Factors Influencing Users' Payment Decisions Regarding Knowledge Products on the Short-Form Video Platform: A Case of Knowledge-Sharing on TikTok[1]

짧은 영상 플랫폼에서 지식상품에 대한 사용자의 구매결정에 영향을 미치는 요인: TikTok의 지식 공유 사례

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〈 Abstract 〉

TikTok, as a leading short video platform, has attracted many users, and the resulting attention generates immense business value as a platform to diffuse knowledge. As a qualitative and explorative approach, this study reviews the knowledge payment industry and discusses the influential factors of users' payment decisions regarding knowledge products on TikTok. By conducting in-depth interviews with ten participants and observing 95 knowledge providers' videos, we find that TikTok has significant business potential in the knowledge payment industry. By using the ATLAS. ti software to code the data collected from these interviews, this study finds that demander characteristics (personal needs), product characteristics (product quality), provider characteristics (the key opinion leader effect), and platform characteristics (platform management) are the four core categories that influence users' payment decisions regarding knowledge products on TikTok. A theoretical model consisting of the ten variables of emotional needs, professional needs, quality, price, helpfulness, value, charisma, user trust, service guarantee, and scarcity is proposed based on the grounded theory. The theoretical and practical implications of the study findings are also discussed.

Key words: TikTok, Knowledge sharing, Knowledge payment, Ground theory

1. Introduction

The sharing economy has grown rapidly over the past decade, and people's sharing habits have extended from tangible assets, such as houses and cars, to intangible aspects, such as services, personal knowledge, and skills (Zhao et al., 2018). Knowledge sharing has been experienced from free to profit-oriented as many online knowledge-sharing platforms or virtual communities changed their free knowledge-sharing strategy to providing paying services (Zhang et al., 2019). For example, zhihu.com, a professional online Q&A platform in China, launched a paid knowledge-sharing service called "Zhihu Live" to provide users with real-time answers in professional fields in exchange for a fee. Since 2016, knowledge transactions have emerged rapidly in China, including paid Q&As, live sessions, paid subscriptions, course columns, and personal services (Wang & Liu, 2021).

With the development of 5G technology, short-form videos have become a common media form and are considered the most important means of knowledge diffusion and sharing. TikTok, a leading social networking platform launched in 2016 for making and sharing short-form videos, has become an important platform for knowledge-sharing, attracting billions of users worldwide. For example, during the COVID-19 pandemic, TikTok acted as an effective method to diffuse medical information and knowledge to the public (Dyer & Gottlieb, 2020). It also offers an educational function, allowing professionals to make videos for medical (Dyer & Gottlieb, 2020). Fiallons et al. (2021) assessed 1,495 educational videos on TikTok and classified the 14 areas that users are most concerned with. They concluded that TikTok provided a potentially significant opportunity for science learning as they found that Health Science and videos related to STEM areas are popular on the platform. The popularity of knowledge-sharing videos on TikTok provides a new business opportunity for the knowledge payment industry. TikTok creators act as knowledge providers, producing interesting and educational videos that can attract users' attention. Users who are interested in the content can pay for the knowledge products or services through the creators' online shop, thus engaging in knowledge payments.

Prior research on knowledge payments focuses on the knowledge transactions of professional and specific knowledge-sharing platforms considering 1) the concept and development, 2) knowledge products and 3) users' satisfaction with the knowledge-sharing platforms. However, there is minimal research on knowledge payments on short-form video platforms. Hence, this study investigates the knowledge payment business model of a short-form video platform, examines users' knowledge payment decisions regarding the knowledge products on this platform, and further discusses how short-form video platforms could radically revolutionize the knowledge payment industry in the future.

Short-form video platforms have prompted the development of e-commerce and created new business models for e-commerce traders. To cater to users' learning demands and also encourage more qualified knowledge-sharing videos, meaningful research can be conducted on users' payment decisions on short-form video platforms. To contribute to this research, we followed 95 TikTok accounts that aim to share knowledge. A comprehensive business model is developed through the findings and results of this study.

We conducted a qualitative study of TikTok users both in mainland China and overseas, supplemented by in-depth interviews with ten users (four with payment experience, six with no payment experience regarding knowledge products provided on TikTok) to address the question: What factors affect users' payment decisions regarding knowledge products on TikTok?

We conceptualized 30 codes from the scripts into ten main factors and categorized them into four characteristics (Demander characteristics, Product characteristics, Provider characteristics, and Platform characteristics). This study also uses the coding results to discuss the dilemmas surrounding knowledge payment on TikTok. Our research has practical contributions in promoting the development of the knowledge-sharing industry by providing suggestions for short-form video platforms and knowledge providers. It also has academic contributions in developing measurement instruments regarding users' payment decisions on short-form video platforms.

The following section provides a literature review of knowledge-sharing and payments. The third section will introduce TikTok and discuss its current business and knowledge transaction development situations. The fourth section discusses the methodology. Finally, findings and implications will be given in the last section.

2. Theoretical Background

2.1. Knowledge-Sharing and Knowledge Payment

Alavi and Leidner (2001) defined knowledge as information possessed in the mind of individuals related to procedures, facts, concepts, ideas, and judgments that can help an individual take effective action, such as solving work-related problems. Therefore, we define knowledge sharing as an individual (the provider) sharing their comprehension of the procedures, facts, concepts, ideas, and judgments to help another individual (the receiver) take action more effectively. The three categories of knowledge shared with the public are (1) traditional knowledge (e.g., school subjects, language learning); (2) common knowledge (e.g., knowledge of daily life and general science), and (3) skills and experiences (e.g., computer skills, working skills).

Online knowledge-sharing refers to knowledge contributors diffusing their professional knowledge or personal experiences as a commodity on knowledge-sharing platforms (Li et al., 2017). Knowledge demanders purchase the shared knowledge as normal products or services through the internet, thus making a knowledge payment. Yu et al. (2017) distinguished the differences between knowledge payment and content payment. Content payment is entertainment-based, aiming to fulfill an individual's enjoyment requirements in life. Knowledge payment is studying-based and has more profound effects on our study or work. Paid knowledge content includes paying for text, audio, online courses, live broadcasts, and long videos. Apart from these types of payment activities, knowledge payment also covers areas such as Q&As, live sessions, paid subscriptions, course columns, and personal services.

Based on Dorian Taylor (2008, 2009), a knowledge product is defined as an individual's retention of information, including text documents (books, journals,

periodicals, essays, poetry, etc.), recorded music, films, television programs, art (paintings, sculpture, installations, etc.), design (flags, logos, branding, trademarks, etc.), legal documents (contracts, acts, writs, etc.) and software. Online knowledge products include text documents (digital documents), lectures and courses, art-related products, design, and more. Intangible knowledge products, such as online consulting services, are also considered in our study.

In traditional virtual communities, people voluntarily share and freely acquire knowledge (Bock et al., 2005). Without monetary gains (Wasko & Faraj, 2005), knowledge providers might lose the motivation to provide high-quality knowledge content to the public. With the increasing demand for knowledge and skills training in recent years, people are more willing to pay for knowledge. Thus, many suppliers have become involved in the knowledge payment market. Professional knowledge-sharing platforms, such as Quora Knowledge Prize and Skillshare in the USA, and Zhihu in China, are changing how people share and obtain knowledge.

Many studies have been conducted to understand the intention behind people's decision to pay for knowledge. For example, Cai et al. (2018) examined the factors contributing to users' payment decisions on live broadcasts in online knowledge-sharing communities. Shi et al. (2020) used the information foraging theory and social information foraging theories to analyze users' payment behaviors when paying for live courses on social Q&A websites. Based on a trust theory perspective, Zhao et al. (2018) conducted an empirical study on how knowledge contributors and their reputations significantly affect users' payment decisions regarding paid Q&A websites. However, users' payment decisions and behaviors on short-form video platforms are under-investigated regarding topics related to knowledge-sharing and payment.

Wang and Liu (2021) pointed out that there has been a revolution in the knowledge-sharing industry along with the growing popularity of short-form videos. Anything short enough to hold a viewer's minimal attention span but long enough to get the key point across can be considered a short-form video. Generally, the duration of these videos is from 15 seconds to 2 minutes. Short-form videos have the advantage of providing users with a unique audio-visual experience, where creators can combine audio and video techniques with other available features to maintain users' interest and help them understand and absorb knowledge easier (Hua, 2019).

2.2. TikTok and Knowledge-Sharing

TikTok, known in China as Douyin, is a video-sharing social networking platform owned by ByteDance, a Chinese technology company, which launched in 2016. This social media platform is used to make short-form content in genres like music, dance, movies, dramas, technology, education, and culture. Videos have a duration from 15 seconds to two minutes or longer for users with a large number of followers or with big influence on this platform. TikTok is the international version of Douyin and uses a similar interface. This study is based on the Chinese version. TikTok has become exceptionally popular in recent years among youth (Geyser, 2021) and has been downloaded over three billion times worldwide, with 1.2 billion monthly active users as of 2021 (Iqbal, 2020). According to data from iiMedia Research (2021)[1], the

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1) https://www.iimedia.cn/c1020/78071.html

user scale of TikTok has increased from 236 million in January 2019 to 490 million in November 2020, ranking first by 45.2% among all short-form video platforms.

The 5G era may hold significant business value for TikTok. The explosive development of TikTok has quickly attracted users of all ages. Short-form videos grasp users' attention easily, making it possible for TikTok to earn its primary revenue through advertising brands to users. With an immense network traffic pool, TikTok provides a platform for sellers and buyers using online transactions and provides each user with an opportunity to achieve fame. When attention and followers reach a certain level, content producers can sell products as brand agents or sell items they made themselves through a personal online shop on TikTok. Therefore, TikTok has prompted the development of e-business and live-streaming commerce in China, which have become means for TikTok to earn revenue.

TikTok was first launched to provide young people with opportunities to record and share their daily lives, using the slogan "Make Your Life." Thus, short-form content on TikTok was initially entertainment-oriented. However, learning demands grew rapidly as users' requirements became more diverse. Videos aiming to share knowledge and experiences now account for a large part of TikTok consumption. There is a trend on TikTok that the production of knowledge content is changing from the UGC (User Generated Content) model to the PGC (Professionally Generate Content) and the PUGC (professionally User Generated Content) models, meaning experts and professional users are increasingly producing content on this platform. Some professional knowledge-sharing videos are non-profit, while most exist to earn revenue. This paper focuses on the for-profit knowledge-sharing videos and accounts on TikTok.

Knowledge sharing has always been an important topic in the academic world as knowledge is seen as a source of wealth, different from the traditional era in which labor and capital were the main sources (Shin et al., 2008). Many studies have been conducted to discuss knowledge management for organizations. For example, Hwang and Lee (2019) examined the role of knowledge sharing in social capital and performance. Hwang (2022) investigated how shared goals and other factors influence individuals' intentions to share knowledge.

3. Research Design and Methodology

3.1. Research Design and Method

To answer our research question of what the main factors are that influence users' payment decisions regarding knowledge products on short-form video platforms, we employed a qualitative study of a single case to generalize the findings into a theory. The case study approach is the most appropriate research method for investigating a contemporary phenomenon (Yin, 2013) and observing an individual's subjective perceptions. The phenomenon we observed in this study is the knowledge-sharing and payment on TikTok, and the research subject is delimited as the users (knowledge providers and demanders) and the knowledge-related content on this platform.

We collected data by conducting online observations and in-depth interviews. The use of online observation is inspired by Mann and Stewart's (2000), who argued that qualitative researchers could use this method to analyze

the linguistic behavior of various computer-mediated communication usages (Hara, 2007). Examining the users' payment decisions regarding knowledge products on short-form video platforms requires in-depth interviews, as this is the most appropriate method for investigating an individual's perceptions.

The case we selected in this paper focuses on the TikTok platform. TikTok's popularity demonstrates its significant potential e-commerce value making it a particularly interesting case for addressing our research question and further generalizing the findings of the knowledge payment industry on short-form video platforms.

Rather than relying on statistical analysis to verify the hypothesis, we used grounded theory as a basis for generalizing the findings, using ATLAS ti. software. Grounded theory methodology (GTM) is a general methodology with systematic guidelines for gathering and analyzing data from a qualitative study. The process consists of coding, developing, checking, and integrating the data into theoretical categories (Charmaz & Belgrave, 2012). Grounded theory has recently been widely used in e-business and Management Information System (MIS) research (Wische et al., 2007; Park & Lee, 2019; Lee et al., 2020; Seoung et al., 2021). In the MIS research area, GTM helps develop theories/models and rich descriptions to understand a phenomenon (Wische et al., 2007), which is beneficial in this study, as it relies on a detailed description for understanding the specific case of TikTok.

3.2. Data Collection

There were two phases of data collection. The first phase was conducted in June 2021 and was an observation of

the knowledge-sharing and payment industry development on TikTok. The next phase involved in-depth interviews with ten users.

In the first phase, we followed 95 TikTok accounts aimed at producing knowledge-sharing videos and observed their videos in the first month of this study. To access the most reliable materials and information, we applied to join the knowledge providers' virtual communities and also bought knowledge products such as online lectures, recorded courses, and books from these knowledge providers.

Based on the principle of utilizing GTM, theoretical saturation (Strauss & Corbin, 1990) occurs when data collection is finished, and there is no new information to be gained from in-depth interviews (Park et al., 2020). To get enough data to reach theoretical saturation, we implemented the second phase of data collection by conducting two waves of in-depth interviews with ten participants. In the first wave of data collection, we interviewed four individuals in June 2021. In October 2021, we conducted the second wave of data collection by engaging in 30-minute interviews (on average) with the other six individuals. Our participants included school students and white-collar workers who were all frequent users of TikTok. The descriptions of the participant's age, gender, occupation, meeting duration, and experience with knowledge payments on TikTok are shown in <Table 1>. The age of participants is in their 20s to 30s, and they have different educational and occupational backgrounds. There are two undergraduate students, two master's students, two doctoral students, two teachers, and two workers (one is a white-collar worker in the field of international business, while the other is a researcher in botany). Four have knowledge payment experience on

〈Table 1〉 The basic information of participants

Participant	Gender	Age	Occupation	Time	Knowledge payment experience
1	Female	31	Teacher	44:39	Yes
2	Male	24	Teacher	26:50	Yes
3	Male	21	Undergraduate	23:48	No
4	Female	25	Master's	33:49	No
5	Male	35	Researcher	38:52	No
6	Male	23	Undergraduate	28:56	No
7	Female	25	Master's	26:05	No
8	Female	25	White-collar	34:12	Yes
9	Male	26	Doctorate	25:12	Yes
10	Male	28	Doctorate	30:34	No

〈Table 2〉 Question sets conducted in interviews

Aspect	Open Questions Set
Personal interests and habits	How often do you use TikTok? What kind of content or genres do you like on TikTok? Why? What do you think about TikTok?
Perceptions of TikTok as a knowledge sharing platform	What is your opinion on whether TikTok works as a knowledge-sharing platform? What do you think about teaching videos on TikTok?
Perceptions of knowledge products on TikTok	Have you ever seen any knowledge-sharing videos on TikTok? What are they teaching about? What kind of knowledge-sharing videos would you like to watch? Why? Have you ever paid for any knowledge product or service on TikTok? If so, what was it? What factors affect your decisions on buying knowledge products on TikTok? In which situation would you pay for a knowledge product or service on TikTok?
Perceptions of knowledge providers' characteristics	What characteristics of the provider are the most important when you buy a product on TikTok?

TikTok, while the others have no experience. We believe that this participant selection procedure is based on the theoretical sampling of the study.

As shown in <Table 2>, open questions related to users' personal interests, perceptions of TikTok as a knowledge-sharing platform, perceptions of knowledge products on TikTok, and perceptions of knowledge providers' characteristics were asked in the data collection process. To ensure high reliability in this qualitative research, we recorded the answers and analyzed the material word by word with the participant's permission. The data collection process was conducted in two different time periods until there were no new findings in the interviews. Thus, our qualitative research has high validity and reliability.

3.3. Data Analysis

Our analytical method adheres to GTM to develop a conceptual framework based on the iterative coding of

extensive recording transcripts. When we conducted in-depth interviews with open questions, we considered the concept of theoretical saturation (Strauss & Corbin, 1990), meaning that data collection and analysis will continue until the interviewees provide no more new information and findings. We attempted to give qualitatively rich descriptions (Wiesche et al., 2007) of users' payment decisions on TikTok from the interview codes derived from the interviews. Our analysis also employed inter-coder reliability by two researchers to cross-check the findings from the in-depth interviews to secure the validity and reliability needed in a qualitative approach.

We employed ATLAS ti, a software embraced by researchers to uncover complex phenomena in qualitative studies, to manage the interview transcripts and data coding process. We carried out three coding processes with an open mindset. In the open coding process, we categorized segments of data using short names that summarized and accounted for each piece of data and then labeled the initial codes iteratively. Labels such as emotion, interest, entertainment, and learning were the main themes of the first data coding process. In the axial coding process, we classified the codes from the last process into higher-level codes and named them using terms such as emotional needs, professional needs, price, quality, helpfulness, value, scarcity, charisma, service guarantee, and user trust. In the core coding process, we conceptualized the codes into four core categories: personal needs, content quality, key opinion leader effect, and platform management. Finally, we synthesized our findings and developed a theoretical framework.

4. Results and Findings

We profiled content creators as freelancers, individual entrepreneurs, entrepreneurial teams, and part-timers based on the direct online observation of 95 knowledge providers and their knowledge-sharing videos on TikTok. As a newly burgeoning live-streaming community, TikTok provides freelancers with a valuable opportunity to increase their income. TikTok is also a good platform for people with unique talents to become internet influencers. For example, a video producer named *Gongmazouri*, who is also a factory worker, gained much attention on TikTok by sharing his talent for writing modern poems. Many entrepreneurial teams or educational companies, like *Mr. Yang*, who shares English learning skills, and *Fandeng Reading*, which recommends books to users, have gained significant attention on TikTok. Part-timers, especially school teachers, lawyers, doctors, and other experts, are more likely to gain attention by sharing their professional knowledge and skills. In conclusion, knowledge sharing on TikTok is based on an individual's professional knowledge, consummate skills, and abundant life experiences.

4.1. The Business Model of Knowledge Payments on TikTok

The business model of knowledge payments refers to the methods for gaining profits through providing knowledge on TikTok. How can knowledge providers earn a profit on TikTok? Knowledge providers create content to share knowledge, skills, and experiences in a specific area for free, to attract followers, and to gain

likes and comments on their videos. A short-form video produced by a knowledgeable creator for monetary profit is used to attract users' attention, arouse interest, motivate intentions, and encourage users to make payment decisions or engage in certain behaviors.

The simplest way for these knowledge providers to earn money is through network flow; however, the profit is minimal. But, there are other methods by which knowledge providers can earn money. For example, they can sell books or courses via an online store to users interested in acquiring further knowledge on a topic. They can also create a virtual community for users where users pay a membership fee for a one-to-one consultation with the provider. Furthermore, they can conduct live broadcasts where users can send digital gifts to the providers, which are transferred into earnings. The five major ways through which knowledge providers earn money by sharing knowledge are: (1) by selling courses, books, or other relevant paper materials via a personal online shop on TikTok, (2) by conducting live broadcasts and receiving digital gifts from users, (3) by conducting offline lectures, (4) by providing professional consulting services, and (5)

by advertising on behalf of other brands.

4.2. Coding Results

We interviewed ten participants, questioning them on aspects such as (1) personal interests and habits, (2) opinions on TikTok as a knowledge-sharing platform, (3) attitudes regarding knowledge products on TikTok, and (4) perceptions of the characteristics of knowledge providers.

After reviewing the scripts iteratively, we summarized and labeled 30 codes in the first coding process. Then, these 30 codes were categorized into ten higher-order codes before being coded into four main categories. The coding process is shown in <Table 3>. We classified emotional needs and professional needs as personal needs, from a knowledge demander's perspective. Themes such as quality, price, helpfulness, value, and scarcity are defined as product qualities based on the perspective of product characteristics. Charisma, derived from the themes of appearance, speaking skills, professions, and reputation, is used to describe the influence of key opinion leaders

〈Table 3〉 Coding results and four categories affecting users' payment decisions

No.	Interview Scripts	First Order Themes	Second Order Codes	Core Categories
1	I like their videos because they heal me and relieve me.	Emotion	Emotional Needs	Demander Characteristics (Personal Needs)
2	I like their writing style; it is interesting.	Interest		
3	I will spend money on things that I am interested in.			
4	I would potentially buy their books because I like their writing.	Affection		
5	I will pay for things that make me happy.	Enjoyment		
6	I want to learn C++ so I would like to spend my money on computer skills training.	Skills	Professional Needs	
7	I am interested in courses that teach me how to write a good paper.	Learning motivation		
8	People will buy something when they have a high learning motivation.	Learning motivation		

No.	Interview Scripts	First Order Themes	Second Order Codes	Core Categories
9	The framework of the courses makes customers understand easily.	Easy to understand	Quality	Product Characteristics (Product Quality)
10	Their work is realistic.	Reality		
11	I will compare the price before buying.	Price comparison	Price	
12	Knowledge products are unreasonable because the platform (TikTok) gets a commission on each sale.	Price premium		
13	I will buy something if the price is lower on TikTok.	Price		
14	I only spend money on things that are helpful and useful for me.	Helpfulness & Usefulness	Helpfulness	
15	I will pay for courses that can improve my English skills or something helpful for me in the future.	Helpfulness & Usefulness		
16	Value is important to me.	Value	Value	
17	I will buy on TikTok when things only can be bought through it.	Exclusive right-to-sell	Scarcity	
18	They are a professional in what I am interested in.	Profession	Charisma	Provider Characteristics (KOLs Effect)
19	Their good reputation is from their brilliance.	Reputation		
20	If the providers have relevant authority or professions, I prefer to buy what they recommend.	Authority/ Professional		
21	They have an interesting soul.	Soul		
22	The influencer I followed has a good appearance, good speaking skills, and good taste in aesthetics.	Appearance		
23	The good appearance of providers makes people feel happy.			
24	TikTok has security problems.	Security	Service Guarantee	Platform Characteristics (Platform Management)
25	TikTok has setbacks in after-sales services.	Maturity		
26	Some content has a high inductivity in advertising.	Exaggerated advertising	User trust	
27	It is a waste of my time to watch TikTok because I hardly learn anything in the fragmented time.	Short videos		
28	TikTok is a platform for entertainment.	Entertainment		
29	People like me watch TikTok only when they are bored.			
30	TikTok is for fun, not for studying.			
KOL: Key Opinion Leader				

acting as knowledge providers. Keywords such as exaggerated advertising, short-form videos, and entertainment frequently emerged from the interview scripts, implying user trust is a core code related to platform management, from a perspective of platform characteristics.

4.2.1. Demander Characteristics (Personal Needs)

User requirements for knowledge products vary but can be roughly divided into two types: requirements for knowledge and skills, defined as professional needs, and requirements based on interests and entertainment, defined as emotional needs. Users decide to pay for a knowledge

product based on their professional or emotional needs. Thus, we categorize the first influential factors as personal needs, which could also be defined as demander characteristics as this category is demander-related.

Participant 1: One of my favorite video makers, named Gongmazouri, shares his poetry talent. His poems are always impressive, making me interested in potentially buying his books…anything I am interested in, I will pay for it. (Emotional interest)

Participant 2: I bought a book about environmental education on TikTok because I have a relevant lecture this semester. (Professional needs)

Participants 3 & 4: I would like to buy some online courses in English or computer skills because I need to improve in these subjects. (Learning motivation/rofessional needs)

Participant 8: I have had some buying experiences on TikTok, such as books on improving communication with people and books about how to get a promotion at work. (Professional needs)

The backgrounds of demanders, especially their occupational backgrounds, influence their personal needs. For example, students require traditional knowledge, especially on school subjects, and users who are professionals have more skills-related requirements as they have a desire for workplace success. Teachers, especially those with liberal art educational backgrounds, have more emotional requirements. High-quality knowledge products that fulfill users' requirements can significantly affect users' payment decisions.

4.2.2. Product Characteristics (Product Quality)

Users with payment intentions are concerned about

product quality. Hence, the second influential factor is conceptualized as product quality, which is based on the perspective of product characteristics. Users tend to spend money on high-value items.

Moreover, the price and scarcity of products also strongly influence payment decisions. Some knowledge products, like books, are not just available on TikTok. Thus, users who need these products may buy them through other websites or platforms if the price is lower than TikTok. In contrast, when products are only accessed through TikTok (meaning that TikTok has an exclusive right-to-sell of a knowledge product), users will purchase these items despite the price being higher than their expectations. Apart from scarcity and price, helpfulness and value are also influential factors related to product quality.

Participant 1: I will compare the price on other platforms and decide whether to buy it on TikTok. But there is an exception. If the knowledge product is what I really need and with high value, even though the price is higher than I expected, I will buy it. (Value)

Participant 2: The quality of the content is my greatest concern. But if a book I liked on TikTok is more expensive than other platforms, like TAOBAO, I will buy it on other platforms. The exception is if the book I wanted is only sold on TikTok. (Price/ Scarcity)

Participant 6: I will pay for courses that can improve my English skills or something helpful for me in the future. (Helpfulness)

Participant 8: Based on experience, some books aiming to share experiences on life and success were useless. (Helpfulness)

Participants 1, 2 & 7: The value of the knowledge products is important. (Value)

4.2.3. Provider Characteristics (KOLs Effects)

The third influential factor is conceptualized as the effect of key opinion leaders (KOLs) which refers to knowledge providers' personal characteristics, such as reputation, profession, authority, humor, and appearance. Professionals in a particular field can more easily gain user trust and their videos are more convincing for users. Knowledge providers with a good sense of humor, and a grasp of the art of speaking can attract users' attention more easily. In addition, a good appearance also plays a role in attracting users' attention. However, the personal charisma of knowledge providers, such as a sense of humor, strong language skills, and a charming demeanor, seems to have a very slight influence on users' payment decisions, although users will be attracted by the providers' charisma.

Participant 4: I think students like me or my classmates are rational. My classmates and I make decisions based on our rational analysis: Do I really need it? Can I find a substitute that costs less? (KOLs effects)

Participants 1 & 5: If the providers have higher authority or profession, I prefer to buy what they recommend. (Charisma)

4.2.4. Platform Characteristics (Platform Management)

Users dispute whether TikTok can act as a knowledge-sharing platform for diffusing professional knowledge; specifically, the service guarantee of TikTok and users' trust in the platform are important influential factors in the decision process. We argued that this can define platform management from a platform characteristics perspective.

Participants 7 & 4: I have bought other products on TikTok, like clothes, food, and especially cosmetics, but I will never pay for knowledge on TikTok because I think TikTok is just for fun, and there is so much junk information on it. I only would like to pay for knowledge products on Zhihu and Bilibili[2] if I have a knowledge requirement. (User trust – negative)

Participant 10: I am busy studying and working during the daytime. When I return home, lying on the bed, and open TikTok, I only want to watch interesting and funny videos. I do not want to use my brain anymore. I think most people think like me; we use TikTok as a method for entertainment, not for learning. So, I do not think TikTok is a good place for gaining knowledge. (User trust – negative)

Participant 1: TikTok is becoming increasingly professional. I noticed it invited many professionals in different fields, such as famous professors at a top university, and I always enjoy the knowledge-sharing videos created by those professionals. (User trust – positive)

These are two completely different attitudes (positive and negative) on whether TikTok is a knowledge-sharing platform. Since TikTok is a short-form video platform primarily aimed at providing entertainment, some users doubt its educational features. They worry that the information received is fake and are concerned about whether there is excessive advertising of the knowledge products. Even with a positive attitude toward TikTok as a knowledge-sharing video platform still doubt that TikTok could be a good platform for gaining knowledge. As one participant stated:

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2) Zhihu: A famous online knowledge Q&A community in China; Bilibili: A Chinese video sharing website themed around animation, comic and games, where users can submit, view and add overlaid commentary on videos.
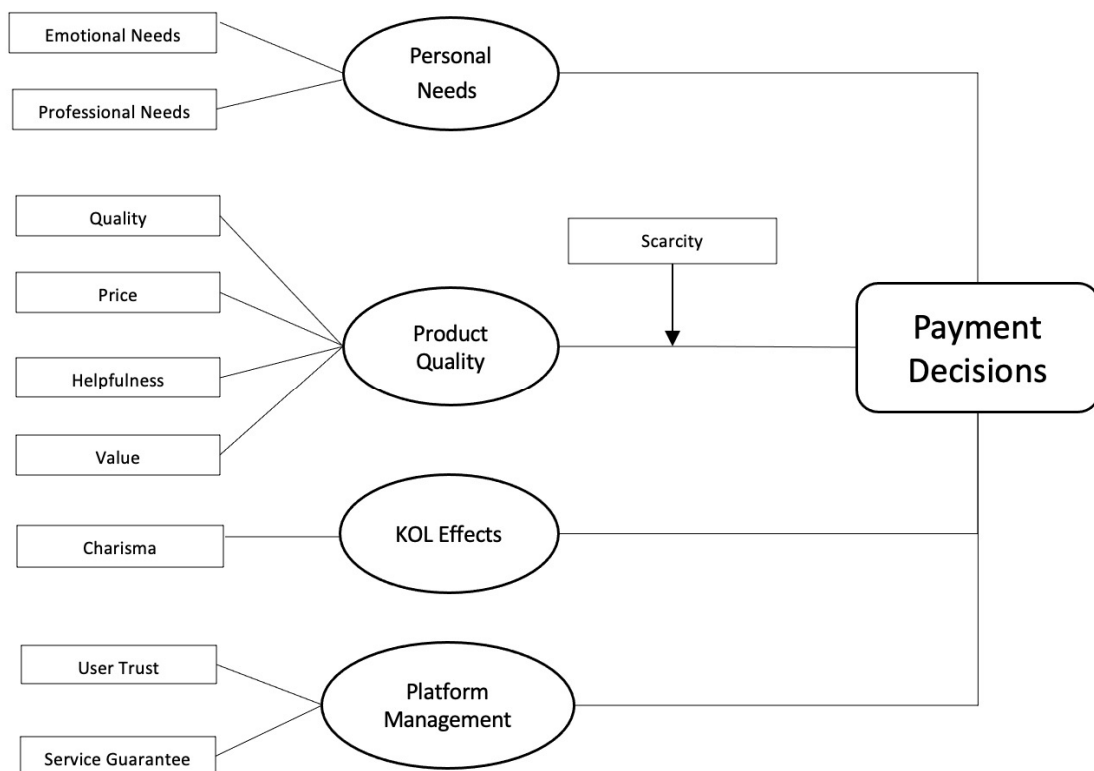
Participant 4: I agree that TikTok is a good platform for sharing knowledge because it has a large scale of users. Information could be diffused quickly to a large population. But when considering learning and gaining professional knowledge on it, I am not sure. I think it would be very hard. As known, the videos on TikTok have a very short duration, so it is very hard for people to learn deeply in such a short time.

Based on these interview response, personal needs, product quality, KOL effects, and platform management are categorized based on GTM. <Figure 1> shows the study findings and results based on GTM regarding payment decisions in the case of TikTok.

5. Discussion and Conclusion

5.1. Discussion and Implications

This study investigated the critical factors which affect users' payment decisions in a knowledge-sharing platform by analyzing TikTok using a qualitative approach. We used GTM based on in-depth interviews with ten relevant participants. From the findings of this study, we mainly discussed the factors influencing users' payment decisions for knowledge products. Although there are many studies on knowledge payment, and numerous theories have been applied to understand consumers' payment decisions or purchase intentions on professional knowledge-sharing websites or applications, this paper discussed knowledge

〈Figure 1〉 Findings and results based on GTM

payments based on the short-form video platform. Regarding the payment decisions of users on TikTok, key factors affecting such decisions were found to be emotional needs, professional needs, quality, price, helpfulness, value, charisma, user trust, service guarantee, and scarcity. We also found that scarcity moderates the effect of content quality on users' payment decisions. This effect is stronger in the case of high scarcity than in low scarcity. When content is scarce, the impact of content quality on payment will be strong.

Furthermore, the core categories contributing to users' payment decisions for knowledge products on TikTok were found to be personal needs as a demander characteristic, content quality as a content characteristic, KOL effects as a provider characteristic, and platform management as a platform characteristic. These core categories and the ten key factors found in this study can contribute to the development of theories regarding users' payment intentions or actual payment decision models. Theoretically, these results can trigger empirical tests with ten second-order codes, such as emotional needs, professional needs, quality, price, value, charisma, trust, service guarantee, and scarcity. These can be considered key variables affecting users' content payment decisions on social platforms. The academic contribution of this study is to explore new factors playing critical roles in increasing users' payment decisions on TikTok.

This study also addressed whether short-form video platforms could be used to develop the knowledge-sharing and payment industry. The results imply that TikTok has significant business potential in the knowledge payment industry and has shown its influence on e-business development. As TikTok gains much attention among Generation MZ, researchers have discussed its potential business value in developing the knowledge-sharing industry. Radin et al. (2022) claimed that TikTok could provide a good opportunity for science teaching and learning. Dyer et al. (2021) argued that TikTok could play an important role in medical education. Also, TikTok was a good educational platform for medical teaching and information diffusion during COVID-19 (Fiallos et al., 2021).

However, TikTok faces many challenges in developing the knowledge payment industry as it cannot provide reliable and efficient means for knowledge providers to earn money through knowledge sharing, though it may revolutionize e-business development by allowing the buying and selling of tangible products, such as food, clothing, and cosmetics. The current business model makes it relatively difficult for knowledge providers to earn profits. Last, the platform does not provide users with guaranteed after-sale services. These factors make it difficult for users to cultivate purchasing habits, and their willingness to pay for knowledge products on TikTok remains low. This suggests that TikTok's business model for the knowledge payment industry on the platform remains underdeveloped.

To promote the development of knowledge-sharing and payment on short-form video platforms such as TikTok, this study provides some practical implications for knowledge providers and short-form video platforms, respectively. For knowledge providers, we suggest that they: (1) develop personal vertical fields, which means providing specific services to certain people based on personal professions; (2) create more qualified content by utilizing varying media techniques; (3) improve their

charisma by changing their language style, clothing style, and surroundings. For short-form video platforms, we suggest that they: (1) intensify content reviews, allowing knowledge providers to post more qualified content with relevant reward systems; (2) enhance the algorithm to push more suitable content based on users' personal needs; (3) optimize the payment path by providing an easier way for users to conduct payment activities. We recommend that both the knowledge providers and the short-form video platform companies consider content scarcity, which is important for actual payment decisions. They must insure relevant and scarce content as much as possible to increase sales.

Our findings in this study provide practical suggestions for knowledge providers and short-form video platforms on developing scarce content and enhancing knowledge sharing. This study will help further develop knowledge-sharing and payment studies on other short-form platforms.

5.2. Study Limitations and Future Research Directions

This study has some study limitations. First, TikTok continues to be seen as a social media platform meant for entertainment and may not be suitable for learning and acquiring professional knowledge. Though it effectively diffuses information and common knowledge to the public, it may not convey professional knowledge. Furthermore, owing to its entertainment features, TikTok is mostly used for fulfillment, entertainment, and relaxation. Thus, the generalization of the findings is limited, and a social media platform's main content type must be considered a variable for future research directions.

Regarding the participant selection, most participants we interviewed were either post-graduate students or had a higher educational background, which means their knowledge requirements cannot represent that of ordinary users on TikTok. Therefore, quantitative research based on statistical analysis with sufficient samples is needed for future studies. Empirical validation of an analytical framework regarding user payment decisions, as proposed in <Figure 1>, is also needed. The usage of factor data, like the actual payments of users, will increase the value of the empirical tests. In addition, our study is limited in drawing a research model to explain users' payment decisions regarding knowledge products on short-form video platforms. Further research using machine learning is needed to develop users' profiles on the topic of knowledge payment.

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〈 국문초록 〉

짧은 영상 플랫폼에서 지식상품에 대한 사용자의 구매결정에 영향을 미치는 요인: TikTok의 지식 공유 사례

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짧은 영상 클립을 공유하는 지식공유 플랫폼으로서 TikTok이 많은 주목을 받고 있다. 이러한 TikTok에 대한 폭발적인 관심은 지식공유 플랫폼으로서의 비즈니스 가치가 크다는 점을 시사한다. 본 연구는 질적, 탐색적 접근을 통해 지식거래산업의 발전 현황과 함께 TikTok에서 어떠한 요인이 지식상품에 대한 사용자의 구매 결정에 영향을 미치는 가를 규명하고자 하였다. 연구방법론으로서 10명에 대한 심층 인터뷰와 함께 95명의 지식 제공자의 동영상을 관찰한 결과, TikTok은 지식거래 산업을 발전시킬 수 있는 비즈니스 잠재력을 가지고 있었으며, ATLAS ti 소프트웨어를 이용한 10명의 심층 인터뷰에서 수집한 데이터를 코딩한 결과, 수요자 특성, 제공자 특성, 플랫폼 특성 및 제품 특성 등의 네 가지 핵심적 요인이 TikTok에서 지식제품에 대한 사용자의 구매결정에 영향을 미친다는 점을 밝혔다. 근거이론을 기반으로 감정적 니즈, 전문성 니즈, 품질, 가격, 도움성, 가치, 카리스마, 신뢰, 서비스 보증, 희소성 등 10개의 변수로 구성된 이론적 모델이 도출되고 제시되었다. 또한 연구발견점에 따른 이론적 시사점과 실무적 시사점이 토의된다.

주제어: TikTok, 지식 공유, 지식 거래, 근거이론

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