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STRUCTURAL MODEL OF FACTORS INFLUENCING VOLUNTARY EDUCATIONAL USAGE OF DOUYIN BY HENAN UNDERGRADUATES IN CHINA



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THESIS PRESENTED TO QUALIFY FOR A DOCTOR OF PHILOSOPHY

FACULTY OF ART, SUSTAINABILITY AND CREATIVE INDUSTRY
SULTAN IDRIS EDUCATION UNIVERSITY

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ABSTRACT

The rapid growth of social media platforms such as Douyin has generated increasing interest in their educational potential. This study aims to examine the key factors influencing undergraduate students' voluntary use of Douyin for educational purposes. Data were collected via cluster sampling from 547 students at Pingdingshan University, representing the general undergraduate institutions in Henan Province. Structural Equation Modeling (SEM) was used to analyze the relationships among Adoption, Purpose, and Personal Factors, and to test the mediating role of Purpose between Adoption and Educational Usage. The results indicated a good model fit, with adoption ($\beta = 0.365$, $p < 0.001$), purpose ($\beta = 0.283$, $p < 0.001$), and personal factors ($\beta = 0.335$, $p < 0.001$) all significantly predicting educational usage. Correspondingly, purpose was found to partially mediate the relationship between adoption and educational usage. The findings suggest that students' voluntary use of Douyin for education is influenced by both technological and personal motivations, especially when driven by a clear learning objective. This study contributes towards a comprehensive theoretical model by integrating the Technology Acceptance Model (TAM), Uses and Gratifications (U&G) and Social Cognitive Theory (SCT) to elucidate informal learning behaviors on social media. Consequently, the implications highlight the need for educators and content developers to align content with students' intrinsic goals and promote personalized learning. Looking towards the future, policymakers should also consider Douyin's potential as an educational tool and encourage responsible digital governance in academic settings.





MODEL STRUKTURAL FAKTOR YANG MEMPENGARUHI PENGUNAAN DOUYIN SECARA SUKARELA BAGI TUJUAN PENDIDIKAN OLEH MAHASISWA DI HENAN, CHINA

ABSTRAK

Perkembangan pesat platform media sosial seperti Douyin telah menimbulkan minat yang semakin mendalam terhadap potensinya dalam bidang pendidikan. Kajian ini bertujuan untuk mengenal pasti faktor-faktor utama yang mempengaruhi penggunaan Douyin secara sukarela oleh pelajar prasiswa bagi tujuan pendidikan. Data telah dikumpulkan melalui persampelan kelompok yang melibatkan seramai 547 pelajar dari Universiti Pingdingshan, mewakili institusi pengajian tinggi am di Wilayah Henan. Structural Equation Modeling (SEM) digunakan untuk menganalisis hubungan kait diantara adoption, purpose, dan personal factors, serta untuk menguji peranan pengantara yang dimainkan oleh faktor purpose dalam hubungan antara faktor adoption dan penggunaan pendidikan. Hasil kajian menunjukkan padanan model yang baik, dengan adoption ($\beta = 0.365$, $p < 0.001$), purpose ($\beta = 0.283$, $p < 0.001$), dan personal factors ($\beta = 0.335$, $p < 0.001$) kesemuanya memberi kesan yang penting dan mendalam terhadap penggunaan pendidikan. Susulan daripada hasil kajian, faktor purpose didapati menjadi pengantara sebahagian hubungan dengan penggunaan pendidikan. Dapatan ini menunjukkan bahawa penggunaan sukarela Douyin oleh pelajar untuk tujuan pembelajaran dipengaruhi oleh motivasi teknologi dan peribadi, khususnya apabila didorong oleh objektif pembelajaran yang jelas. Kajian ini menyumbang kepada pembinaan model teori yang komprehensif dan terperinci melalui proses pengintegrasian Technology Acceptance Model (TAM), Uses and Gratifications (U&G) dan Social Cognitive Theory (SCT) yang memungkinkan penjelasan tingkah laku pembelajaran tidak formal di media sosial. Oleh itu, implikasi kajian ini menekankan keperluan pihak pendidik dan pembangun kandungan untuk menyelaraskan bahan pembelajaran dengan matlamat intrinsik pelajar serta menggalakkan pembelajaran yang lebih diperibadikan. Disarankan kepada pihak penggubal dasar, agar potensi Douyin sebagai alat pendidikan serta penyokong tadbir urusan digital yang bertanggungjawab dalam persekitaran akademik, dipertimbangkan untuk membantu dan menyumbang kepada masa hadapan.



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LIST OF ABBREVIATIONS

AGFI	Adjusted Goodness-of-Fit Index
CR	Critical Ratio
CFA	Confirmatory Factor Analysis
CFI	Comparative Fit Index
DF	Degree of Freedom
EFA	Exploratory Factor Analysis
EU	Educational Usage
GFI	Goodness-of-Fit Index
KMO	Kaiser-Meyer-Olkin
PEOU	Perceived Ease of Use
PF	Personal Factor
PU	Perceived Usefulness
RMSEA	Root Mean Square Error of Approximation
SE	Standard Error
SCT	Social Cognitive Theory
SI	Social Influence
TAM	Technology Acceptance Model
TLI	Tucker-Lewis Index
U&G	Uses and Gratifications Theory





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VIF Variance Inflation Factor



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LIST OF APPENDIX

- A Online Chinese Survey Questionnaire
- B Ethical approval letter
- C Data Collection Approval Letter
- D Questionnaire Validation Expert Confirmation





CHAPTER 1

INTRODUCTION

1.1 Introduction



With the advancement of physical broadband and mobile network technology, people increasingly rely on the Internet, driving the development of new media. Consequently, lifestyles have shifted, with significant amounts of time being spent on new media platforms. The Internet, in particular, has permeated every classroom, dormitory, and aspect of college students' daily study routines. College students have undeniably become the most active users of new media in their daily lives (Yu, 2021), especially with the rise of TikTok, a social media platform for short video sharing that has become a favorite among young people. According to CNBC, TikTok's global monthly active users grew from approximately 507 million in December 2019 to 689 million in July 2020 (Radin & Light, 2022). By September 2021, TikTok announced it had reached 1 billion global monthly active users, making it the sixth most active





social media platform worldwide. As of April 2023, TikTok had 1.092 billion users aged 18 and older, with the largest age group being 18 to 24, comprising 38.5% (419.9 million users), followed by the 25 to 34 age group, accounting for 32.5% (354.8 million users) (Kemp, 2023). These figures highlight TikTok's rapid global popularity in recent years, solidifying its role as an integral part of university students' daily lives (Sun, 2021).

A similar situation exists in China. According to the 51st Statistical Report on the Development of the Internet in China, released by the China Internet Network Information Center (CNNIC) in 2023, the number of Internet users in the country reached 1.067 billion. Among them, 1.012 billion were short video users, representing 94.8% of the total Internet user base. College students, the most active mobile short video users—primarily on platforms like Douyin, the Chinese counterpart of TikTok—spend over 40% of their total mobile phone usage time watching short videos (Feng & Fu, 2022).

It is important to note that while TikTok is globally recognized, its domestic counterpart in China, Douyin, serves a distinct yet closely related role. Both platforms were developed by ByteDance and share nearly identical core functionalities, such as user-generated short video content creation and recommendation algorithms. However, Douyin operates within China's self-contained digital ecosystem, shaped by the "Great Firewall," and is tailored specifically for domestic audiences, while TikTok is designed for international markets. This bifurcated approach, often referred to as "parallel platformization," enables ByteDance to adapt each platform's governance, infrastructure, and content to the needs of their respective markets. For instance,





Douyin includes features like a "Positive Energy" section to align with Chinese cultural norms, while TikTok targets international audiences with globally appealing content (Kaye et al., 2020). Although Douyin is primarily used in the Chinese context, its close resemblance to TikTok makes their relationship inseparable.

The impact of Internet technology and new media on education is widely recognized as transformative. One of the most significant developments in the academic world is the integration of Internet technology into education (Arteaga Sánchez et al., 2014), with social media platforms serving as a prominent example. Social media offers numerous advantages for educational purposes. Two key benefits are particularly noteworthy: the broad range of educational affordances these platforms provide compared to other technologies, and the existing familiarity that both students and teachers have with them, which facilitates smoother and more appealing adoption in learning environments (Joosten, 2012). Among the newer platforms, TikTok and its domestic counterpart Douyin have rapidly gained global attention for a variety of uses, including education. TikTok's popularity is especially pronounced among Generation Z, often referred to as digital natives—individuals born in the mid-to-late 1990s who have been exposed to the Internet and portable digital technologies from an early age (Twenge, 2017; Turner, 2015).

Today's undergraduate students belong to this Net Generation and have grown up immersed in digital environments that shape their ways of accessing and processing information (Galanek et al., 2018; Arteaga Sánchez et al., 2014). As a result, higher education institutions and educators must adapt their instructional strategies to better align with students' digital lifestyles in order to foster engagement





and enhance learning outcomes. This shift necessitates moving away from traditional teacher-centred models—where learning is viewed as the transmission of knowledge—to learner-centred models that emphasize independent learning, critical thinking, and digital autonomy (Mazman & Usluel, 2010).

Undergraduate students of this generation are highly motivated and passionate about engaging with social media. They are accustomed to using social media platforms to search for information, including learning-related content. When faced with academic challenges, they frequently turn to the Internet for solutions, often excelling in this innovative approach to learning (Orijj & Torunarigha, 2019). In China, Douyin, the domestic counterpart of TikTok, is a widely popular social media platform among undergraduate students, supporting interactive, autonomous, and creative learning styles. Students are willing to invest significant time on Douyin, including using it for educational purposes. However, most existing research on the educational use of Douyin (including TikTok) has primarily focused on its application by lecturers during instruction, with limited attention given to students' independent use of Douyin for academic purposes. Therefore, this study seeks to explore the factors influencing Chinese undergraduate students' use of Douyin for educational purposes and to construct a structural equation model to describe the determinants of this user behavior.





1.2 Research Background

The unique potential of TikTok and its Chinese counterpart, Douyin, in education has been affirmed by numerous studies worldwide. Radin and Light (2022) highlighted that integrating social media platforms like TikTok into higher education is an effective strategy for expanding educational course materials and building a 21st-century online knowledge base. TikTok is particularly effective for engaging students and promoting knowledge due to its user-friendly interface, which allows content creators to easily capture, edit, and share video content directly through the application (Radin & Light, 2022). Younger users, including university students, access platforms like TikTok, Instagram, and YouTube far more frequently than traditional online educational platforms often used in higher education classrooms. Consequently, the use of social media for educational purposes is becoming increasingly popular (Carter, 2022). Moreover, undergraduates, with greater autonomy in managing their time and increased freedom at university, now spend more time on social media than ever before, often leveraging these platforms for educational purposes (Zhai & Razali, 2021).

According to data from Oceanengine (2023b), an increasing number of people are using Douyin for educational purposes. From January to October 2022, the number of knowledge-related content pieces posted on Douyin grew by 35.4%. The platform recorded over 250 million users interested in knowledge content, representing a 44.1% increase compared to the previous year. These users collectively searched for more than 16 billion knowledge-related questions, averaging 27 knowledge topics actively explored per user. Simultaneously, more creators joined the





knowledge-sharing trend. In October 2022, the number of knowledge experts on Douyin exceeded 500,000, marking a 69.6% increase compared to the same period in 2021. Notably, even Nobel laureates, academicians, and professors from prestigious universities have become lecturers on the platform. In 2022, nearly 400 professors were certified by Douyin, alongside 45 academicians and four Nobel laureates who shared cutting-edge scientific theories and research findings.

Figure 1.1 highlights the top professor creators on Douyin. As of November 2022, more than 95 million Douyin users had watched live college streams, equivalent to 1 in every 14 Chinese people attending virtual university classes via Douyin. Figure 1.2 presents the top 10 most-viewed Douyin accounts for live university classes in 2022. Regarding the change in user engagement, from January to October 2022, knowledge-related content on the Douyin platform in the field of campus education experienced significant growth, with a growth rate exceeding 60%. Among the segmented categories, campus education ranked among the top three in terms of user interest (Oceanengine, 2023b). Douyin's knowledge interest users are younger compared to the overall user base, with the 18–23 age group showing an exceptionally high preference, reflected by a Target Group Index (TGI) of 129 (Oceanengine, 2023b). This aligns with the typical age of undergraduate students, indicating that they actively use Douyin for educational purposes and exhibit a strong preference for such content.



Figure 1.1

The Douyin platform professor creators (partly)

China Douyin Platform Professor Creator (partial)



Han Xiuyun on Economics

Associate Professor, Department of Economics, Faculty of Economics and Management, Tsinghua University

No. of followers: **11 million +**



Dai Jianye

Professor, Faculty of Chinese Literature, Central China Normal University

No. of followers: **7 million +**



Grandma Wu who doesn't do more questions

Professor of Physics, Tongji University

No. of followers: **3 million +**



Wei Kunlin

Professor, Faculty of Psychological and Cognitive Sciences, Peking University

No. of followers: **2 million +**



Mo Yan

Professor, International Writing Centre, Beijing Normal University

No. of followers: **1.6 million +**



Fu Peirong

Professor, Department of Philosophy, National Taiwan University

No. of followers: **1.5 million +**



Wang Defeng's Philosophy Workshop

Professor, Faculty of Philosophy, Fudan University

No. of followers: **1.1 million +**



Studying the Universe

Associate Professor, Department of Physics, The Hong Kong University of Science and Technology

No. of followers: **300,000+**



History by Jonah Hui

Professor, Department of History, University of Pittsburgh

No. of followers: **130,000+**



Professor Peng Kaiping

Professor, Department of Psychology, Tsinghua University

No. of followers: **130,000+**

Data date: November 2022

Oceanengine, 2023b

Figure 1.2*Top 10 college accounts of Douyin University live class viewers in 2022***Top 10 university video accounts for live streaming of Douyin China university classes in 2022**

Data source: Oceanengine, January-November 2022

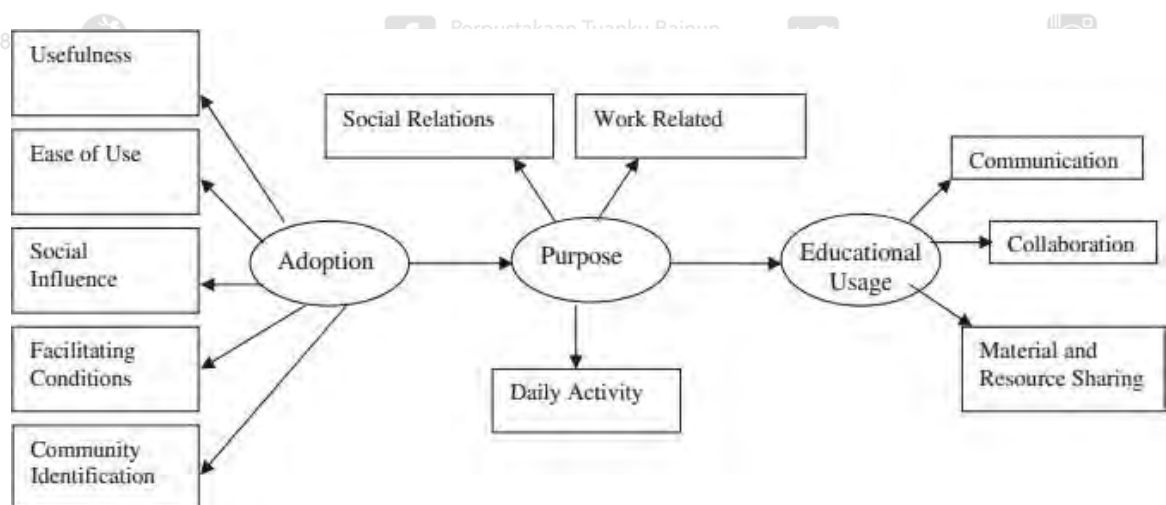
Oceanengine, 2023b

The voluntary use of Douyin for educational purposes presents a significant research opportunity for scholars, yet more studies are needed to examine TikTok or Douyin from this perspective. Over the past decade, researchers have investigated the educational benefits of prominent social media platforms such as Facebook. For instance, Mazman and Usluel (2010) developed a structural model examining users' voluntary use of Facebook for educational purposes. At the time, much like the current popularity of Douyin and TikTok, Facebook was studied as an innovative social and technological tool. The structural model developed by Mazman and Usluel (2010) identified Educational Usage of Facebook as a key factor, influenced by two

other factors: the Adoption of Facebook and the Purpose of Facebook users, with a total of 11 observable variables (Figure 1.3). This study involved 606 voluntary Facebook users, nearly 70% of whom were university students. While Douyin is also a social media platform, it differs from Facebook in terms of functionality. Facebook is primarily socially oriented, whereas Douyin emphasizes short video content creation and sharing. Additionally, Douyin incorporates features for socializing and interaction but places a greater focus on user expression and creativity. This emphasis on creativity likely explains why the platform is particularly appealing to younger audiences.

Figure 1.3

Theoretical Model for the Educational Usage of Facebook



Mazman & Usluel, 2010

Regarding the relationships among the three critical factors in this model, the study identified a strong positive correlation between user Adoption and user Purpose, as well as a significant correlation between user Adoption and Educational Usage. The findings indicate that the Facebook Adoption process alone accounts for 45% of



the variance in Educational Usage. However, when User Purpose is included in the analysis, the explanatory power increases to 50%. Notably, from the perspective of user Purpose, Adoption accounted for over 50% of the variation in Educational Usage, underscoring the educational potential of the social media platform. The TFEU model was later tested and reconfirmed by Arteaga Sánchez et al. (2014) and Manasijević et al. (2016), further validating the structural model's robustness.

In China, Douyin has evidently become one of the most addictive social media platforms among young people, used daily, while research on TikTok and Douyin continues to gain momentum in academic circles. Regarding the willingness to adopt TikTok, some researchers argue that the Technology Acceptance Model (TAM) has significantly contributed to understanding its adoption (Al-Marroof et al., 2021). The TAM model is widely employed to examine users' acceptance and adoption of new technologies. It serves as a critical metric for evaluating a system's effectiveness and the outcomes of user experiences (Niederhauser & Perkmen, 2010). Additionally, TAM is instrumental in studying the behavioural motivations behind users' adoption of a system. To gain insights into users' attitudes or opinions towards an information system, it is essential to assess its ease of use and usefulness—specifically, how effortless users find the system to use and the practical benefits and assistance it provides (Davis, 1989).

Most researchers have focused on and agreed upon the significance of the Technology Acceptance Model (TAM) in the context of social media adoption. For example, Wirtz and Göttel (2016) concluded that TAM is one of the most widely recognized models in information technology acceptance research and remains the





dominant theoretical framework for understanding users' adoption of social media. Similarly, Lane and Coleman (2012) highlighted the strong influence of TAM on social media adoption, noting that an increase in perceived ease of use enhances perceived usefulness, which subsequently leads to greater intensity in social media usage. Lorenzo-Romero et al. (2011) also asserted that TAM is the most suitable model for studying social media adoption. Al-Khasawneh et al. (2022) applied the TAM framework to examine the impact of perceived usefulness, perceived ease of use, perceived enjoyment, sense of belonging, and user-generated content on TikTok adoption in Jordan. The findings revealed that user-generated content exerted the most significant positive influence on users' intentions to adopt TikTok, followed by perceived enjoyment, sense of belonging, perceived ease of use, and perceived usefulness. Additionally, the study showed that 47.8% of the variance in willingness to adopt TikTok could be explained by these independent variables (Al-Khasawneh et al., 2022). The authors also recommended further research across different nations and demographic groups to enhance the generalizability of these findings.



Research on the purpose of social media use is well established, with numerous studies employing the Uses and Gratifications Theory (U&G). U&G, introduced by Katz and Foulkes (1962), seeks to understand why and how individuals actively seek and use specific media to satisfy particular needs. Over the years, this model has become the foundation for many studies on media usage. Common social media functions include forming and maintaining social connections and interactions (Bonds-Raacke & Raacke, 2010), gaining a sense of social belonging (Young et al., 2017), as well as self-expression, escapism (Lee et al., 2015), seeking novelty, entertainment, relaxation, or participating in new trends (Smock et al., 2011). Wen





(2014), in his Ph.D. thesis, constructed a model using U&G to examine factors influencing the usage behavior of WeChat users, summarizing the purposes of use into four categories: Information Seeking, Social Interaction, Entertainment, and Self-identity. Similarly, Gupta and Bashir (2018) investigated the purposes of social media use among university students. Their study, based on random sampling techniques and factor analysis, identified four key factors: academic, socialization, entertainment, and informativeness. The internal consistency index, Cronbach's alpha ($\alpha = 0.830$), indicated good internal reliability.

Douyin has become one of the most frequently used social media platforms among Chinese young people, allowing users to communicate ideas, thoughts, and emotions with friends and family, as well as to share music, movies, and audio files without restrictions (Ghafar et al., 2022). As a social media platform, Douyin not only enables students to communicate and express themselves more effectively but also provides a space for showcasing their experiences and talents and searching for study-related information (Gupta & Bashir, 2018). These functions position Douyin as a multifunctional platform that supports both entertainment and educational exploration among university students.

To better understand how students engage with such platforms for learning, Social Cognitive Theory (SCT) offers a useful lens. SCT posits that individuals acquire new knowledge and skills through observation, imitation, and feedback. During this process, people are influenced not only by the behavior of others but also by observing and adjusting their own behavior and outcomes (Bandura et al., 2002). Previous research has applied SCT to explain technology usage behavior and sharing





behavior on social media. For example, Zhou et al. (2020) found that individuals' expectations and attitudes significantly influence their behavior in using YouTube as a learning resource. Similarly, Ayar et al. (2021) demonstrated a strong positive correlation between young people's purposes for using social media and their engagement in technology-driven learning, facilitated by social media functions such as document exchange, virtual communication, and knowledge formation.

Personal factor, such as motivation, has been identified as a core factor universities can leverage to promote knowledge sharing and improve students' learning performance. Zhou (2019), in his doctoral thesis, investigated university students' self-regulated learning strategies for the voluntary use of social media in formal learning, identifying personal factors as influential in the use of social media for learning. Research further supports that personal factors related to technology usage can significantly impact individuals' online learning behavior and performance (Zhou, 2019; Artino, 2007; Whipp & Chiarelli, 2004).

Based on the above perspectives, this study aims to develop a structural model to examine the factors influencing undergraduate students' use of Douyin for educational purposes. Specifically, it seeks to explore whether Chinese undergraduate students' adoption of Douyin, their purposes of use, and personal factors influence its educational usage. Furthermore, the study aims to assess whether the purpose of use serves as a mediating variable between adoption and educational usage of Douyin.



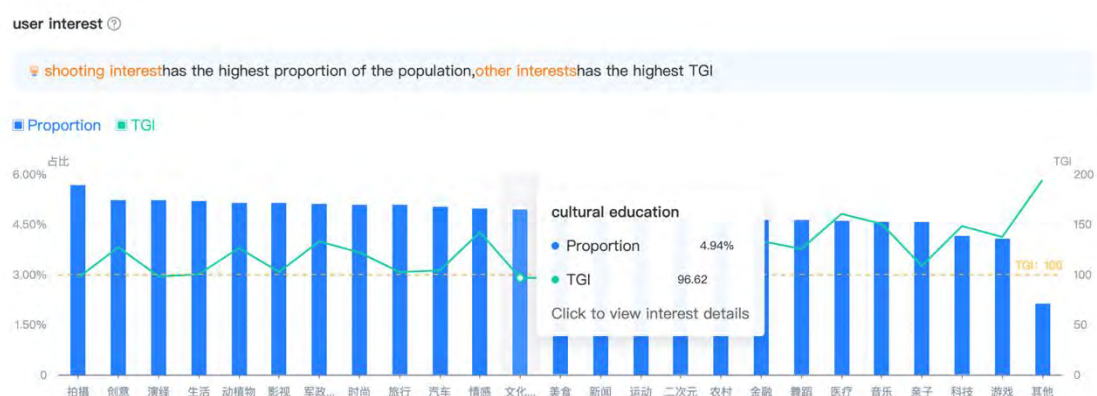
1.3 Problem Statement

Although Douyin was initially designed as an entertainment-oriented social media platform, the increasing volume of educational content and the growing integration of Douyin by instructors have significantly enhanced its educational potential. Data indicates that between January and November 2022, Douyin hosted 21,103 college live streams, representing a 46% increase compared to the total of 14,463 streams throughout 2021. Additionally, over 95 million users watched these educational streams, resulting in nearly 200 million likes (Oceanengine, 2023b). Figures 1.4 and 1.5 illustrate a noticeable shift in user interests: from just 4.94% of users interested in cultural and educational content in 2021 (Oceanengine, 2022a), this figure rose to 5.42% by 2022, ranking it third in overall user preferences (Oceanengine, 2023a).

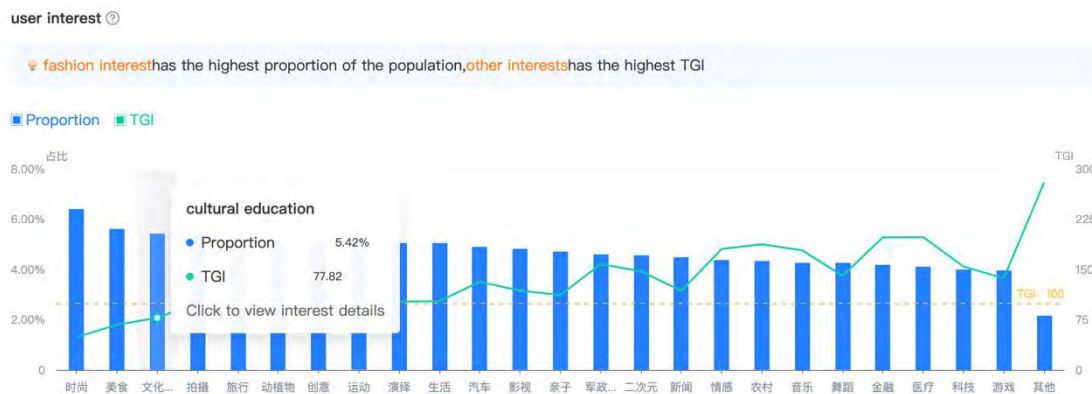
Thus, the educational use of Douyin might be more widespread among users than commonly perceived.

Figure 1.4

Statistical chart of Douyin user interest in 2021



Oceanengine, 2022a

Figure 1.5*Statistical chart of Douyin user interest in 2022*

Oceanengine, 2023b

This shift suggests that the educational use of Douyin may be more frequent and more meaningful than previously assumed. Indeed, the functions of social media in China have expanded significantly beyond entertainment. Studies have shown that Chinese social media users now integrate these platforms into work and academic contexts, supporting both professional performance and personal learning (Li et al., 2021). For university students in particular—members of Generation Z—social media is deeply embedded in everyday routines. They rely on platforms such as Douyin not only to communicate with peers and instructors, but also to access and share information, cultivate skills, and build digital communities (Zhang, 2019). Given this transformation, the boundaries between informal and formal learning are increasingly blurred, and Douyin, despite its entertainment roots, has become a potentially valuable channel for autonomous, interest-driven educational engagement.

However, despite this evolving reality, most existing research in China has focused on Douyin's commercial or marketing functions (Chen & Yin, 2022; Wu et al., 2022; Huang et al., 2022), or on its use by instructors in structured teaching



contexts (Gao, 2022; Ma & Xia, 2022; Yang, 2022). There remains a significant lack of empirical research on how university students voluntarily use Douyin for educational purposes, particularly in self-directed and informal learning settings. Unlike instructor-led tasks or platform-pushed content, voluntary educational usage reflects students' intrinsic motivations and digital behaviors—a phenomenon that is crucial for understanding how Douyin might be authentically integrated into broader learning ecosystems.

To address this gap, it is essential to examine what factors drive students to adopt Douyin for educational use, and how their motivations and personal characteristics influence this process. The Technology Acceptance Model (TAM) provides a widely recognized framework for analyzing user adoption of digital technologies. Numerous studies have demonstrated the impact of perceived usefulness and perceived ease of use on individuals' behavioral intentions to adopt various platforms, including Douyin (Al-Khasawneh et al., 2022; Akar & Mardikyan, 2014; Yan, 2022). Moreover, perceived enjoyment, interactivity, and social influence have been shown to mediate or enhance these relationships, especially in the context of short video apps (Xiang, 2020; Jia et al., 2022).

Beyond adoption, the Uses and Gratifications Theory (U&G) adds further insight into users' psychological and practical motivations. The theory suggests that individuals engage with media platforms to satisfy specific needs—ranging from entertainment and social connection to self-identity and information-seeking (McQuail, 1997). In educational settings, researchers have applied U&G to explore how academic, social, and informational gratifications drive social media usage





(Gupta & Bashir, 2018). Empirical tools developed under this framework have validated that university students often seek academic benefits from platforms typically regarded as non-academic.

One of the most relevant integrated frameworks is the model proposed by Mazman and Usluel (2010), which links Adoption, Purpose of Use, and Educational Usage in a structural model. This model, originally applied to Facebook, demonstrates that purpose mediates the relationship between technology adoption and actual educational use. Their work has been validated in multiple studies across different platforms (Manasijević et al., 2016; Arteaga Sánchez et al., 2014), but its applicability to Douyin remains underexplored.



Moreover, existing models tend to overlook personal factors — a core component of Social Cognitive Theory (SCT). According to SCT, personal agency, beliefs, and self-regulatory capacities interact with environmental factors to shape individual behaviors (Bandura, 2002b; Pintrich & Schunk, 2002). Zhou (2019) applied SCT to examine self-directed social media use in university settings and identified several personal variables, such as motivation, learning habits, and digital self-efficacy, that significantly impact students' engagement patterns. Integrating these personal dimensions into structural models can deepen our understanding of how and why students engage with platforms like Douyin for learning purposes.

Therefore, this study aims to build upon the TAM, U&G, and SCT frameworks to construct and validate a comprehensive structural model that explains the voluntary educational usage of Douyin by undergraduate students in China.





Specifically, the study investigates whether Adoption, Purpose, and Personal Factors significantly influence educational usage, and whether Purpose serves as a mediating variable between Adoption and Educational Usage. By addressing this multi-theoretical gap and expanding the scope of inquiry to include students' autonomous behaviors, this research contributes both theoretically and practically to the field of educational technology and informal learning in the digital era.

1.4 Theoretical Framework

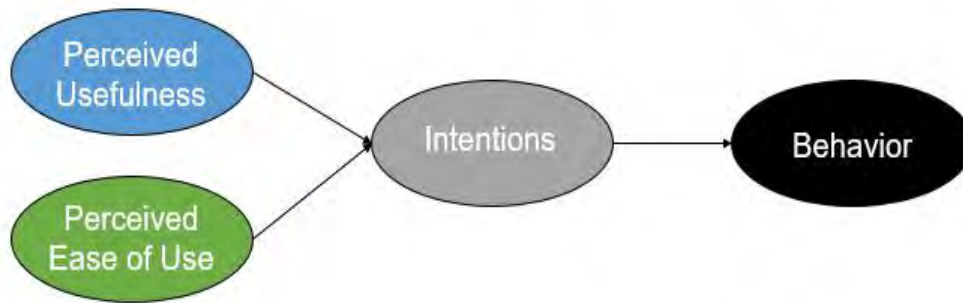
The theoretical framework of this study is grounded in the Technology Acceptance Model (TAM), Uses and Gratifications Theory (U&G), and Social Cognitive Theory (SCT). The TAM originated from the Theories of Reasoned Action and Planned Behavior (Davis, 1989; Davis et al., 1989). The original TAM aimed to provide a general explanation for the determinants of computer acceptance, accounting for user behavior across a wide range of end-user computing technologies and user groups, while remaining parsimonious and theoretically sound (Davis et al., 1989). Since its inception, the TAM has been expanded to encompass various other technologies beyond computers, including telemedicine services (Kamal et al., 2020), digital technologies for teachers (Scherer et al., 2019), e-learning platforms for students (Sukendro et al., 2020), and mobile applications (Al-Khasawneh et al., 2022; Min et al., 2019). The TAM is widely used to study users' behavioral intentions to adopt specific systems. Users' attitudes or perceptions toward information systems are primarily influenced by two key factors: perceived ease of use and perceived usefulness. These elements are fundamental in shaping technology acceptance and



behavioral intentions to adopt new technologies (Al-Marroof et al., 2021; Al Kurdi et al., 2020; Alshurideh et al., 2019; Teo, 2011). The TAM is illustrated in Figure 1.6.

Figure 1.6

Technology Acceptance Model



Al-Khasawneh et al. (2022) investigated the factors influencing user adoption of the TikTok app in Jordan using the TAM model, validating the roles of perceived usefulness and perceived ease of use. Based on these findings, the variables influencing the adoption of Douyin in this study have been adjusted to include perceived usefulness, perceived ease of use, perceived enjoyment, sense of belonging, and user-generated content. Additionally, Guner (2018) extended the original TAM by incorporating social influence and facilitating conditions, demonstrating their positive effects on the adoption of information and communication technologies (ICT) among older adults. Similarly, Vahdat et al. (2021) expanded TAM by including social and peer influences. Jia et al. (2023) specifically examined TikTok, exploring and confirming the sources of social power and highlighting the significant role of social influence in shaping users' intentions to continue using TikTok. Consequently, in this study, the adoption of Douyin is framed with reflective variables including perceived usefulness, perceived ease of use, and social influence.

The Uses and Gratifications (U&G) framework provides a theoretical basis for media researchers to explore how users engage with various forms of media—whether traditional or new—and the needs, utilities, and purposes they seek to fulfill. U&G posits that users select media based on its ability to satisfy their specific needs, taking into account the utility of each medium (Perse & Courtright, 1993; Katz et al., 1973). This approach enables researchers to better understand users' behaviors, perceptions, and motivations across different media types with diverse goals. According to Pedersen et al. (2020), audiences interact with mass media to fulfill specific purposes, influenced by personal characteristics, social categories, and relationships.

Building on this framework, Gupta and Bashir (2018), through a comprehensive literature review and surveys in various educational contexts, identified four primary purposes for social media use by university students: academic (Kio, 2016), socialization (Park, 2015; Pornsakulvanich & Dumrongsiri, 2013; Wijesundara, 2013), entertainment (Eid & Al-Jabri, 2016; Sridhar & Vizhi, 2016; Pornsakulvanich & Dumrongsiri, 2013; Wijesundara, 2013; Griffiths, 2002), and informativeness (Eid & Al-Jabri, 2016; Sridhar & Vizhi, 2016; Park, 2015; Remia, 2014). Similarly, Wen (2014), in her doctoral thesis, categorized the purposes of social media use into external and internal needs, aiming to examine how these influence user behavior. External needs included information seeking, social interaction, and entertainment, while internal needs centered on self-identity.

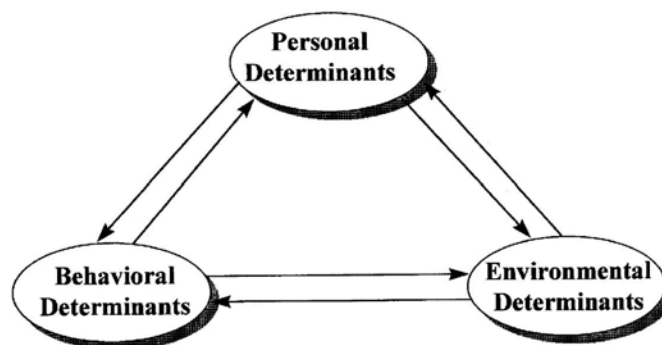
Previous research highlights that the purposes of social media use span socialization, entertainment, information acquisition, and academic activities. In Mazman and Usluel's (2010) structural equation model on the educational usage of

Facebook, purpose-of-use factors included social relations, work-related activities, and daily activities, focusing predominantly on external needs. In this study, building on U&G and prior findings, the purposes of Douyin usage are framed around external needs, with reflective variables defined as socialization, entertainment, and informativeness. Furthermore, under Social Cognitive Theory (SCT), behavior is influenced by both external environmental and personal factors (Bandura, 2002b; Pintrich & Schunk, 2002). Consequently, educational usage should also account for the influence of personal factors.

The third theoretical foundation of this study is Social Cognitive Theory (SCT). First proposed by Bandura (2002b), SCT is a psychological framework that explains human behavior through a triadic interactive causal relationship. As depicted in Figure 1.7, personal determinants, environmental determinants, and behavioral determinants interact bidirectionally (Bandura, 2001). Essentially, the theory posits that individual and environmental factors not only shape and control human behavior but are also influenced by behavior itself, thereby affecting an individual's internal personality and external environment (Bandura, 2002b; Pintrich & Schunk, 2002).

Figure 1.7

Schematization of triadic reciprocal causation in the causal model of social cognitive theory



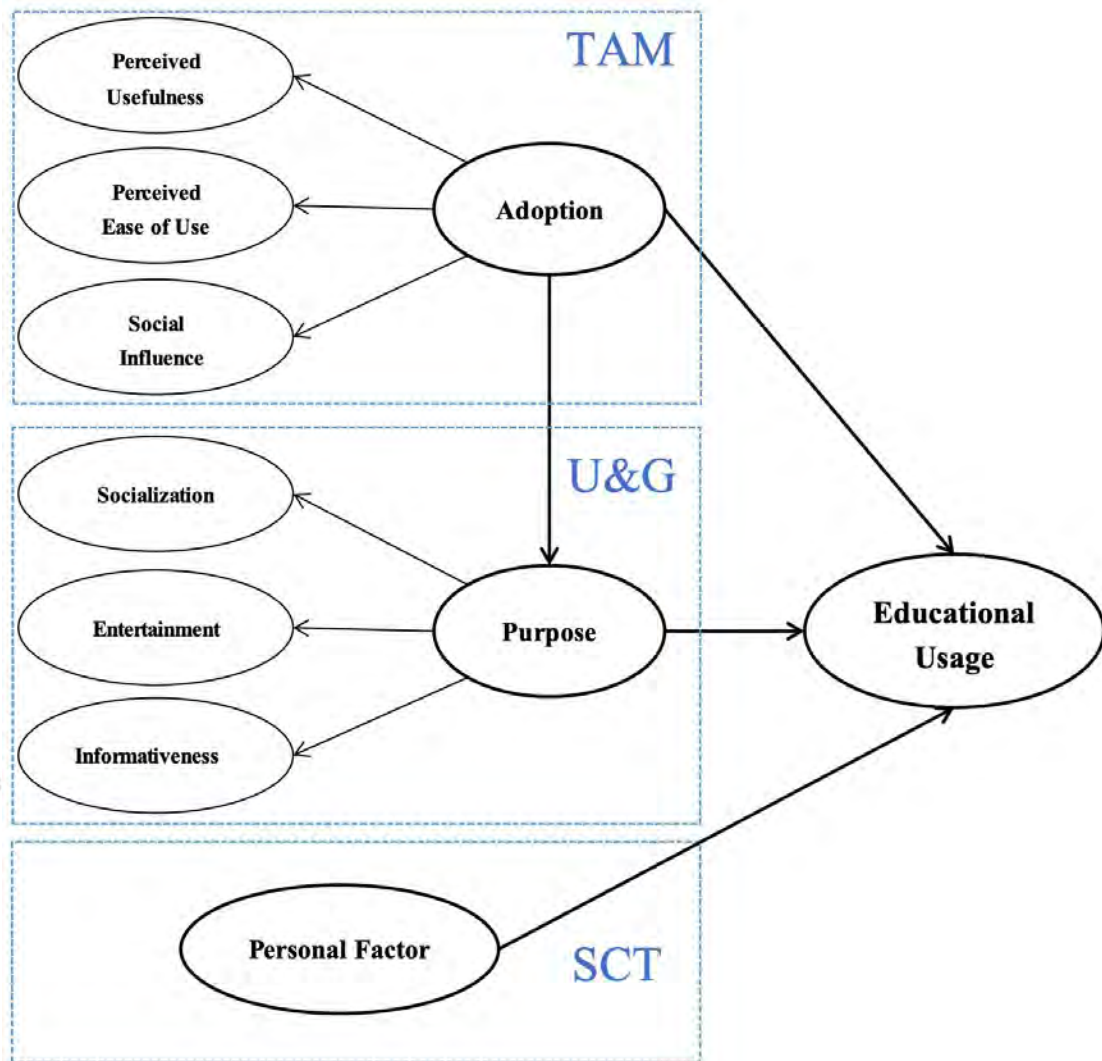
Bandura, 2001



SCT explores how people learn from observing the behaviour, experiences and environments of others. Personal factor determines a person's ability to perform specific behaviours in a social networking system. Personal factor examines the level of self-efficacy, which helps motivate a person to share knowledge and learn in virtual communities. Environmental factors refer to how the environment influences the ability of individuals to share and access more efficiently, ensuring successful behaviour (Bandura, 2001). Bandura (2001) argues that in the face of increasingly complex technological developments, individuals must be technologically competent if they are to succeed in a technologically mediated environment. This technical competence is shaped by the individual's self-efficacy, outcome expectations and attitudes towards technology use (Zhou, 2019; Lee, 2012). Lau (2017) conducted a systematic literature review on Social Cognitive Theory (SCT) to validate individual behaviors, focusing primarily on media influence, learning performance, communication, and social interaction. Zhou et al. (2020) applied SCT to study knowledge-sharing behaviors within virtual communities on YouTube. Similarly, Hosen et al. (2021) demonstrated through empirical research that document exchange, virtual communication, and knowledge formation by university students using social media are effective tools for both personal and educational purposes, significantly enhancing their academic performance. Using SCT, it is possible to explore how undergraduate students observe and learn from educational information shared by others on Douyin. These findings suggest that the personal factor also has a significant influence on the educational usage of Douyin.

In conclusion, a conceptual framework has been suggested and is shown in Figure 1.8 by adjusting to these theories, principles, and the literature review.



Figure 1.8*Conceptual framework*

Douyin is an emerging social media platform. To fully capture its potential for educational usage, it is essential to explore the factors that influence undergraduate students' educational usage of Douyin. This study aims to develop a model of the factors influencing the educational usage of Douyin by undergraduate students in China, grounded in the frameworks of TAM, U&G, and SCT. A detailed explanation of the conceptual model will be provided in Chapter 2.



1.5 Research Objectives

The primary objective of this study is to develop and validate a structural model that explains the factors influencing the voluntary educational usage of Douyin among undergraduate students in China. Drawing on the Technology Acceptance Model (TAM), Uses and Gratifications Theory (U&G), and Social Cognitive Theory (SCT), the study sets out to achieve the following specific objectives:

1. To examine the effects of adoption, purpose of use, and personal factors on the educational usage of Douyin by Chinese undergraduates.
2. To investigate the relationship between adoption and the purpose of using Douyin by Chinese undergraduates.
3. To assess whether the purpose of use mediates the relationship between adoption and educational usage, using structural equation modeling and bootstrapping analysis.

1.6 Research Questions

On the basis of the research objective, the research questions are as follows:

1. Could adoption, purpose and personal factor be significantly related to educational usage of Douyin by Chinese undergraduates?
2. Could the adoption of Douyin be significantly related to purpose of Douyin use by Chinese undergraduates?
3. Could the purpose of Douyin use mediate the relationship between adoption of Douyin and educational usage of Douyin?





1.7 Research Hypotheses

Based on the research questions posed, the following hypotheses were formulated:

H1 The adoption of Douyin by undergraduate students in China is significantly correlated with their educational usage of Douyin.

H2 The purpose of Douyin use by undergraduate students in China is significantly correlated with their educational usage of Douyin.

H3 Personal factor of Douyin by undergraduate students in China significantly correlate with their educational usage of Douyin.

H4 The adoption of Douyin by undergraduate students in China is significantly correlated with their purpose of Douyin use.

H5 The purpose of Douyin use mediated the relationship between adoption of Douyin and educational usage of Douyin.



1.8 Significance of the Study

Chinese scholars began researching short videos relatively early, but much of the existing research on Douyin focuses on the commercial operations of short-form video platforms and the marketing of specific short-form video content. In the field of education, most studies have centered on lecturers' usage, with limited attention to students' educational usage behaviors. This study emphasizes user subjectivity and investigates the educational usage of Douyin by undergraduate students. It aims to identify the factors influencing their adoption of Douyin, their purposes for using it, and how these factors contribute to generating educational usage behaviors.





Additionally, the study examines the personal factors that affect their educational usage behaviors, thereby addressing a research gap to some extent. Furthermore, the findings of this study will provide policymakers and education providers with a broader perspective on the use of Douyin in higher education, enabling them to establish more effective patterns for leveraging new media technologies.

Moreover, this study attempts to shed light on what factors influence the generation of educational usage behaviour on Douyin, which can contribute to the development of new media in the field of education. At the same time, the study investigates factors impacting young users' adoption and purpose of use of Douyin as well as describing personal factors influencing their educational usage, giving the researchers a more discerning viewpoint on the behavioural patterns of students - as the primary audience and main beneficiaries of education - using new media.



1.9 Limitation

The study focused on undergraduate students at a university in the Henan province region of China, not only due to the fact that Henan is the most populous province in China but, more significantly, among the TOP 10 cities in terms of the number of Douyin knowledge interest users, knowledge interest users in cities in Henan Province preferred campus education-related content (Oceanengine, 2023b). So, the educational usage of Douyin for undergraduate students in Henan Province is perhaps more representative. And even though the location is restricted to Henan Province, the study samples are somewhat persuasive as students at the university come from all





over the country. Furthermore, considering that the primary sample focuses on students aged 18 to 23—an age group that demonstrates the highest preference for educational content on Douyin (Oceanengine, 2023b)—this makes the sample more representative. Therefore, limiting the sample to undergraduate students aligns better with the targeted age range.

In addition, quantitative research methods will be used to collect data through online questionnaires. Although the online questionnaire distribution is convenient, it is limited by the fact that the respondents cannot be fully confirmed, the quality of the questionnaire responses is not sufficiently controlled, and the selection of respondents may be limited to the researcher's city, so the results of the survey may be affected. Besides, the survey phase may affect the findings due to the different majors, ages, and grades of the students interviewed, and the individual circumstances of the samples are not the same, such as the level of knowledge and personal abilities, so attention should be paid to the balance and diversity of the sample population.

This study focuses on Douyin, which is limited by its product positioning, functions, and features, and its conclusions may not necessarily apply to other social media. Moreover, new things are constantly emerging in the age of online information. Douyin is still in its growing stage and may be subject to further changes or interference from social factors or market factors, leading to some errors or uncertainties in the study. Furthermore, the educational usage of Douyin by undergraduates is a voluntary and autonomous use by students that is not restricted to the realm of university education and excludes the need for mandatory or required curriculum use by lecturers. This educational usage is generally a scenario where





students use Douyin to gain the necessary knowledge and skills. This study concentrates on user usage to provide a diverse perspective on the educational usage of Douyin.

1.10 Operational Definitions

1. Adoption

Adoption in this context refers to the process of accepting, using, and integrating new technology or innovation into one's daily life or work. It involves the decision and actions taken by individuals or organisations to incorporate the technology into their routines or systems (Guner & Acarturk, 2020). In this study, adoption refers to the willingness of Chinese undergraduate students to adopt Douyin.

2. Educational Usage

In contrast to passively receiving knowledge and instruction, social media enables students to create and share learning resources with other students (Zhou, 2019). This study explores the user's perspective, where undergraduate students use Douyin to learn knowledge or skills voluntarily and autonomously.



3. Entertainment

Entertainment is an extremely common purpose for users to use social media (Ito et al., 2013). In this study, entertainment refers to users having fun, relaxing, killing time, etc., on Douyin.

4. Informativeness

Informativeness means that through the use of social media, users get the comprehensive, timely and reliable information they need and share it with other users (Wen, 2014). In this study, informativeness means users using Douyin to get the information they need or to share information.

5. Perceived Ease of Use

Perceived ease of use has been defined Davis (1989) as "the degree to which a person perceives a particular system to be effortless to use". In this study, PEOU is considered to be the extent to which a person believes using Douyin will be effortless.

6. Perceived Usefulness

Perceived Usefulness is defined as (Davis, 1989) "the extent to which a person believes that using a particular system will improve his or her performance". In this study, PU refers to the degree of utility that users can perceive in the process of using Douyin.

7. Personal Factor

In SCT, personal factor refers to the personal characteristics and intrinsic factors that influence an individual's cognition and behaviour in social interactions (Bandura, 2001). Personal factor in this study refers to the inherent personal motivations of undergraduate students' educational usage of Douyin.

8. Purpose

The concept of purpose encompasses the underlying motivation or intention that drives an individual's actions, catalyzes something's existence, or acts as the driving force behind pursuing a specific goal to attain a desired outcome (Jones-Khosla & Gomes, 2023). In the context of this study, purpose refers explicitly to the exact intention behind the use of Douyin.

9. Social Influence

Social influence pertains to the phenomenon whereby an individual's actions, emotions, or attitudes are susceptible to the impact of the behaviors or verbal expressions exhibited by others within their social network (Venkatesh & Brown, 2001). Social influence in this study refers to the extent to which undergraduate students are influenced by their adoption of Douyin from the external social environment or by others.

10. Socialization

Socialization is defined as the users' pursuit to fulfill their social integrative needs through the use of social media (Lee & Ma, 2012). In this study,

socialization refers to the use of Douyin by undergraduates to meet social purpose.

1.11 Summary

This chapter begins with a brief introduction to this study. It introduces the research context of this study, where Douyin has found many applications in the education field amidst its massive popularity among university students. This is followed by a description of the problem statement of this study, pointing out the current problems to show the need for this study and the research gap. The theoretical framework of this study is then constructed based on the theories of TAM, U&G and SCT, combined with other scholars' research literature on Douyin. Based on the listed objectives of this study, the research questions are located and based on this; the research hypotheses are listed concerning the existing theory and literature. This is followed by a further explanation of the research significance of this study and its contribution to Douyin research and higher education. In addition to this, the scope of the study is specified and the limitations of the study are described. Finally, specific definitions and explanations of the study's operational terms are provided to help better understand the analysis.