Understanding Commodity Market Dynamics and Investor Outcomes in India

Sanat Rout

Doctoral Scholar, School of Management Studies, GIET University, Gunupur, Odisha, India
Email Id: sanat.rout@giet.edu
(Corresponding author)

Sadananda Sahoo

School of Humanities,
Associate Professor, School of Humanities, GIET University, Gunupur, Odisha, India
Email Id: sadananda@giet.edu

Rabindra Kumar Mishra

Former Associate Professor & HOD Commerce, P.N. College (Autonomous), Khordha, Odisha, India
Email Id: rabimishra_4u@yahoo.co.in

https://doi.org/10.63340/samt/1007

Abstract: *This study examines the interplay between risk perceptions, risk assessment, and investor intentions in the commodity market, focusing on Indian investors. The purpose is to explore how risk assessment mediates the relationship between perceived risks and investment decisions, converting uncertainties into actionable strategies. The aim is to identify factors influencing investor behavior and analyze the role of structured evaluations in enhancing confidence and decision-making. The study highlights the positive implications of risk assessment in aligning investment choices with financial goals, promoting informed decision-making in volatile markets. By addressing the gap between risk awareness and actionable investment, the findings provide insights into improving risk management practices for individual and institutional investors. The scope encompasses commodity markets, emphasizing the growing importance of risk evaluation tools in dynamic financial landscapes. The study's outcomes offer actionable recommendations, contributing to more resilient and confident investor behavior in emerging markets like India.*

Keywords: *Indian investors, Risk perception, Risk assessment, Commodity market, Investor intention*

Introduction

The Indian markets have indeed opened a new industry for regular traders and investors: commodities futures. Commodities are the ideal alternative for people trying to broaden their investments across stocks, bonds, and estate development (Akrim & Hensel, 1993). For business traders, hedgers, and gamblers, commodities have the capacity to be a unique investment vehicle. Commodities might just be a big market for small investors who pretend to comprehend the equities markets. Commodities, on the other hand, are simple to comprehend in terms of supply and demand principles. While investing in commodities futures, small investors ought to be aware of the dangers and benefits. Commodity futures trading has traditionally been a little unpredictable compared to bond pricing and equity, making them a good option for

portfolio diversification. Commodity futures markets, like every market, play a significant role in sharing information and sharing risks.

Most Indian investors are unaware of the pre-established commodity market; their assessment is one of dangerous to extremely risky conjecture. In their observations, most of them seem to have erroneous impressions about commodity markets. As a result of this phenomena, Indian commodity market traders have a skewed perception of the market (Jhunjhunwala & Suresh, 2024). The Indian commodity market officials have taken the necessary procedures to ensure that commodity transactions are conducted in a peaceful and orderly manner. Aside from commodities market officials, certain non-governmental organizations (NGOs) are attempting to train commodity market participants regarding commodity market trading. Also, there is no argument on the statement that, in the coming years, the commodities market, instead of the market of spot, would turn into a hotspot for Indian agricultural societies. Additionally, producers, agents, and dealers will benefit from it. However, to make it happen, one must use creativity to govern and expand the commodity market.

The requirement of some countries hoarding cyclical agronomic crops propelled commodity future trading forward. In 1848, Chicago pioneered the concept of systematized commodity trade. Sellers and purchasers began to make commitments to change the product for cash flow, and futures trading contracts were born. By which the manufacturer decides to sell his or her product to the customer at a prearranged cost at a later delivery date. As a result, the manufacturer was aware of what cost the produce would bring, and the merchant was aware of the cost involved ahead of time. This type of agreement was beneficial to both parties. If the trader is not careful in capturing the shipment of the produce, he or she may sell the agreement to anyone who requires it. Likewise, a manufacturer who does not intend to distribute goods to a trader could delegate the task to others. The cost of this agreement would have been determined by changes in wheat market rates (Ahmed, Singla & Singh, 2024). Later, these agreements were warped into and evinced to defend parties involved from opposed elements such as unplanned pricing actions and adverse climatic events by making necessary modifications. This encouraged traders to enter the futures contract, which has no idea of selling or buying wheat and instead relied solely on market rate changes to make money.

However, its origins may be traced back to Japan. Traders in Japan used to keep rice in depots for later consumption (Jussaume, 2020). To get funds, warehouse owners issued receipts against with the rice they had on hand. Rice tickets were the name of them. Eventually, commercial trade includes these types of rice tickets and is said to be the trade of commercials. Later, standards were established to standardize rice ticket trade. In the nineteenth century, Chicago, Illinois, became a major marketing hub in the USA. As an outcome, wheat manufacturers from the Midwest are interested in selling their products to distributors and retailers. Producers are sometimes at the mercy of merchants' decisions caused by lack of organized warehouses and consistent measuring and rating methods. These conditions highlight the importance of setting up a usual discussions' location for producers and merchants to coordinate spot grains deliveries and collect compensation.

Review of Literature

Till the new century, the commodities futures market proceeded to crumble and remain dormant for 40 years. When the measures were first introduced, they resulted in a significant shift in policy, and the commodity market became more vibrant and optimistic. Following the 1990 Liberalization and Globalization Act, the government formed a committee in 1993 to evaluate the influence of futures trading. The Committee (led by Prof. K.N. Kabra) suggested that futures trading be permitted in 17 commodity groupings. It also supported the creation of the Forward Markets Commission and amendments

to the Forward Contracts (Regulation) Act 1952, which gives permission for selected trading of goods and broker licensing with the Forward Markets Commission. The government accepts these recommendations, so future trading is permitted in each of the commodities named (Fletcher, Larkin & Corbet, 2021). It is a timely choice, given that the commodities process is on the rise globally, with the next ten years being dubbed "the Commodity Decade." In India, in which the values of every commodity are still not established in a systematic fashion, the commodities exchange plays a critical role. Previously, pricing was determined only by the sellers and buyers of products on the market.

Commodity trades of days are entirely conjecture. They go out to manufacturers, users, and small traders in a brief way before deciding on a cost. In the essential market, it provides price transparency and managing risk. A key distinction between a traditional auction, in which a solitary speaker announces the estimate, and the Marketplace is that teams are fighting not only to purchase but to sell. Nobody can ever bid just below a higher offer, and nobody can try and sell created for less than somebody else's low bid, according to trade rules and regulations. This keeps the marketplace as efficient and effective as possible, and dealers on their feet, ensuring that no one obtains the buying or selling before them. From 2002, India's commodities futures market has had an unanticipated expansion in context of contemporary interchange, the quantity of commodities acceptable for trading of derivatives, and the volume of commodities trading of futures, in 2006 which surpassed 1 trillion dollars (about $3,100 per person in the US). Except for a few minor actions on an OTC basis, the commodities derivatives market was non-existent from 1952 to 2002.

There have been 25 recognized future exchanges in India, three of those are multi-commodity exchanges at the national scale. After 30 years, the Government of India has approved forward commodity trades via Digital Exchanges of Commodity, an alteration of conventional company called as Adhat and Vayda Vyapar that will allow for improved coverage of risks and commodities deliveries. NMCEIL (National Multi-Commodity Exchange of India Limited) (NMCEIL) in Ahmedabad, MCX (Multi Commodity Exchange of India Limited in Mumbai), and NCDEX (National Commodity & Derivatives Exchange Limited) in Mumbai are the three exchanges. Similar local commodity exchanges can be found in various locations of India.

But besides the increasing prevalence of commodity market threats, study on the effects of market volatility on shareholder intentions and conceptions is limited, with contrasting findings (Baines & Hager, 2022). Quantity risk, according to some practitioners, is related to the shareholders' intention to buy (Schulte & Knuts, 2022). The research of Aren & Nayman Hamamci (2020) shows a link between investment intentions and market risk. Khan et al. (2020) found that regulatory risks may not always encourage investment intentions. Moreover, the opinions on commodity market risk perceptions are not very well described in terms of boosting investor investment intentions (Chen et al., 2022). There is still a lot of debate about whether managing risk in the commodity market is a useful strategy. In addition, empirical evidence on the degree and degree of impacts on investment intentions is weak and conflicting.

Investment intentions continue modest and conflicting. These opposing viewpoints indicate that a greater understanding of the relationship between different commodity market risk indicators and their effect on investment intentions via perceived risks and risk evaluation is required. Although some studies support the usefulness of investing intentions to shareholders, there are no clear indications as to whether these programs are effective (McCarthy et al., 2008). There is also the chance that what works in one nation could not function in some other, and that risk perceptions vary from place to place and cultures. In this regard, little study has been done on the views of commodity macro-economic variables and the development of a risk

assessment model in the Indian commodity market. As an outcome, the aim of this research was to give preliminary data on how investor views, such as quantity, price, regulatory risks, and market are linked to investment intentions. The research also investigates the influence of risk assessment and risk perception on investing choices.

The Indian commodity market has undergone great development since 2003, according to Ahuja (2006), with a rise in the number of contemporary commodity exchanges, openness, and trade activity. Commodity trade quantity has exceeded expectations. This was owing to the involvement of market forces as well as the government's wide presence through changes in commodity derivatives policy. He advocated for the development of obstacle free transactions in the futures market and the prices to be determined by free markets. Bose (2006) provided account information of significant breakthroughs in the exchange rate, financial derivatives markets, and Indian commodity as well as explains the supervisory obligations that were implemented to reduce derivatives abuse.

According to Gakhar and Meetu (2013), there seem to be multiple problems (such as a complete absence of scale economies, legal and tax backlogs, continued to increase of off-balance sheet publicity of Indian banks, and a need for an independent authority, and so on) that must be resolved properly to boost investor interest in the Indian derivative market. Chauhan (2013) looked examined the BSE and NSE's financial results throughout the last ten years. And has attempted to determine whether any of the stock exchange is functioning financially better on many bases, concluding that the BSE and NSE are the symbols of the Indian capital market; they are not competitors; both are cornerstones of the Indian economy. Both parties must strive to be complementary to one another. If both go together, the country will see tremendous growth and development.

Shalini and Raveendra (2014) investigated the context, background, idea, description, kinds, characteristics, regulatory oversight, economy, tendency, economic expansion, prospects for the future, and obstacles of derivatives in India, as well as the condition of the Indian derivatives market in comparison to the global derivatives market and concluded that derivatives play a significant role in the national economy. Investors consider financial sustainability, principal amount, accessibility, easy transferability, and permission to be the most important characteristics of an investing.

In India, there are a variety of investment options accessible, including stocks, metal, postal savings, property investment, and so on. The investor's targeted rate of return as well as his or her risk tolerance. National saving certificates, provident funds, insurance schemes, chit funds, securities, firm fixed deposit accounts, government securities, mutual fund strategies, stocks, and derivatives are examples of investments. It can be argued that each trader wants to save even more money, and that taking on more risk leads to greater profits. This is the primary reason for the negative opinion of equities and derivatives investments. There is indeed a lot of ambiguity in the behavior of investors and channels to choose between stock and derivatives.

Since 1991, software inventions and financial services reworking have indeed been incorporated in India as aspect of economic austerity policies, according to Gautami and Kalyan (2018). Derivatives innovation is an example of a segment in which advancement and innovation are progressive. In India, the advent and development of the financial industry is a recent concept. From its very beginnings in June 2000, the derivative instruments business has increased dramatically in terms of length and density of traded contracts. Derivatives are a broad class of investment products that primarily include futures and options. The worth as well as other contributing factors in the inherent value are used to determine the worth of such equities.

They really had no inherent value and derive their relevance from the consumption they place on the ownership of a variety of other investment equipment or securities by their users.

Roy (2006) proposed that lenders participate in the commodity futures market to successfully control commodity cost hazard since bank funding might provide an optimal shield towards price fluctuations. Commodities have been prominent as an asset class because of their major risk rewards and diversified capabilities, according to Bhattacharya and Sharma (2007). In latest days, Indian futures markets have developed significantly, resulting in significant changes in the traditional fragmented marketplaces, in the presence of agriculture products. Trading in commodity futures, led to a significant increase in prices because the market price of chosen products and their volatility spillovers increased significantly throughout the period of futures contracts.

As per Kaur and Rao (2010), future prices and commodity spot in chosen agricultural products constantly monitored each other, with no significant volatility in the price levels of future and spot agreements of those agricultural products. Indian commodity futures market gives greater diversification efficiency in agricultural products than in non-agricultural products, and the role of the Indian commodity futures market in cost managing of risk has also continued to increase with greater market action.

The essence of price-volume connections in asset markets has been an important topic in financial literature because it exposes an incredibly significant feature that has potential ramifications for economic efficiency, according to Biswas and Rajib (2011), who performed research to assess price-volume connections for Indian commodities. The goal of this study is to look at price-volume correlations in the Indian commodity futures market. But there are simultaneous links among quantity and price movements in some circumstances, SIH is confirmed overall owing to the combination of Granger causality.

In response, this research carried out an empirical investigation to accomplish the below-mentioned objectives:

- To identify the impact of risk perceptions on investor intentions in the commodity market.
- To analyze the mediating role of risk assessment between risk perceptions and investor intentions.
- To suggest strategies for leveraging risk assessment to enhance informed investment decisions.

Relationship Between Risk Perceptions and Investor Intentions

In the views of institutional asset managers and private investors, commodities futures have emerged as one of the most appealing asset classes to invest in over the course of the previous decade. Investors are willing to add commodity futures to their portfolios because commodities have the possibility to diversify their holdings, and there is a lower connection among both commodities and stocks or bonds than there is between commodities and any other asset class. This allows investors to build investment, which is a proposed action that supports enhancement, enhance allocation of asset, trying to hedge and reduced risk (Schoenmaker & Schramade, 2019).

When the higher potential risk translates into greater returns, the risk aware investors might invest in the commodities market. Volatility of price in commodities markets such as gold, oil and agricultural products act as a magnet for the risk prone individuals who feel that price movement is equivalent to opportunity for great returns (Kyei et al., 2024). Indian investors' understanding towards asset class other than commodities are improving and thus a lot of people believe the commodity markets are worth exposing in order to achieve better portfolio returns. This high-risk high reward strategy is

very desirable given the fact that at times of economic disturbances, commodities are usually better than other financial instruments.

Moreover, risk perceptions alongside other factors facilitate investments that are informed and more strategic. Investors who possess understanding of the commodity market and its structures such as hedging and risk management strategies will see most perceivable risks as hurdles but plausible to manage (Harvey & Rabetti, 2024). For example, during recession of equity markets, commodities are good because they aid in diversification and they protect against inflation as well as changes in currency values. Therefore, risk perception may also be a pull factor to Indian investors in the search of risk balance in their portfolios and take advantage of market inefficiencies.

H1: Risk perceptions will significantly affect investor intentions towards commodity markets.

Association between Risk Perceptions and Risk Assessment

A positive correlation gradually develops trooping into heightened levels of awareness among the risk-taken individuals' attributes to managing risk as they apply more detailed examination which in turn influences the outcome positively. Investing in financial contexts has also been shown to elevate a lot of risk-averse investors as they seek to cover their bases, taking things into account such as market risk, trend analysis, and economic factors (Chowdhury, Mahdzan & Rahman, 2024). As a result, this linkage makes sure that risk feelings are not just feelings, but rather ideas with implications that enhance better judgement. For example, in the case of a commodity market, assuming that there are expected fluctuations in pricing, an investor makes the effort to evaluate risk in order to check the maximum level of potential losses or gains.

In addition, this relation helps develop an initiative to counter threats before they become actual adverse occurrences. Knowing the risk factors allows people to use the appropriate tools and frameworks for thorough risk analysis. Throughout risk perception and detailed risk analysis, investors or stakeholders are able to match their deeds with the level of risk they are interested in pursuing. This relationship features not only improvements in the quality of the decisions made but also reassurance as there is always a risk assessment to tell the way forward rather than pretend that there is no uncertainty.

H2: Risk perceptions have a significant impact on the risk assessment of the commodity market investors.

Risk Assessment positively impact Investor Intentions

Investor intent is enhanced by risk assessment because it ensures the clear understanding and reassurance of the decisions being made. Investors for example, after going through an elaborate risk assessment are more likely to understand the market's shortcomings and abundances. This assessment aids in the evaluation of the likelihood of particular threats and in which areas investors can operate within their desired risk and return framework, thus enhancing control. For example, in the commodity arena, investors may be able to do so because they now take risks related to price fluctuations, political tensions, and seasonal demands into account. Such considerate choices further increase investor readiness to invest even in risky markets.

Moreover, risk assessment in most cases emphasizes risk management approaches, which in turn feeds back positively towards investor intent. Knowing that they have at least an understanding of the risks involved and how to avoid them by methods such as portfolio balance or risk mitigation; investors can pursue alpha returns without the fear of losing their capital (Wardani & Yusniar, 2024). This proactive approach lowers the anxiety around the processes involved in investment and inspires confidence in investors to put their resources in different investment opportunities. In markets like India where the levels of economic literacy are

improving over time, risk assessment instruments and strategies provide investors in these markets the ability to take advantage of complex and dynamic market forces, spurring investment activity.

H3: Risk assessment significantly affects the investor intentions in the commodity markets.

Mediating role of Risk Assessment between Risk Perceptions and Investor Intentions

Risk assessment helps to bridge the perceived rift that exists between investors taking risk and taking investment decisions. Some risks have to be encountered if an investor wants to invest and so when there are risks that are perceived by an investor, their feelings have different variations of excitement or fear. Understanding risk helps in putting order to these feels and judging the severity of the risks at hand which determines the actions that a particular investor can engage in. Pointing out the ambiguity in a situation helps the investor in evaluating the possibilities in a rationale manner for potential outcomes (Arend, 2020). For instance, in commodity markets in clear terms, it is possible that some investors might not want to participate in the markets due to price fluctuations, but some later point get more into in-depth analysis and track records and trends to overcome their fears.

Risk assessment has the ability of sending investors into active investments as it identifies many factors that can help the investors create or increase confidence in the investment (Hadan et al., 2024). This objective approach aligns investments that need to be made with effective goals and appropriate levels of risk. This change promotes action since investors are more confident and rely on their advanced level understanding on the uncertainties involved in the investment process.

H4: Risk assessment acts as a mediator in the link between risk perceptions and investor intention.

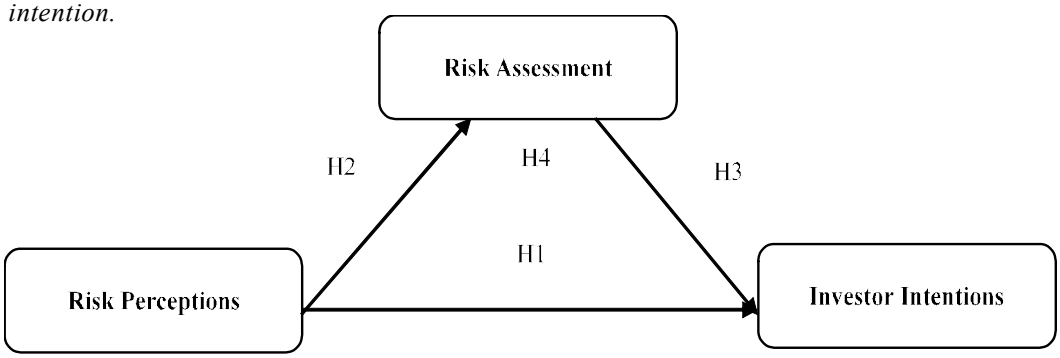

Figure 1. Hypothesized research model

Methodology

The present research aims to establish and validate the theoretical relationships between the constructs of risk perceptions, risk assessment, and investor intentions in the context of Indian commodity trading context and it forms the main objective of the study. Based on the research objectives, the study conducts an opinion survey using cross-sectional design with the selected participants. To gather info. regarding the study variables, this research comprises investors who are engaged in the commodity trading activities. this study followed the recommendations of prior researchers to devise a simplistic and user-friendly questionnaire that helps in achieving high response rate and reliable data. In this regard, the research instrument (questionnaire) included a cover letter to give instructions to the survey respondents as well as the questions were kept short and crisp to minimize participants' effort and time. The questionnaire was administered to 600 respondents to collect their opinions on the study constructs. To derive meaningful insight

from the study, it is essential that least 60 percent of the selected sample has responded correctly (Punch, 2003). The secondary data, primarily, include the data which has been collected in the past by the researchers and is available in current archives and published form. Specifically, this research has used multiple secondary sources like case studies, journal articles and books.

Data Analysis and Interpretation

The present research employed the EFA procedure using principal component method and varimax rotation to analyze the study variables. Generally, varimax rotation falls in the category of orthogonal factor rotation, which ensures maximizing the variance between a factor and respective indicators (Field, 2009). The factors extracted in the EFA exhibit high or low loadings of any specific variable. Exploratory factor analysis (EFA) becomes essential in situations of uncertainty regarding the number of factors present comprising cluster of variables. According to Hair et al. (2014), this technique reduces large no. of dimensions into lesser number of useful constructs without losing any meaning and information. The varimax solution provides an output which helps in identifying each variable with a single factor. Based on the EFA process, eighteen items were retained having communality values above .5, factor loadings higher than .7 and absence of cross-loading on other components. The estimation of sampling adequacy was carried out through Kaiser-Meyer-Olkin (KMO) and Bartlett's test of sphericity. In this regard, Hutcheson and Sofroniou (1999) recommends KMO greater than 0.7 and significant p-value w.r.t Bartlett's test of Sphericity are deemed essential for establishing the appropriateness of EFA. Table 1 exhibits the KMO=.918, which suggests that the items may yield distinct and reliable factors. Further, the chi-square value=6362.145, degrees of freedom=153, p-value <0.001 empirically support the correlation matrix differs from an identity matrix in terms of statistical significance.

Table 1: Results of KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.918
Bartlett's Test of Sphericity	Approx. Chi-Square	6362.145
	df	153
	Sig.	.000

The communality value exhibits proportion of common variance existing in a measurement item. As such, an item that has no specific variance (or random variance) would have a communality of 1. MacCallum et al. (1999) suggests items with communality values lower than .5 do not adequately explain the common variance. Table 2 exhibits the communality values for the items ranges between .545 and .890, thereby, sufficing the recommended levels. Table 3 shows that three factors were extracted having eigenvalues>1 that cumulatively contributes 72.168 % of the total variance. Specifically, the first factor explains 26.816 % variance, which exceeds the variance contribution of the individual factors. Table 5.5 shows the rotated component matrix involving the identified factors. The extracted factors comprise more than three items; while, factor loadings of all measurement items are above the recommended level of .5. Hence, the factors of interest are robust and reliable.

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Table 2: Communalities for the study items

Items	Extraction
RP1	.636
RP2	.622
RP3	.758
RP4	.716
RP5	.721
RP6	.702
RA1	.545
RA2	.601
RA7	.869
RA3	.890
RA4	.872
RA8	.827
RA6	.855
IVI1	.636
IVI2	.599
IVI3	.732
IVI4	.744
IVI5	.665

Table 4: Rotated Component Matrix showing the extracted factors and respective loaded items

	Component		
	1	2	3
RA3	.851		
RA4	.823		
RA6	.812		
RA7	.804		
RA5	.793		
RA2	.769		
RA1	.738		
RP3		.870	
RP5		.849	
RP4		.844	
RP6		.838	
RP1		.796	
RP2		.781	
IVI3			.846
IVI4			.792
IVI5			.776
IVI2			.742
IV11			.718

Note: Extraction Method: PCA; Rotation Method: Varimax with Kaiser Normalization

Table 3: Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	7.284	40.465	40.465	7.284	40.465	40.465	4.827	26.816	26.816
2	4.151	23.060	63.525	4.151	23.060	63.525	4.155	23.085	49.901
3	1.556	8.643	72.168	1.556	8.643	72.168	4.008	22.267	72.168

Note: Extraction Method: PCA

The application of SEM requires assessment of the latent construct and their respective indicators in the measurement model, thereby, ensuring considerable differences between the constructs. In this regard, the measurement model comprises of four constructs and twenty-seven items. The model fit indices of the measurement model establish model appropriateness and fit (CMIN/df=2.411, p<.001, GFI=.926, AGFI=.903, RMSEA=.059, RMR=.052, TLI=.971, CFI=.971, NFI=.952). Also, the convergent and discriminant validity of the model was affirmed using the measures of composite reliability (CR), average variance extracted (AVE), and bivariate correlations. The shared variance of the variables taken together to explain a single construct defines convergent validity.

Hair et al. (2014) suggests individual items of the latent constructs should have std. loadings > .5. AVE represents the mean variance explained by the items of a latent construct, and the threshold

values should be in excess of .5 (Fornell and Larcker, 1981). The value of CR should exceed 0.7 for being statistically acceptable (Peterson and Kim, 2013). Table 5 shows each indicator loads significantly on the respective construct, where the std. factor loadings meet the recommended levels of .5. Also, the AVE and CR values for the constructs of interest are above the threshold value of .5 and .7 respectively.

Table 5: Convergent validity of the study measures

Construct	Measurement item	Standardized factor loadings	CR	AVE
Risk Perceptions	RP1 RP2 RP3 RP4 RP5 RP6	.758 .739 .870 .825 .769 .755	.906	. 617
Risk Assessment	RA1 RA2 RA3 RA4 RA5 RA6 RA7	.612 .630 .915 .902 .883 .845 .792	.946	.723
Investor Intentions	IVI1 IVI2 IVI3 IVI4 IVI5	.773 .711 .762 .857 .778	.882	.600

Table 6: Discriminant validity

	RP	RA	IVI
RP	*0.786*		
RA	-0.023	*0.851*	
IVI	-0.108	0.719	*0.774*

Note: Diagonal values in italics represent square root of the AVE

The discriminant validity was evaluated using the inter-item correlation of the constructs. As shown in Table 5.7, the inter-item correlations confirm the distinctiveness of the constructs and achieves discriminant validity. Thus, the measurement model comprising the constructs of interest show satisfactory convergent and discriminant validity. The subsequent step examines the hypothesized linkages between these constructs through structural model assessment.

Structural model results and discussion

The present research carried out SEM analysis using AMOS 20 package to empirically examine the hypothesized relationships between risk perception, risk assessment, and investor intentions. In this regard, the structural model results exhibit acceptable model fit (CMIN/df = 2.528, $p < .001$, GFI = .891, AGFI= .865, NFI = .934, TLI = .931, CFI = .952, RMSEA = .071, RMR= .075).

Basest on the assessment of the structural model-fit indices, it is quite evident that the data fits the model well (Hair *et al*., 2010). Table 7 shows the empirical results of the hypothesized relationships of the research model.

Table 7: Hypothesis testing results

Hypothesized Relationships	Standardized Path coefficients	t-value	Decision
H1: RP → IVI	.442	5.023**	Supported
H2: RP → RA	.539	6.823***	Supported
H3: RA → IVI	.395	5.411**	Supported
H4: RP → IVI (RA)#	.655	7.892***	Supported

Note: ***p < 0.001 and **p < 0.01; RP- Risk perceptions, RA- Risk assessment, IVI- Investor intention

Table 8: Mediation model results

Structural Path	Total Effects	Direct Effect	Indirect Effect	Sobel 's Z value	Mediation Type
RP → IVI (RA)#	.655**	.442**	.213**	4.239**	Partial

Note: # mediator in parenthesis, ** p < .001

The mediating analysis results empirically support that RA partially mediates the linkage between risk perception and investor intentions in the commodity trading market. This finding reveals the assessment of risks involved in commodity trading can acts as catalyst in enhancing the significant association between risk perception and investor intentions. Specifically, the finding is unique in the context of the commodity trading domain. Therefore, it becomes clear that the element of risk assessment is vital to accomplish positive and favorable intentions of the investors.

Discussion and Conclusion

The present research focuses on empirical validation of the association between the model constructs- risk perceptions, risk assessment, and investor intentions in the context of commodity market trading in India. Based on the holistic examination of prior studies, this study identified some gaps that formed the basis for developing the research objectives and theoretical framework. The model involved three distinct constructs that were deemed crucial considering the background and context of this research.

Risk perceptions measures play a vital role to enhance the overall intention towards Subsequently, the govt. policymakers and financial institutions should essentially link the financial schemes and trading strategies to achieve the desired outcomes such as improved enhanced participation of the investors, high awareness levels regarding the business opportunities options in commodity trading, means to start their own business, gaining economic freedom, etc. In this regard, setting up training etc. can help to gain the confidence and trust of the investors (both retail and institutional).

The present study has evaluated the link between risk perceptions, risk assessment, and investor intentions, therefore, addressing the call for extensive research pointed by previous researchers (Lau and Bilgin, 2013; Mishra and Panda, 2016). The empirical model validation affirms the significant role of risk perceptions and risk assessment on driving investors' intention towards commodity trading in the study regions. Therefore, the research findings provide cues to understand the significant factors that contributes towards enhancing the intentions of the commodity investors in the Indian context.

The study outcomes may attract more quantitative studies in this domain that can help to extend the limited academic literature in the area. The prior studies have pointed towards the link between the model constructs used in this study, however, they have mainly been conceptual and most of them have explored the constructs individually and not as a holistic model. This study validates a holistic model involving the above-mentioned constructs through empirical assessment.

Accordingly, it contributes to the limited literature in this domain by highlighting the interrelationships between the constructs of interest. From the theoretical viewpoint, this study establishes investor intentions as an outcome of risk assessment and risk perceptions supporting prior works (Li et al., 2016; Kogan et al., 2009).

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