

A SYSTEMATIC REVIEW ON INFORMATION SEARCH AS A MEDIATOR OF INVESTMENT ATTITUDES AND PURCHASE DECISION ON AGRICULTURAL-RELATED EXCHANGE-TRADED FUNDS (ETFs)

GUO YAO¹, MOHAMAD NASIR SALUDIN²

¹ INFRASTRUCTURE UNIVERSITY KUALA LUMPUR, 43000, KUALA LUMPUR, MALAYSIA.

² INFRASTRUCTURE UNIVERSITY KUALA LUMPUR, 43000, KUALA LUMPUR, MALAYSIA.

EMAIL: ¹yaoguo_work@163.com, ²datonasir@geomatika.edu.my

ORCHID ID: ¹First Author id, ²Second Author id, ³Third Author id

Abstract:

The present paper discusses the existing literature on behavioral drivers of purchase decisions in agricultural-related Exchange-Traded Funds (ETFs) and provides a particular focus on the Henan Province of China. Although the ETF market is expanding internationally, the use of the agriculture ETF is poorly studied in the developing world. As a result, this review paper specifically examines the influence of attitude toward investment, perceived return, risk, trust in financial institutions, herding behavior, and financial literacy on investment behavior, with a particular focus on how information search mediates the relationship between investment attitude and purchase decision. This paper also pinpoints literature gaps, suggests recommendation and provides implications on the future empirical research and investment in developing economies, especially in agricultural countries.

Keywords: Information search, investment attitude, purchase decision, behavioral finance, agricultural ETF, financial literacy

INTRODUCTION:

According to recent report, the Exchange-Traded Funds (ETFs) have become one of the most dynamic investment vehicles in the financial markets across the world over a decade. In layman terms, ETFs are diversified, liquid and low cost, and therefore form a key asset category to institutions and retail investors. Based on recent report, ETF market has grown to more than 10 trillion dollars' worth of assets under management globally by 2022, and is projected to reach 18 trillion by 2026 (Heistrivers, 2022). Amongst this growth, the agricultural-related ETFs are becoming a topic of further interest due to their capacity to offer access to the commodity-based industries without the inherent risks that are present in physical agricultural investments (Statista, 2023; Antoniou et al., 2023). Specifically, China being one of the largest and ever-changing economy in the world has also experienced a similar growth trend in the ETF market. In 2024, China had an ETF market with an asset under management of more than 491 billion (Shanghai Stock Exchange, 2024). In this context, Henan Province, which is an agricultural powerhouse referred to as the breadbasket of China provides a special location to examine investment behavior in agricultural ETF. Although the popularity of ETFs is increasing, the use of agricultural ETFs is not popular despite the economic significance of the region and the focus of the government on rural financial development (Qi et al., 2023; Chu et al., 2024).

While the existing studies presented significant evidence on the issues of investment attitudes and financial decision-making (Ajzen, 2020; Khumalo, 2022), the lack of knowledge of the interaction between behavioral variables such as perceived return expectations, perceived risk perception, trust in financial institutions, herding behavior, and financial literacy and the process of information search to affect the determination of whether to purchase an ETF is found to be a significant gap. Particularly, the aspect that is most conspicuously absent in the agricultural financial scenario is the research that specifically aims at examining the role of the moderation of the relationship between the attitude towards investment and real purchase decisions that is caused by the information search. This also highlights the necessity to study the mental operations that investors undergo when approaching such tricky and sector-specific financial instruments as agricultural ETFs at least in such underrepresented province as Henan Province. According to studies, information searches are a critical mediating process especially in the digital era of information that is abundant yet in most cases overwhelming or even inconsistent. They enable investors to assess product alternatives, decode risk messages as well as develop confidence in their choices. This role becomes even more essential in the provinces with low levels of financial literacy such as Henan, where the availability of trusted information might be scarce (Yang & Chi, 2023; Baihaqqy et al., 2020).

Thus, the objectives of this review paper are to synthesize literature on the association between the driving factors that based on the theory of planned behavior and behavioral economics theory, information search and purchase decisions, especially on agricultural-related financial behavior. This paper also aims at emphasizing the mediating role of information search as an important cognitive process via which the attitude towards investments is transformed into concrete purchasing behavior, in particular, with regard to such sectoral-specific instruments as agricultural ETFs. Amid to these, conceptual framework will be propose based on the well-established theoretical and empirical literature, which provides a systematic way of examining these relationships in a better manner. Lastly, this review paper also highlights the existing research gaps and suggests future research directions on the empirical verification of the research findings especially in newer and less represented markets like the Henan Province where agricultural finance is an important component of the economy.

➤ METHODS AND METHODOLOGY:

2.1) Development of agriculture- and climate-themed ETFs in China:

In the past years, there have been significant growths in sustainable and agriculture-related ETFs in China, with the government offering subsidies and other green finance-related efforts (Zournatzidou, 2025). This is in line with the growing popularity of environmental, social, and governance (ESG) principles in the structure of ETFs, where agriculture plays a leading role in green ETFs as a strategic sector (Ruan & Zhang, 2025). Strategic farming of ETFs in China helps with the promotion of biomass and clean energies as seen through its connection to biofuels funding in advanced transport and agricultural remaining financing (Chong & Ng, 2024). Furthermore, the agriculture sector in China presents a major opportunity of developing climate-linked ETFs, where these funds shall act as financial pipelines to route investments to low-carbon agriculture initiatives that are aligned with the national climate strategies (UN ESCAP, 2024; Van t Wout et al., 2021). Several studies highlight the practice of China in adopting an agriculture-oriented framework of emission data, which supports the purpose of ETFs in sustainability-linked investment (Come Zebra et al., 2021). More so, green ETFs in China such as agriculture-themed green ETFs help reduce long-term climate transition risks in BRICS economy portfolios (Espagne et al., 2023). The retail investor exposure to ETFs that are linked to agriculture has also been increased by the fintech platforms such as Yu eBao, enlarging access and participation (Zhang & Zhao, 2025). Moreover, the impact of the Chinese on the global commodity prices has also influenced the formation of ETFs because nowadays ETFs that focus on agriculture also tend to follow price volatilities and are associated with the dynamics of the international market (Xu et al., 2025). The geopolitical factors are also influencing the investor mood and capital inflows into climate and food ETFs, especially within the relations between the US and China regarding climate finance (Bryant & Webber, 2024).

2.2) Attitude Toward Investment:

Attitude of investors and its influence on the adoption of Exchange-Traded Fund (ETF) in various environments have been found to have been given great attention in the current literature. According to Aman (2025), the behavior of investing in ETFs by generational Z investors is affected positively by their attitude towards ESG and financial technology (fintech)-integrated ETFs; that is, their attitude towards these forms of ETFs is a positive influence of their behavior in adopting ETFs, including their investments. Darskuviene and Lisauskiene (2021) on the same note confirm that behavioral biases, trust in fintech and attitudes towards automation are important determinants of the ETF preference, more so, among passive investors who are more likely to adopt an ETF. Ruan and Zhang (2025) also mention that ESG ETFs will tend to be purchased by investors to the extent that they share an environmental value with the subject of the funds, where one of the most important determinants is the passive investment strategies and cost awareness. Li et al. (2025) conclude that the positive attitude to low-cost indexing mediates the ETF choice whereas Anttila (2025) establish that the conservative investors are concerned with stability even though they do not get high returns. Zhang and Zhao (2025) reveals that the role of digital finance platforms in the ETF adoption can be influenced by the confidence in the mobile fintech solutions and the early adoption of the ETFs is linked to the confidence in the mobile fintech solutions. In addition, ETF preference is also based on the risk and diversification attitudes. Valle (2021) argues that the positive opinion about global diversification and data-driven investment planning plans also has to be mentioned as the factor that makes ETFs preferred more than traditional securities. Conversely, Nwogugu (2025) shows that crypto volatility cynicism increases the appeal of ETFs as a proxy of less risky investments. On the same note, according to Sprute (2024), thematic interests, including biotech and sustainability sectors also motivate the adoption of ETF in the retail portfolio. In addition, Potcovaru et al. (2025) claim that the danger of macroeconomic uncertainty and the rise of risk aversion make ETFs more attractive to defensive investors.

2.3) Perceived Return Expectation:

The expectations of perceived returns are quite central in influencing the decisions of investors in adopting ETFs. Tan et al. (2025) found that passive index ETFs win more investors since they are associated with clear and stable returns. Among the younger investors, Aman (2025) records that visibility of returns can be more enhanced with the use of fintech, hence, the Gen Z investors would switch traditional deposits to ETFs when the returns are highly visible. Similarly, Zhang and Zhao (2025) highlight how fintech platforms simplify the process of making projections on returns, and ETFs are more attractive due to a user-friendly graphical display of performance. In

addition, the perception of investors is also influenced by technological tools such as robo-advisors; Darskuvienė and Lissauskienė (2021) add that the simulations of returns have a high influence on the selection of ETF despite behavioral biases. Valle (2021) supports this argument by showing that portfolio optimization tools that would equal the future expected returns and the desires of investors give additional incentives to using ETFs. The anticipation of returns in risky markets has been and remains to be very significant in markets- even where the outcomes are not known. Nwogugu (2025) concludes that risk-adjusted crypto ETF returns yield an investor behavior on the signal, even though the volatility is high. Return narratives also apply in sector-based ETFs. New ETFs of a niche and, specifically, biotechnology and healthcare are of particular interest to investors who hope to obtain returns based on innovations (Sprute, 2024). As Gormsen et al. (2024) illustrate, the investment returns into the sustainability-themed ETFs are also associated with the effect of climate resilience and ESG integration premiums. Equally, Aqeeq and Chamadia (2024) and Sikorskaya (2023) also indicate that the current distributions of lifecycle funds as well as the institutional-level short-selling operations are predetermined by the expected short and long-run returns of ETFs, which are likely to be replicated by individual investors.

2.4) Perceived Risk Perception:

According to previous literature, risk perception is one of the key factors that affect the investor decisions on ETFs. Nwogugu (2025) shows that a strong perceived risk in crypto-assets makes investors prefer to invest in ETFs, which are considered safe, particularly when the securities are regulated. Likewise, Gazaliyeva et al. (2025) observe that in emerging economies, the demand of ETFs is highly dependent on the perceptions of investors in regards to financial risks in the economy. Similarly, Zournatzidou (2025) reveals that ESG ETFs have been attracting capital in the situations when environmental and institutional risks are seen as mitigated, indicating the fact that the socially responsible investments are considered less risky. On top of that, investors also draw comparisons between ETF and other investment vehicles. As Malviya and Soni (2025) indicate, the perception regarding the ETFs is that they are less risky than such assets as real estate or gold, which is why risk-averse investors tend to prefer passive index ETFs. According to Aman (2025), ETFs, and in particular ESG-centered ETFs are chosen by younger investors over more unstable assets because of the idea of low-risk impact. Darskuvienė and Lissauskienė (2021) further state that emotional perceptions of risk, which are influenced by robo-advisor interfaces, have a considerable impact on ETF preferences and thus should consider behavioral biases in digital investment tools. In addition, literature also found perception of risk is also influenced by geographic and political factors. Valle (2021) emphasizes that risk-adjusted global ETF portfolios should take into consideration regional variation in investor tolerance. Groszwald Ozery (2025) concludes in a geopolitical scenario that disinvestment in ETFs related to a country is connected to long-term political tensions of the country i.e. political tensions between the U.S. and China cause disinvestment of ETFs related to the country. On the structural end, Tan et al. (2025) and Sherrill (2020) emphasize that index ETFs are preferred in the risk-aware environment owing to their transparency and lower costs and systematic risk sensitivity also influences age-based ETF allocation.

2.5) Trust in Financial Institutions:

According to Zournatzidou (2025), transparency and credibility of fintech and institutions are instrumental in enhancing investor trust in ESG ETFs that boost the level of adoption. Similarly, Hassan et al. (2025) suggest in the case of Islamic finance that the confidence in the Shariah compliant institution plays a significant role in the adoption of ETF and hence the validity of religion and ethical integrity in the process of deciding investment. In analogy, Nwogugu (2025) finds the existence of over-subscription of even risky crypto ETFs as the institutions seemingly support the investment which in certain cases can be estimated above the apparent risk. Besides, the reputation of the platform can be considered as a factor into the ETF choices at least among the younger investors. Aman (2025) argues that the ETF investment choices by Gen Z are moderated by the trust in the transparency of fintech apps and financial services. This is also confirmed by Darskuvienė and Lissauskienė (2021) who argue that the passive ETFs preferences are based on the trust in robo-advisors which implies the growing significance of the digital trust. In response to this, Sprute (2024) state that retail investors have a higher preference of health-sector ETFs that are sponsored by companies with good reputations, and they attribute brand credibility to thematic fund compilation. The confidence of investors in turbulent conditions is also boosted by the participation of the institution. The presence of Federal Reserve on the fixed-income ETF markets, as witnessed by Boyarchenko and Shachar (2025), increases the confidence of investors when the economy is financially vulnerable. As the research by Valle (2021) and Espagne et al. (2023) has confirmed, the trust in the integrity of data and institutional reliability is strongly linked to the use of an ETF in case of an internationally diversified portfolio formation or exposure to cross-border market risks. In addition, Potcovaru et al. (2025) finds that the investor would prefer ETFs or any other alternative such as crowdfunding based on the extent of trust in financial institutions which reveals its implication in the portfolio choices in general.

2.6) Herding Behavior:

Anttila (2025) validate that the investors are prone to follow the strategies of ETF as perceived alpha and prefer the most popular ones disregarding the underlying fundamentals. Likewise, Ruan and Zhang (2025) note that the ETF market in China has a high degree of crowd-following behavior in which popularity of the funds is more significant than fund performance in determining investment decisions. Through GARCH modeling, Karlsson and Bauer (2025) demonstrate that ESG-labeled ETFs have higher herding by the circulating market narratives

and behavioral bias. On the structural level, systemic herding is also present. Åström and Pettersson (2025) find network-based fund co-movements and fund portfolio overlaps among ETFs, which reflects uniform behavior among investors and fund managers. Nogueira Reis and Pinto (2024) further explain that herding-induced reallocations usually occur because of macroeconomic shocks that prompt a collective investor reaction to the crisis whereby investors switch into similar ETF assets. Chaim (2022) also demonstrates that institution investors add to herding behavior by following peer portfolio method in passive ETFs and may add to the effects of contagion during market stress. Eventually, asset-linked and sector-linked ETFs are affected in the same way. A herd-like behavior in mineral-linked ETFs is observed and recorded by Danino-Perraud et al. (2021), where the flow of investors responds to outside shocks, like changes in the demand of commodities. According to Nwogugu (2025), crypto ETFs have been shown to contain herding contagion which emanates in token ecosystems, and usually results in over-subscription through hyped-up markets. According to Kohler (2021), even though strategic foresight tools may be used to diminish the impact of herding behavior, numerous portfolios continue to be susceptible to such anticipatory behavior-based cycles. In addition, Kumar (2025) relates herding mentality to crisis amplification and how herding or mass effects create financial instability in ETF dominated markets due to overconfidence.

2.7) Financial Literacy:

According to recent studies, the ETFs of sustainable and agriculture orientation are booming due to governmental incentives and green financing approaches (Zournatzidou, 2025), which makes investors understand increasingly intricate environmental, social, and governance (ESG) standards built into these financial products. Ruan and Zhang (2025) underline the fact that the ESG principles are becoming more and more integrated into the ETF structuring to introduce another layer of information that has to be interpreted by investors to make an informed decision. It is a complicated situation that highlights the importance of high financial literacy, allowing one to manage special ETFs related to such areas as biomass and biofuels (Chong & Ng, 2024), and comprehend them as a means to achieve the goals of clean energy and climate in China (UN ESCAP, 2024). Further, digital fintech solutions such as Yu eBao enable retail investors to gain access to agriculture-linked ETFs (Zhang & Zhao, 2025), indicating that the democratizing power of investment is not the only benefit to digital fintech solutions since they can be used as informal, non-professional educational tools to make exposure and returns easier to visualize. Nevertheless, with ETFs aligning their funding with investments linked to the country-specific climate contributions in the context of the Paris Agreement (Van t Wout et al., 2021) or responding to the fluctuation of commodity prices (Farooki & Kaplinsky, 2013). In this context, investors should have financial literacy necessary to assess their risks and long-term consequences. Espagne et al. (2023) also emphasize that the cross-border risks and the uncertainties during the climate transition of BRICS economies, including China are crucial in managing the portfolios of green ETFs in an effective manner. Being aware of these dynamics, investors can use ETFs as tools of climate finance and at the same time address the financial risks that come with it. Groswald Ozery, (2025) observe that the relationship between climate-focused ETFs and investor sentiment, especially in the Sino-American markets, creates even greater pressure to increase financial literacy to read not only market signals, but also geopolitical circumstances that may affect ETF flows.

2.8) Information Searches:

Studies reveals that the search of information can be an important mediator between the attitude and behavioral biases between the investor and the investment outcome. For instance, Susanto and Mandagic (2025) highlight that the influence of financial literacy and technological affinity on Gen Z investment behavior mediated by information search, meaning that active information search plays an important role in decision making. Likewise, Mishra et al. (2025) illustrate that the structured search of information affects the attitude and purchasing intentions of investors, and awareness plays the role of a significant moderator in the process. Mittal et al. (2025) note the contribution of digital and social media platforms to the process of information search because they conclude that positive information valence collected via social media has positive effects on perceived stock utility and investment choice. Studies further indicate that heuristic biases and behavioral tendencies usually hinder effective information processing. According to Jain et al. (2023), biased perception of risk decreases the use of rigorous information search, which affects rational decision-making. Shunmugasundaram and Sinha (2025) also demonstrate that information processing is vulnerable to the distortion of behavioral biases, which mediates the impact on the purchase intentions in an uncertain situation. In addition, online peer influence and electronic word-of-mouth (eWOM) are also the main means of accepting information, which determines the sustainable investment decision and is demonstrated by Truong and Lan (2025). This is supported by Haritha (2024) who points out that information exposure influences the sentiment of an investor, which confirms the mediating factor in the information search in the context of investment behavior. Moreover, Kumar et al. (2024) discover that biased or insufficient information search is one of the factors of the risky heuristic reliance, and gender moderates the final results in the form of investment performance. Oktaviani and Sumiyarti (2025) build on this knowledge by demonstrating how family travel decision-making is mediated by the information search conducted in the digital media environment, which provides a parallel with the setting of financial decisions.

► LITERATURE MATRIX:

The following table summarizes the discussed key studies examining the driving factor as well as mediating role of information search in investment decision-making in agricultural exchange-traded fund (ETF) market.

Author(s) & Year	Focus Area	Key Themes	Main Findings
Aman (2025)	Attitude	Gen Z, ESG, Fintech	Positive attitude boosts ETF adoption among Gen Z
Darskuvienė & Lissauskienė (2021)	Attitude & Trust	Behavioral biases, Fintech	Trust and automation attitude drive passive ETF preference
Ruan & Zhang (2025)	Attitude & ESG	ESG values, Passive investing	Shared values increase ESG ETF purchases
Li et al. (2025)	Attitude & Return	Indexing, Cost awareness	Positive indexing attitude mediates ETF choice
Anttila (2025)	Attitude	Stability, Conservative investors	Conservative investors prefer ETFs for stability
Zhang & Zhao (2025)	Attitude & Digital Finance	Mobile fintech confidence	Fintech trust linked to early ETF adoption
Valle (2021)	Attitude	Diversification, Data-driven	Positive diversification attitude favors ETFs
Nwogugu (2025)	Risk Perception	Crypto volatility skepticism	Crypto risk perception increases ETF preference
Sprute (2024)	Attitude	Thematic ETFs (Biotech, Sustainability)	Thematic interests drive ETF adoption
Potcovaru et al. (2025)	Attitude & Risk	Macroeconomic uncertainty	Risk aversion increases ETF attractiveness
Susanto & Mandagie (2025)	Information Search	Mediation, Financial literacy	Info search mediates tech affinity and financial attitude
Mishra et al. (2025)	Information Search	Awareness, Attitude, Intention	Structured info search affects attitude and intention
Mittal et al. (2025)	Information Search	Social media, Info valence	Positive social media info increases investment choices
Jain et al. (2023)	Behavioral Biases	Risk perception, Info search	Biased risk perception reduces info-based decisions
Shunmugasundaram & Sinha (2025)	Behavioral Biases	Heuristics, Info processing	Biases distort info processing, mediating purchase intent
Truong & Lan (2025)	Information Search	eWOM, Peer influence	Online info adoption mediates sustainable investment
Kumar et al. (2024)	Information Search	Heuristics, Gender	Biased info search leads to risky heuristics; gender moderates
Oktaviani & Sumiyarti (2025)	Information Search	Digital media, Decision-making	Digital media info search mediates family decisions

► Literature Synthesis:

The current literature on ETF investment behavior has significantly analyzed the variables that affected the investment choice by the investors such as the attitude towards investing in the ETFs, perceived returns, risk, trust in the financial institutions, herding and financial literacy. Studiess like Aman (2025) and Darskuvienė and Lissauskienė (2021) lay stress on the centrality of attitude amongst investors especially those belonging to younger

generations and in regards to fintech innovations. In the meantime, perceived returns and risk perceptions have been repeatedly found to be the key determinants influencing the ETF adoption with Tan et al., (2025) and Nwogugu (2025) emphasizing the stability of returns and risk avoidance as the critical factors in the preference of investors. Moreover, confidence in financial institutions is another major factor which influences the attitude and readiness of investors to embrace ETFs as suggested in the studies by Zournatzidou (2025) and Hassan et al. (2025). The herding effect is not new, and it is indicative of how investors tend to sway to popular trends and herd decisions instead of basing their decisions on fundamental analysis, which could enhance volatility in the market (Hull et al., 2024; Kumar, 2025). Financial literacy is also critical in helping investors understand how to invest in a world of an ever-increasing number of more complex investment products, especially sustainable and thematic ETFs (Ruan & Zhang, 2025; Zournatzidou, 2025). Despite of these insights, several gaps remain. The moderating role played by information search behavior between investor attitudes, behavioral biases, and investment performance is limited, particularly in digital spaces that are becoming more about social media and fintech platforms. Besides, existing frameworks tend to look at these factors in isolation as opposed to a dynamic approach to capture their compound nature across the economic and regulatory environment. As a result, these gaps are imperative to fill in order to progress the literatures on the ETF investment dynamics and to develop interventions that help investors to make better decisions.

➤ DISCUSSIONS AND RESULTS:

The literature reviewed provides an in-depth knowledge of the complex factors that influence investor behavior with regard to Exchange-Traded Funds (ETFs). Particularly, studies have highlighted that attitude of investors becomes one of the main premises that determines the adoption of ETFs. For instance, a favorable perception of ESG integration, online investments platforms using fintech, and low-cost passive investment products all drive investment actions strongly (Nortamo, 2025). The changing nature of investor preferences is also indicated by the generational change as more younger investors emphasize their desire to put a premium on sustainability and technological convenience (Nayak, 2025). This attitude is however not fixed, but rather it is influenced by the external factors like perceived returns and trust in financial institutions that makes it important to look at a holistic point (Coates et al., 2025).

Next, literature also argued that return expectations have a central role in influencing the behavior of investment. In the literature, it is emphasized that transparent, consistent, and visible returns, which are usually enabled by fintech solutions like robo-advisors and portfolio optimizers, promote the usage of ETFs. Surprisingly, younger investors are more likely to change their traditional savings to ETFs in case the data on returns are available in an open manner. However, expectations of returns tend to be mixed with perceptions of risk, particularly in such turbulent areas as crypto and thematic ETFs (Sutton, 2025; Buchanan et al., 2025). This interdependence implies that investors do not analyze returns in isolation, but on a larger risk-return analysis.

Similarly, risk perception is always a major factor influencing the preference of ETF. ETFs are more likely to be appreciated by investors who view them as less risky purchase than other more unstable investments such as cryptocurrencies, real estate, or gold. Studies emphasize that market volatility is not the only factor that has shaped this perception, but also geopolitical and macroeconomic uncertainty (Korsah et al., 2024). The existence of regional differences in risk tolerance also complicates the situation, which shows that cultural and political environments should be taken into account when examining the patterns of ETF adoption. Notably, index ETFs are especially desirable in risk-averse settings because they are perceived as more transparent and cheaper.

Another important aspect is the trust in the financial institutions and fintech platforms. Credibility and transparency of fund providers, regulating agencies, and online investment platforms have a great influence on investor confidence. This trust will temper the reaction of the investors to the information provided in the market and will determine which investors will be keen on newer financial products. The institutional support which may include Federal Reserve influence on ETF markets in times of financial stress, also proves the connection of trust and investment choice (Yeniley, 2025). Furthermore, the digital trust will include robo-advisors and mobile fintech solutions, which underlines the technological aspect of investor confidence (Abbas, 2025).

Herding behavior is an aspect of behavioral bias whereby investors tend to follow the investment decisions of other people and they are more concerned with popularity than the fundamentals. This is more marked in both ESG-labeled and thematic ETFs, where herding and group-think happen on the back of market narratives and industry enthusiasm. Nguyen et al. (2025) emphasize that the herding is also contributed by institutional investors who increase the effects of contagion in the market during stress. Although herding can speed up the adoption of ETF, it can also increase the volatility of the market and diminish the efficacy of individual decisions.

Moreover, Financial literacy supports the capacity of investors to master the challenging ecosystem of ETFs, especially the thematic and sustainability funds that integrate the complex ESG standards and climate risks. Investment at the investor level becomes democratic with the use of fintech platforms, which on the one hand makes access easier but, on the other hand, requires a greater level of investor education to facilitate interpretation and management of such products (Petersen, 2024; Abuamria & Ajouz, 2025). At last, literature have reveals that information search is an important mediating mechanism. Structured information search and active search results in better investment attitudes and purchase intentions, and allow the investors to reduce bias and make more

informed decisions. Nevertheless, information processing through behavioral biases and using heuristic tendencies might lead to inaccuracy in information therefore the significance of credible sources of online data as well as peer pressure (Ali, 2025).

Consequently, the literature presents a complicated, mutually related structure in which investor attitudes, expectations, perceptions of risk, trust, and behavioral biases, literacy, and information processing interact and precondition ETF adoption. An understanding of these forces will inform the direction of effective investor education curriculums, enhancement of fintech spaces, and decisions made by regulators to promote wise and sustainable investment behaviour. Besides, the revealed gaps, including the necessity of further understanding regional risk tolerance and the effect of digital trust on various groups of investors, open opportunities to conduct empirical studies in the future.

► Recommendations and Future Directions:

Concluding on the basis of the evidence offered in the reviewed literature, several recommendations can be suggested in order to promote the use of ETF and benefit the investment decision-making. First, it is necessary that financial institutions and fintech platforms invest in building user-friendly tools that can communicate risk-return transactions clearly to the less-experienced and younger investors. Second, regulators together with educators are supposed to refine the products of financial literacy, especially in the context of thematic-based as well as ESG-linked ETFs. This would enable the investors to make decisions at an informed level and minimize occurrence of herding behavior. Moreover, the regional variations in the adoption of ETFs and intergenerational aspect need to be researched further in regard to cultural variations in the perception of trust and risk. Also, the further study of the use of digital trust in fintech platforms and robo-advisors might reveal more about the investor behavior. In this context, it will also help contribute to the field in terms of studying the formation of the investor attitudes as time changes with the behavior of the market environment and the development of technology.

► CONCLUSION:

To summarize, the current state of findings on financial literacy, behavioral biases, and information search as drivers of investment decisions was synthesized in this review paper with regard to the ETF adoption. The literature underscores the intermediary position of information search in influencing the investor behavior and emerging relevance of thematic issues such a sustainability. Although the available literature has provided helpful information, there are still more gaps in the generational and digital effects. Through the synthesis of these views, the review gives a basis to further empirical investigation and policy formulation towards making the retail investment operations as more informed, confident, and responsible operations in the light of changing financial perspectives.

► Acknowledgements:

I would like to express my sincere gratitude to my supervisor, **Dr. Mohamad Nasir Saludin**, for his invaluable guidance, continuous support, and insightful feedback throughout the course of this research. His encouragement and expertise greatly contributed to the successful completion of this work.

► REFERENCE:

- Abbas, S. K. (2025). Understanding User and Investor Perspectives on Robo-Advisors Adoption in Fintech [véadás előtt] (Doctoral dissertation, Budapesti Corvinus Egyetem).
- Abuamria, F., & Ajouz, M. (2025). Leveraging FinTech Innovations for Sustainable and Social Finance: A Comprehensive Analysis of Their Contributions to Social Impact Investment. In *From Digital Disruption to Dominance* (pp. 245-264). Emerald Publishing Limited.
- Ajzen, I. (2020). The theory of planned behavior: Frequently asked questions. *Human Behavior and Emerging Technologies*, 2(4), 314-324.
- Ali, S. M. S. (2025). Cognitive biases in digital decision making: How consumers navigate information overload (Consumer Behavior). *Advances in Consumer Research*, 2, 168-177.
- AMAN, A. (2025). INVESTMENT DECISION AMONG YOUNGSTERS. Available at SSRN.
- Antoniou, C., Weikai Li, F., Liu, X., Subrahmanyam, A., & Sun, C. (2023). Exchange-traded funds and real investment. *The Review of Financial Studies*, 36(3), 1043-1093.
- Anttila, H. O. (2025). Herding Bias and Its Impact on Long-Term Fund Performance: A Human vs. AI Comparison.
- Aqeeq, M. A., & Chamadia, S. (2024). Do actively managed equity funds add value in developing economies?—The case of ‘inverse Gruber puzzle’ in Pakistan. *Journal of Islamic Accounting and Business Research*, 15(5), 876-893.
- Åström, W., & Pettersson, G. (2025). The Role of Portfolio Overlap and Network Centrality: Systemic risk in Swedish mutual funds.

- Baihaqqy, M. R. I., Disman, N., Sari, M., & Ikhsan, S. (2020). The effect of financial literacy on the investment decision. *Budapest International Research and Critics Institute-Journal (BIRCI-Journal)*, 3(4), 3073-3083.
- Boyarchenko, N., & Shachar, O. (2025). A Hitchhiker's Guide to Federal Reserve Participation in Fixed Income Markets. *Journal of Economic Perspectives*, 39(2), 171-194.
- Bryant, G., & Webber, S. (2024). Climate finance: Taking a position on climate futures.
- Buchanan, B., Silvola, H., & Vähämaa, E. (2025). Sustainability and private investors. *The European Journal of Finance*, 31(2), 174-201.
- Chaim, D. A. (2022). *Institutional Ownership in the Twenty-First Century: Perils, Pitfalls, and Prospects*. Columbia University.
- Chong, C. T., & Ng, J. H. (2024). Advanced Transport Biofuels: Production, Economics, and Sustainability.
- Chu, L., Cheng, L., Gao, Y., Deng, H., Wang, Q., & Luo, Y. (2024). Influence of green finance on agricultural green total factor productivity: a case study in China. *Frontiers in Environmental Science*, 12, 1463833.
- Coates, Z., Brown, S., & Kelly, M. (2025). Understanding the impacts of climate anxiety on financial decision making. *Sustainability*, 17(9), 3815.
- Come Zebra, E. I., Mahumane, G., Canu, F. A., & Cardoso, A. (2021). Assessing the greenhouse gas impact of a renewable energy feed-in tariff policy in Mozambique: towards NDC ambition and recommendations to effectively measure, report, and verify its implementation. *Sustainability*, 13(10), 5376.
- Danino-Perraud, R., Legleuher, M., & Guyonnet, D. (2021). Assessment of European Demand for Mineral Resources by Material Flow Analyses: The Case of Cobalt. *Mineral Resources Economy 1: Context and Issues*, 3.
- Darskuvienė, V., & Lissauskienė, N. (2021). Linking the robo-advisors phenomenon and behavioural biases in investment management: An interdisciplinary literature review and research agenda. *Organizations and Markets in Emerging Economies*, 12(2), 459-477.
- ESCAP, U. (2024). 2024 Review of climate ambition in Asia and the Pacific: from ambitions to results sectoral solutions and integrated action.
- Espagne, E., Oman, W., Mercure, J. F., Svartzman, R., Volz, U., Pollitt, H., ... & Campiglio, E. (2023). Cross-border risks of a global economy in mid-transition (Vol. 184). *International Monetary Fund*.
- Farooki, M., & Kaplinsky, R. (2013). *The impact of China on global commodity prices: The global reshaping of the resource sector*. Routledge.
- Gazaliyeva, A., Sembekov, A., Kolchin, S., Talimova, L., Apysheva, A., & Kernebaev, A. (2025). Analysis of the Investment Potential of the Stock Market and its Impact on the Banking System. *Faculty of Mediterranean Business Studies Tivat, Montenegro*, 21(3), 249.
- Gormsen, N. J., Huber, K., & Oh, S. (2024). Climate capitalists (No. w32933). *National Bureau of Economic Research*.
- Groswald Ozery, T. (2025). *The Laws of Financial Decoupling: Financial Lawfare in US-China Friction*. Available at SSRN 5281813.
- Hassan, M. K., Muneeza, A., & Hasan, R. (2025). *Islamic finance and sustainable development*. Cambridge University Press.
- Heistrubers, S. (2022, May 11). ETF assets will surpass \$20TN by 2026, PWC predicts. *Financial Times*. <https://www.ft.com/content/d6e0625a-1214-4b05-afa6-64428bf19ea2>
- Jain, R., Sharma, D., Behl, A., & Tiwari, A. K. (2023). Investor personality as a predictor of investment intention—mediating role of overconfidence bias and financial literacy. *International Journal of Emerging Markets*, 18(12), 5680-5706.
- Karlsson, Albin, and Erik Bauer. "Hållbarhet lönar sig? ESG-betygens relation till avkastning och volatilitet på Stockholmsbörsen:-En kvantitativ analys av ESG-betygens inverkan på finansiell prestation och risk." (2025).
- Khumalo, M. (2022). *Investigating Factors Affecting Retail Investor Awareness of Exchange Traded Funds (ETFs)* (Doctoral dissertation, University of Pretoria (South Africa)).
- Kohler, K. (2021). *Strategic foresight: Knowledge, tools, and methods for the future*. CSS Risk and Resilience Reports.
- Korsah, D., Amewu, G., & Osei Achampong, K. (2024). The impact of geopolitical risks, financial stress, economic policy uncertainty on African stock markets returns and volatilities: wavelet coherence analysis. *Journal of Humanities and Applied Social Sciences*, 6(5), 450-470.
- Kumar, A., & Upadhyay, P. (2025). Digital communication and recovery strategy during crisis: evidence from the tourism industry. *Global Knowledge, Memory and Communication*.
- Li, Z., Tan, E. K., & Zhu, M. (2025). The impact of indexing on mutual fund performance. Available at SSRN 4670333.
- Malviya, G. L., & Soni, A. (2025). A Comparative Study on Risk and Return Analysis of Investment Avenues: Property, Gold, Shares, FDs, Post Office Schemes, and Mutual Funds. *International Journal of Innovations in Science, Engineering And Management*, 16-23.

- Mishra, A. K., Bansal, R., Maurya, P. K., Ansari, Y., & Gupta, N. (2025). Effect of service quality on intention to invest in mutual funds: attitude as mediator and awareness as moderator. *Journal of Advances in Management Research*.
- Mittal, A., Sigh, B., Singh, S., Singh, P. K., & Rajest, S. S. (2025). Impact of social media (SM) information on stock market investment decisions (ID): a quantitative investigation using SEM-ANN approach. *International Journal of Trade and Global Markets*, 21(2), 188-218.
- Nayak, G. (2025). Evolution in Options Trading: The Impact of Generation Z on the Transformation of Investment Preferences. *Journal Press India*, 12(1).
- Nguyen, A. P. N., Crane, M., Conlon, T., & Bezbradica, M. (2025). Herding unmasked: Insights into cryptocurrencies, stocks and US ETFs. *PloS One*, 20(2), e0316332.
- Nortamo, S. (2025). A holistic approach to ESG strategy implementation in PayTech companies.
- Nwogugu, M. C. (2025). Measuring Altcoin Under-valuation, Indexing And CryptoToken International Contagion Models. *Indexing And CryptoToken International Contagion Models* (February 15, 2025).
- Petersen, L. C. (2024). Tech meets trust-The intersection of FinTech regulation and international human rights law.
- Potcovaru, A. M., Nica, E., & Labudova, E. (2025). PRICE DEVELOPMENT OF GOLD AND S&P 500 INDEX AS A DETERMINANT OF INVESTMENT BEHAVIOR: A COMPARATIVE ANALYSIS. *Ekonomicko-Manazerske Spektrum*, 19(1), 39-54.
- Qi, Y., Zhang, J., Chen, X., Li, Y., Chang, Y., & Zhu, D. (2023). Effect of farmland cost on the scale efficiency of agricultural production based on farmland price deviation. *Habitat international*, 132, 102745.
- Reis, P. N., & Pinto, A. P. S. (2024). Unlocking portfolio resilient and persistent risk: A holistic approach to unveiling potential grounds. *The North American Journal of Economics and Finance*, 73, 102198.
- Ruan, Q., Zhang, J., & Lv, D. (2024). Forecasting exchange rate volatility: is economic policy uncertainty better?. *Applied Economics*, 56(13), 1526-1544.
- Shanghai Stock Exchange. (2024). ETF market sees rapid growth. *China Daily*.
https://english.sse.com.cn/news/newsrelease/voice/c/c_20241029_10763455.shtml
- Sherrill, D. E. (2019). Different paths to the same target: Variation in target date funds. *The Journal of Investing*, 28(6), 27-41.
- Shunmugasundaram, V., & Sinha, A. (2025). The impact of behavioral biases on investment decisions: a serial mediation analysis. *Journal of Economics, Finance and Administrative Science*, 30(59), 5-21.
- Sikorskaya, T. (2023). Institutional investors, securities lending and short-selling constraints. *Securities Lending, and Short-Selling Constraints*.
- Sprute, S. (2024). The Oncology ETF: How Retail Traders Can Utilize Custom Growth ETF's.
- Statista Research Department. (2023). Assets of global etfs 2022. Statista.
<https://www.statista.com/statistics/224579/worldwide-etf-assets-under-management-since-1997/>
- Susanto, K. P., Mandagie, W. C., Endri, E., & Wiwaha, A. (2025). Financial literacy, technological progress, financial attitudes and investment decisions of Gen Z Indonesian investors. *Investment Management & Financial Innovations*, 22(1), 25.
- Sutton, C. V. (2025). NAVIGATING FINANCIAL TURBULENCE WITH CONFIDENCE: Preparing for Future Market Challenges, Crashes & Crises. *NuovoNova Ltd*.
- Truong, D. D., & Lan, B. T. H. (2025). Harnessing digital voices for a greener future: the role of eWOM and information adoption in shaping green investment decisions. *Environmental Research Communications*.
- Valle, A. M. (2021). Evaluating the robustness of global diversified ETF-based investment portfolios.
- Van't Wout, T., Celikyilmaz, G., & Arguello, C. (2021). Policy analysis of Nationally Determined Contributions in the Europe and Central Asia region: 2021. *Food & Agriculture Org*.
- Xu, H. C., Tan, Y. Z., Fan, H. X., & Zhou, W. X. (2025). Early warning of bubbles in the agricultural commodity market: Evidence from LPPLS confidence indicators. *Journal of Management Science and Engineering*, 10(2), 245-261.
- Yang, C., & Chi, J. (2023). Investor sentiment and volatility of exchange-traded funds: Evidence from China. *International Journal of Finance & Economics*, 28(1), 668-680.
- Yeniley, U. (2025). The Role of Gold ETFs in Market Stability, Price Discovery, and Economic Dynamics during Crises. *Asian Journal of Economics, Business and Accounting*, 25(1), 60-74.
- Zhang, Y., & Zhao, J. (2025). The Value of Payment Innovation to Households: Evidence from a FinTech Platform. Available at SSRN 5332427.
- Zournatzidou, G. (2025). Green Finance and Sustainable Development: Investigating the Role of Greentech Business Ecosystem Through PRISMA-Driven Bibliometric Analysis. *Administrative Sciences*, 15(4), 150.