

Exploring Factors Affecting Intention to Use Chatgpt for Searching Finance-Related Information

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Abstract

The emergence of ChatGPT has revolutionized information seeking behavior. This study aims to explore the potential factors that influence the adoption of ChatGPT as a tool for searching finance related information. This study also distributed the online questionnaire to gather the responses from existing users. The findings indicate that ease of use, usefulness, herding behavior, and social influence significantly affect users' intention to use ChatGPT for searching finance related information. However, this study also revealed that there is no significant relationship between individuals who used ChatGPT for searching finance related information and their intention for information checking. These results provide valuable insights for future studies and underscore the potential of ChatGPT as a tool for searching finance related information.

Keywords: ChatGPT, Information Searching, Finance Related Information, Information Checking, Herding, Social Influence

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Introduction

AI and ChatGPT

Artificial Intelligence (AI) has revolutionized the way we live our lives, becoming an essential component of numerous technological products that we use daily. The term AI simply refers to the integration of various interrelated technologies for problem solving. Undoubtedly, it brought significant impact to society, organizations, and individuals (Dwivedi et al., 2023). According to the report released by Grand View Research, the AI market was valued at USD 136.55 billion in 2022, with remarkable advancements in multiple areas of application, such as insurance claim (Thesmar et al., 2019), detection of money laundering Garcia-Bedoya et al (2020), stock price prediction Liu et al (2021), and education (Zhang and Aslan, 2021).

Recently, there has been a notable achievement in the field of AI with the emergence of ChatGPT, a prominent chatbot developed by OpenAI. ChatGPT also quickly gained immense popularity and amassed over a million users in just five days after the launching on 30th November 2022 (Dowling & Lucey, 2023). In January 2023, ChatGPT recorded an average of 13 million daily visitors, followed by an average of around 30 million daily visitors in February 2023 (David, 2023). It costs approximately \$100,000 per day to run ChatGPT on Microsoft Azure Cloud, but it is also estimated to generate \$200 million in revenue for OpenAI by the end of 2023 (Robert & Cai, 2023).

Interestingly, a recent study conducted by Tiffany et al (2023) revealed that ChatGPT nearly passes all the three exams of the Medical Licensing Exam (USMLE) without any special training. Meanwhile, Bommarito and Katz (2022) revealed that ChatGPT can pass the professional legal accreditation exams in the US. To some extent, ChatGPT also potentially jeopardizes the online exam integrity soon. The emergence of ChatGPT also has led professionals from a range of fields, such as journalism Alex (2023), and programmer Taecharungroj (2023), to question whether their jobs are at risk of becoming obsolete. This marks a significant entry of new technology into the workforce.

The Challenges of ChatGPT

Recently, Cotton et al (2023) argued that the emergence of ChatGPT has the possibility for plagiarism issues among the university students. They also suggested the universities lecturer set the assessment that require the students to think critically and communicate well with their group mates. This action tends to prevent the students from just copying and pasting the answer from the ChatGPT. On the other hand, Korzynski et al (2023) mentioned that ChatGPT can affect the workforce in three different levels – strategic, functional, and administrative level. They stated that ChatGPT tends to affect manager's decision making (strategic level), automate the customer service and help the human resources to sort out the appropriate candidates in a shorter period (functional level). They also highlighted that the repititive tasks such as scheduling appointments have a higher possibility of being replaced by ChatGPT.

On the other hand, Schonberger (2023) highlighted the constraints of using ChatGPT for obtaining up-to-date financial reports, financial statements, and current news related to a publicly listed organization. This limitation arises from the fact that the knowledge cutoff date for ChatGPT is 2021. Despite ChatGPT can generate an orderly and unambiguous market outlook report with some input, but it falls short in possessing autonomous analytical skills (Yang, 2023). This is due to the reason that ChatGPT's lack of deep understanding of the

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concepts behind the words it processes, which can result in responses that lack depth and insight (Farrokhnia et al., 2023). Additionally, it has difficulty evaluating the credibility of the data it was trained on, limiting its capability to provide accurate information (Lecler et al., 2023). ChatGPT also lacks higher-order thinking skills, as it heavily relies on data and lacks context, common sense, and emotions crucial for critical and analytical thinking (Rudolph et al., 2023). This lack of understanding of the context may pose various risks, particularly within the realm of education, such as incorrect content recommendations for personalized learning or inaccurate essay grading. While ChatGPT can generate acceptable responses, it needs a more meaningful and less superficial understanding to be truly effective.

AI and Information Searching

Regardless of the investment size, investors always refer to the finance related information obtained or financial advice to make their investment decisions. However, the financial advice market is prone to misconduct for two main reasons (Weitzel & Kirchler, 2023). Firstly, financial advice is difficult for customers to evaluate the quality of the products or services offered. Secondly, financial advisers are often caught between providing advice that benefits their customers and increasing profits for their employer, leading to potential conflicts of interest. This conflict can result in financial advisers receiving commissions, fees, or incentives that encourage dishonest behavior such as overcharging. As a result, many people do not trust human financial advisors because they are often influenced by conflicts of interest that can impact the quality of their advice and lead to financial exploitation (Weitzel & Kirchler, 2023).

Many retail investors, particularly those with limited experience in financial decision-making such as young retail investors aged 18-29 years, tend to seek financial advice (Fecht et al., 2018; Bhattacharya et al., 2012; Lusardi et al., 2019). However, young retail investors may face a dilemma as their limited financial resources may prevent them from hiring human advisors. In response, they often turn to affordable automated services like financial robo-advisors that utilize artificial intelligence (AI) technology (Belanche et al., 2019). The pandemic has further increased the attractiveness of robo-advisors, as customers operate digitally. Despite the assets under management in the robo-advisor segment exceeded 1 trillion dollars in 2020 and are projected to grow at an annual rate of 16.72% afterward (Isaia & Oggero, 2022). However, Hilary (2023) reported that there has been a significant decrease in the adoption of digital advisors, from 27.7 percent in 2021 to 20.9 percent in 2022. It appears that investors who are experiencing difficulties with self-directed approaches encounter not only high transfer costs but also uncertainty regarding the benefits of digital advice.

With the emergence of ChatGPT, the information searching behavior might be changing. Individuals may prefer to use the advice given by ChatGPT due to its simplified responses. Bernard (2023) also suggested that ChatGPT can help the banks in analyzing the client's data and offering individualized financial planning services such as debt management, budgeting, and retirement planning to clients. Meanwhile, ChatGPT may help in suggesting customized investment recommendations based on client's unique financial goals and risk preferences. Despite ChatGPT can be used in gathering the information or advise about a particular financial product, however, it is important to acknowledge ChatGPT might have some of the observed limitations, including the generation of incorrect information and biased content (Haleem et al., 2023).

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ChatGPT has opened previously unimaginable opportunities for obtaining information and financial guidance, captivating millions of users, especially young retail investors seeking personalized planning services. This all occurs in an era shaped by the transformational force of Artificial Intelligence (AI). Beneath the allure of its simpler solutions lies the challenge of inaccurate information and biased content, potentially impacting consumers' financial decisions and their trust in AI-based services. This ground-breaking study tackles the fascinating problem of analyzing perceived usability, perceived usefulness, herding behavior, and social influence to examine the elements influencing users' intentions to use ChatGPT for financial information searches.

Hence, there are two main objectives to be tested in this study.

- Investigate the relationship between four potential factors (perceived ease of use, perceived usefulness, herding behavior, and social influence) that affect the users' intention to use ChatGPT to search for finance-related information.
- 2. Investigate the relationship between users' intention to use ChatGPT for searching finance-related information and their intention to perform information checking.

This study contributes to the existing literature in the following ways. First, this study provides empirical evidence on the potential factors that affect users intentions to use ChatGPT for searching finance-related information. Despite the fact that ChatGPT can be used to gather information or advice about a particular financial product, it is important to acknowledge that ChatGPT might have some of the observed limitations, including the generation of incorrect information and biased content (Haleem et al., 2023). This study also fills in the knowledge gap by testing whether the users perform any information checking after gathering the finance related information from ChatGPT. This study provides new evidence for the ChatGPT related literatures. Moreover, by providing empirical evidence, the findings of this study are also expected to help the Chatbot provider to identify the potential factors that influence the adoption of ChatGPT.

Theoretical Foundation

This section starts with the discussion of technology acceptance model (TAM). Davis (1989) developed the TAM assumed that the acceptance of any new technological product highly affected by its perceived easiness and usefulness. According to Davis (1989), the term of perceived ease of use simply refers to the extent where someone believe that the technological product is easy to use, while the term of perceived usefulness refers to the extent where someone believe that the technological product is useful and help in enhance their performance or effectiveness. TAM also widely applied in studies from various fields including mobile banking Evon et al (2020), E-wallet Sarmah et al (2020), and E-government service (Elkheshin & Saleeb, 2020; Nguyen et al., 2020).

However, these two factors are not sufficient to explain the intention to use a new technological product, such as ChatGPT. Thus, this study extends the TAM model by including herding and social influence as the potential factor in affecting the usage of ChatGPT. Despite ChatGPT potentially revolutionizing the way finance related information is accessed and disseminated, there is a limited number of studies that have examined the effectiveness of ChatGPT in finance related information searching. This section continues to discuss the

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existing literature on the use of ChatGPT in finance and highlights the need for further research in this area.

Lastly, this study also proposed the framework (as shown in Figure 1) to capture the potential factors that affect user's intention to use ChatGPT in looking for finance related information. The hypotheses tested in this study are summarized in Section 2.1.

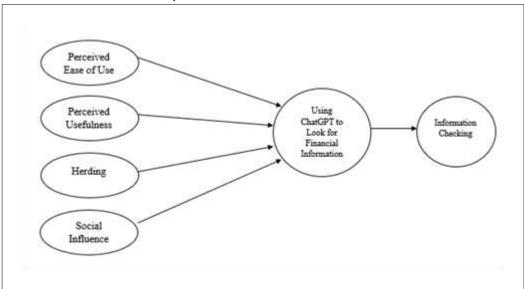


Figure 1: Proposed Conceptual Framework

Hypothesis of the Study

Hypothesis 1: Perceived ease of use is positively related with the users' intention to use ChatGPT for searching finance related information.

Hypothesis 2: Perceived usefulness is positively related with the users' intention to use ChatGPT for searching finance related information.

Hypothesis 3: Herding behavior is positively related with the users' intention to use ChatGPT for searching finance related information.

Hypothesis 4: Social influence is positively related with the users' intention to use ChatGPT for searching finance related information.

Hypothesis 5: Users' intention to use ChatGPT for searching finance related information is positively related to the intention to perform information checks.

Data and Methodology

Data Collection and Sampling Method

This study applied the purposive sampling method and collect the feedbacks from existing ChatGPT users in Malaysia. A pilot test was conducted with 30 ChatGPT users to review the questionnaire's design and feasibility before distributing the questionnaire to the other respondents. On the other hand, the minimum sample size was determined based on the suggestion of (Ramayah et al., 2011). They suggested five responses for each independent variable. Hence, the minimum sample size was 20. Then, social media platform such as Instagram and WhatsApp were used to collect the data from respondents. A total of 297 completed questionnaires were collected, which is greater than then minimum sample size requirement of 20.

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Convergent Validity and Discriminant Validity

This study employed Cronbach's alpha and composite reliability to assess the internal consistency reliability of the construct. The threshold for both measures was set at 0.7, as recommended by (Taber, 2017). To confirm convergent validity, the average variance extracted (AVE) was used, with a minimum acceptable threshold of 0.5, in accordance with the suggestion by (Hair and Alamer, 2022). Subsequently, discriminant validity was evaluated by checking the heterotrait-monotrait ratio (HTMT), with the recommendation by Hair and Alamer (2022) that the HTMT should be below 0.85.

PLS-SEM

Partial Least Squares Structural Equation Modeling (PLS-SEM) has garnered attention from various social science disciplines, including marketing Arbabi et al (2022); Ooi et al (2023) and finance (Agyapong & Tweneboah, 2023; Ramli et al., 2019). Specifically, PLS-SEM combines principal component analysis and ordinary least squares regression to estimate the partial regression relationships of the path model to maximize the explained variance and minimize the error terms of the endogenous constructs (Hair et al., 2018). On the other hand, Law and Fong (2020) have pointed out several technical advantages of PLS-SEM. Firstly, PLS-SEM is a composite-based and causal-predictive approach that is more suitable for exploratory research and predicting statistical models. Secondly, it is preferred for addressing research questions related to causal relationships between both reflective and formative constructs that involve multiple direct and indirect effect paths from numerous indicators. Thirdly, PLS-SEM generally does not assume a type of distribution and is suitable for analyzing data with a non-normal distribution. This is particularly relevant for this study as the type of distribution was practically unknown before data collection. Additionally, Ramli et al. (2019) mentioned that PLS-SEM has the ability to handle models of any size and the simplicity of incorporating moderator variables. Thus, PLS-SEM is the preferred method for path models with complex structural relationships.

Results and Discussion

This section presents and discusses the results obtained in this study. A total of 297 responses were gathered from ChatGPT users. Table 1 summarizes the demographic information of the respondents. Majority of respondents were male (52.2%) and aged between 21 and 30 years old (47.1%). Furthermore, most of the respondents worked as employees (69.3%) and earned between RM 3,501 to RM 4,500 (35.7%). Next, this study used the factor loadings, Cronbach's alpha (CA), composite reliability (CR), and average variance extracted (AVE) to assess the reliability and validity of the items and scale. Factor loadings were calculated for each item to determine the relationship between each item and the underlying construct. Table 2 shows that all items had high factor loadings, ranging from 0.746 to 0.951, indicating that they were good indicators of their respective constructs. Cronbach's alpha (CA) was used to assess the internal consistency reliability of the scale. The CA values for all constructs were high, ranging from 0.721 to 0.873, which indicates that the scale is reliable. Composite reliability (CR) was also used to assess the internal consistency reliability of the scale, taking into account the inter-item correlations. The CR values for all constructs were high, ranging from 0.842 to 0.940, which confirms the scale's reliability. To assess the convergent validity of the scale, average variance extracted (AVE) was calculated for each construct. The AVE values for all constructs were high, ranging from 0.629 to 0.887, indicating good convergent validity. Table 3 presents the results of the Heterotrait-Monotrait (HTMT) ratio test. All the HTMT ratios were

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below the threshold of 0.85 suggested by (Hair and Alamer, 2022). The results confirmed that there were no discriminant validity issues exists.

Table 1
Demographic Information of the Respondents

Variable	Item	Frequency	Percentage
Gender	Male	155	52.2%
	Female	142	47.8%
Age	Below 21	26	8.8%
	21 to 30	140	47.1%
	31 to 40	131	44.1%
Occupation	Student	86	29.0%
	Employee	206	69.3%
	Freelance	5	1.7%
Income	Less than RM 1,500	83	27.9%
	RM 1,501 – RM 2,500	3	1.0%
	RM 2,501 – RM 3,500	30	10.1%
	RM 3,501 – RM 4,500	106	35.7%
	RM 4,501 – RM 5,500	51	17.2%
	More than RM 5,500	24	8.1%

Table 2
Result for Factor Analysis

Variable	Item	Mean	Standard Deviation	Factor Loading	CA	CR	AVE
Perceived Ease of	EU1				0.856		
Use		3.589	1.131	0.837		0.903	0.699
	EU2	3.498	1.209	0.857			
	EU3	3.596	1.151	0.808			
	EU4	3.714	1.179	0.841			
Perceived	PU1				0.84		
Usefulness		3.667	1.217	0.821		0.893	0.675
	PU2	3.623	1.172	0.825			
	PU3	3.657	1.153	0.824			
	PU4	3.62	1.186	0.817			
Herding Behaviour	HB1	3.444	1.254	0.862	0.795	0.88	0.71
	HB2	3.495	1.175	0.792			
	HB3	3.552	1.257	0.871			
Social Influence	SI1	3.424	1.167	0.746	0.721	0.842	0.641
	SI2	3.468	1.183	0.823			
	SI3	3.354	1.166	0.83			
ChatGPT Usage	CU1	3.485	1.169	0.781	0.803	0.871	0.629
	CU2	3.451	1.211	0.774			
	CU3	3.438	1.182	0.828			
	CU4	3.552	1.194	0.787			
Information	IC1				0.873		
Checking		4.162	0.892	0.933		0.940	0.887
	IC2	4.148	0.871	0.951			

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Table 3
Result of HTMT

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Variable	Ease	Useful	Herding	Social	ChatGPT	Checking
Ease						
Useful	0.683					
Herding	0.798	0.695				
Social	0.632	0.35	0.493			
ChatGPT	0.738	0.669	0.847	0.604		
Checking	0.189	0.193	0.171	0.051	0.098	

Notes: Ease refers to "Perceived Ease of Use"; Useful refers to "Perceived Usefulness"; Herding refers to "Herding Behavior"; Social refers to "Social Influence"; ChatGPT refers to "Intention to Use ChatGPT to Search for Finance Related Information"; and Checking refers to "Information Checking".

Table 4
Result of Path Analysis

Variable	Coefficient	P values
Ease -> ChatGPT Usage	0.148**	0.029
Usefulness -> ChatGPT Usage	0.183*	0.004
Herding -> ChatGPT Usage	0.405*	0.000
Social -> ChatGPT Usage	0.185*	0.001
ChatGPT Usage -> Checking	0.082	0.246

R-Squared = 0.552

Notes: Ease refers to "Perceived Ease of Use"; Useful refers to "Perceived Usefulness"; Herding refers to "Herding Behavior"; Social refers to "Social Influence"; ChatGPT refers to "Intention to Use ChatGPT"; and Checking refers to "Information Checking". *refers to significant at 1%, **refers to significant at 1%.

This study also tests the research hypotheses by using partial least square structural equation modeling (PLS-SEM). Table 4 shows the results of the coefficient of determination (R²) and path coefficients. The value of R² of 0.552 indicated that model constructs accounted for 55.2% of the variance in ChatGPT Usage. The results showed that perceived ease of use (β = 0.148, p-value = 0.029) and perceived usefulness (β = 0.183, p-value = 0.004) significantly influence the utilization of ChatGPT to search for finance related information. Hypotheses 1 and 2 were supported. Undoubtedly, the user-friendly design of ChatGPT, coupled with its convenience, accessibility, and personalized responses, has made it a popular choice among users searching for finance related information. Furthermore, since ChatGPT is able to provide personalized responses to user queries, it can save time and effort that would otherwise be spent sifting through large volumes of information. However, investors should be aware that the ChatGPT database only contains data up until 2021, so they may not be able to access the latest information.

Furthermore, herding (β = 0.405, p-value = 0.000) and social influence (β = 0.185, p-value = 0.001) also significant influence the utilization of ChatGPT to search for finance related information. Hypotheses 3 and 4 were supported. When many individuals in a particular social circle or professional network are using ChatGPT, others may be more likely to adopt the

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platform, regardless of their own preferences. Moreover, positive social influence from peers' recommendations or favourable reviews and ratings on social media platforms may serve as encouragement for individuals to opt for ChatGPT as their primary source for finance-related information searches.

However, upon analyzing the collected data (β = 0.082, p-value = 0.246), it was determined that while there was a positive correlation between ChatGPT usage and information checking, it did not reach statistical significance. Consequently, Hypothesis 5 could not be supported. This finding implies that some individuals may have doubts regarding the accuracy of chatbots' provided information and instead choose to verify it from official sources. Meanwhile, others might simply prefer consuming content in a more formal and structured manner, as commonly found on official websites. Thus, this result draws attention to an existing knowledge gap and highlights the importance of exploring trust in chatbot responses' accuracy, credibility perception towards official sources, and convenience perception in utilizing ChatGPT compared to official websites when investigating how individuals utilize technology for finance-related information search and decision-making processes. By attaining a comprehensive understanding of these relationships, we can expand our insights into individuals' adoption of technology for acquiring financial knowledge and making informed choices.

Conclusion, Recommendation, and Implications

The advent of ChatGPT has brought about a transformative approach to information retrieval, offering users a conversational interface that delivers answers in a more natural manner. This study investigated the potential factors influencing the users' intention to use ChatGPT as an instrument for seeking out finance-related information and examines whether individuals engage in any information checking processes following responses from ChatGPT. The findings demonstrate significant influences from perceived ease of use, perceived usefulness, herding behavior, and social influence on individuals' intentions regarding using ChatGPT for finance-related information searches. Conversely, this study indicates that intentions towards using ChatGPT for searching financial information do not significantly impact individuals' intentions to double check the accuracy of the information. These outcomes are valuable references for forthcoming studies in this field and offer valuable insights into the potential application of ChatGPT as an instrument for exploring finance-related data.

Based on these conclusions, it is advisable for ChatGPT to focus efforts on refining personalized responses by integrating voice functionality into its system—an introduction that would enable users to engage in conversation with chatbots instead of relying solely on typing and inquiries. This will not only attract more users but also increase their inclination to employ the platform for searching financial information. Furthermore, this study recommends collaboration between other chatbot providers and financial institutions to offer educational resources and content. Such collaborations would facilitate increased understanding of fundamental financial concepts among users, thereby enhancing their financial literacy—an advantage that ultimately aids them in making informed choices regarding finance.

However, users may not fully trust the information provided by chatbots and need to verify the information from other sources. Developers of chatbot applications should ensure that the information they provide is accurate and trustworthy. Alternatively, they could empower users with the ability to verify the information from official sources. Future research also can

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delve into areas such as trust, skepticism, and perceived accuracy in influencing user behavior towards chatbot applications.

It is important to acknowledge some limitations of this research. Firstly, this study does not assess the actual quality of finance related information provided by ChatGPT, which could impact user trust in and adoption of the platform. Future studies should consider incorporating measures of information quality into their research. Secondly, this study does not explore potential negative effects associated with using ChatGPT for finance related information search, such as over reliance on the platform or misinformation.

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Appendix Survey Item

Variable	Questions	Sources
Perceived Ease of Use	ChatGPT is easy to use.	Venkatesh et al (2012)
	It is easy for me to become	
	skilful by using ChatGPT.	
	I find it easy to get the ChatGPT	
	to do what I want it to do.	
	Learning to use ChatGPT has	
	been easy for me.	
Perceived Usefulness	ChatGPT helps me to accomplish	Venkatesh et al (2012)
	tasks faster.	
	ChatGPT improves my work	
	performance.	
	ChatGPT increase my work	
	productivity.	
	ChatGPT enhances my	
	effectiveness at work.	
Herding Behaviour	Other users' decision of using	Cristofaro et al (2022)
	ChatGPT have impact on my	
	decision to use it.	
	Other users' frequency of using	
	ChatGPT have impact on my	
	decision to use it.	
	Other user's decision of the	
	ChatGPT have impact on my	
	intention to use it.	
Social Influence	The people who are important	Venkatesh et al (2012)
	to me will think that I should use	
	ChatGPT.	
	The people who influence me	
	will think that I should use	
	ChatGPT.	
	People whose opinions I value	
	would like me to use ChatGPT.	
ChatGPT Usage	I will use ChatGPT to gather	Developed by Author
(Intention to Use ChatGPT to	information before making any	
Search for Finance Related	financial decision.	
Information)		
-	Before buying or investing in any	
	financial product, I will use	
	ChatGPT to gather the	
	information.	
	I will use ChatGPT to summarize	
	the information about a financial	
	product.	
	•	

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	I will use ChatGPT to gather information before making any investment decision.	
Information Checking	I will check the official website of financial institution (for example banks, insurance companies, investment bank) to confirm the accuracy about the information of the financial products. I will compare the information from ChatGPT and official website of the financial institution (for example banks, insurance companies, investment bank).	Developed by Author