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A Critical Review of Theory of Planned Behavior in Knowledge Payment

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Abstract

The Theory of Planned Behavior (TPB) is a widely applied theoretical framework for predicting individual intentions and behaviors. However, its application in the knowledge payment domain remains limited. Existing studies primarily focus on TPB's three core constructs while overlooking emerging factors. Additionally, most studies rely on quantitative methods, particularly cross-sectional surveys, lacking longitudinal and experimental research, which may result in an incomplete understanding of consumer knowledge payment behavior. This study utilizes a Systematic Literature Review (SLR) methodology to thoroughly examine the current research based on the TPB within the domain of knowledge payment. A systematic search method was employed to gather pertinent research from prominent academic databases, accompanied by stringent inclusion and exclusion criteria to guarantee the representativeness and credibility of the chosen literature. Additionally, qualitative content analysis and knowledge mapping techniques were applied to synthesize key findings and identify potential theoretical gaps. The findings suggest that incorporating trust, motivation, and electronic word-of-mouth (e-WOM) can enhance the explanatory power of TPB in knowledge payment research. Moreover, adopting longitudinal studies, experimental designs, and big data analytics can improve the robustness and predictive capabilities of future research. While this study provides a theoretical expansion framework, further empirical validation is required. Future research should integrate interdisciplinary approaches, such as

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psychology, behavioral economics, and data science, to further enrich TPB's theoretical and practical significance in knowledge payment studies.

Keywords: Theory of Planned Behavior, Knowledge Payment, Critical Review, Behavioral Intention

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1.0 Introduction

Knowledge payment denotes the transaction of monetary or alternative forms of remuneration for the acquisition of knowledge-based products or services (Wang et al., 2021). The knowledge payment industry has been experiencing rapid development in recent years, becoming a vital digital economy component. With advancements in internet technology and the increasing demand for high-quality knowledge content, the market size of knowledge payment continues to expand, covering various domains such as online courses, paid consultations, e-books, and subscription-based content (Zhang et al., 2024). Market research data indicates that the global knowledge payment market is expected to maintain high growth, particularly in countries such as China and the United States, where both the user base and market revenue are rising. Knowledge payment models are generally categorized into three main types: subscription-based models (e.g., paid communities, membership courses), transaction-based models (e.g., one-time purchase of courses or consulting services), and reward-based or crowdfunding models (e.g., knowledge Q&A, content crowdfunding) (Qi et al., 2019; Wang et al., 2024).

However, despite the prosperity of the knowledge payment market, users are becoming increasingly rational in their purchasing decisions. The knowledge payment industry is experiencing a “three-low” phenomenon characterized by low repurchase rates, low course completion rates, and limited usage duration (Wang et al., 2024). Azizah et al. (2024) investigated the mechanisms that affect customer trust and its impact on repurchase intention. Their findings demonstrate that trust exerts a favorable and substantial influence on repurchase intention. In the domain of massive open online courses (MOOCs), only a small percentage of participants successfully complete course requirements. Badali et al. (2022) aimed to identify the motivational factors affecting course completion rates among MOOC participants and proposed a theoretical framework. Their study found that motivational factors directly influence course completion rates. Meanwhile, Kusuma Putri and Berlianto (2024) demonstrated that electronic word-of-mouth (e-WOM) has a positive influence on the intention to continue using Halodoc, suggesting that e-WOM can enhance user engagement and duration. In conclusion, low repurchase rates primarily stem from users’ lack of trust in the quality and value of knowledge products, while a combination of intrinsic motivation and

external incentives influences low completion rates. Additionally, e-WOM plays a crucial role in determining user engagement duration, with negative reviews significantly reducing usage time and participation, whereas positive reviews contribute to sustained user engagement and retention.

The Theory of Planned Behavior (TPB) is a prominent theory in behavioral science, commonly used to predict individuals' intentions and actions (Ajzen, 1991). According to TPB, behavioral intention is determined by three key factors: attitude, subjective norms, and perceived behavioral control. In knowledge payment research, TPB has been applied to examine users' purchasing intentions for knowledge products (Fan, 2024). However, most existing studies focus predominantly on the three core constructs of TPB while overlooking critical factors that significantly influence user behavior in the digital economy, such as trust, motivation, and electronic word-of-mouth. In recent years, scholars have proposed extending the TPB by incorporating trust, motivation, and e-WOM to enhance its explanatory and predictive power across various consumer domains. For instance, Panggabean et al. (2024) expanded the fundamental TPB model and discovered that trust acts as a mediating variable, enhancing the indirect effects of subjective norms on purchase intention. Additionally, Drake et al. (2021) investigated the key beliefs influencing consumers' willingness to book accommodations through online lodging marketplaces, revealing that travel motivation plays a crucial role in the acceptance and use of such platforms. Similarly, e-WOM has been widely recognized as a critical factor in consumer decision-making. In the context of online purchasing behavior, Indiani et al. (2024) surveyed 450 internet shoppers and found that e-WOM and trust have a significant impact on consumers' purchase intentions.

Although the traditional TPB framework provides a solid foundation for predicting consumer purchase intentions, its explanatory power is constrained in complex digital consumption and knowledge payment environments. By integrating trust, motivation, and e-WOM into an extended TPB framework, researchers can better capture the underlying drivers of consumer behavior, improve the predictive accuracy of user payment decisions, and provide a more robust theoretical foundation for knowledge payment and other digital consumption models. Furthermore, existing TPB-based studies predominantly employ cross-sectional and quantitative research designs, while

longitudinal and experimental studies remain relatively scarce (Setia, 2023). Although cross-sectional studies provide valuable insights into behavioral patterns at a specific point in time, they are often viewed as minimally informative for causal inference, as they primarily provide correlational data rather than insights into causal mechanisms (Bhojak & Momin, 2024).

In contrast, longitudinal studies enable tracking changes in user behavior over time, significantly enhancing the explanatory power of theoretical models. For instance, Kirtley (2022) conducted a meta-analysis, revealing that the variance explained in behavioral intention was generally below 45% when using cross-sectional data, whereas incorporating a time dimension in longitudinal studies improved explanatory power to 55%-68%. Additionally, experimental research enables the controlled manipulation of key variables, facilitating the validation of causal relationships (Liu, 2023). However, the limited adoption of longitudinal and experimental approaches in TPB research on knowledge payment weakens its ability to establish causality and improve predictive accuracy. Consequently, there is a pressing need to extend the TPB framework to enhance its explanatory capability and adopt more comprehensive research methodologies.

This study critically examines the application of the TPB in the context of knowledge payment, identifies limitations in existing research, and explores possible theoretical extensions. While TPB is widely recognized as a robust framework for explaining consumer behavior, its applicability in the knowledge payment domain remains underexplored. Specifically, previous research has predominantly focused on the three fundamental constructs of the TPB, while neglecting crucial factors such as trust, motivation, and e-WOM. Additionally, most TPB-based research relies on cross-sectional studies, lacking longitudinal and experimental research, which limits its ability to establish causal relationships.

This study is organized around the following essential research questions to address identified gaps: (1) How has the Theory of Planned Behavior (TPB) been applied in knowledge payment research, and what are its theoretical limitations? (2) Can extending the TPB framework to include trust, motivation, and e-WOM enhance its

explanatory power? (3) What are the methodological limitations in existing TPB research, and how can they be addressed to improve scientific rigor and empirical validity?

Accordingly, the study pursues four main objectives: (1) to introduce the concept of the TPB and its application in consumer behavior research; (2) to develop a knowledge map based on a systematic literature review of TPB in knowledge payment research, systematically illustrating the relationships among core TPB constructs, extended variables such as trust, motivation, and e-WOM, and their impact on knowledge payment; (3) to evaluate the existing research methodologies in TPB and (4) to propose future research directions to advance the study of knowledge payment behaviors. The study's findings will yield profound behavioral insights for knowledge payment platforms, content creators, and policymakers, providing theoretical support for optimizing knowledge payment models.

2.0 Research Methodology

This study employs a Systematic Literature Review (SLR) methodology to rigorously analyze the implementation of the TPB in knowledge payment research. To ensure the comprehensiveness and rigor of this review, the following methodological steps were undertaken.

First, a structured search strategy was implemented to enhance the systematicity and reproducibility of the study. The literature review was performed utilizing three primary academic databases: Web of Science, Scopus, and CNKI (China National Knowledge Infrastructure). Given that 2016 is widely recognized as the "Year of Knowledge Payment" (Li et al., 2023), the search period was set from January 2016 to February 2025 to capture the latest developments in knowledge payment research. The search keywords included "Theory of Planned Behavior" and its relevant terms related to knowledge payment, such as "knowledge payment," "paid knowledge," "payment intention," and "consumer behavior." To ensure relevance, only studies that explicitly

applied the TPB framework to knowledge payment or consumer behavior research were included.

Second, a set of inclusion and exclusion criteria was established to ensure the scientific rigor and representativeness of the selected literature. The inclusion criteria were as follows: (1) studies that adopt TPB as the core or extended theoretical framework; (2) studies examining key factors influencing users' knowledge payment intention; (3) studies exploring key factors affecting consumer behavior; (4) studies employing qualitative or quantitative empirical research methods. The exclusion criteria were: (1) studies that are unrelated to knowledge payment; (2) studies that mention TPB but lack empirical research; (3) studies that examine consumer behavior but do not adopt TPB; (4) theoretical discussions without a clearly defined research framework. Initially, a title and abstract screening was conducted to identify relevant studies, followed by further selection based on literature sources and research types. To ensure representativeness, studies were ultimately selected based on citation frequency, journal impact factor, and other evaluation metrics (Zhu & Zhang, 2021). The final dataset included the most representative studies. Key research attributes—including research questions, objectives, theoretical foundation, methodology, theoretical framework, and significant findings—were systematically documented for further synthesis.

Finally, a qualitative content analysis approach was adopted to systematically categorize the selected studies based on research objectives, theoretical foundations, methodologies, research strategies, key influencing factors, and variable relationships. Additionally, knowledge mapping techniques were employed to visually represent the relationships between TPB variables and their extended constructs, facilitating the identification of gaps in the existing literature and exploring potential extensions of the TPB framework in the knowledge payment domain. This method enhances the systematicity of the study and provides a clearer theoretical foundation for future research.

3.0 Literature Review and Hypotheses Development

3.1 Theory of Planned Behavior and the Application in Consumer Behavior Research

The TPB is a theoretical framework established by Ajzen (1991) as an extension of the Theory of Reasoned Action (TRA) to forecast and elucidate human intentions and behaviors. TPB states that behavioral intention, the direct predecessor to actual behavior, is shaped by three fundamental constructs: attitude, subjective norms, and perceived behavioral control. Attitude denotes an individual's comprehensive assessment of a particular behavior, signifying its perceived positivity or negativity. Subjective norms refer to the perceived social pressure from important individuals (e.g., friends, family, coworkers) to either participate in or refrain from a specific behavior (Ajzen, 1991). Perceived behavioral control refers to an individual's evaluation of their ability and resources to do a behavior. It can directly affect behavioral intention and serve as a moderator in the intention-behavior link (Ajzen, 2002).

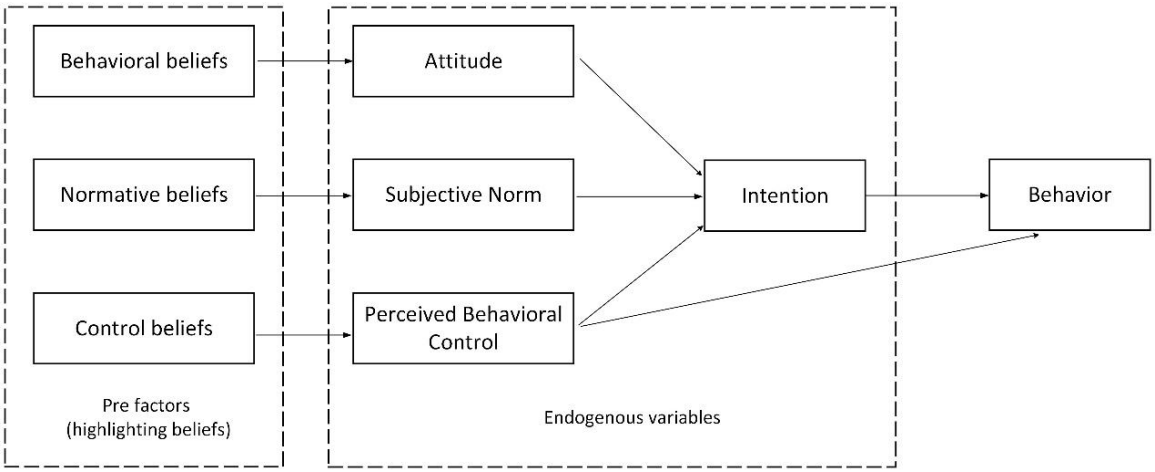

Figure 1: Theoretical Framework of Theory of Planned Behavior

The TPB has been extensively applied in consumer behavior research across various consumption industries. For instance, in the field of green consumption, TPB has been used to examine consumers' purchase intentions toward green cosmetics,

sustainable food delivery, and green products (Nguyen et al., 2024; Prisco et al., 2025; Upadhyaya & Sijoria, 2024). Additionally, TPB has been utilized in the online consumption context, such as investigating online purchase intention and the influence of e-WOM on consumer behavior (Indiani et al., 2024). The tourism industry is another major area where TPB has been employed to explore consumers' attitudes and behavioral intentions toward sustainable tourism (Drake et al., 2021; Sujood et al., 2024). Overall, TPB provides a theoretical foundation for understanding green consumption, e-commerce, the food industry, and tourism, offering valuable insights for predicting consumer behavior and developing effective marketing strategies.

Table 1 illustrates the application of TPB in different consumer industries. In recent years, the TPB has been extensively expanded in consumer behavior research to enhance its explanatory power in complex consumption decisions. Among these expansions, trust, e-WOM, and consumer motivation have emerged as critical variables in TPB-related studies (Mathur et al., 2024; Sujood et al., 2024; Tri, 2024). The incorporation of these variables has not only strengthened TPB's predictive capacity in online and green consumption behaviors but also extended its applicability in social media contexts (Sharma et al., 2024). However, despite TPB's extensive development across multiple consumption domains, its application in the field of knowledge payment remains relatively limited (Lu, 2021). Existing studies have paid insufficient attention to the roles of trust, e-WOM, and motivation in this context.

Table 1: Selected Literature Related to TPB in Consumer Industries

Authors	Objective	Theory	Path Related to Newly Expanded Variables	Results
Wahab et al. (2023)	To identify factors affecting customers' inclination to purchase online inside the realm of e-commerce.	TPB	TIM → PI TOV → PI CPP → T (Moderation)	All were significantly related

Sujood et al. (2024)	To examine factors influencing consumers' intention to use smart technologies in the tourism and hospitality industry.	Technology Acceptance Model (TAM), TPB	TR → IN PU → IN PEOU → IN	All were significantly related
Adawiyah et al. (2024)	To investigate the influence of AI-AR integration on tailored suggestions and consumer usage intention within the cosmetics sector.		PEOU → IU PU → IU PT → IU	All were significantly related
Tri (2024)	To comprehend the determinants influencing the use of blockchain-integrated supply chain management systems inside e-commerce distribution networks.	Unified Theory of Acceptance and Use of Technology (UTAUT2), TAM, TPB	PE → BI EE → BI SI → BI FC → BI HM → BI PV → BI	All were significantly related
Drake et al. (2021)	To investigate the beliefs influencing customers' intentions to book accommodations via online lodging platforms and the moderating effect of travel incentives on these beliefs.	TPB	TM → IN	All were significantly related
Colaljo et al. (2024)	To examine how UGC affects internet trust and consumer purchasing intentions in the Philippines.	TRA、TPB	OT → PI IQ → ATUGC SC → ATUGC	All were significantly related

Sharma (2024)	To analyze millennials' attitudes towards e-waste disposal and assess the moderating influences of e-WOM and online collecting platforms.	TPB	eWOM → ATT → IN OCP → ATT, SN, PBC	All were significantly related
Nguyen et al. (2024)	To examine both the direct and indirect effects of e-WOM on young Vietnamese female consumers' purchasing intentions for green cosmetics.	TPB	eWOM → GCPI eWOM → HC→ ATGC eWOM → EC→ ATGC	All were significantly related
Indiani et al. (2024)	To explore the moderating effect of consumer demographics on the relationship between online purchase intention and actual purchase.	TPB	eWOM → OPI TR → OPI eWOM → AP TR → AP	All were significantly related
Mathur et al. (2024)	To investigate the influence of e-WOM components—argument quality (AQ) and source credibility (CR)—on consumers' behavioral intentions towards green cosmetics.	TPB	AQ → ATGC SC → ATGC SC → GCPI PI → GCPI	All were significantly related
Panggabean et al. (2024)	To formulate tactics aimed at enhancing the propensity to purchase prescription medications via e-pharmacy.	TPB	TR → PI GP → PI	All were significantly related

Long et al. (2024)	To analyze the influence of social media streamer influencers on consumers' likelihood to engage in live-stream purchasing.	TPB	SMIS → IN SMIS → ATT, SN, PBC	All were significantly related

Notes: AP = Actual Purchase; ATGC = Attitude Toward Green Cosmetics; ATT = Attitude; ATUGC = Attitude Towards UGC; BI = Behavior Intention; CPP = Cybercrime Perception; EC = Environmental Concern; EE = Effort Expectancy; FC = Facilitating Conditions; GCPI = Green Cosmetics Purchase Intention; GP = Government Policies; HC = Health Concern; HM = Hedonic Motivation; IN = Intention; IQ = Information Quality; IU = Intention to Use; OCP = Online Collection Portal; OPI = Online Purchase Intention; OT = Online Trust; PB = Purchase Behavior; PBC = Perceived Behavioral Control; PE = Performance Expectancy; PEOU = Perceived Ease of Use; PI = Purchase Intention; PT = Perceived Trust; PU = Perceived Usefulness; PV = Price Value; SC = Source Credibility; SI = Social Influence; SMIS = Social Media Influencer Streamers; SN = Subjective Norms; TIM = Trust in Internet Medium; TM = Travel Motivation; TOV = Trust in Online Vendors; TR = Trust; UGC = User-Generated Content.

3.2 Theory of Planned Behavior in Knowledge Payment

As an emerging business model, knowledge payment attracts users primarily by providing high-quality, scarce, and personalized knowledge content, thereby enhancing their willingness to pay. TPB has been widely applied in knowledge payment research to explain users' payment intentions and actual payment behavior. Lu (2022) systematically reviewed relevant studies from both domestic and international perspectives, analyzing the factors that influence user behavior on online knowledge payment platforms within different theoretical frameworks. The findings emphasized that TPB is a fundamental theoretical model for studying users' knowledge payment behaviors, wherein attitude, subjective norms, perceived behavioral control, and intention primarily influence payment behavior. Based on TPB, Lu and Zhang (2021) developed a model to examine the factors influencing knowledge payment behavior among university students. Their findings demonstrate that the perceived usefulness of knowledge, perceived sociality, and perceived cost-effectiveness—essential elements of attitude—together with

subjective norms and perceived behavioral control, exert considerable beneficial influences on both payment willingness and actual payment behavior.

Based on previous studies, some research supports the critical role of subjective norms in knowledge payment behavior, suggesting that recommendations from social groups (e.g., friends, colleagues) significantly influence users' purchasing decisions (e.g., Lu, 2022). However, other studies have found that in certain contexts, the influence of subjective norms is relatively weak, particularly when users have a high personal interest in knowledge products. In such cases, their decision-making is more reliant on their own attitudes and perceived value rather than social pressure (Wang et al., 2022). This inconsistency suggests that the applicability of TPB in the knowledge payment domain may be contingent on contextual and individual differences.

Despite its potential limitations, TPB still provides a valuable explanatory framework for certain aspects of knowledge payment behavior. For instance, Zhang et al. (2021) found that TPB variables—attitude, subjective norms, and perceived behavioral control—play a significant role in predicting users' initial purchase intentions for knowledge products. Moreover, Li et al. (2023) refined the theoretical framework by constructing an index system for factors influencing users' knowledge payment intentions. They redefined key TPB variables by replacing "attitude" with perceived benefits, perceived costs, and perceived risks; substituting "subjective norms" with online word-of-mouth, opinion leaders, and interpersonal influence; and replacing "perceived behavioral control" with self-efficacy. Similarly, Wang and Jiang (2023) conducted a structural adaptation of TPB in their study. Their results suggest that perceived usefulness, conversion costs, and platform trust positively influence sustained knowledge payment behavior, while perceived risks and perceived ease of use have a positive effect on temporary knowledge payment behavior. Additionally, subjective norms exhibit a positive effect on temporary knowledge payment but a negative effect on sustained knowledge payment. In short, the application of TPB in knowledge payment research has evolved into multiple analytical approaches. Scholars have continuously refined its theoretical framework to capture the complexity of user payment behaviors and their influencing factors with greater precision.

A critical review of previous studies that applied TPB to investigate knowledge payment behavior was conducted. Based on the identified variables and their relationships, a knowledge map is presented in Figure 2. The knowledge map categorizes the relevant research variables into three clusters. In the first cluster, attitude, subjective norms, and perceived behavioral control are the mediators between the other constructs and behavioral intention. Cluster 2 extends the scope of variables affecting attitude, payment intention, and payment behavior, and these variables have direct effects on the payment intention or payment behavior. Cluster 3 represents the core structure of TPB, emphasizing the interconnections between attitude, subjective norms, perceived behavioral control, and payment intention, where payment intention significantly influences payment behavior.

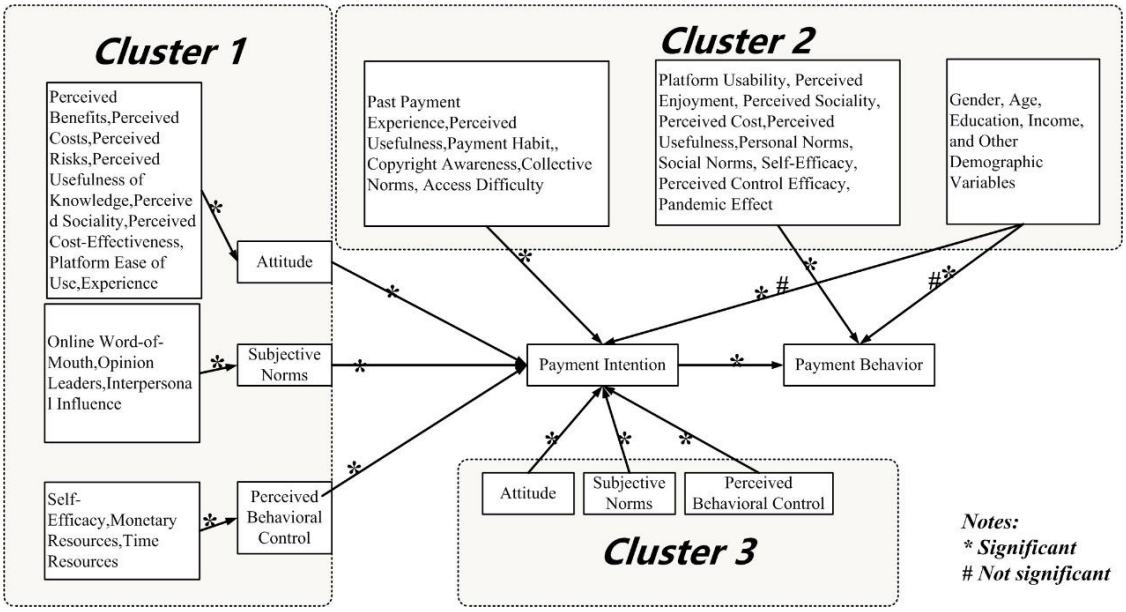

Figure 2: Knowledge Map of Theory of Planned Behavior in Knowledge Payment

Figure 2 organizes the variables and their relationships in existing studies. Despite these refinements, prior research has identified limitations in TPB's explanatory capacity in the context of digital consumption and online payment behaviors. Scholars argue that in its traditional form, TPB does not fully capture the social and psychological

factors that drive user engagement in online platforms (Gu et al., 2019; Kleinberg et al., 2023). In recent years, researchers have incorporated emerging variables—trust, electronic word-of-mouth (e-WOM), and motivation—to better explain consumer behavior in digital environments (Drake et al., 2021; Indiani et al., 2024; Wahab et al., 2023).

In the domain of knowledge payment, empirical studies have shown that trust significantly influences users' attitudes toward knowledge payment platforms, as it reduces perceived risks and enhances confidence in platform reliability (Cao, 2024; Guo et al., 2024). Similarly, e-WOM has been recognized as a crucial determinant influencing subjective norms, as positive recommendations from peers or online communities can reinforce an individual's knowledge payment intention (Liu & Zhang, 2020). Furthermore, motivation—both intrinsic (e.g., learning desire) and extrinsic (e.g., monetary incentives)—has been found to affect behavioral intention in knowledge payment contexts directly (Kong et al., 2023). Knowledge payment behavior is shaped by multiple psychological and social factors, making it difficult for traditional TPB constructs to fully capture users' decision-making processes. Thus, integrating trust, motivation, and e-WOM into an extended TPB framework can provide a more comprehensive understanding of the key determinants influencing knowledge payment behaviors.

Building upon the knowledge map presented in Figure 2, this study has extended the TPB framework to incorporate these emerging variables, resulting in an expanded knowledge map (see Figure 3). Figure 3 refines the original framework based on insights from the literature review and introduces three key additions: (1) trust, e-WOM, and motivation directly influence users' knowledge payment intention; (2) trust and motivation indirectly influence behavioral intention through attitude; and (3) e-WOM indirectly affects behavioral intention through subjective norms.

By integrating these factors, the expanded framework enhances TPB's explanatory power in knowledge payment research, offering a more thorough comprehension of the psychological and social dynamics that affect users' payment behaviors. This theoretical extension aligns with prior findings in e-commerce, online

learning, and digital service adoption, further strengthening the applicability of TPB in contemporary digital economies (Kong et al., 2023; Nguyen et al., 2024; Sujood et al., 2024).

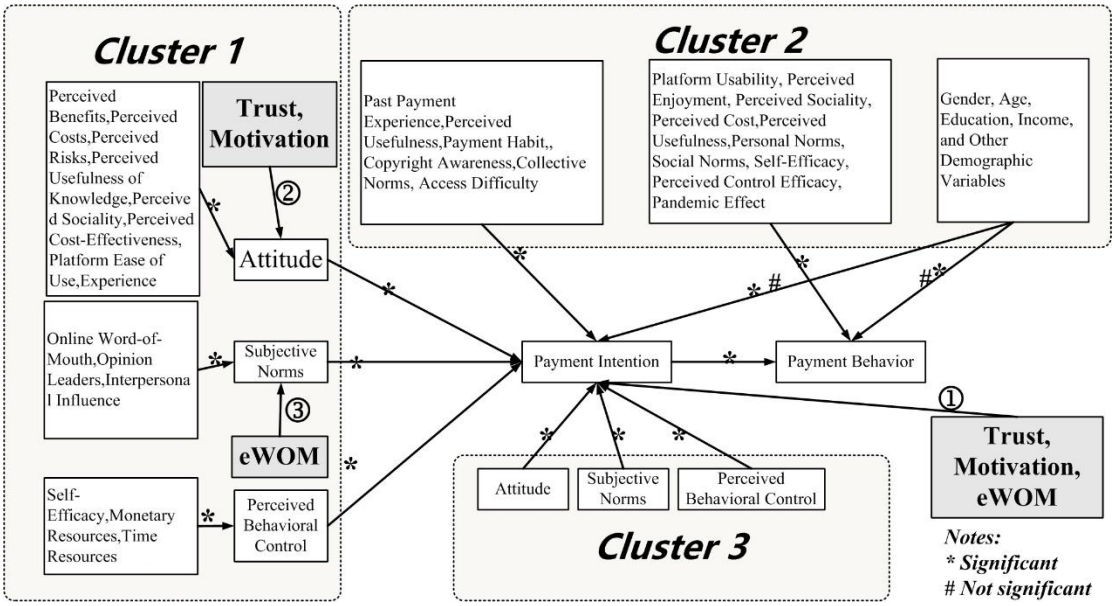

Figure 3: Knowledge Map of Extended Theory of Planned Behavior in Knowledge Payment

Based on Figure 3 and previous studies, it is evident that TPB primarily focuses on rational and planned decision-making processes. However, knowledge payment behavior often involves additional psychological and social factors that are not explicitly covered within the TPB framework. For instance, trust plays a crucial role in users' willingness to pay for knowledge-based products, as they typically cannot directly assess the quality of the content before making a purchase (Azizah et al., 2024). Additionally, e-WOM significantly influences user engagement and retention, particularly in online learning platforms, where peer reviews and ratings shape perceptions of course credibility and value (Kusuma Putri & Berlianto, 2024). Moreover, motivating elements encompass internal motivation (e.g., a passion for learning) and extrinsic drive (e.g., professional advancement), which have been found to impact course completion rates and continued payment behavior directly (Badali et al., 2022).

Since TPB does not explicitly incorporate these critical variables, other theoretical models, such as the TAM and the UTAUT, may serve as complementary frameworks. TAM highlights the significance of perceived usefulness and perceived ease of use in influencing users' acceptance of digital platforms (Davis, 1989). UTAUT further expands this viewpoint by integrating social influence, facilitating conditions, and habit as essential factors of technology-related behaviors (Venkatesh et al., 2012). By integrating these theories, researchers can develop a more comprehensive framework to better explain the complexities of knowledge payment behavior.

3.3 Review of Research Methodology in Knowledge Payment

A critical review of the past studies related to research methodology in knowledge payment was conducted, and the summary is documented in Table 2. Only literature on the influence factors on the intention to pay knowledge is included in Table 2.

In researching influencing factors of knowledge payment behavior, Lu (2021) pointed out that most studies employing the TPB predominantly rely on quantitative methods, particularly questionnaire surveys. The summary in Table 2 further corroborates this observation, indicating that existing TPB studies largely adopt cross-sectional rather than longitudinal data, making capturing the dynamic evolution of users' knowledge of payment behavior difficult. The limitations of this static research approach hinder the assessment of changes in key TPB variables as users engage with knowledge payment platforms. Furthermore, experimental methods, such as A/B testing, are rarely employed to rigorously verify the causal relationship between TPB variables and knowledge payment intention, leaving the predictive validity of TPB in this domain insufficiently examined.

While quantitative research dominates the study of knowledge payment behavior, the underutilization of qualitative and mixed-method approaches limits a comprehensive understanding of the field. Quantitative research primarily relies on structured questionnaires and statistical analysis, focusing on correlations and causal relationships between variables (Liyan Cao et al., 2024). However, its rigid theoretical frameworks

may overlook the complexity of social phenomena, leading to an incomplete understanding of human behavior (Sapkota, 2024). Furthermore, the deterministic nature of quantitative research may dilute subjective experiences, which are crucial for a holistic analysis of knowledge payment behavior (Sapkota, 2024). Data availability constraints also pose a significant limitation for quantitative research. Limited data can result in biased or inaccurate predictions (Gu, 2023). For instance, small sample sizes and missing data may skew results in educational assessment studies, leading to inaccurate representations of school quality (Jerrim & John, 2023). Additionally, an overreliance on data without incorporating human intuition or qualitative insights can lead to false correlations, affecting research findings' reliability (Gu, 2023).

Existing research on knowledge payment behavior primarily relies on cross-sectional data, which fails to capture the dynamic evolution of users' payment intentions. However, longitudinal studies can provide deeper insights into long-term behavioral changes. For instance, Hanage et al. (2024) employed a longitudinal approach to study entrepreneurial intentions, revealing that entrepreneurial intent evolves over time as external circumstances shift and personal perceptions develop. This dynamic perspective is equally relevant to knowledge payment research. Additionally, experimental research plays a crucial role in establishing causal relationships. Vankov (2021) investigated young drivers' speeding behavior using hierarchical multiple regression analysis, demonstrating that self-efficacy and past behavior independently predict future behavior. This suggests that experimental approaches could be valuable in assessing the direct impact of behavioral intention on actual payment behavior.

In addition, big data analytics is gaining attention in the study of knowledge payment decision-making. For example, Qi et al. (2022) applied Signaling Theory and analyzed over 110,000 user comments and 20,000 seller responses to examine the impact of online reviews and seller replies on knowledge payment purchase decisions. Their study found that review volume, seller recognition, and user experience significantly influence purchase decisions, while seller response rates strengthen the impact of user reviews on decision-making. This research underscores the critical role of e-WOM in knowledge payment and highlights the potential of big data analysis in identifying consumer behavior patterns. Therefore, future research should integrate longitudinal

studies, experimental designs, and big data analytics to develop a more comprehensive understanding of the mechanisms underlying knowledge payment behavior and enhance the predictive validity of TPB in this domain.

Table 2: Review of Research Methodology in Knowledge Payment

Authors	Objective	Theory	Methodology	Strategy
Li et al. (2023)	To establish the principal determinants of users' propensity to invest in information regarding academic journal new media platforms.	TPB	Quantitative research	Questionnaire survey
Ge (2023)	To examine the determinants of university students' online knowledge payment behaviour.	TPB	Quantitative research	Questionnaire survey
Wang and Jiang (2023)	To explore common and differentiated influencing factors of temporary and continuous knowledge payment behaviors.	TAM, TPB	Quantitative research	Questionnaire survey
Li and Fan (2021)	To examine the determinants of users' propensity to pay for mobile audio knowledge services.	TAM, TPB	Quantitative research	Questionnaire survey
Lu and Zhang (2021)	To investigate the determinants of university students' knowledge payment behaviour.	TPB	Quantitative research	Questionnaire survey

Sun and Liang (2020)	To examine the correlation between university students' financial behaviour and their levels of worry.	TRA, TPB	Quantitative research	Questionnaire survey
Fan (2024)	To investigate the factors influencing university students' online knowledge payment behavior.	TPB	Quantitative research	Questionnaire survey
Zhang et al. (2021)	To analyze university students' online knowledge payment behavior in Meishan city.	TPB	Quantitative research	Questionnaire survey
Meng and Deng (2022)	To the path and influencing factors of users' paid viewing behavior on Q&A platforms.	-	Qualitative research	Semi-Structured Interviews
Lu et al. (2020)	To examine the configuration of factors influencing users' willingness to pay for information in online Q&A communities from the perspectives of rationality and bias.	SQBT, RCT	Qualitative research	fsQCA
Huang et al. (2021)	To examine the collective impact of variables affecting differentiated users' propensity to pay for online knowledge on social platforms.	-	Qualitative research	fsQCA

Wei and Xie (2020)	To investigate the correlation among the attributes of knowledge payment products, user requirements, and the intention to maintain payment.	UGT	Qualitative research	fsQCA
Guo et al. (2020)	To examine the process underlying internet users' knowledge payment behaviour utilizing the CCC-B framework (Content-Context-Consciousness-Behavior).	-	Qualitative research	fsQCA

Notes: fsQCA =Fuzzy-set Qualitative Comparative Analysis , RCT =Rational Choice Theory,SQBT = Status Quo Bias Theory, UGT =Uses and Gratifications Theory.

4.0 Findings

This study systematically reviewed the application of the TPB in knowledge payment research, identifying key trends, gaps, and areas for future exploration. The findings reveal that existing studies predominantly focus on the three core TPB constructs—attitude, subjective norms, and perceived behavioral control—while largely neglecting emerging influencing factors such as trust, motivation, and e-WOM. Furthermore, the review highlights the methodological limitations in this field, with most research relying on cross-sectional survey data and lacking longitudinal or experimental studies. These findings suggest that expanding the TPB framework and incorporating alternative research methodologies could enhance its explanatory power in understanding consumer behavior in the knowledge payment domain.

5.0 Conclusion

The TPB is a widely recognized theoretical framework in behavioral research, extensively applied to predict individuals' intentions and behaviors. In recent years, knowledge payment has emerged as an innovative business model with a vast global market and a large user base. However, consumer behavior in this domain has become increasingly rational, and knowledge payment products commonly exhibit low repurchase rates, course completion rates, and usage duration. Although TPB has been extensively employed to explain consumer behavior, its application in knowledge payment research has certain limitations. Existing studies primarily focus on the three core variables of TPB while overlooking the potential influence of emerging factors. Additionally, current research methods present notable constraints. Most TPB-based studies rely on quantitative approaches, predominantly using questionnaire survey data, with a lack of longitudinal and experimental research.

This study provides a critical analysis of the application of the TPB within the knowledge payment sector, systematically developing a more comprehensive knowledge framework by incorporating emergent factors into the TPB model. Furthermore, it offers a critical evaluation of existing research methodologies. The findings indicate that while TPB has been widely applied in knowledge payment research, previous studies have primarily focused on its three core constructs, neglecting factors such as trust, motivation, and e-WOM. The dominance of quantitative research, particularly cross-sectional surveys, may fail to capture the complexity of social phenomena, thereby weakening the examination of subjective experiences and resulting in a partial comprehension of consumer behavior.

To enhance the applicability of TPB in knowledge payment research, future studies should consider expanding the theoretical framework by incorporating trust, motivation, and e-WOM. Moreover, integrating TPB with other theories could further enhance its explanatory power. Methodologically, adopting longitudinal studies, experimental designs, and big data analytics will improve research robustness and predictive accuracy. Addressing these issues will enable a more comprehensive understanding of consumer decision-making in the knowledge payment domain. Despite

its contributions, this review has certain limitations. First, potential bias in literature selection may exist due to database constraints or language limitations, which could result in the omission of relevant studies. Second, while this study proposes an extended TPB framework, further empirical research is required to validate the influence of newly introduced variables on knowledge payment behavior. Third, recommendations for methodological improvements remain theoretical, necessitating future empirical applications to assess their effectiveness. Additionally, future studies should incorporate experimental and longitudinal research to explore evolving trends in knowledge payment behavior. Finally, interdisciplinary research approaches—integrating theories and methodologies from psychology, behavioral economics, and data science—will further enrich TPB's theoretical and practical contributions in knowledge payment research.

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References

Adawiyah, S. R., Purwandari, B., Eitiveni, I., & Purwaningsih, E. H. (2024). The influence of AI and AR technology in personalized recommendations on customer usage intention: A case study of cosmetic products on Shopee. *Applied Sciences (Switzerland), 14*(13). https://doi.org/10.3390/app14135786

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes, 50*(2), 179–211. https://doi.org/10.1016/0749-5978(91)90020-T

Ajzen, I. (2002). Perceived behavioral control, self-efficacy, locus of control, and the theory of planned behavior. *Journal of Applied Social Psychology, 32*(4), 665–683. https://doi.org/10.1111/j.1559-1816.2002.tb00236.x

Azizah, R. N., Pramukti, W., & Utami, W. P. (2024). Analysis of factors influencing trust and its impact on repurchase intention in C2C e-commerce in indonesia. syntax literate. *Jurnal Ilmiah Indonesia, 9*(7), 3715–3731. https://doi.org/10.36418/syntax-literate.v9i7.16808

Badali, M., Hatami, J., Banihashem, S. K., Rahimi, E., Noroozi, O., & Eslami, Z. (2022). The role of motivation in MOOCs' retention rates: a systematic literature review. *Research and Practice in Technology Enhanced Learning, 17*(1), 5. https://doi.org/10.1186/s41039-022-00181-3

Bhojak, N., & Momin, M. (2024). Planned behavior theory: Exploring health risk, insurance literacy, and infrastructure effects. *International Journal of Healthcare Management*, 1–11. https://doi.org/10.1080/20479700.2024.2312675

Cao, Y. (2024). Research on the influence of opinion leaders on knowledge payment. *China Press, 04*, 14–15.

Colaljo, J. M., Moreno, D. E. L., Dalisay, R., Casas, P. S., & Santos, J. L. D. (2024). The Role of User-Generated Content on Customers' Purchase Intent and Behavior: A Basis for E-Commerce Content Strategy for Micro and Small Enterprises. 8th

International Conference on Business and Information Management, ICBIM 2024, 59–63. https://doi.org/10.1109/ICBIM63313.2024.10823408

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly, 13*(3), 319. https://doi.org/10.2307/249008

Drake, J. R., Crawford, A., Deale, C. S., & White, B. J. (2021). Tourism in the Sharing Economy: How Novelty Seeking Impacts Travel Intentions. *Journal of Electronic Commerce in Organizations, 19*(1), 92–110. https://doi.org/10.4018/JECO.2021010105

Fan, Z. (2024). Research on influencing factors of college students' online knowledge payment behavior. *China Market, 21*, 191–194.

Ge, X. (2023). Factors influencing university students' online knowledge payment behavior. *Digital Communication World, 09*, 139–143.

Gu, D., Guo, J., Liang, C., Lu, W., Zhao, S., Liu, B., & Long, T. (2019). Social media-based health management systems and sustained health engagement: tpb perspective. I*nternational Journal of Environmental Research and Public Health, 16*(9), 1495. https://doi.org/10.3390/ijerph16091495

Gu, Y. (2023). Problems and solutions of quantitative analysis in financial market. highlights in business, economics and management, *21*, 753–757. https://doi.org/10.54097/hbem.v21i.14757

Guo, Y., Chun, D., Zhou, Y., & Yin, F. (2024). The influence of perceived factors and external factors on consumers' continuous purchase intention: The mediating role of satisfaction and trust. *Science and Technology Entrepreneurship Monthly, 37*(03), 32–40.

Guo, Y., Guo, Y., & Zhao, Y. X. (2020). Content or context: Mechanism of online user knowledge payment behavior - Configuration analysis based on the CCC-B framework. *Library and Information Service, 64*(01), 120–130.

Hanage, R., Davies, M. A. P., Stenholm, P., & Scott, J. M. (2024). Extending the Theory of Planned Behavior – A longitudinal study of entrepreneurial intentions. *Entrepreneurship Research Journal, 14*(3), 1223–1258. https://doi.org/10.1515/erj-2022-0142

Huang, M. M. , Lu, X. Y. , Wang, X. L. , & Jiang, Y. P. (2021). The linkage effect of differentiated users' willingness to pay for online knowledge based on fsQCA. *Information Science, 39*(7), 169-176+192.

Indiani, N. L. P., Amerta, I. M. S., & Sentosa, I. (2024). Exploring the moderation effect of consumers' demography in the online purchase behavior. *Cogent Business & Management, 11*(1). https://doi.org/10.1080/23311975.2024.2393742

Jerrim, J., & John, A. (2023). The Strengths and Limitations of Using Quantitative Data to Inform School Inspections. https://doi.org/10.35542/osf.io/cng8z

Kirtley, O. J. (2022). Advancing credibility in longitudinal research by implementing open science practices: Opportunities, practical examples, and challenges. *Infant and Child Development, 31*(1). https://doi.org/10.1002/icd.2302

Kleinberg, J., Mullainathan, S., & Raghavan, M. (2023). The challenge of understanding what users want: inconsistent preferences and engagement optimization. *Management Science*. https://doi.org/10.1287/mnsc.2022.03683

Kong, X. , Li, M. , Zhang, X. , & Zheng, Z. (2023). Factors influencing college students' behavior in mobile online learning based on the UTAUT2 model. *Journal of Hubei University of Technology, 39*(05), 39–43.

Kusuma Putri, C. A., & Berlianto, M. P. (2024). Antecedents and consequences of electronic word-of-mouth halodoc. *International Journal of Health and Pharmaceutical (IJHP), 4*(3), 520–530. https://doi.org/10.51601/ijhp.v4i3.349

Li, L. Y. , & Fan, Z. Z. (2021). Research on factors influencing mobile audio payment intention of users: Integrated model based on TPB-TAM. *Today's Science, 10*, 48–58.

Li, Y. , Zhang, K. , & Yan, Z. (2023). Identification of key factors influencing users' willingness to pay for knowledge on new media platforms of academic journals. *Chinese Journal of Scientific and Technical Periodicals, 34*(10), 1283–1292.

Liu, X. (2023). Experimental Epidemiology. In Textbook of Clinical Epidemiology (pp. 105–122). Springer Nature Singapore. https://doi.org/10.1007/978-981-99-3622-9_6

Liu, X., & Zhang, L. (2020). A study on the impact mechanism of platform interactivity on users' willingness to pay for knowledge online. *New Century Library, 08*, 22-28+79.

Liyan Cao, Shamsudin, M. F., & Abu Hassim, A. (2024). Understanding the key types of quantitative research and their impact. *Journal of Postgraduate Current Business Research, 9*(1), 54–68.

Long, J., Zaidin, N., & Mai, X. (2024). Social media influencer streamers and live-streaming shopping: examining consumer behavioral intention through the lens of the theory of planned behavior. *Future Business Journal, 10*(1), 80. https://doi.org/10.1186/s43093-024-00370-0

Lu, H., Zhang, X., Zhang, L., & Guo, S. (2020). Research on the factors influencing the willingness to pay for knowledge of users in online Q&A communities from the perspective of rationality and bias. *Library and Information Work, 64*(19), 89–98.

Lu, Y. (2021). Research on Influencing Factors of Online Knowledge Payment [Doctoral dissertation]. Beijing University of Posts and Telecommunications.

Lu, Y. (2022). Research progress and prospects on user behavior in online knowledge payment platforms. *Price Theory and Practice, 6*, 59–62.

Lu, Y., & Zhang, M. (2021). A study on the influencing factors of college students' knowledge payment behavior. *Journal of Hangzhou Normal University (Natural Science Edition), 20*(01), 13–21.

Mathur, S., Vishnoi, S. Kr., Bagga, T., Mittal, A., & Mittal, A. (2024). Examining the impact of argument quality and source credibility on consumers' behavioral intention toward green cosmetics: The moderating role of perceived innovativeness. *Prabandhan: Indian Journal of Management, 17*(3), 26–47. https://doi.org/10.17010/pijom/2024/v17i3/173364

Meng, J. , & Deng, X. (2022). Research on the path and influencing factors of users' paid observation behavior on online question-and-answer platforms. *Information Studies: Theory & Application, 45*(04), 146–153.

Nguyen, T. T. T., Limbu, Y. B., Pham, L., & Zúñiga, M. Á. (2024). The influence of electronic word of mouth on green cosmetics purchase intention: evidence from young Vietnamese female consumers. *Journal of Consumer Marketing, 41*(4), 406–423. https://doi.org/10.1108/JCM-11-2022-5709

Panggabean, B., Suharjo, B., Sumarwan, U., & Yuliati, L. N. (2024). Strategy development to increase consumer intention of purchasing prescription drugs through e-pharmacy in Indonesia. *International Journal of Risk and Safety in Medicine, 35*(1), 49–73. https://doi.org/10.3233/JRS-220067

Prisco, A., Troise, C., Monge, F., & Giovando, G. (2025). How food delivery service can be sustainable: some evidence from the Giusta delivery case. *British Food Journal, 127*(1), 363–386. https://doi.org/10.1108/BFJ-03-2024-0260

Qi, T., Wang, T., Ma, Y., & Zhou, X. (2019). Knowledge payment research: status quo and key issues. *International Journal in Computer Simulation, 3*(2), 117–137.

Qi, T. , Zhao, Y. , Tang, J. , & Wang, T. (2022). Research on the impact of online reviews on the purchase decision of knowledge paid products - the moderating effect of seller responses. *Nankai Management Review, 02*, 147–158.

Sapkota, M. (2024). Implications and critiques of quantitative research: a systematic review. *Journal of Learning Theory and Methodology, 5*(3), 153–159. https://doi.org/10.17309/jltm.2024.5.3.09

Setia, M. S. (2023). Cross-Sectional Studies. In The Cambridge Handbook of Research Methods and Statistics for the Social and Behavioral Sciences (pp. 269–291). *Cambridge University Press*. https://doi.org/10.1017/9781009010054.014

Sharma, M., Kaushal, D., Joshi, S., Kumar, A., & Luthra, S. (2024). Electronic waste disposal behavioral intention of millennials: A moderating role of electronic word of mouth (eWOM) and perceived usage of online collection portal. *Journal of Cleaner Production, 447*, 141121. https://doi.org/10.1016/j.jclepro.2024.141121

Sujood., Bano, N., & Siddiqui, S. (2024). Consumers' intention towards the use of smart technologies in tourism and hospitality (T&H) industry: a deeper insight into the integration of TAM, TPB and trust. *Journal of Hospitality and Tourism Insights, 7*(3), 1412–1434. https://doi.org/10.1108/JHTI-06-2022-0267

Sun, W. , & Liang, X. (2020). Study on the Relationship Between College Students' Knowledge Payment Behavior and Anxiety Levels. Southeast Communication, 07, 106–109.

Tri, N. C. (2024). The behavior of using blockchain-integrated supply chain management systems on e-commerce distribution channel. *Journal of Distribution Science, 22*(11), 15–26. https://doi.org/10.15722/jds.22.11.202411.15

Upadhyaya, A. S., & Sijoria, C. (2024). Customers' purchase intention of green cosmetics in India: empirical validations using an extended Theory of Planned Behavior (TPB). *Indian Journal of Marketing, 54*(8), 60–77. https://doi.org/10.17010/ijom/2024/v54/i8/174187

Vankov, D., Schroeter, R., & Twisk, D. (2021). Understanding the predictors of young drivers' speeding intention and behaviour in a three-month longitudinal study. *Accident Analysis & Prevention, 151*, 105859. https://doi.org/10.1016/J.AAP.2020.105859

Venkatesh, Thong, & Xu. (2012). Consumer acceptance and use of information technology: Extending the Unified Theory of Acceptance and Use of Technology. *MIS Quarterly, 36*(1), 157. https://doi.org/10.2307/41410412

Wahab, F., Khan, I., Kamontip,., Hussain, T., & Amir, A. (2023). An investigation of cyber attack impact on consumers' intention to purchase online. *Decision Analytics Journal, 8.* https://doi.org/10.1016/j.dajour.2023.100297

Wang, J., Zhang, H., Zhang, Y., & Cheng, H. (2021). Research on users' willingness to use knowledge payment based on the ELM and psychological inertia perspectives. *Modern Information, 41*(7), 14.

Wang, K., van Hemmen, S. F., & Criado, J. R. (2022). The behavioural intention to use MOOCs by undergraduate students: incorporating TAM with TPB. International *Journal of Educational Management, 36*(7), 1321–1342. https://doi.org/10.1108/IJEM-11-2021-0446

Wang, X. , Li, Y. , Gao, K. , & Guo, Z. (2024). A hierarchical path study on user experience value of subscription-based online knowledge payment products. *Chinese Journal of Management Science, 32*(5), 315–324.

Wang, Y. , & Jiang, Z. (2023). A study on the antecedents of knowledge payment behavior: An analysis from the perspectives of temporality and persistence. *Information Exploration, 07*, 19–27.

Wei, W. , & Xie, X. (2020). Factors influencing users' continued payment intention for online knowledge payment. *Data Analysis and Knowledge Discovery, 4*(08), 119–129.

Zhang, D., Bai, D., Wang, C., & He, Y. (2024). Distribution dynamics and quantile dynamic convergence of the digital economy: Prefecture-level evidence in China. International Review of Financial Analysis, 95, 103345. https://doi.org/10.1016/j.irfa.2024.103345

Zhang, J., Zhou, X., & Wu, M. (2021). Analysis of online knowledge payment behavior among college students in Meishan. *New Academic Horizons of Sichuan University of Industry and Commerce, 6*(1), 105–110.

Zhu, L., & Zhang, W. (2021). A review of influencing factors of online user participation behavior in the context of knowledge payment. *Library Science Research, 02*, 9-18.