The Overconfidence Conundrum: Risk Perception and Bankers Investment Decision

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Purpose: This study explores risk perception as a mediator between overconfidence bias and investment decisions among banking professionals in India's stock market. Methodology: A quantitative study involving 235 banking professionals examines the interplay between overconfidence, risk perception, and investment decisions. Findings: Results reveal that overconfidence significantly affects investment decisions, with risk perception as a significant mediator. Implications: Enhancing understanding of biases and implementing better risk assessment practices can improve risk perception and investment decisions among bankers. Originality: This research fills a literature gap by examining overconfidence bias and risk perception among bankers in India's evolving stock market.

Keywords: Behavioural Finance, Investment Decisions, Overconfidence Bias, Risk Perception

1. Introduction

The traditional finance model rests on the assumption that investors make rational decisions, an ideal that often neglects the emotional and cognitive biases that influence real-world behaviour (Statman, 1995). These biases frequently lead investors to make decisions that diverge from the predictions of traditional finance, exposing a critical gap in its ability to account for actual investment behaviour and its broader implications (Baker & Nofsinger, 2001). While traditional finance theories might appear reliable when markets align with fundamental and technical analyses, investor behaviour reveals a more complex landscape. If rationality alone guided investment decisions, theoretically, investors should rarely incur losses or miss substantial gains after diligent analysis.

However, the reality of India's stock markets, largely driven by the NSE and BSE, tells a different story. By 2022, India's market capitalization had surged to approximately $3 trillion, a growth fuelled by increasing retail investor participation. Yet, this rapid expansion has also brought to light the volatility associated with stock bubbles, where asset prices exceed intrinsic value by significant margins (Pan, W. F., 2020). This phenomenon became particularly evident after the IPO surge of 2021, with Zomato's debut valuation of ₹1.1 trillion followed by a 30% drop in a few months amid concerns about profitability and market saturation (Khanna, T., 2022). Allegations of stock manipulation, such as those involving Adani Group's price surge and accusations of financial irregularities, have further underscored the impact of speculative behaviour on investor confidence (Thomas, P. N., 2024). The 2008 market crash, where the Sensex plunged nearly 60% from its peak due to rampant speculation and irrational behaviour, starkly reminds us of the high stakes and systemic risks fuelled by such biases.

Behavioural finance offers a compelling alternative to traditional financial theories, addressing these limitations by recognizing that investors are not always fully rational (Barberis & Thaler, 2002). This approach integrates concepts from classical economics with insights from psychology and decision-making research, aiming to explain anomalies in financial literature and the systematic errors investors frequently make.

Cognitive biases can distort expectations regarding future market trends, leading to mispriced securities (Fuller, 1998). Investors may face a range of mistakes, from minor miscalculations to major missteps, jeopardizing their financial well-being (Shefrin, 2000). They often embrace unrecognized risks, experience unexpected outcomes, and engage in impulsive trading, ultimately blaming themselves or external factors for their results (Kahneman & Tversky, 1998). This raises important questions about the rationality assumption in investment decisions, particularly in emerging markets like India's financial sector, where behavioral biases significantly influence outcomes (Parveen et al., 2020).

For instance, overconfidence bias can lead to excessive trading, increasing brokerage fees and exposing investors to considerable losses. The influence of behavioral finance on investment choices has attracted considerable academic interest. Researchers have identified various factors that shape investment decisions, including cognitive biases, emotional responses, social influences, risk perception, and individual personality traits (Baker et al., 2023; Baker et al., 2019). Numerous studies highlight how these elements contribute to suboptimal decision-making. Notably, recognizing risk perception as a mediating factor is essential for connecting behavioral finance with investment decision-making (Ahmed et al., 2022). It emphasizes how cognitive biases and emotions shape investment choices, with risk perception serving as an intermediary that affects how individuals interpret risks. Analyzing this interplay reveals the psychological dimensions of financial behavior, illustrating how subjective risk assessments influence risk tolerance and investment decisions.

Despite the expanding body of literature, there remains a notable gap concerning the role of risk perception as a mediator between behavioral finance factors and individual investment decisions, particularly among banking professionals in India's

stock market. This gap is critical, especially given the rapid growth of the market and the significant influence of bankers' decisions on its dynamics. Exploring this mediation could provide valuable insights into the behavioral aspects of the Indian stock market, empowering bankers to make more informed investment choices and assisting policymakers in developing strategies to enhance market stability and sustainability.

Key biases such as overconfidence, loss aversion, and the disposition effect are known to significantly impact investment decisions (Barber & Odean, 2001; Kahneman & Tversky, 1979; Shefrin & Statman, 1985). Increased risk perception often leads to more frequent trading and reduced investments in the stock market (Ahmed et al., 2022). Conversely, a lower perception of risk may foster herding behaviour, negatively affecting investment decisions. This tendency to follow the crowd plays a significant role in how investors make choices (Madaan & Singh, 2019).

2. Literature Review and Hypotheses Development

The review of literature in behavioural finance highlights the critical roles of overconfidence bias, risk perception, and investment decisions. Behavioural finance investigates the psychological influences on financial decision-making, revealing significant gaps in traditional finance models that often neglect irrational investor behaviour. Almansour (2015) argues that these models fail to account for the cognitive and emotional factors that lead to suboptimal investment choices. Consequently, behavioural finance emphasizes cognitive biases—such as overconfidence, loss aversion, and herd behaviour—that can trigger irrational investment actions.

Risk perception, a crucial element in investment decision-making, involves how individuals assess and interpret investment risk. Research by Ahmad and Shah (2020), Nguyen et al. (2019), and Almansour et al. (2023) delves into the complexities of risk perception, showing how it is influenced by cognitive biases. Behavioural finance posits that investors' risk assessments are shaped not only by objective data but also by subjective heuristics and biases, diverging from purely rational evaluations. Therefore, examining risk perception through the lens of behavioural finance provides valuable insights into the psychological factors influencing investment choices.

Investors often overestimate their ability to identify top-performing stocks, believing their market knowledge and predictive accuracy are exceptional. This overconfidence can become a significant psychological trap (Hammond, Keeney & Raiffa, 2006). Many investors with overconfidence bias inaccurately assess their investment potential, exhibiting unwarranted confidence that their portfolios will yield returns above the market average (Baker & Nofsinger, 2010). This bias leads them to favour information that confirms their beliefs, particularly when they lack the skills for effective market analysis, resulting in the neglect of critical contradictory data. Even after past setbacks, their confidence in achieving positive outcomes often persists.

Risk perception refers to how investors evaluate the risks associated with financial assets, shaped by their experiences and fears (Ahmad & Shah, 2020). Studies indicate that behavioural biases significantly influence risk perception, leading investors to make emotion-driven decisions that can yield irrational outcomes (Houghton et al., 2000). Slovic (1987) defines risk perception as an individual's subjective assessment of risk levels. Nguyen and Rozsa (2019) explored the connections between risk perception, risk tolerance, and investment decision-making, concluding that both elements play a pivotal role in shaping investment behaviours. Their findings underscore the importance of understanding how investors assess risks in making financial portfolio decisions.

Behavioural biases significantly influence both risk perception and investment decisions, underscoring the critical role of psychological factors in shaping how investors assess risk and make financial choices. These biases—such as overconfidence, loss aversion, and herd behaviour—not only drive direct investment behaviours but also affect investors' subjective perception of risk. Consequently, risk perception functions as a mediating factor, subtly shaping the relationship between behavioural biases and final investment decisions. By understanding this intermediary role of risk perception, we can better appreciate how cognitive biases indirectly mould investment strategies, thereby impacting portfolio outcomes and overall financial health (Ishfaq et al., 2020).

Against this backdrop, the present study aims to achieve the following broad objectives:
1. To examine the influence of overconfidence bias on investment decisions.
2. To explore the mediating effect of risk perception on the relationship between overconfidence bias and investment decisions.

Based on this, the study proposes the following hypotheses:
- **H1:** There is a significant influence of overconfidence on risk perception
- **H2:** There is a significant influence of overconfidence on investment decision
- **H3:** There is a significant influence of Risk perception on investment decision.
- **H4.** Risk perception mediates positively the influence of overconfidence on investment decision.

3. Conceptual Framework of the Study

The conceptual model illustrates the relationship between overconfidence bias and investment decisions, with risk perception serving as a mediating variable. Overconfidence bias, characterized by an individual's tendency to overestimate their knowledge and abilities, is expected to influence investment decisions directly. Additionally, this bias may impact how individuals perceive risk, subsequently affecting their investment choices. This framework highlights the intricate interplay between cognitive biases and decision-making processes in the context of investment behaviour, emphasizing the role of risk perception in shaping financial outcomes.
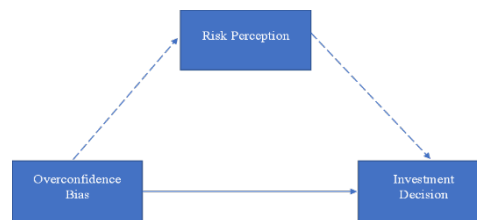
Figure 1 *Conceptual Model*
Source: *Researchers Compilation*

4. Research Methodology

4.1 Population Sample and Methodology

In this study, investment decision-making is treated as the dependent variable, with overconfidence bias as the independent variable and risk perception as the mediator. The primary aim is to examine how overconfidence bias impacts investment decisions and then to assess the mediating role of risk perception on the relation between overconfidence bias and investment decision. The study specifically targets banking professionals in Kerala who actively invest in stocks. Guided by expert recommendations, the purposive sampling technique—a non-probability method tailored to fit the characteristics of the study population was used to target relevant participants accurately. Banking professionals can be easily identified, but those banking professionals in Kerala with stock investments forms the population which required purposive sampling technique as recommended by experts. A structured questionnaire was designed and distributed to 300 participants, of which 235 complete and usable responses were collected, ensuring a substantial sample for analysis. Secondary data from journals, books, and websites provided further theoretical support. Data was then analysed using descriptive statistics, correlation analysis, confirmatory factor analysis (CFA), and structural equation modelling (SEM), enabling a rigorous assessment of relationships, while CFA ensured the validity of constructs, and SEM tested the model's fit and hypothesized pathways.

Table 4.1 *Sample Size Allocation and Eligibility Summary*

Questionnaires	No. of Questionnaires	Percentage
Distributed	300	100
Completed	235	78.4
Discarded	23	7.6
Not received	42	14

Source: *Researchers Compilation*

Table 4.1 suggests that the distribution and response rates of the questionnaires indicate strong participant engagement, with a completion rate of 78.4% (235 out of 300 distributed). The 23 discarded questionnaires (7.6%) highlight the need for clarity in design to minimize invalid responses, while the 42 not received (14%) suggest potential logistical issues or lack of interest. Overall, the data reflect a successful distribution process, emphasizing the importance of addressing factors influencing non-responses and discarded questionnaires to improve future research.

4.2 Questionnaire Design and Measures of Construct

Data were collected through adapted questionnaires by employing 5-point Likert scale to test all the variables. The questionnaire was divided into two parts, first part comprised of six descriptive questions including age, gender, marital status, income, stock investment experience and education qualification. The second part included adapted statements to measure the constructs including Overconfidence bias, Risk Perception and investment decisions in the study. As already mentioned, the measures of the study constructs are adapted from previous studies. The table displays the specific variables and their relevant literature sources.

Table 4.2 *Key Variables and their Adapted Literature Sources*

Variable	No. of Items	Literature source
Overconfidence Bias	8	Ritika & Kishor, 2022 Jain et al., 2021
Risk Perception	8	Weber et al., 2002
Investment Decision	8	Mayfield et al., 2008 Hunjra, Qureshi & Riaz, 2018

Source: *Researchers Compilation*

Table 4.2 outlines the key variables such as overconfidence bias, risk perception, and investment decision—are measured using established items adapted from highly cited and extensively applied literature, ensuring robust content validity. By drawing from existing research that has undergone rigorous review and application, these items provide a solid foundation for assessing each construct with relevance and accuracy. Additionally, expert opinions were sought to tailor these items effectively

to the study's specific context. This structured approach enhances the validity of the constructs, ensuring that overconfidence bias, risk perception, and investment decision are comprehensively represented and aligned with the study's objectives

5. Data Analysis

5.1 Demographic Profile

Table 5.1 *Demographic Profile of the Respondents*

Demographic Characteristic		Frequency	Valid percent
Age	25-35 years	136	57.9
	36-45 years	80	34.0
	46-55 years	8	3.4
	Above 55 years	11	4.7
Gender	Male	147	62.6
	Female	88	37.4
Marital Status	Single	37	15.7
	Married	198	84.3
Annual Income	Less than 3L	37	15.7
	3 to 6L	57	24.3
	6 to 9L	40	17.0
	9 to 12L	40	17.0
	12 to 15L	24	10.2
	Above 15L	37	15.7
Stock Investment Experience	Less than 1 year	37	15.7
	1 to 3 years	54	23.0
	3 to 5 years	39	16.6
	5 to 7 years	32	13.6
	7 to 10 years	30	12.8
	Above 10 years	43	18.3
Edu Qualification	Bachelor	49	20.9
	Masters	174	74.0
	Others	12	5.1

Source: *Primary Data Analysis*

Table 5.1 presents the demographic profile of banking professionals, providing a solid foundation for examining overconfidence bias, investment decisions, and risk perception in behavioural finance.

Age Distribution: The majority of participants (57.9%) fall within the 25-35 years age bracket, while a substantial portion (34.0%) is between 36-45 years. This age distribution indicates a sample that is relatively young and likely to be more adaptable to technological advancements and market changes. Younger professionals may exhibit higher levels of overconfidence due to their familiarity with modern investment tools and trends, making them ideal subjects for studying overconfidence bias in investment decisions.

Gender Representation: With a notable representation of both genders (62.6% male and 37.4% female), the sample allows for a comparative analysis of how gender influences risk perception and investment behaviour. Research in behavioural finance suggests that gender differences can play a significant role in decision-making processes and risk tolerance, making this demographic characteristic crucial for the study.

Marital Status: The predominance of married individuals (84.3%) indicates a demographic that may have different investment priorities and risk assessments compared to their single counterparts. Married professionals often have family financial responsibilities, which may influence their investment decisions and risk perception. Understanding these dynamics is essential for examining how personal circumstances impact behavioural biases.

Annual Income Levels: The distribution of annual income levels, with 24.3% earning between 3 to 6 lakhs and a combined 15.7% in both the lowest and highest income brackets, suggests a diverse economic background. This diversity allows for the examination of how varying financial pressures and risk capacities affect overconfidence bias and investment choices. Higher income individuals might exhibit different levels of risk tolerance and confidence in their investment decisions compared to lower-income counterparts.

Stock Investment Experience: The sample shows a variety of stock investment experiences, from less than one year to over ten years. This variability is crucial for understanding how experience correlates with overconfidence and risk perception. Experienced investors may have developed their investment strategies, impacting their confidence levels and risk assessments, while novices may be more susceptible to overconfidence biases without sufficient market knowledge.

Educational Qualification: With a significant majority holding a master's degree (74.0%), this demographic is likely well-versed in financial concepts and investment strategies. This educational background can influence their cognitive biases, particularly overconfidence, as higher education levels often correlate with a stronger belief in one's decision-making capabilities. Analysing this group can provide insights into how education impacts investment decisions and perceptions of risk.

Overall, the participants represent a diverse yet focused group of banking professionals, enabling an in-depth exploration of how age, gender, marital status, income, investment experience, and educational background influence overconfidence bias, investment decisions, and risk perception. This comprehensive approach will enhance the understanding of behavioural finance among banking professionals and contribute valuable insights to the field.

5.2 Reliability Analysis

Cronbach's alpha is a metric for assessing internal consistency and reliability, helping determine whether the scale is suitable for use. A minimum value of 0.7 is considered acceptable for scale reliability (Taber, 2018).

Table 5.2 *Reliability Statistics*

	No. of items	Cronbach's Alpha
Overconfidence Bias	8	.861
Risk Perception	8	.850
Investment Decision	8	.857

Source: *Researchers Compilation*

Table 5.2 shows that each variable in the study showed a Cronbach's alpha coefficient exceeding 0.70, demonstrating reliability and consistency in measuring the intended constructs. These strong alpha values further validate the reliability of the study's measured variables.

5.3 Descriptive Statistics

Table 5.3 *Descriptive Statistics*

Variable	N	VIF	Mean	Std. Deviation	Skewness		Kurtosis	
					Statistic	Std. Error	Statistic	Std. Error
Overconfidence Bias	235	1.363	3.42	.836	−.498	.209	−.209	.416
Risk Perception	235	1.706	3.60	.705	−.906	.209	.820	.416
Investment Decision	235	1.374	3.54	.774	−.648	.209	−.153	.416

Source: *Researchers Compilation*

Table 5.3 presents insights into Overconfidence Bias among banking professionals, with a mean score of 3.42 and a standard deviation of 0.836, indicating moderate overconfidence. The negative skewness of -0.498 suggests many respondents feel even more confident in their investment decisions, while the negative kurtosis value of -0.209 indicates a flatter distribution with outliers who possess exceptionally high confidence.

The Risk Perception score averages 3.60, with a standard deviation of 0.705, suggesting a moderate perception of risk. A skewness of -0.906 indicates that most respondents feel they face less risk, likely due to their financial literacy. The kurtosis of 0.820 reflects a peaked distribution, showing a cautious majority but also a minority perceiving higher risks.

The Investment Decision mean is 3.54, with a standard deviation of 0.774, indicating confident investment choices. The negative skewness of -0.648 reveals that many respondents are assertive in their decisions, while the kurtosis value of -0.153 suggests some outliers, either taking bold risks or being overly cautious.

Overall, these statistics highlight the complex interplay between overconfidence, risk perception, and investment decisions among banking professionals. Despite their confidence, their perceptions of risk are moderated by financial knowledge and experience. Mean scores for investment decisions, risk perception, and overconfidence bias suggest a balanced approach, yet the potential for overconfidence bias underscores the need for awareness of cognitive biases in decision-making.

5.4 Hypotheses Testing

Table 5.4.1 *Model Fit Indices*

Fit Index	OB-ID without mediator	OB-ID with RP as mediator	Threshold Value	Interpretation
CFI	0.963	.976	≥ 0.95	Good fit
IFI	0.907	.916	≥ 0.90	Acceptable fit
GFI	0.940	.924	≥ 0.90	Acceptable fit
RMSEA	0.052	.015	≤ 0.06	Good fit

Source: *Researchers Compilation*

Table 5.4.1 indicates a strong alignment of the proposed model exploring the relationships among overconfidence bias, risk perception, and investment decisions among banking professionals. The first model depicts the relation of Overconfidence bias on investment decision without a mediator, whereas further the model explores the relation of Overconfidence bias on Investment decision with Risk Perception as a mediator. The CFI value (of 0.963, .976) and the IFI value (of 0.907, .916) both indicate an excellent fit, exceeding the recommended thresholds. This suggests that the model effectively captures the underlying relationships between the variables. Additionally, the GFI value of 0.940, .924 signifies that a significant portion of the variance is explained by the model. The RMSEA value of 0.052, .015 further supports this, indicating minimal error and a well-specified model. Collectively, these indices confirm the robustness of the model, demonstrating its capacity to accurately represent the dynamics of overconfidence, risk perception, and investment decision-making in the context of financially literate banking professionals.

Table 5.4.2 *Hypotheses Testing and Results*

Path	Reg. Coeff.	Critical Value	Result	Interpretation
OB→RP	.106	1..855	Reject	Overconfidence does not significantly impact Risk Perception, as the test statistic is below the critical value.
OB→ID	.148*	2.056	Accept	Overconfidence has a significant positive effect on Investment Decision, as the test statistic meets the critical value.
RP→ID	.442***	4.104	Accept	Risk perception significantly influences investment decisions, as indicated by a high test statistic that exceeds the critical value
OB→RP→ID	.548*	1.643	Accept	The indirect path from Overconfidence to Investment Decision through Risk Perception is significant, as it meets the required critical value.

Source: *Researchers Compilation*

6. Discussions

The lack of a significant relationship between overconfidence and risk perception suggests that even banking professionals, despite their financial literacy, may not directly link their confidence levels with a heightened awareness of risk. This aligns with behavioural finance theories, which highlight that overconfidence often leads individuals, even experts, to overlook potential risks because they believe their skills can mitigate or avoid adverse outcomes. In a banking environment, this could mean that overconfident professionals proceed with investment strategies without fully accounting for potential risks, possibly underestimating unfavourable market conditions. Similar interpretations can be seen in studies, (Areiqat et al., 2019; Wattanasan et al., 2020).

The significant positive impact of overconfidence on investment decisions indicates that banking professionals with higher confidence are more inclined to make frequent or more assertive investment decisions. This reflects a common behavioural bias in finance where overconfident individuals tend to act on their beliefs, often leading to increased trading frequency or larger investment positions. For financially literate professionals, this might mean they feel assured in their analytical skills and market knowledge, potentially leading to bolder investment choices. However, this overconfidence, while beneficial in some market conditions, can sometimes result in excessive risk-taking, potentially impacting the institution's risk profile or leading to financial misjudgements. This is in line with the studies like Baker & Nofsinger (2002) and Raheja & Dhiman (2019).

The significant mediation effect of risk perception in the relationship between overconfidence and investment decisions suggests that while overconfidence directly influences investment behaviour, the way these professionals perceive risk plays a secondary, moderating role. This finding implies that overconfident professionals are likely to invest assertively, but their risk perception can adjust the degree to which they take on investments. For banking professionals, this means that even when confident in their investment skills, their awareness of risk can still temper their decision-making, resulting in more calculated actions. This nuanced view aligns with behavioural finance, emphasizing that experienced individuals can still exhibit biases, but factors like risk awareness help refine their final choices. The likable results are seen in prominent studies like Lim et al., (2018), Ahmed et al., (2022).

7. Conclusion, Implications and Recommendations

7.1 Conclusion

This study sheds light on the role of overconfidence bias and risk perception in shaping investment decisions among banking professionals in Kerala, specifically those involved in stock investing. Findings indicate that overconfidence bias significantly influences investment decisions, with risk perception mediating this relationship. Notably, overconfidence does not significantly impact risk perception directly, suggesting that financially literate banking professionals may not perceive heightened risks associated with confident investment decisions. These insights emphasize the persistence of behavioural biases, such as overconfidence, even among knowledgeable investors, thereby underlining the necessity of behavioural finance frameworks in understanding and potentially guiding investment choices.

7.2 Implications

The results have substantial implications for financial institutions and regulatory bodies, especially in crafting policies aimed at minimizing irrational investment behaviours. Overconfidence bias among banking professionals can lead to excessive trading

and risk-taking, potentially impacting portfolio returns and institutional stability. By recognizing that risk perception only partially moderates the influence of overconfidence on decision-making, institutions can tailor interventions—such as training in bias awareness and enhanced risk assessment protocols—to foster more balanced investment approaches. This study also underscores the need for policies that encourage banking professionals to adopt reflective practices, helping them recognize and mitigate the impact of cognitive biases in their investment decisions.

7.3 Recommendations

To address the effects of overconfidence on investment decisions, it is recommended that financial institutions implement continuous training programs focused on behavioural bias awareness. Such programs could include case studies, real-time simulations, and reflective exercises to enhance professionals' ability to assess risks more accurately. Additionally, incorporating structured risk assessment tools in decision-making processes could help banking professionals critically evaluate their investments beyond their confidence levels. Institutions may also benefit from regular workshops that promote a culture of cautious optimism in investment choices, encouraging professionals to balance confidence with comprehensive risk analysis, thereby safeguarding both individual and institutional financial health.

8. Limitations and Scope for Future Research

8.1 Limitations

This study, while offering valuable insights into overconfidence bias, risk perception, and investment decision-making among banking professionals, is limited by its cross-sectional design, which captures data at a single point in time. This limits the ability to track changes in overconfidence and risk perception over time, potentially overlooking dynamic shifts in behaviour due to evolving market conditions or changes in personal experience. Additionally, the study's focus on banking professionals in India restricts the generalizability of the findings to other populations or financial sectors, where cultural and professional contexts may yield different results. Finally, the study's reliance on self-reported data could introduce biases in responses, as participants may overestimate or underestimate their confidence and risk perception.

8.2 Scope for Future Research

Future research should consider longitudinal studies to better capture how overconfidence and risk perception evolve over time and in response to market trends or economic events. Broadening the scope to include professionals from different financial sectors or geographic regions could enhance the generalizability of the findings, allowing for a more comprehensive understanding of overconfidence and risk perception across diverse groups. Additionally, incorporating experimental methods or behavioural data alongside self-reports could improve the accuracy of findings by mitigating self-report bias. Further research could also explore how interventions, such as financial education programs or cognitive bias training, might impact overconfidence levels and lead to more balanced investment decisions among professionals.

9. References

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