The Development and Validation of InvPERC Scale: A Perception Study

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Abstract: The rationale behind this research is to frame a novel measurement scale for mutual funds—“The InvPERC Scale.” This scale focused on ascertaining non-conventional factors, apart from risk and return, influencing investor perception of Indian mutual fund investors towards this investment avenue. The exhaustive assessment of the available literature canvass showed that no scale for measuring investor perception toward mutual fund performance is available. Therefore, the scale was developed by thoroughly analyzing investors’ opinions on mutual funds. Data for the analysis has been gathered through 1280 mutual fund investors’ questionnaire-based surveys and put into meticulous data analysis. The findings of this research work present a combination of three factors playing a decisive role in framing mutual fund investors’ perception namely convenience, credibility, and intrinsic fund qualities.

1. Introduction

Keeping up with stock market fluctuations, regularly staying in touch with critical investors, and receiving updates about investor opinions and ideas, does not guarantee a full-proof investment strategy, as some things are left unstated. That is where a perception study comes in.

According to four relevant logic, knowing about investor perception related to mutual funds is imperative. First is the exorbitant spread of the mutual funds market, which makes it viable to reveal investor inclination at this point of the pandemic, even when in 2020, during the pandemic stock market has recorded various peaks. The global mutual fund assets market was valued at $54.93 trillion in 2019 and is expected to touch the mark of $101.2 trillion by 2027, Second, as available past literature has mentioned investors’ negative or neutral perceptions about mutual funds, it was crucial to understand the investor insight and analyze whether the perception has changed over time. Third, it is mentioned in the behavioral research literature that people have stated dependency on heuristic processes to arrive at their decisions. However, due to limited information analysis capacities, people turn towards bad decision-making to arrive at the presumably right decision (Kahneman and Tversky, 1974). However,
lousy decision-making cannot be afforded in investments involving finances. This has also been observed in earlier research that due to bad decision-making, individual investors withdraw their funds at an early stage from mutual funds. Fourth, the research gap identified from the in-depth literature review shows that despite the abundant availability of investor perceptions literature, presently, no scale exists for evaluating investor perceptions concerning mutual fund investment.

Moreover, available literature emphasizes risk and return as the major factors affecting investment. However, this focus is on ascertaining non-conventional factors, apart from risk and return. Also, at the time of interviews, the researcher got to know that inbound inquiries regarding mutual funds are almost quintuple in comparison to the number of investors finally deciding in favor of mutual funds. Due to this, knowing the reasons for the gap between the final investment decisions and investor perception has become a prerequisite for asset management companies (AMCs). Moreover, investor perception is related to individual insight or awareness that is majorly influenced by market movements so continuous monitoring of investor perception is a mandate for bridging the aforementioned gap. So, to fulfill the mentioned gap, this perception study has been conducted. The novel contribution of this study is the framing of a meticulous scale in the field of mutual funds by diligently following all the critical steps in the scale development process. Therefore, the following research questions were investigated:

RQ1. What role does investor perception affect investment decisions related to mutual funds?

RQ2. Apart from risk and return, what other factors affect investors’ decisions regarding mutual funds investing?

The InvPERC scale is the result of a combination of exploratory surveys and a comprehensive evaluation of investors’ perceptions. The factors that the scale discovers are highly rational, feasible, hands-on, and relevant to all kinds of mutual funds. Additionally, a sample size of 1280 is adequate according to the prerequisites of data analysis through selected statistical tools (EFA and CFA). Data collection was done from investors in the regions of the 10 selected Indian states, namely Uttar Pradesh, Madhya Pradesh, Rajasthan, Maharashtra, Karnataka, Gujarat, Bihar, Punjab, Haryana, and Chhattisgarh. An average of 128 sample size of each state has been considered to have an equal representation of all the regions. Data analysis depicts that investor perception has a credible influence on individual investors’ decision-making process and identifies intrinsic fund qualities, credibility, and convenience as the decisive factors for investment.

The findings of Yates et al. (1997) served as a base for conducting this study in India and confirming the results. They found that people brought up in Asian cultures display greater diversity in perception-induced decision-making than people in the United States or other western countries. Although India is a developing nation yet its economy has attributes similar to that of any developed nation. This evaluation would help check the prime idea of examining the perception of present-day investors regarding mutual funds and then collating it with the previous research. This research will be helpful for asset management companies in widening the boundaries of the mutual fund market even to rural areas and tier 2 and tier 3 cities.

Furthermore, this study will benefit firms planning to go beyond product and investments. This scale also emphasizes the need to understand the customer journey across multiple channels to improve
investor engagement and investment decisions. Finally, studying investment decisions under investor perception will help practitioners, financial service providers, sponsors, financial institutions, and corporate giants to pre-plan their public offerings according to the expected investor reaction.

To address the above-mentioned research questions, the paper is structured as follows: immediately subsequent section reviews the available literature on background theories, various variables affecting investor perception, and what is the collective effect of these factors on investment decisions. The next section explains data collection, sample profiling, and the research methodology. Section 4 discusses the detailed data analysis showing the pilot scale, initial scale, final scale, and the up-gradation of results. The last section concludes the study through findings, discussion, implications, and conclusion.

2. Literature Review

Walia and Kiran (2009) analyzed that mutual fund as an investment opportunity is chosen by the category of investors who either do not wish to undertake absolute capital market-related risk or are interested in relying on the expertise of mutual fund managers. Research works of Kumar and Goel (2014), Kumar and Bansal (2014), and Singh and Singh (2016) revealed that for the younger generation, mutual funds are the most chosen investment avenue. Results of Rohilla and Tripathi (2022) work shows that there is a significant positive relationship between investor sentiment and market return. Table I shows a chronological progression of investor perception with the basic notion of how investor perception of mutual funds has changed over the years. Starting from 2002 and up to 2022, the literature review revealed that the primary reason for less penetration of the Indian mutual fund industry was the lack of awareness. Post-2012, the results were commendable as the Association of Mutual Funds of India (AMFI) emphasized investor awareness initiatives, conducted various awareness campaigns, and started advertising mutual funds through various platforms. Research done during 2002-2011 revealed that investors were dissatisfied with mutual funds, but in more than a decade, situations and perceptions have changed immensely.

Table 1: Investor Perception over the Years

<table>
<thead>
<tr>
<th>Author and Year of Research</th>
<th>Investor Perception towards Mutual Funds</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rajeshwari and Rama Moorthy (2002)</td>
<td>The highly favored investment vehicle was bank deposits.</td>
</tr>
<tr>
<td>Singh and Chander (2004)</td>
<td>The funds performed less in contrast to anticipation, and fund managers have also been unproductive and ineffective, so investors preferred to discontinue their mutual funds’ investment.</td>
</tr>
<tr>
<td>Senthil and Zefar (2005)</td>
<td>Investors preferred shares to mutual funds because they thought mutual funds to be hazardous.</td>
</tr>
<tr>
<td>Bhayani and Patidar (2006)</td>
<td>Many investors perceived mutual funds as they could raise the amount of domestic savings and upgrade the distribution of funds through the market but were still uncomfortable investing due to a lack of awareness.</td>
</tr>
</tbody>
</table>

contd. table 1

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The primary interrogation was desired in cities categorized as tier 2 and tier 3, where the investor awareness level about mutual funds was shallow. The research work also found that women investors were generally confused about endowing funds in mutual funds due to their complicated procedures.

Low yields in mutual funds were the main issue that resulted in low penetration among investors.

The study revealed that many investors had not developed any outlook on mutual funds. The root cause of this problem was the unawareness of investors about the basic idea and operational procedures of this mode of investment.

As an investment instrument, investors had a confidence awareness deficit in mutual funds primarily due to a dearth of knowledge.

Investors preferred mutual funds for return potential, liquidity, and safety.

The majority of respondents were highly contented as a result of the numerous benefits along with the quality services offered by the asset management companies.

Investors preferred mutual funds chiefly due to expert fund management and superior returns.

Amongst various conventional investment instruments, mutual funds were given priority.

They mentioned that investor perception was positive when investing funds in mutual funds. Therefore, a very bright future was expected of the mutual fund industry.

Mutual funds were amongst the most favored investment option.

Most investors had a positive approach toward mutual funds investing, but due to a lack of conceptual knowledge, they avoid this investment option. Investors wished to endow their funds in mutual funds due to superior returns, tax benefits, and capital appreciation.

The investors identified mutual funds as a good investment instrument.

It was mentioned that low-risk and liquidity factors influence investors’ perceptions regarding mutual fund investment.

Mutual Funds are an appealing and most invested option.

The investors identified mutual funds as a high-yielding investment avenue with a clear preference for perception-molding factors.
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<table>
<thead>
<tr>
<th>Author and Year of Research</th>
<th>Investor Perception towards Mutual Funds</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hassan (2020)</td>
<td>Investors’ sentiment is influential in framing investor perception toward mutual funds.</td>
</tr>
<tr>
<td>Dhall et al. (2021)</td>
<td>Investors’ preference for mutual fund investment was based on tax benefit, security, liquidity, return, and reliability. In addition, it also suggests a strong association between factors like gender and investors’ perception, age, and investors’ perception concerning returns and higher tax shields, respectively.</td>
</tr>
<tr>
<td>Sharma (2021)</td>
<td>Source of information, risk, quality of life, and independent decisions significantly impact working women’s investment decisions.</td>
</tr>
<tr>
<td>Kaur and Singh (2021)</td>
<td>Factors like risk-averse behavior, spending habits, financial decision-making support, living for today, and risk-tolerant behavior influence the saving behavior of an individual.</td>
</tr>
<tr>
<td>Sharma (2022)</td>
<td>Factors like risk, return, fund characteristics, fund manager, and fund family significantly impact investor perception regarding mutual fund investment decisions.</td>
</tr>
</tbody>
</table>

Note: Table depicting chronological flow and progression of investor perception about mutual funds from 2002-2022

Source: Author’s Own Compilation

Goetzman and Peles (1997) reported that shreds of evidence present the notion of the effect and presence of investor psychology in fund selection and switching activities. Ippolito (1992) disclosed that the previous performance of a fund is a decisive factor in selecting a mutual fund. Barber and Zheng (2005) have conducted research based on an analysis of over 30,000 households. The primary outcomes given by their research are that investors tend to purchase funds with robust previous performance, and investors are quite concerned about the fund expenses. In their research, Goldstein and Krutov (2000) argued that fund expenses do not directly affect investors’ decisions as they compare fund expenses in the context of returns.

Moreover, they do not mind paying even higher fund expenses if they are getting high returns with high fund expenses. Singh (2012) and Kasilingam and Jayabal (2011) researched the influential aspects of mutual funds from a retail investor’s point of view. They found that a fund’s return potential, flexibility, transparency, affordability, and liquidity are the crucial features affecting investors’ decision-making. Saha and Dey (2011) discovered that investors make investments in mutual funds mainly due to tax shelter and minimum guaranteed returns. Ranganathan’s (2006) and Sharma’s (2013) research factors affecting investors’ investment decisions were the security of resources invested, capital inflation, and favorable credit rating of the fund.

3. Objective of the Study

Based on research questions and available literature review, the primary objective of this research work is to frame a novel performance measurement scale for mutual funds, focusing on ascertaining non-conventional factors influencing investor perception of Indian mutual fund investors.

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4. Research Methodology

Due to the deficiency of empirical concepts for investor perception of individual investors about mutual funds, original statements are framed for this study. For framing measurement models methodology proposed by Churchill (1979) was followed. The data was collected via survey. The surveys were done in three phases. The pilot study was done in the first phase, followed by developing the initial scale, and the third phase was for the final scale development. A five-point Likert scale has been used (Hair et al., 2006). The sample unit of the research included all the present and past mutual fund investors. In the pilot study, respondents were from Delhi/NCR only, but during the initial and final scale, respondents were from 10 Indian states, namely Uttar Pradesh, Madhya Pradesh, Rajasthan, Maharashtra, Karnataka, Gujarat, Bihar, Punjab, Haryana, and Chhattisgarh. For the initial scale, five states and five different states were considered for the final scale. An average of 128 sample sizes of each state was considered to have an equal representation of all the regions. The non-probability sampling-purposive sampling methodology was selected. In purposive sampling, the sample is selected based on the population’s characteristics and the study’s objective. It differs from convenience sampling as, in purposive sampling, the characteristics of picking respondents are pre-defined by the researcher. Here, the pre-condition to select respondents was a minimum of three years of market experience. The sample size in the pilot (630 for 32 items) and the final phase (1280 for 18 items) highly supported the response ratio of a minimum of 1:10. Out of 1280 respondents, the majority (61%) fall in the age bracket of 41-60 years, 23% are in the age bracket of fewer than 30 years, and the rest, 15%, are above 60 years. The education background of the majority of respondents (46%) is graduation, while only 29% are professionally qualified. Respondents' occupation spread mainly concentrates on private sector employees (62%), professionals (22%), etc. Data analysis was done using IBM SPSS version 24 for all EFA calculations and AMOS for CFA. Scale items for the pilot study were generated based on a literature review, followed by statement filtration based on theoretical reasoning and statistical data analysis.

5. Data Analysis

5.1. Three Scale Levels

Churchill (1979) and Parasuraman et al. (1988) recommended that the refinement of a scale commences with the calculation of item-to-total correlation, and Cronbach’s alpha coefficient, and goes up to exploratory factor analysis (EFA). EFA analysis gave total variance explained (%) = 73.24, KMO value was 0.723, and overall Cronbach’s α was 0.797. The pilot study was done with 26 items. Factor loadings for all factors (IFQ = 0.871, Cred = 0.732, Conv = 0.797, InvPerc = 0.825) were above 0.70 (Hair et al., 2006).

Table 2 depicts various CFA results of pilot scales. Again, the values of pilot-scale analysis were within the acceptable limit, leading the researcher to move to the initial scale and final scale data collection and analysis with a different set of respondents.
The table below shows the goodness of fit measures comparison of scales.

<table>
<thead>
<tr>
<th>Measure</th>
<th>Pilot Scale</th>
<th>Initial Scale</th>
<th>Final Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Absolute fit measures</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$\chi^2$ Value and significance level</td>
<td>1302.70 ($p=0.00$)</td>
<td>636.28 ($p=0.00$)</td>
<td>387.108 ($p=0.00$)</td>
</tr>
<tr>
<td>NCP</td>
<td>891.07</td>
<td>536.83</td>
<td>180.3</td>
</tr>
<tr>
<td>GFI</td>
<td>0.76</td>
<td>0.88</td>
<td>0.97</td>
</tr>
<tr>
<td>RMSR</td>
<td>0.13</td>
<td>0.06</td>
<td>0.03</td>
</tr>
<tr>
<td>RMSEA</td>
<td>0.096</td>
<td>0.086</td>
<td>0.077</td>
</tr>
<tr>
<td>ECVI</td>
<td>6.52</td>
<td>2.58</td>
<td>1.36</td>
</tr>
<tr>
<td><strong>Incremental fit measures</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AGFI</td>
<td>0.54</td>
<td>0.78</td>
<td>0.85</td>
</tr>
<tr>
<td>NFI</td>
<td>0.66</td>
<td>0.73</td>
<td>0.88</td>
</tr>
<tr>
<td>NNFI</td>
<td>0.84</td>
<td>0.90</td>
<td>0.94</td>
</tr>
<tr>
<td>CFI</td>
<td>0.85</td>
<td>0.90</td>
<td>0.93</td>
</tr>
<tr>
<td>IFI</td>
<td>0.80</td>
<td>0.89</td>
<td>0.91</td>
</tr>
<tr>
<td>RFI</td>
<td>0.72</td>
<td>0.80</td>
<td>0.85</td>
</tr>
<tr>
<td><strong>Parsimony fit measures</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PGFI</td>
<td>0.46</td>
<td>0.61</td>
<td>0.65</td>
</tr>
<tr>
<td>PNFI</td>
<td>0.61</td>
<td>0.68</td>
<td>0.71</td>
</tr>
<tr>
<td>AIC</td>
<td>1340.78</td>
<td>692.67</td>
<td>479.10</td>
</tr>
<tr>
<td>Critical N (CN)</td>
<td>66.47</td>
<td>118.44</td>
<td>138.31</td>
</tr>
</tbody>
</table>

*Note:* This table shows the scale's improvement stages from pilot to final.

*Source:* Author's Own Compilation

A revised form of the pilot scale was used for the initial scale. The initial sample comprised 1205 mutual fund investors from 5 different Indian states, namely Uttar Pradesh, Rajasthan, Maharashtra, Punjab, and Haryana. The initial scale also applied EFA confirmatory factor analysis (CFA). The value of the coefficient alpha extended from 0.468 to 0.879. Five constructs including 20 items were categorized on the basis of the results of the initial scale. Factor loadings were higher than 0.40 for most of the items (Hair et al., 2006), except for six items, which were eventually removed from the final scale. Table 2 shows that the initial scale’s CFA outcome produced a good fit. However, despite that, there still existed a possibility for more up-gradation of the fit indicators, which led the researcher to go for final scale data analysis.

The final phase of the scale development sample included 1280 mutual fund investors from 5 different Indian states, namely Madhya Pradesh, Karnataka, Gujarat, Bihar, and Chhattisgarh. At this stage, AMOS software applied CFA with maximum likelihood estimation. Consequently, the final scale
comprised 18 items (after removing two items) trimmed down to three factors. Overall \( \hat{\alpha} \) was 0.893 and meticulous scrutiny of the final scale results shows that all the factor loadings were statistically relevant \((p < 0.01)\) and demonstrated values higher than 0.40 (Gerbing and Anderson, 1993; Hair et al., 2006; Jöreskog, 1993). The standards for evaluating the indices used were based on the suggestions given by several prominent researchers like Hair et al. (2006), Gerbing and Anderson (1993), Kaplan (2000), Kline (1998), and Nunnally (1978). The inclusive assessment of the goodness of fit indices illustrated remarkable up-gradation from the pilot scale to the initial scale and from the initial scale to the final scale.

5.2. validity and reliability

To check the convergent validity, AVE was calculated and its value was higher than 0.50 for all the factors. This exhibits that all indicators were aptly placed and could define the construct they were related to. The square root of AVE was compared with all inter-factor correlations to analyze discriminant validity (as shown on the diagonal in Table 3). All factors showed sufficient discriminant validity as the correlation values were lower than the diagonal values. In all cases, the composite reliability was more significant than the minimum standard value of 0.70, indicative of reliability in factors. Table 3 exhibits the valid convergent validity indices showing that the scale is capable to measure the context that it was intended to measure. The values of Cronbach alpha for all the constructs were reportedly greater than the minimum required standard values. The InvPERC scale, exemplifies an acceptable fit, as the items demonstrate convergent validity and consistency in their causal factors.

Table 3: Reliability and Validity Analysis of Final InvPERC Scale

<table>
<thead>
<tr>
<th></th>
<th>CR</th>
<th>(IFQ^a)</th>
<th>(Cred^b)</th>
<th>(Conv^c)</th>
<th>(InvPerc^d)</th>
</tr>
</thead>
<tbody>
<tr>
<td>IFQ^a</td>
<td>0.859</td>
<td>0.821</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cred^b</td>
<td>0.857</td>
<td>0.697</td>
<td>0.833</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conv^c</td>
<td>0.823</td>
<td>0.780</td>
<td>0.707</td>
<td>0.793</td>
<td></td>
</tr>
<tr>
<td>InvPerc^d</td>
<td>0.807</td>
<td>0.681</td>
<td>0.639</td>
<td>0.621</td>
<td>0.714</td>
</tr>
</tbody>
</table>

Note: * Based on (Fornell and Larcker, 1981): AVE in the diagonal and inter-construct correlation off-diagonal.\(IFQ^a\)=Intrinsic Fund Quality, \(Cred^b\)=Credibility, \(Conv^c\)=Convenience, \(InvPerc^d\)=Investor Perception

Source: Author's Own Compilation

6. Results and Discussion

The primary finding of this study is that perception plays a statistically significant role in affecting investment decisions related to mutual funds. Moreover, investor perception of this investment avenue has changed positively over time. The results of this study validated the 3-factor multidimensional scale. This scale identified factors apart from conventional factors- risk and return. Intrinsic Fund Qualities are the most influential factor. They are also the exclusive predictor of investor perception.
because fund qualities like liquidity, transparency, simplicity and the fund’s objective hold the utmost importance for a retail investor and mold their perception of any investment option, including mutual funds. This finding has been validated in the research work of Gnana et al. (2006) and Kalaiselvi (2016). Two more factors, Credibility and Convenience, are also vital and valid. Credibility provides self-assurance to investors regarding the well-being and safety of their funds. This finding has been corroborated in the research work of Saha and Dey (2011), Kumar and Goel (2014), and Singh and Singh (2016). In the context of mutual funds, the majority of investors in most of the research, including this study, have admitted that investing in mutual funds is primarily due to the small investment amount, along with various regulatory relaxations in the form of easy entry-exit terms and flexibility, etc. These are the reasons convenience has become a relevant perception molding factor. Managerial implications of this research study indicate more focus on the investor perception-driven mutual fund industry and a strategic focus shift by Asset management companies to derive policies with investors as the centre point.

7. Conclusion

The only objective of this research was to frame a novel multidimensional scale for investor perception of mutual funds. This study contributes to the existing literature on investor perception of mutual funds by developing a perceptual instrument to measure investor perception. Due to the non-existence of a scale that captures investors’ perception of mutual funds, researchers and practitioners had to rely on already available questionnaires, which have not been tested and validated well. This scale can contribute to standardizing investor perceptions. The variance explained by the proposed scale was 73.24%, indicating that 26.67% remains unidentified and appeals for substantial further research. To eliminate the problem of lack of generalizability of scale, this scale can be tested in other countries so that this scale can be robustly validated. Strengths of the InvPERC scale are its brevity, ease of administration, and confirmed validity across 10 selected Indian states. This scale has come up with very few factors limiting its scope in real market scenarios. Despite these constraints, this novel scale fulfills an essential gap as it offers future researchers a ready measurement instrument for modeling intricate relationships among various variables affecting investor perception.

References


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