Measuring Investment Importance Perception in Equity Shares: A Scale for Individual Investors

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Abstract

This study focused on developing a scale for measuring Investment Importance Perception in Equity shares (IIPe) of individual investors. Item generation (from equity share investors) and content validity was performed (with expert panel) to gather the initial pool of items for the scale. Exploratory Factor Analysis (EFA) was used for item reduction and for establishing the dimensions of IIPe. Further, Confirmatory Factor Analysis (CFA) was used test the measurement validity. Parameters were estimated with maximum likelihood (ML) through the use of AMOS (version 16). The assumptions for multivariate normality were checked by looking into the skewness and kurtosis value of the individual items of the scale. The chi-square goodness-of-fit test guided evaluation of model fit along with established fit indices such as goodness of fit index (GFI), comparative fit index (CFI), incremental fit index (IFI), standardized root mean square residual (SRMR), root-mean-square error of approximation (RMSEA) and Akaike Information Criterion (AIC).

Keywords: *Investment Importance Perception, Investor Knowledge, Acceptance of Equity Shares (AES), Enduring Importance*

INTRODUCTION

For an individual, saving and investment are tasks that play a focal role in his financial wellbeing. The need and importance of saving and investing among individuals are now widely accepted (Gerry Croy, Paul Gerrans and Craig Speelman, 2010), and the individuals around the world have also become increasingly responsible for their financial planning (Ron

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van Schie, Bas Donkers and Benedict G. C. Dellaert, 2012). The financial decisions for an individual come down to a choice between competing alternatives, but choice between current consumption and future consumption (i.e., saving and investing) forms a critical economic decision for him (Sanjay Kumar Mishra and Manoj Kumar, 2011). Considering the importance of increased savings and investments among individuals there appears a lack of research that addresses the intensity of motivations towards activities underlying the task of investing (Hershey, D. A., Jacobs-Lawson, J. M., McArdle, J. J., & Hamagami, F., 2007). Consumer behavior literature indicates that product importance (Bloch, P. H., & Richins, L. M., 1983) influences the consumer decision making through the extent to which a consumer link a product to salient enduring goal (Bloch & Richins, 1983). Borrowing this thought to behavioural finance, the relative intensity of motives that governs an individual investor's activities (Howard. John A, 1974), becomes a strong triggering factor to determine the investor's behaviour. This is due to the fact that investors with high relative intensity of motives towards the task of investing are likely to perceive high stake in investing activities and thus engage in various kinds of activities that increases his domain knowledge (Mishra S.J & Kumar M, 2011). Thus the perceived importance towards investing (due to the subjective norms (Ajzen, 1991)) determines the intentions of achieving higher levels of domain knowledge in investments, and this further would help him approach towards better financial wellness.

The above discussions indicates the role of perceived importance towards investments in determining one's investment domain knowledge and thereby his financial wellness. Hence, perceived importance towards investments is a critical factor for research in the area of behavioural finance. However, an appropriate scale to measure one's perceived importance towards investments seems to be still developed. This study attempts to develop a scale for measuring investor's Investment Importance Perception in Equity Shares (IIPe), with an intention to facilitate studies on IIPe's capability of predicting Investment Domain Knowledge (IDK). Appropriate procedures are followed in the development of scale as per the guidelines of Churchill (1979) and the C-OAR-SE Approach (John R. Rossiter, 2002). The hypothesized factor structure is represented in Figure 1.

Figure 1. Hypothesized Factor Structure

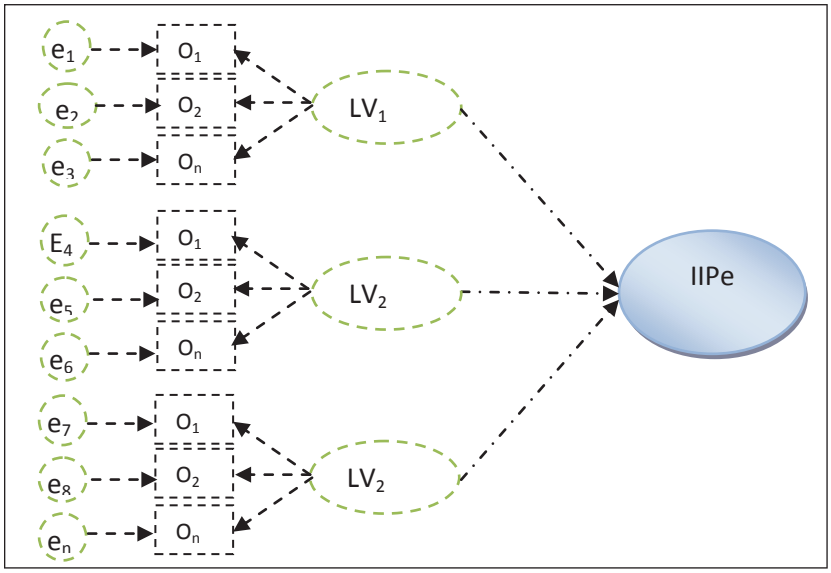


Figure 1 explains the various dimensions of IIPe (shown in dashed eclipses –LV_1 through LV_n), and its respective indicators (shown in dashed rectangles – O_1 through O_n) and their measurement error (shown in small dashed circles – e_1 through e_n), which are to be established through the procedure of scale development (Gilber A. Churchill, 1979) and (John R. Rossiter, 2002). IIPe is formed by a set of factors which are not directly observable (Bloch, P. H., & Richins, L. M., 1983). These factors (LV_1 through LV_n) are referred to as latent variables. Since IIPe (which is again a latent variable) is formed by latent variables LV_1 through LV_n, IIPe becomes a second order latent variable.

REVIEW OF LITERATURE

The whole set of procedure established for development of measuring scales in social sciences was for ensuring their reliability and validity. The extent to which results are consistent over time and an accurate representation of the total population under study is referred to as reliability and if the results of a study can be reproduced under a similar methodology, then the research instrument is considered to be reliable (Nahid Golafshani, 2003). Now, attention has moved beyond simple questions of reliability and now includes more "direct" assessments of validity. A measure is valid when the differences in observed scores reflect true differences on the characteristic one is attempting to measure (Gilber A. Churchill, 1979).

Thus, a scale should be capable of repeating the results (with stability in similar context) and also be accurately measuring rater's judgement on attribute of interest of the object under the study (John R. Rossiter, 2002).

The phenomenon referred in this study was the relationship between the IIPe and IDK. The individuals around the world have now a heightened importance towards the task of investing as they have become increasingly responsible for their financial planning (Ron van Schie, Bas Donkers and Benedict G. C. Dellaert, 2012). The decisions on investment which individual investors are required to make are becoming more complex due to the existence of an environment where available information pertaining to the domain of investing are often abundant, but frequently disorganized and incomprehensible (King & Hill, 1994). Therefore, there would be a heightened concern in the task of investing to balance the risk- return profile on one's portfolio in this dynamic environment. Investor who perceive high importance (Bloch, P. H., & Richins, L. M., 1983) in the task of investing are likely acquire higher knowledge of investment domain (Mishra S.J & Kumar M, 2011), due to their highly developed conceptual structures and ability to comprehend domain (Alba, J. W., & Hutchinson, J. W., 1987) and also restrict processing to relevant and important information (Johnson & Russo, 1984). Thus, an investor who attaches high importance to the task of investing is likely to acquire higher level of domain knowledge in investments and, through a higher knowledge an investor is likely approach towards better financial wellbeing. This is due to the fact that passive income (i.e., income from investment) determines the current life style and leisure activities as well as long term financial well being of individuals (Lichtenstein, D. R., Kaufmann, P. J., & Bhagat, S., 1999) and (Mishra S.J & Kumar M, 2011).

Literature indicates that a high perceived importance for investing (Clarke, Keith and Russell Belk, 1979) could determine the financial well being of an individual (Lichtenstein, D. R., Kaufmann, P. J., & Bhagat, S., 1999). The perceived importance of the task (investing) is focal to the investor behavior domain (Jacoby, J, Chestnut, R.W., & Fisher, W.A., 1978, 1978), but interstinglly, in research and literature the concept of product or task importance has received only little attention (Bloch, P. H., & Richins, L. M., 1983). Literature in behavioural finance also reveals that the concept of perceived importance towards investing has not received much research attention. Consumer behavior literature revealed that similar concepts to that of perceived importance of investment like 'amount at stake' (Cox. Donald F, 1967) and 'importance of purchase' (Howard. John A, 1974)

relate to importance only to a specfic context or an purchase situation (Bloch, P. H., & Richins, L. M., 1983). In other words, *importance* was viewed in a much narrow view contained to importance based on usage related and purchase related goals or specifically pertaining to consumer product domain. Usage related goal results when a specific anticipated usage situation lends importance to the product. For example, when an investor is planning to perform a task of investing for the well being of his retired life, investment products gains importance as a product class because of the situation where this investment will be used in future. Here, the goal of ensuring the wellbeing of his retired life, results in a heightened importance of investing. On the other hand, when the increased importance arises from the goal of making an optimal purchase, it accounts a purchase related goal. For example, when an investor looks at tax planning, tax saving products becomes an important product class.

However, a product may be perceived as also having enduring importance even when a specific purchase or usage goal is not operative, for the importance perceptions here are based on the product's ability to satisfy intrinsically investor's enduring needs (Bloch, P. H., & Richins, L. M., 1983). For example, many investors exhibit continuous monitoring efforts and portfolio altering tendencies, even if there is no immediate investment or usage (liquidation) plans. Thus, enduring importance also becomes an important dimension in the importance perception of an individual towards the task of investing. Literature further records that high involvement in a task (to mean the task of investing here) could indicate an attachment of high importance towards such tasks or the intended usage situation of such tasks (Clarke, Keith and Russell Belk, 1979). But, constructs like 'task involvement' (Bloch, P. H., & Richins, L. M., 1983) or 'product involvement'seems too generic (Day, George S., 1970). Thus incorporating the dimensions of enduring importance, context specific importance and intensity of task involvement (Bloch, P. H., & Richins, L. M., 1983) was found more appropriate to operationalize the concept of investments importance perception in equity shares (IIPe). Conceptual definitions of constructs like 'product importance perception (PIP' (Bloch, P. H., & Richins, L. M., 1983) showed strong formation of the construct definition (John R. Rossiter, 2002), but the operationalization was not found suitable for measing the importance for equity shares (product) .

Thus to conclude, most of the literature on product importance revealed (from consumer behavior domain) a long term (enduring) importance for the product class and an instrumental importance which is of short term nature, that a consumer maintains for a product (Bloch, P. H., & Richins,

L. M., 1983). Literature also supported the concept of relative strength of motive towards a purchase/acceptance of a particular product to other products, to explain product importance (Howard. John A, 1974). Further task involvement (Clarke, Keith and Russell Belk, 1979) also presented a dimension to look at product importance.

Definition of the Construct and the Need for Measurement

In this study C-OAR-SE Approach (John R. Rossiter, 2002), Churchill's guidelines (Gilber A. Churchill, 1979) and Mcguire framework (McGuire, W. J., 1989) are considered to arrive at a refined operationalization of the construct IIPe. C-OAR-SE theory requires that constructs be conceptually defined (described) in terms of (1) the object, including its constituents or components, (2) the attribute, including its components, and (3) the rater entity. According to the C-OAR-SE approach an initial definition for IIPe was formed as the importance an investor attaches to his central economic goals and capability of a selected product to help him approach his central economic goals (Mishra S.J & Kumar M, 2011). However, the attribute *importance* in the above definition needs to be clarified as enduring importance (Bloch, P. H., & Richins, L. M., 1983) and not instrumental importance. This is because a salient economic goal would be of an enduring nature and the importance one attaches to a salient enduring goal should be continuous. Further, the generic term 'selected product' in the above definition makes it difficult to operationalize the IIPe as different products (in the product family of investment products) has very different characteristics and purposes. For example, the importance an investor generates towards ULIPs and mutual funds would be based on entirely different motives. Hence, the operationalization IIP (Mishra S.J & Kumar M, 2011) and such similar constructs (discussed earlier) are not capable of studying one's perceived importance on a particular investment product(to mean IIPe), but only on generic investment product family. Based on the above discussion and cited observations from the literature researcher felt the need to develop a scale to measure Investment Importance Perception in Equity Shares (IIPe) that would perfectly suit to the contemporary context. C-OAR-SE approach was adopted to refine and reconstruct the definition. C-OAR-SE approach (especially) emphasizes on expert panel supervision in the formation for the construct definition. Accordingly, an eight member expert panel was constituted for generating dimensions and items for operationalizing the construct to

facilitate measurement (this procedure is discussed later). Based on the cited literature and discussions among the expert panel members, the panel suggested two dimension to operationalize IIPe viz., Enduring Importance of Investments for Financial Well Being (EIIFWB) and Acceptance of Equity Shares (AES) as an investment product to approach EIIFWB. Accordingly, the *object, attribute* and the *rater* of the construct and their classifications are explained below.

Object and Object Classification: 'Financial wellbeing' is the *object* in the first dimension (EIIFWB). The *object* is classified as *concrete singular object.* This is because the *rater* could understand and identify the *object* with clarity as there are no multiple constituent (John R. Rossiter, 2002) in this *object*. Further, 'equity shares' is the *object* in the second dimension (AES) and is also classified as *concrete singular object.* This is again for the same reason that the *rater* could understand and identify the *object* with clarity as there are no multiple constituent. This classification was vetted by the expert panel and a consensus was arrived that the *object* does not have multiple constituent.

Attribute and Attribute Classification: 'Perceived importance' is the attribute measured on the *object* 'financial wellbeing'. The expert panel constituted for the supervision of construct definition felt that the respondents would make summative type of judgments by 'thinking about each item' that make up the overall score for EIIFWB. Thus, the attribute 'Perceived importance' is classified as *formed attribute* (John R. Rossiter, 2002). Further, 'Acceptance' is the attribute measured on the object 'equity shares'. The expert panel constituted for the supervision of construct definition felt that the respondents would make summative type of judgments by 'thinking about each item' that make up the overall score for AES. Thus, the attribute 'Acceptance' is also classified as *formed attribute.* The components of both of the above discussed formed attributes are concrete (these components are discussed in generation of initial item pool).

Rater and Rater Type: The individual's (individual investor's) difference of disposition on the attribute 'perceived importance' and 'acceptance of equity shares' is captured on the object 'investment in equity shares. Thus, the *rater* is individual investors in equity shares and the rater type is the *individual*.

As discussed above, Investment Importance Perception in Equity Shares (IIPe) is been operationilized as a two dimensional construct. Firstly, Enduring Importance of Investments for Financial Well Being (EIIFWB)– is the long term cross situational importance of investments

an investor attaches for his financial wellbeing. Secondly, Acceptance of Equity Shares (AES) is the investor's perceived capability of equity shares (as a investment product) that help him approach the desired level of financial wellbeing.

Scale Formation: Scale formation according to C-OAR-SE procedure is a matter of putting together object item parts with their corresponding attribute item parts to form scale items. The items must be easily comprehended by the target raters, and pre-testing is needed to ensure this (Schwarz, N, 1999). The broad procedure adopted in this study for the formation of the measuring scale for IIPe is listed below (details presented later).

a. Specifying the domain of the Construct (Gilber A. Churchill, 1979)
b. Defining the construct (John R. Rossiter, 2002)
c. Generation of initial item pool (John R. Rossiter, 2002) and (Gilber A. Churchill, 1979).
d. Content validity of the operationilization (John R. Rossiter, 2002).
e. Exploratory Factor Analysis procedure (Worthington, R., & Whittaker, T., 2006) and (Peter Cabrera-Nguyen, 2010).
f. Confirmatory Factor Analysis procedure using SEM. (Brown, T. A., 2006) and (Peter Cabrera-Nguyen, 2010).

Sample Profile, Generation of Primary Item Pool and Content Validity

An expert panel of eight members having sound experience in financial service industry, academia and research was constituted to supervise the operationilization of IIPe (details provided in the appendix – Table 1 a). A report on the literature review was presented to the panel for self reflection and discussion on the domain. The panel noted that most of the literature on product importance revealed (from consumer behavior domain) dimensions of a long term importance and an instrumental importance which is of short term nature, that a consumer maintains for a product. Literature also supported the concept of relative strength of motives towards purchase of a particular to other products or usage, to explain product importance (Howard. John A, 1974). Further task involvement (Clarke, Keith and Russell Belk, 1979) presented a dimension to look at product importance. Similar constructs to that of IIPe (Mishra S.J & Kumar M, 2011) also required a relook and further refinement. Before, proceeding further, the profile of the sample used in this study is presented in Table 1 b.

Table 1 a here. Details of the Expert Panel Constituted for Content Analysis

Table 1 b here. Profile of samples used in the study.

Literatures in the area of consumer behavior were reviewed to gather the initial item pool. Further, to add on to the pool of items, an open ended primary survey among 198 individual stock investors was conducted to ensure the adequacy and appropriateness of items. The open ended survey primarily gathered from the investors the reasons (motives) for investing in general (product class level) and also reasons for investing particularly in equity shares. The logic was that *intensity of motives* is an indicator of EIIFWB (Howard. John A, 1974), and *reasons for investing equity shares* indicates factors contributing to AES, thus EIIFWB and AES forms IIPe.

The initial pool of items from literature, survey of investors and suggestions from the expert panel accounted to 279 and on removing duplications the final 42 items were selected. Further a first level classification based on obvious nature of items, the expert panel reduced the items to 21 numbers. These 21 items were produced before the two members of the expert panel for face validity. Incorporating the suggestions, these items and available literature were presented before the expert panel for content validity. There was a two stage intervention of expert panel.

Stage One: The items were circulated among the panel members and their feedbacks were invited. The expert panel was provided with feedback forms to rate each of the item for content validity. The format of the form used to collect the feedbacks from the expert panel is shown in Appendix - Figure 1.

Figure 2. here. Format for Content Validity Feedbacks.

The panel suggested deletion of 2 items, inclusion of 1 new items and also minor modifications for 2 items. The details are presented Table 2.

Table 2. here The details of content validity– stage 1

Stage Two: In this stage, the same iteration was repeated and the expert members were invited for a common platform discussion. The revised items (20 items) after incorporating the suggestions of the first round expert panel review were further submitted for final review of the panel. The second stage of the panel review lead to the preparation of

the final draft, incorporating the recommendations and suggestions by the expert panel. Further on items were subjected to EFA to explore the underlying the factor structure. The total number of items after the second stage of content validity test accounted for 16 in numbers. The deletion of four items was base on the suggestion of the expert committee, for being items were felt to be confusing.

Details of the Exploratory Factor Analysis (EFA) Procedure

General declarations: In this study, EFA was conducted with the objective of identifying a smaller set of uncorrelated items from the initial set of item pool, and thus to obtain the underlying dimensions for the construct IIPe. The usable data was obtained from 198 respondents and the total numbers of items were 16. The EFA is re-run each time (Peter Cabrera-Nguyen, 2010) if an item was deleted. The responses were appropriately measured for factor analysis on ratio scale (Likert Scale was used). The software used for analysis was SPSS Version 17.

Details of EFA (on first run)

EFA was run with 198 samples and 16 items, the sample to items ratio is 12.375(>10:1). The KMO sample adequacy value is 0.734 (>.05) indicates that the sample is adequate. Further the Bartlett's Test of Sphericity (Approx Chi-Square) was found to be 2942.626 at 0.01 levels of significance. The extraction sum of squared loadings indicated a total variance explanation of 69.163% by the two factors extracted.

Orthogonal rotation is used in this context (Varimax). The justification for using varimax rotation is the assumptions of factor inter-correlation are the norml in social sciences (Costello, A., & Osborne, J., 2005). Further, the items considered in this study were assumed to have an inter correlation as the theoretical dimensions of the construct projects two dimensions which conceptually has a thin line of distinction. The rotations converged in 3 iterations extracting two factors. The first factor contained 9 items with all items indicating a loading of greater than 0.4. The second factor contained 6 items with all items indicating a loading of greater than0.4. Only one item was observed to have a cross loading and this item was deleted. EFA was re-run after the deletion. The details are presented below.

Deletion of Items and Justifications (on first run of EFA):

Cross loading items with values ≥ .32 on at least two factors should generally be candidates for deletion, especially if there are other items with factor loadings of .50 or greater (Costello, A., & Osborne, J., 2005). Accordingly, one item was decided to be deleted from the item pool. The details are presented Table No. 3.

Table No. 3 here . Table Showing Deletion of Items in the First Stage of EFA

The EFA was re-run since an item was deleted (Peter Cabrera-Nguyen, 2010).

Details of EFA (on Second run)

a) Sample Adequacy: There was no deletion in the second run of EFA. With 198 samples and 15 items, the sample to items ratio improved to 13.2 (>10:1). The KMO sample adequacy value is 0.741 (>.05) indicates that the sample is adequate. Further the Bartlett's Test of Sphericity (Approx Chi-Square) was found to be 2659.848 at 0.01 levels of significance. The table No. 4 below shows the KMO sample adequacy extraction from SPSS output.

Table No. 4. KMO Sample Adequacy Extraction from SPSS Output

KMO and Bartlett's Test[a]		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.741
Bartlett's Test of Sphericity	Approx. Chi-Square	2659.848
	df	105
	Sig.	.000
a. Based on correlations		

b) Explanation of Variance by the Items: The extraction sum of squared loadings indicated a total variance explanation of 70% (approx) by the two factors extracted. The first factor explained 46% (approx) of the variance and the second factor explained the remaining 24% of the variance. This also indicates that there is no issue of uni-dimensionality among the items.

c) **Rotation type used**: Orthogonal rotation is used in this context (Varimax).

Table No. 5. Rotated Component Matrix Showing the Factors Extracted and the Item Loadings

Rotated Component Matrixa				
	Raw		Rescaled	
	Component		Component	
	1	2	1	2
Financial wellness of Retired Life (FW)	.805		.813	
Proportion of income apportioned for savings. (ProSav)	.893		.854	
Regular monitoring and review of the portfolio.(RegMon)	.909		.893	
Analyzing of the financial implication on new investments/expenditures (FinImp)	.823		.927	
Need (percived) for effective financial markets and market regulators. (FinReg)	.604		.729	
Centrality of investment tasks to one's life. (CenLife)	.612		.806	
Steadily enhance the standard of living. (StdLiv)	.570		.815	
Financial strength for meeting planned future expenditure. (FinStr)	.274		.462	
Protecting the standard of living against uncertainties. (ProSL)	.640		.734	
Proportion of saving apportioned to investments in equity shares. (ProEq)		.307		.560
Character of equity shares (ChaEq)		.239		.469
Efffortful selection of equity shares (for investments) (EqSel)		.404		.746
Risk-Return expetation from investments in equity shares. (RR)		.815		.917
Potential (perceived) for investments in equity shares to generate value (Val)		.595		.838
Rliability (perceived) of investments in equity shares (as compared against other alternatives of investments) (RI)		.965		.890
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.				
a. Rotation converged in 3 iterations.				

d) Rotated Component Matrix.

The rotation converged in 3 iterations. The items and the respective factor loadings are presented below. It could be observed that now in the re-run EFA, there are no cross loading and all the retained items are having sound loading to the respective factors. The factor loading is presented in Table No.5.

"It is very important that researchers [and reviewers] be able to independently evaluate the results obtained in an EFA study. This can, and should, occur on two levels. Given the myriad subjective decisions necessary in EFA, independent researchers should be able to evaluate the analytic choices of authors in the reported study. Second, independent researchers should be able to accurately replicate the study on new data, or even employ a CFA" (Henson, R., & Roberts, J., 2006). Accordingly the procedure for Confirmatory Factor Analysis (CFA) is initiated based on data from 208 respondents (fresh respondents).

CFA is used to examine construct validation and whether a measure is invariant or unchanging across groups, populations, or time (Brown, T. A., 2006). Theory and/or prior research are crucial to specifying a CFA model to be tested (Donna Harrington, 2009). This study has considered the theory (discussed in the literature section above) and proceeded through an EFA in conceptualizing theoretical model.

MODEL SPECIFICATION FOR CFA

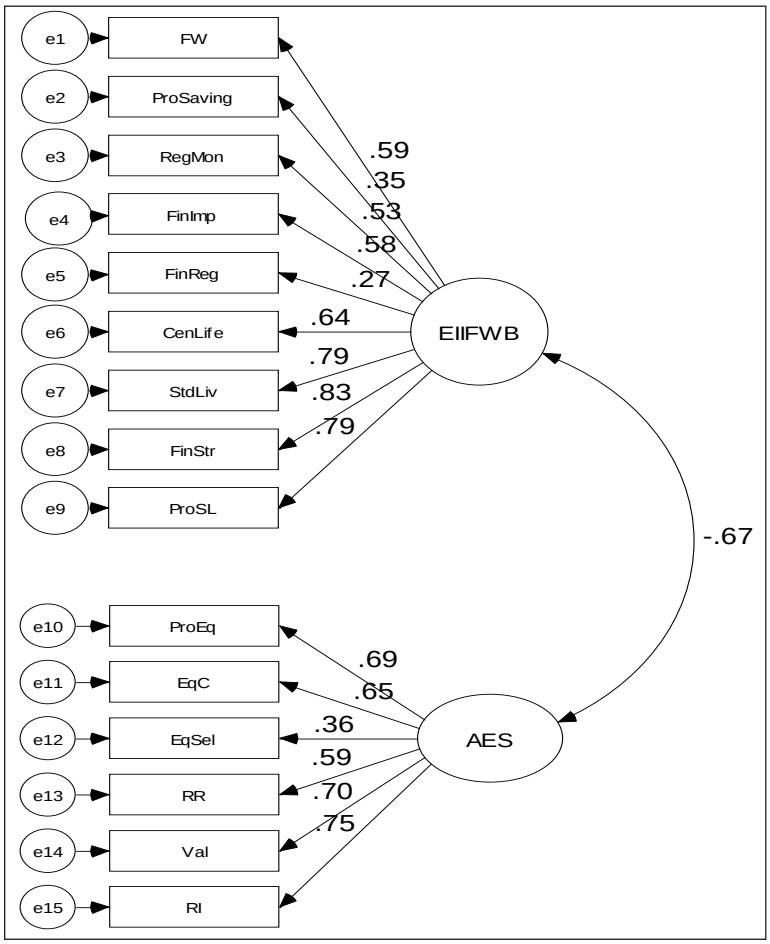
The construct of IIPe is a function of the salient beliefs about the perceived consequences of performing the task of investment and the evaluation of these consequences (Ajzen, 1991). An investor who measures a high IIPe is likely to acquire higher level of IDK enabling a person to approach towards better financial wellbeing (Lichtenstein, D. R., Kaufmann, P. J., & Bhagat, S., 1999). As discussed earlier, this study has attempted to develop a scale for measuring IIPe, with an intention to facilitate further studies on IIPe's property of predicting IDK. A 15 item scale with two dimensions was established based on review of literature, contributions from a carefully selected expert panel and an EFA (as reported earlier). First dimension (EIFWB) of IIPe was measured using 9 indicators and the second item (AES) was measured using 6 indicators, on a five point Likert - type scale (attributes of the items assessed are presented in the appendix. A higher score on the dimensions indicated a higher IIPe. To check for any linkage between EIFWB and AES, covariance among these first order

latent variable is also included in the model. 208 new samples were used in for the CFA. The emerged measurement model is presented below.

Identification of the Model

The number of distinct sample moment is 120 and the distinct parameters to be estimated is 31. Thus, the model is over identified with 89 degrees of freedom. Each latent variable is scaled, with the path coefficient for one observed variable being set to "1" for each latent variable.

Figure 2. CFA Model with Standardized Estimates (*n* = 208)



Estimation Method

Maximum likelihood (ML) estimation was used for this model because the observed variables can be treated as continuous and the data are approximately normally distributed. The CFA model and standardized estimates are presented below in Figure No. 2.

Model Fit

All the observed variables were found to be significantly related to the latent variables. No covariance between the latent variables was observed. The reason could be attributed to the fact that equity related investments would be seen as undesirable for an risk averse investor. The cut-off scores for model fit indices were decided according to the recommendations of (Hu, L and Bentler, P., 1999) and as endorsed by (Brown, T. A., 2006). Accordingly, a good fit for the model was found with Root mean square error of Approximation (RMSEA) 0.042 (close to 0.06 or less is recommended); Comparative Fit Index (CFI) 0.967 (close to 0.95 or greater is recommended); Tucker-Lewis Index (TLI) 0.961 (close to 0.95 or greater is recommended).

- Comparative Fit indices

Comparative fit indices are used to evaluate the fit of a model relative to a more restricted, nested baseline model. Comparative fit index (CFI), the Tucker-Lewis index (TLI) and Incremental Fit Index (IFI) scores are presented below.

Index	Index Score	Recommended cut-off score
CFI	0.967	≥0.95
TLI	0.961	≥0.95
IFI	0.967	≥0.95

- Predicative Fit Indices.

Predictive fit indices "assess model fit in *hypothetical* replication samples of the same size and randomly drawn from the same population as the researcher's original sample … these indexes may be seen as population based rather than sample based" (Kline, R. B., 2005). The Akaike information criterion (AIC) and the expected cross validation index (ECVI) are used here to check the predicative fit of the model when used to compare between two or more non-nested models, tested on the same data set.

Index	Index Score	Recommended cut-off score
AIC	184.125	Smaller the better; good for model comparison (nonnested), not a single model
ECVI	0.889	Smaller the better; good for model comparison (nonnested), not a single model

- Absolute Fit Indices.

Absolute fit indices test whether the predicted variance-covariance matrix is equal to the sample variance–covariance matrix. The most common absolute fit index is the model chi-square (X^2), which tests whether the model fits exactly in the population. Standardized Root Mean Square Residual (SRMR), which is the average standardized discrepancy between the covariance in the input matrix and the covariance predicted by the model is also presented below.

Index	Index Score	Recommended cut-off score
• Model chi-square (X^2), • X^2 to degree of freedom	122.125 1.372	Ratio of $\chi 2$ to $df \leq 2$ or 3, useful for nested models/ model Trimming
SRMR GFI	0.0486 0.929	≤ 0.08 ≥ 0.95 is very good

With the above indicators providing a good model fit, exploring for modification of the model for a better fit was not initiated.

DISCUSSIONS

The findings of the study delineate the formation of IIPe from two first order latent variables (dimensions) EIIFWB and AES. The study conducted on sample of 406 (198+208) investors in equity shares suggests that the measurement model assumed was appropriate. The study also could bring out appropriate indicators of the two dimensions (EIIFWB and AES) of IIPe. This This study had made contributions to the body of knowledge in the area of behavioural finance by developing an appropriate scale to measure IIPe. Using Brown's (2006) guidlines of RMSEA ≤ 0.06; CFI ≥ 0.95; and TLI ≥ 0.95, we feel that this model fairly fits well, with RMSEA = 0.042, CFI = 0.967, and TLI = 0.961. The correlations among the latent

variables are shown next to the curved lines. The factor loadings are shown on the arrows from the latent variables to the observed variables. The loadings for most of the variables on EIIFWB and AES are well above 0.5. Further the critical ratio (CR) for all variables are also above 1.96, indicating that all loadings are significant (Tabachnick, B. G. and Fidell, L, 2007).

Residuals can be examined to identify localized areas of strain. Standardized residuals greater than 1.96 (for $p < 0.05$) or 2.58 (for $p < 0.01$) may indicate areas of strain. Positive standardized residuals indicate that the model's parameters underestimate the relationship, whereas negative standardized residuals indicate the model's parameters overestimate the relationship (Donna Harrington, 2009). The Standard Covariance Matrix of the model in this study does not show any residual values greater than 1.96. Further, the skewness and kurtosis indices are presented in Table No.6. Variables with skew index absolute values greater than 3 and kurtosis index absolute values greater than 10 are of concern, none of the variables in this analysis has problematic levels of skewness or kurtosis (Kline RB, 2005). Here, the data appear to be sufficiently univariate normally distributed. The Cronbach's alpha was observed to be 0.801 for items of EIIFWB and 0.778 for items of AES, indicating a good internal consistency. Thus, based on the above analysis and discussions, the items presented in Table No. 5 are suggested for the scale to measure IIPe. First nine items measure EIIFWB and the next six items measure AEs, the two dimensions of IIPe respectively. Each item is measure on a 5 point Likert scale and thus, the maximum scoring for the scale will be 75 points. A high score on the scale indicates a high IIPe and vice versa.

As discussed above a high perceived importance for investing (Clarke, Keith and Russell Belk, 1979) could determine the financial well being of an individual (Lichtenstein, D. R., Kaufmann, P. J., & Bhagat, S., 1999). Governments and regulatory agencies across the globe are highly concerned with the low level of financial literacy among investors (Mishra S.J & Kumar M, 2011). They are constantly focusing on making the information that are relevant to their investment decision accessible to average investor. However, availability of information will only provide opportunity to investor to acquire and process that information; lack of IIP among investors will dampen the spirit of providing information to investors to make intelligent investment decision. This is due to the fact that investors with high IIP are likely to perceive high stake in investing activities and thus engage in various kinds of activities that increases his IDK (Mishra S.J & Kumar M, 2011). Thus, this scale could help further

research on of IDK by facilitating measurement of IIPe, an important predictor of IDK.

CONCLUSION

Based on this study, it can be concluded that IIPe has two dimensions - EIIFWB and AES with nine and six items (indicator variables) respectively. The CFA provided acceptable scores for the measurement model to suggest these items to form the scale for measuring IIPe. A high score in this scale would indicate a high IIPe and vice versa for an individual investor. IIP being an important predictor of IDK, this scale could help further research on of IDK by facilitating measurement of IIPe.

SCOPE FOR FUTURE RESEARCH

Though study delineate the formation of IIPe from two first order latent variables (dimensions) EIIFWB and AES, further studies could be carried out to explore more dimensions and items with better loadings. Further, a CFA could bring out a better measurement model. In similar lines with measurement of IIPe, scales suitable for measuring the IIP on other popular investment products would help studies specific to such products with more accuracy. However, more specific to this study, an attempt to establish convergent validity of the IIPe scores with scores of similar other scales could be a would be a good area of further research. Studies with different samples especially from a different socio cultural environment would also be help in checking reliability of this scale.

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APPENDIX

Figure1. Format for Content Validity Feedbacks

Please comment as the 'Opinion of Content Evaluation Panelist' as to whether this item is

- (•) Essential
- ( ) Useful but not essential
- ( ) Not useful

to measure the Investment Importance Perception in Equity Shares (IIPe). Also plz rate the degree to which the item taps the objective of measurement on a 5 point scale (1 lowest and 5 highest) : **Rating**:……

Table No. 1 a: Details of the Expert Panel Constituted for Content Analysis

Sl No.	Profile of the Panelist	Qualification of the Panelist	Profession Experience in Years
Panel Member 1	Senior Academician (Professor level in State University)and Researcher	Masters in Commerce and Ph.D in the area of Finance	More than 35 Years
Panel Member 2	Senior Academician and Researcher	Masters in Mathematics, Masters in Business Administration and Ph.D in the area of Marketing	More than 12 Years
Panel Member 3	Seniour Industrialist and Managing Director of a Leading Financial Service Co. in India	Bachelor of Technology	More than 25 Years
Panel Member 4	Senior Academician (Professor level in State University)and Researcher	Masters in Commerce and Ph.D in the area of Finance	More than 20 Years
Panel Member 5	Senior Academician(and also previous Vice Chancellor of a State University), Researcher and consultant in securities market domain	Masters in Commerce and Ph.D in the area of Finance	More than 30 Years
Panel Member 6	Seniour Manager of a Leading Financial Service Co. in India, Academician, Researcher and stock trader	Masters in Commerce and Master in Business Administration	More than 8 Years
Panel Member 7	Senior Academician(Professor level) and Researcher	Masters in Business Administration and Ph.D in the area of Finance	More than 15 Years
Panel Member 8	Managing Director of a Leading Financial Service Co. in India, Researcher and Academician	Masters in Business Administration and Ph.D in the area of Finance	More than 15 Years

Source: Primary Data

Table No. 1 b: Profile of Samples Used

Sample for item generation and EFA	Number of samples – 198 Demographic profile : Gender: 108 Male and 90 female. Age group: 60 in the age group of 30- 40, 60 in the age group of 41- and 78 in the in the age group of 51 and above. Education level was controlled to have all samples to have at least a graduate level qualification.
Sample for CFA	Number of samples – 208 (new set of samples) Demographic profile : Gender: 138 Male and 80 female. Age group: 60 in the age group of 30- 40, 70 in the age group of 41- and 68 in the in the age group of 51 and above. Education level was controlled to have all samples to have at least a graduate level qualification.

Table No. 2: The details of content validity test – stage 1

SL.	Item	Action	Reason
1.	Importance of Accumulation of wealth for health care in old age.	Deletion	This item was felt to mislead the respondents between concern for health care and importance for investments.
2.	Importance of an enduring involvement in investment task.	Deletion	This item was felt to confuse the respondents between importance and involvement.
3.	Proportion of income apportioned to savings.	Addition	This item was added for ensuring item adequacy for the proposed scale, as the panel felt that it is logical to assume that a higher proportion of income apportioned to saving would indicate an higher importance towards the investment task.

Source: Primary Data

Table No. 3 Here . Table Showing Deletion of Items in the First Stage of EFA

Sl. No.	Item	Reason	Other remarks
1	Importance of continuous involvement in the investment task	Cross loading. Loading on Factor 1: 0.494 Loading on Factor 2: 0.363	a) The expert panel also came to a consensus regarding the removal of this item and felt that the removal will not affect the content validity of the scale. There were other items with loading of greater than 0.5 with the same factor.

Table No. 6 Items, Means, Medians, Skewness, Kurtosis, and Percent Missing (n = 208)

Case Summaries															
	FW	**Pro Saving**	**Reg Mon**	**Fin Imp**	**Fin Reg**	**Cen Life**	**Std Liv**	**Fin Str**	**Pro SL**	**Pro Eq**	**EqC**	**Eq Sel**	**RR**	**Val**	**RI**
N	208	208	208	208	208	208	208	208	208	208	208	208	208	208	208
Mean	3.87	3.04	3.60	3.68	4.02	4.01	3.95	4.31	3.84	3.57	3.43	3.03	2.95	3.19	2.94
Median	4.00	3.00	4.00	4.00	5.00	4.00	4.00	5.00	4.00	4.00	3.00	3.00	3.00	3.00	2.00
Kurtosis	-1.118	-1.199	-.892	-.892	-.267	.432	-.607	.551	-.983	-.900	-1.182	-1.249	-.965	-1.473	-1.210
Skewness	-.586	.059	-.512	-.507	-1.083	-.998	-.429	-1.141	-.426	-.246	-.283	.080	.193	.149	.447
Std. Error of Kurtosis	.336	.336	.336	.336	.336	.336	.336	.336	.336	.336	.336	.336	.336	.336	.336
Std. Error of Skewness	.169	.169	.169	.169	.169	.169	.169	.169	.169	.169	.169	.169	.169	.169	.169

Source: Primary Data