Marriages accounted for 93.7%. In terms of education level, bachelor's degree or above accounted for 4.1%, secondary school account for 67.8%, and primary schools for 28.1%.

4. **Results and Discussions.**

4.1. **Correlation analysis, discriminant validity, and first-order confirmatory factor analysis of the model.** Table 1 showed the correlation coefficients (r) and Average Variance Extracted (AVE) among the five latent variables. AMOS was used to analyze the correlation. The results showed that objective financial knowledge has a significant positive effect on value perception ($r = 0.336$, $p < 0.05$), which was consistent with H1a. There was a significant positive influence between subjective financial knowledge and value perception ($r = 0.314$, $p < 0.01$), which was consistent with H2a. Objective financial knowledge ($r = 0.421$, $p < 0.01$), subjective financial knowledge ($r = 0.381$, $p < 0.01$), and value perception ($r = 0.394$, $p < 0.01$) all had significant positive effects on behavioral intention, consistent with H1b, H2b, and H3. There was a significant positive effect between behavioral intention and financial behavior ($r = 0.456$, $p < 0.01$), which was consistent with H4. Meanwhile, the paper unexpectedly found that objective financial knowledge, subjective financial knowledge, and value perception all have a significant positive influence on financial behavior, which provides a revelation for future research. The absolute values of correlation coefficients between potential variables were all less than 0.5, and are all less than the square root of AVE. These data showed that there is a certain correlation among latent variables, and variables' discrimination validity is good.

Meanwhile, Table 1 showed the first-order confirmatory factor analysis results. The model fitting index found that CMIN/DF $= 2.067 < 3$, GFI (Goodness-of-Fit Index) $= 0.811 > 0.8$, NFI (Normed Fit Index) $= 0.951$ and CFI (Comparative Fit Index) $= 0.927$ were greater than 0.9. RMSEA (Root Mean Square Error of Approximation) $= 0.014 < 0.08$. All these index data explained that the goodness of fit between the measurement

Table 1. Correlation analysis, discriminant validity and first-order confirmatory factor analysis of the model

Construct	OFK	SFK	VP	BI	FB	Question items	Loadings	CR	AVE
Objective Financial Knowledge (OFK)	0.847					/	/	/	/
Subjective Financial Knowledge (SFK)	0.132^{***}	0.845				SFK1 SFK2 SFK3 SFK4 SFK5	0.748^{***} 0.809^{***} 0.707^{***} 0.857^{***} 0.856^{***}	0.831	0.561
Value Perception (VP)	0.336^{*}	0.314^{**}	0.821			VP1 VP2 VP3 VP4	0.882^{***} 0.729^{***} 0.899^{***} 0.854^{***}	0.822	0.595
Behavioral Intention (BI)	0.421^{**}	0.381^{**}	0.394^{**}	0.801		BI1 BI2 BI3	0.711^{***} 0.819^{***} 0.857^{***}	0.818	0.658
Financial Behavior (FB)	0.496^{**}	0.417^{**}	0.366^{**}	0.456^{**}	0.817	FB1 FB2 FB3	0.701^{***} 0.785^{***} 0.881^{***}	0.837	0.662

Note: Significance level * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. The values on the main diagonal of the matrix are the square root of AVE, and the values on the remaining lower triangles are the correlation coefficients r.

model and sample data was good. In addition, it can be seen from Table 1 that the loading factor of each item is greater than 0.700 ($p < 0.001$), and loading value was in the range of 0.701-0.899. All the items tested have passed the T-test and were significant at the level of 1‰, that is, each latent variable had a good explanatory degree to the model. The Combined Reliability (CR) coefficients were all greater than 0.8, and AVE > 0.5. The above analysis showed that all scales have good convergence validity and fit the basic requirements of the Structural Equation Model (SEM).

4.2. **Hypothesis testing.** SEM was used to empirically test the hypothetical model in Figure 1, and Table 2 gave the optimal path analysis. Both objective financial knowledge and subjective financial knowledge can significantly affect the value perception and behavioral intention of rural breadwinners. H1a, H1b, H2a, and H2b have been confirmed. In other words, both objective and subjective financial knowledge can affect the behavioral intention and value perception of breadwinners. The higher the level of knowledge breadwinners own, the more they understand the rules of the financial market and have a higher value perception of financial behaviors. Therefore, under the influence of knowledge and value perception, they take more action to carry out financial activities (H3a was confirmed). Furthermore, according to the discussion on intention and behavior in TPB, the breadwinner directly carries out financial behavior after having a strong behavioral intention. This statement was consistent with H4.

In a word, all direct effect hypotheses were verified. The relationships among financial knowledge, value perception, behavioral intention, and financial behavior were as follows. 1) Financial knowledge had a significant positive effect on value perception and behavioral intention, that is, as the level of financial knowledge of breadwinners improved, they would

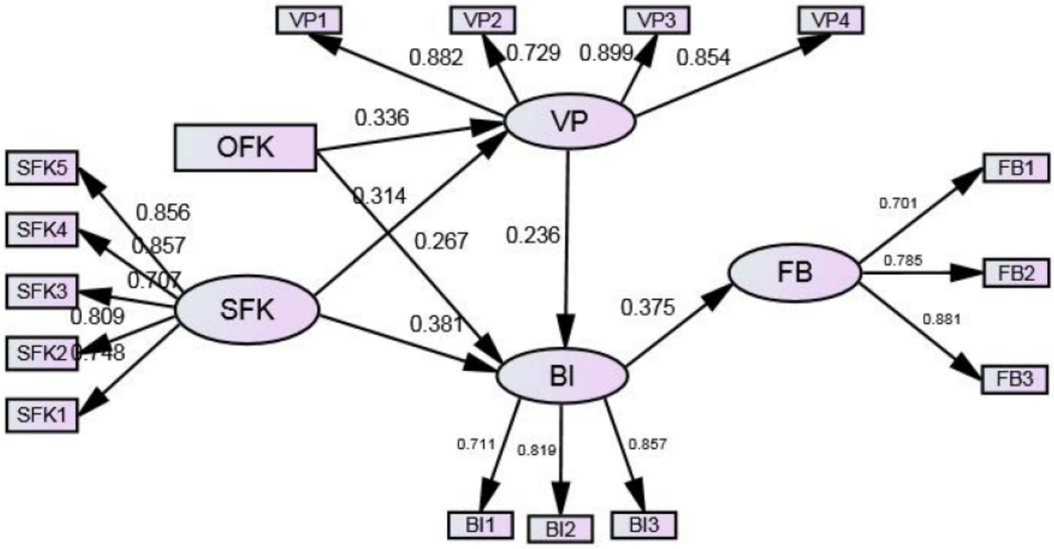

Figure 2. Statistical test of structure model of variables

Table 2. Effect test

Effect	Path	Normalized path coefficient	Mean effect	95% confidence interval	
				BootLLCI	BootULCI
Direct effect	OFK → VP	0.336*	0.336	0.115	0.406
	OFK → BI	0.267**	0.267	0.193	0.323
	SFK → VP	0.314**	0.314	0.198	0.36
	SFK → BI	0.381**	0.381	0.141	0.439
	VP → BI	0.236**	0.236	0.101	0.307
	BI → FB	0.375**	0.375	0.195	0.453
Indirect effect	OFK → VP → BI		0.079	0.038	0.181
	SFK → VP → BI		0.104	0.027	0.311
	VP → BI → FB		0.089	0.054	0.184
Total effect			0.398	0.158	0.499

Note: Significance level * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Effects were tested by 1500 times Bootstrap analyses on the basis of the original samples ($N = 731$).

make more rational financial behaviors and obtain pragmatic rational value and emotional value. That may have influenced their behavior intention to take the next financial behavior. 2) Chain influence path: Objective financial knowledge (or subjective financial knowledge) → value perception → behavioral intention → financial behavior. Among them, value perception was a partial intermediary between objective financial knowledge (or subjective financial knowledge) and behavioral intention, and the behavioral intention was a complete intermediary between value perception and financial behavior. See Figure 2 for the paths.

4.3. **Mediation effect test.** For this part, the paper used the Bootstrap method to verify the direct effect, indirect effect, and total effect among variables. From Table 2, the mean direct effect of objective financial knowledge on value perception was 0.336, and the 95% confidence interval $[0.115, 0.406]$ did not contain 0. In other words, there was a significant direct effect between objective financial knowledge and value perception. H1a has been verified again. The same method could be used to verify the validity of H1b, H2a, H2b, H3a, and H4.

Table 2 also showed that the total effect of financial knowledge on financial behavior is 0.398, and the 95% confidence interval $[0.158, 0.499]$ did not contain 0, that is, the total effect was also significant. Meanwhile, Table 2 gave the indirect effect test results. The mediating effect value of value perception between objective financial knowledge and the behavioral intention was 0.079, the mediating effect accounted for 19.8% of the total effect, and the confidence interval $[0.038, 0.181]$ of the mediating effect at the 95% level did not contain 0; in other words, there was a significant mediating effect. In the same way, value perception also had a significant mediating effect between subjective financial knowledge and behavioral intention, the mean effect was 0.104, accounting for 26.1% of the total effect. The significant mediating effect value of behavioral intention between value perception and financial behavior was 0.089, accounting for 22.4% of the total effect. In addition, the path to influence the breadwinner's financial behavior was as follows: objective financial knowledge (or subjective financial knowledge) → value perception → behavioral intention → financial behavior.

5. **Conclusion.** Based on the TPB model, the paper used financial survey data of rural breadwinners in Hebei Province to analyze the influence of financial knowledge, value perception, and behavioral intention on financial behavior. The findings were as follows. 1) Breadwinners' value perception and behavioral intention were enhanced with the improvement of financial knowledge level. Value perception was significantly positive to behavioral intention, and behavioral intention had a significantly positive influence on financial behavior. 2) Bootstrap was used to test the mediating effect. It was found that value perception played a mediating role in the relationship between objective financial knowledge (or subjective financial knowledge) and behavioral intention, and the behavioral intention was the mediating variable of value perception affecting financial behavior. Meanwhile, the paper obtained the chain effect of the breadwinner's financial behavior: objective financial knowledge (or subjective financial knowledge) → value perception → behavioral intention → financial behavior.

About the next step, the paper will study 3 aspects. 1) It is found in Table 2 that objective financial knowledge, subjective financial knowledge, and value perception all have a significant positive influence on financial behavior, and the paper will deepen the study of various variables on financial behavior. 2) Try to introduce risk perception into the model to build a dual intermediary financial behavior model. 3) The paper will study the chain mediating effect of risk perception and value perception in the financial behavior model.

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