

The Interplay of Watching, Creation, Socialization, and Monetization on TikTok

Mickey Mengting Zhang

*Faculty of Humanities and Arts
Macau University of Science and Technology
Macau, 999078, China*

mtzhang@must.edu.mo

Cees de Bont

*School of Design and Creative Arts
Loughborough University
Leicestershire, LE11 3TU, UK*

c.j.de-bont@lboro.ac.uk

Abstract

Purpose - Short video platforms (SVP), as a new form of social media, have become tremendously popular over the last few years. SVPs are not fully formed but are instead the result of the dynamic among platform, users, and designers. This research takes a closer look at how UX is innovated and interrelated on one such platform - TikTok.

Methodology/approach - After an introduction to the emergence of TikTok, the paper explored the concept of UX, the construct of SVP, and the experience innovation of each construct. Then we investigated the interplay of watching experience, creation experience, social experience, and monetization experience, as the four fundamental constructs of SVP. A survey with users of the platform was conducted to understand the interplay of the four constructs. Data was collected and analyzed with structural equation modeling (SEM).

Findings - This paper argues that besides algorithms, UX design and innovation contribute to the success of SVP. The platform innovates in watching, creation, social, and monetization experiences, each of which is essential for the integrity of UX. We further investigated that what is the relationship among the four constructs; how they influence each other; and why the influence is essential. Based on the findings, we establish a UE-SVP model, which could be applied by practitioners and researchers to establish a new platform, or refine and assess an existent SVP.

Originality/value - This research extended the current understanding of the domain of SVP, which is an important topic in social media. This study represents a step toward understanding the UX innovation of SVP. It offers implications for designers and development teams.

Keywords: User Experience, Innovation, Interplay, Short video platform, TikTok.

1. INTRODUCTION

Due to the prevalence of high-quality cameras on mobile phones and high-speed Internet, user preferences shifted toward visual content in terms of images and videos (Savic, 2021). Short video platforms quickly dominated the social media market (Wang, 2019; Gould, 2019; Omar & Dequan, 2020). TikTok is one such successful platform. As the industry's leading company, TikTok has been downloaded more than 2.6 billion times since its launch in 2016, trending on Android and iOS systems (Wallaroo, 2021). To put it in perspective, this increase was substantially more than Facebook's and Twitter's growth throughout their early stage (Savic, 2021). The platform continues to expand under the COVID-19 pandemic garnering more than 500

million active users monthly (Influencer Marketing Hub, 2020). Most of them are teenagers and millennials, who spent at least an hour per day on average on the platforms (Davis, 2019; Yu, 2019; Sehl, 2020).

Although how long SVP will influence the world is not clear at large, it fundamentally changes how we interact with social media, especially in terms of entertainment, communication, and information dissemination. When reviewing the literature, research related to user experience (UX) included personality traits (Omar & Dequan, 2020), psychology of users (Kumar & Prabha 2019), use of humor (Wang, 2020), the algorithm-driven personalized contents (e.g. Anderson, 2020); anticipate user preference and cause “stickiness”, and student engagement (Pavlik, 2020). Other studies explore its innovation in algorithms (e.g., Ryan, et al., 2020), referral or retention strategies (e.g., Anderson, 2020); information dissemination during COVID-19 (Basch, et al., 2020; Sidorenko-Bautista et al., 2020; Eghtesadi & Florea, 2020); scientific public engagement (Hayes et al., 2020; Swathi & Devakumar, 2020); its impact on privacy, ethic, political or national security (Neyaz, et al., 2020; Medina Serrano et al., 2020; Scalvini, 2020; Cheng et al., 2020; Koleson, 2020) and so on. Considering the user experience (UX), not much attention has been drawn to it. However, understandings the innovation of UX and the interplay of different types of UX on TikTok are limited.

Before the concept of "user experience" appeared, academia and Information and Communications Technology (ICT) industries were mainly “occupied with usability and human factors engineering” (Löwgren et al., 2013). Usability is defined as the extent to which a product, service, or system can be used to achieve goals efficiently and error-freely (ISO 9241-11). Different measures have been developed to evaluate usability (e.g., Bevan & Macleod, 1994; Seffah et al., 2006; Bevan, 2009). According to ISO 9241-11, usability can be measured with “effectiveness (the ability of users to complete their work qualitatively using the system), efficiency (resources spent on tasks), and satisfaction (subjective user reactions to system use)”. A variety of design rules (e.g., Norman, 2005; Johnson, 2020), principles and specifications (e.g., ISO 9241-110, 2006; Matera et al., 2006), and guidelines (e.g., Nielsen, 1994; Federoff, 2002; Vanderdonck & Pribeanu, 2005) were developed to design for user interface and assess system usability.

With substantial offerings on the market, usability becomes a "must-have" quality. It can be utilized to improve an existing solution, but cannot guarantee success, as there is always another solution that may provide more satisfaction and enjoyment (Battarbee & Koskinen, 2005). Gradually its dominant role in human-computer interaction (HCI) was challenged by a novel emotional concern concept with an appealing term: user experience (Cockton, 2012). The HCI field is moving towards experience, seeking to bridge humans, technology, and design (e.g., Baker, 1993; Hassenzahl, 2003). User experience goes beyond pure utility and concerns a user's perceptions and responses to the use of the product, service, or interactive system (Bevan, 2009). It has emerged as comprehensive and holistic with both utilitarian and emotional aspects (Rhea, 1992). Several techniques have been developed to measure and categorize user experience (e.g. Forlizzi & Battarbee, 2004; Hassenzahl & Tractinsky, 2006; Karapanos et al., 2009; Ketola & Roto, 2008; Zarour & Alharbi, 2017).

While top-tier UX has a lot to do with the success of short video platforms (e.g., Yu, 2019; Chin, 2021; Yang, 2022; Kobie, 2022). The quality of experience on the platform is correlated with users' loyalty, behavior, satisfaction, and willingness to retain (e.g., Salameh & Hassan, 2015). However, current research mainly focuses on how technological advancement influences the development of the social media industry. Less of them explored how the platform delicately calculates the UX and optimizes it with design strategies and tactics. In addition, some extant research on short video platforms examined different types of user experience individually, leaving other issues such as the interplay of these types of experience underexamined. Therefore, this study intends to explore how watching experience, creation experience, social experience, and monetization experience influences each other as an integrated system. First, we reviewed the theoretical basis and those concepts essential to the study, including the

concept of UX, constructs of SVP, and UX of each construct. Second, we explore the theoretical model as well as the relationships among constructs and developed a model named UE-SVP Model (User Experience Model on SVP; see Fig.2), which was generated based on quantitative theories and quantitative analysis. The final section discusses the design implications, limitations, and further studies.

2. LITERATURE REVIEW

As there is limited research concerning the UX of TikTok, this study begins with its constructs, as to how a platform is formed can reflect what kind of experience users is expected to perceive. It also provides an interesting framework where we can position a different kind of experience in. When reviewing the literature, a line of research investigates the interplay among different constructs in social media. Online mobile applications can be divided into two types. One takes the utilitarian approach, which provides users with live service support or conveniences in daily life like Amazon, or Uber. The other takes an emotional approach to entertainment, leisure, and enjoyment, such as Youtube, and Snapchat (Mhalla et al., 2020). Social media platforms were usually recognized as the second one. They are usually applied in three ways: consuming, participating, and producing (Shao, 2009). Consuming refers to how users watch, read, or view content on the platform. Participating entails both user-to-user and user-to-content engagement with actions like sharing, liking, commenting, or following. Producing includes the development and distribution of one's content such as text, photos, audio, and video on the platform. Based on the three usages, Shao proposed a theoretical framework that described their interrelationship from a gratification perspective. The three usages discussed are essential for UGM, as well as SVP as SVP could also be considered as a form of UGM. However, the research was conducted at the early stage of UGM development, which did not mention the monetization function - an essential construct of SVP. In addition, it emphasized features of usability rather than UX influences on gratification.

This perspective considered social media mainly from an emotional approach as a platform for self-expression and entertainment, rather than a tool with a definite aim to finish a certain task. While others treat SVP from a business perspective and emphasized its possibility of monetizing the business. The platform seems to form a self-sustain loop for users to create, interact, and make revenue on the platform, which ensures the business is lucrative. This evolution is developed based on mobile ICT services, with a high-quality camera, high-speed Internet, a fragment of information, and an attention economy. Mhalla et al. (2020) summarized TikTok's service offerings into three categories: 1) creation, discovery, and social sharing; 2) social commerce; and 3) social impact. In addition, the prominence of SVP is that these different usages do not work independently. Instead, they are connected and intertwining with each other. Cuofano (2020) discussed how TikTok created a databased content-centered model, which is continuously optimized through a dynamic circle of creation, control, planning, recommendation, and interaction. Similarly, Jiang (2019) studied how the user interface, interaction experience, and contents of SVPs were optimized to improve the retention of the platform. Jiang further emphasized three factors that play an essential role in retention: user-centered design, creative digital content, and personalized service that especially meet users' needs and expectations on the platform. Xu et al. (2020) discussed that short video platforms should be dedicated to helping companies in the acquisition of target customers and future markets, through 1) creating and leading consumption trends; 2) disseminating product information and attracting attention; 3) integrating online and offline resources and streams for value creation. Su et al. (2020) asserted that short video platforms were effective channels for branding, especially in COVID-19. They further illustrated their points with a case of how athletes adopted TikTok to interact with fans and companies use it to launch marketing campaigns and ads. Inspired by previous research, and observing and analyzing the information structure of TikTok, it was found that the platform can be categorized into four modules: watching, creation, socialization, and monetization in at least three layers (Fig.1).

2.1 Watching Experience

Learning users' habits, automatic recommending, and waterfall video playing, brought incremental and accumulated satisfaction (Lin, 2019). TikTok creates a positive watching experience from the first seconds of using the platform, and users did not have to do a thing for it. Rather than having to choose what to watch from a listing format (served in other apps), users on the SVP platform do not need to manually filter out their preferences. When the platform is launched, a user is immediately served with an endless feed of video on the very first screen. This feed is driven by the "first-party behavioral cues", which cater to users' preferences based on factors like the user engagement (watch duration, like, share, comment, etc) and the content information (video duration, music, hashtags, etc) (Bytedance, 2020). These curated feeds provide a distinct watching experience in comparison with the other social media platforms (Kazais, 2021). The first video is always the highly ranked one, usually the best content, which can increase its success rate to retain a user (Dulenko, 2020). It is also an easier way for the platform to recognize and analyze what type of content the user like. To make the feeds more personalized and relevant, the platform can connect user enjoyment to repeat product usage. The smart move is that the platform tells users they can improve their experience through continued product use. Thus, a larger percentage of new users will invest the time needed to be hooked on the app.

When accessing and consuming any sort of material on a social network, a user will be interrupted with a range of information (e.g., username, captions, hashtags) and interactive elements (eg. like, comment, share). Each of these components competes for attention, while screen space is restricted. Simplicity in interaction design is an effective way to solve this problem and drive users' attention and foster engagement (Kazais, 2021). In the case of TikTok, the platform is designed with a human-centered layout, positioning, and natural gesture interaction to build an engaging experience for users. All contents are displayed on a vertical full-screen with main actions located on a sidebar at the same time. When users are watching, they can simultaneously follow, like, comment, and share with the thumb to reach the right of the screen easily. The icons of these actions are designed distinctly to avoid being blended from the video content. When changing the videos played, a user just needs to flick the thumb up and down. At each time, users only encounter one content without seeing a preview. This could also be recognized as intermittent variable rewards for users. Before swiping down, they do not know what video they will see, which makes the journey mysterious and excited (Yu, 2019). Through behavioral psychology principles, user interface and interaction design, and the automatically playing mechanism, the platform can reduce interruption and create an immersive visual environment. By learning users' habits, automatic recommending, and waterfall video playing, the platform brings users incremental and accumulated satisfaction (Lin, 2019).

2.2 Creation Experience

Social media platforms rely on a steady stream of user content. They encourage users to generate and consume content on a large scale (Gurbani et al., 2015). It is almost the basic law of why these systems can self-sustain and continue the growth. Some video platforms (e.g., Youtube) may require professional skills, equipment, or even financial investments to create content and gain popularity (McRoberts et al., 2016), while TikTok makes it much easier without financial cost for young people. The distinction between consumers and producers has been blurred on social media platforms (Cooke & Buckley, 2008). Hundreds of millions of Internet users, streamers, and celebrities become self-publishing consumers (Omar & Dequan, 2020). They can shoot and clip videos, live streaming broadcasts, and establish social networks on short video platforms (Omar & Dequan, 2020). When a user watched an interesting video usually watched millions of times, there is a great chance that he/she would like to watch it till the end, and maybe like or share it with friends (Dulenko, 2020).

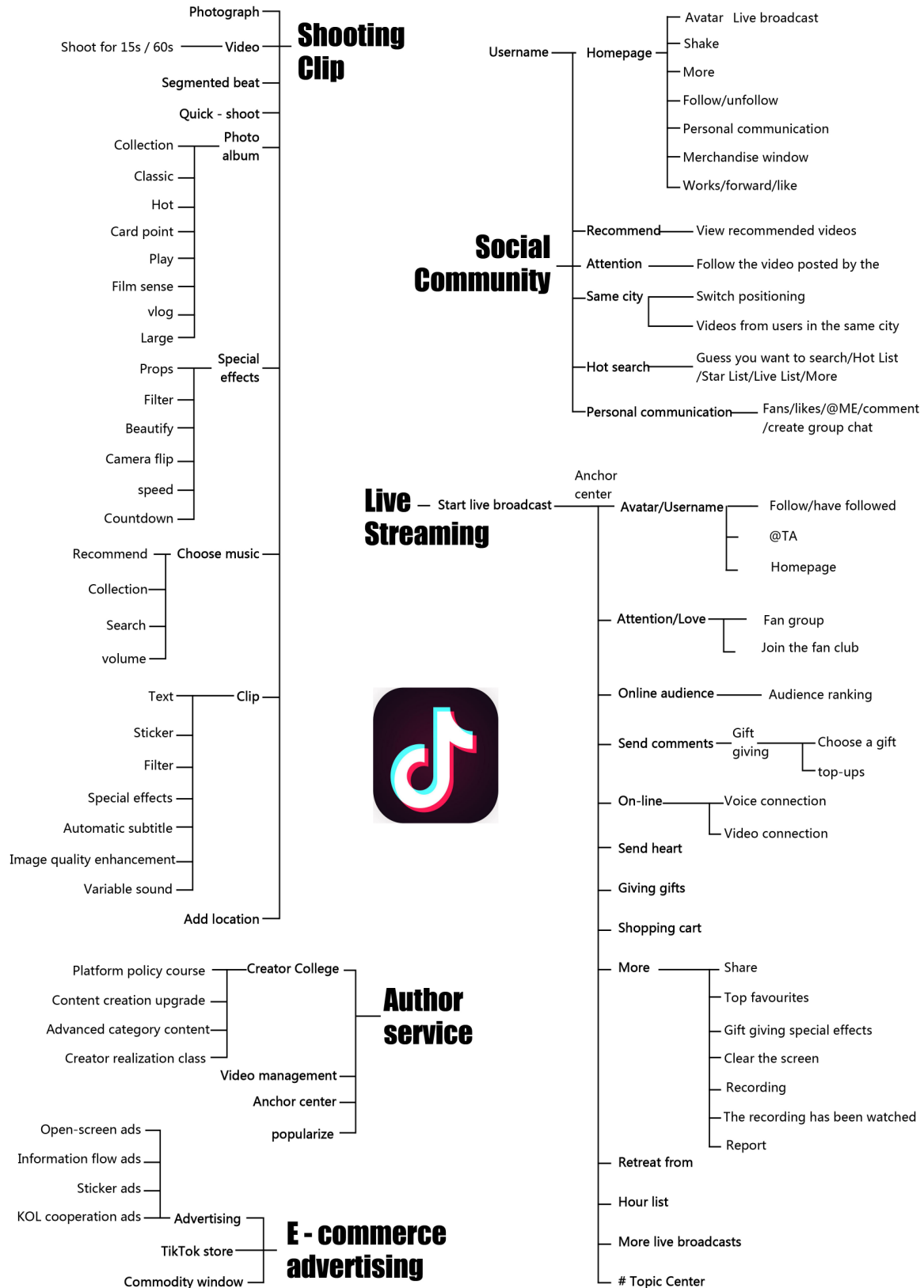


FIGURE 1: Information architecture of TikTok created by the authors (2022).

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The main features of TikTok in the creation module are shooting and clipping videos of 15 seconds (more popular) to 60 seconds, while 95% of videos do not exceed 15s. With its extensive free editing tools, the platform allows creators to improve content with only a few clicks on a smartphone, which is almost always at hand (Shutsko, 2020). Users can easily access an abundance of soundtracks, editing actions, tools, effects, filters, and stickers. To increase acquisition rate, visibility, and ownership, all of the contents created are immediately watermarked for save and share. Creators are provided with author service to monitor and enhance the quality of the contents (e.g., creator college, video management, broadcast center, and promotion program). They can analyze their data to trace the growth of followers, comments, and income, and adjust their strategies accordingly. Through various ways, they can initiate networking and business collaboration with brands, and small businesses, and commercialize their fame and influence with their creation. All these tools aim to attract younger persons and stimulate creative storytelling (Shutsko, 2020).

The platform's goal is to create an easy and comfortable environment, where self-expression and creativity take center stage (Shutsko, 2020). The contents can cover numerous aspects of life, e.g., cooking, technology, cinema, education, beauty, health, singing, dancing, etc (Wang, 2020). Unlike other social media apps (e.g., Instagram, Facebook), content on TikTok can be a little weird (Influencer Marketing Hub, 2020). Creators usually do not pursue professional or aesthetical performance, but sometimes quirky and funny, trivial or nonsensical, with uncoordinated dancing, pranks that went wrong, comics, mobile games, and other weird, or wonderful acts, as TikTok positions itself. These contents embrace local and global trends to resonate with a huge young user pool across the globe (Arai & Tolle, 2010; Nygren, 2012). A study conducted by Lu and Lu (2019) suggested different kinds of content are popular on TikTok in China. Creators might exhibit cosmetics, or clothes matching, build a virtual romantic relationship with the audiences, or provide recommendations to their fans with fancy nicknames. The "prosocial behavior" of humans can be observed, as the audiences can "absorb" certain positive energy from the creators (Shutsko, 2020). Other contents popular on the platform include popular sciences, education, arts and skills, or lifestyle. Several features have been implemented on the platform including auto-captions, text-to-speech, and photosensitivity to create an inclusive environment. It also tailors filters, effects, activities and trends for local audiences (Chin, 2021).

2.4 Social Experience

Younger people are more likely to be attracted by social media (Hoffmann, Lutz & Meckel, 2015). Their engagement with digital media is primarily led by social connections and entertainment (Nansen et al., 2012). While young users also apply online space to escape from anxieties in daily life (Pangrazio & Cardozo-Gaibisso, 2020). They can freely express themselves. Their opinions, interests, likeness, and dislikeness can be seen, understood, and discussed by more peers online. Users can interact with each other through various ways, such as viewing, liking, commenting, sharing, or following. With algorithms based on this information, they are more likely to be connected with similar interests, tastes, and preferences (Klug, 2019). The stimuli, activities, and events can be videos, music, or topics. The more time, energy, and attention a user attaches

to the contents, the more they are involved. TikTok can be a “free social network centered around performativity and play” (Savic, 2021, p.3173). Kobie (2019) noticed that the gesture interaction design of the interface may be a little hard for adults to use, which may interfere with parents joining the service.

2.5 Monetization Experience

Profit generating became increasingly essential for Internet companies' survival, due to the fierce competition (Hooper & Sant, 2018). Practitioners and researchers emphasized monetization innovation and began to wonder how companies could not only increase traffic but also actually make money (Mhalla et al., 2020). The monetization strategies implemented on social media platforms can be various, usually including advertisement, freemium, affiliate revenue, crowdfunding, subscription models, and micropayments (Mahoney & Tang, 2016).

It is a simple and convenient way to charge users to download apps, but TikTok does not take it. Its monetization potential can be limited, especially for platforms with high levels of user-generated content. Similarly, the other mainstream model is freemium, the combination of free and premium (Tang, 2016). It is usually accompanied by advertisement, the typical revenue model for traditional and new media companies. It is interesting to note that Tik Tok did not rely solely on advertisements at first (Mhalla et al., 2020), as it may jeopardize user experience. This move was critical for early-stage growth, as the primary goal of the company is to acquire as many users as possible to grow locally and internationally. Recently, by offering high exposure to brands and companies through advertising programs (Mhalla et al., 2020). These ads can be measured by checking the interactions with users, such as the number of clicks, views, likes, shares, and comments. If audiences are interested, they can be linked to the website page, specific hashtags, or platform challenges.

Other monetization strategies on the platform include live commerce (e.g., second killing purchase, instant reward function), e-commerce (e.g., product display widow, video), and virtual coins (e.g, donation, electronic red envelope, and gifts). TikTok “clings to a gift economy model of monetization, and relies predominately on live streaming and virtual currency exchange” (Kaye et al., 2020, p. 20). Live commerce is a creative way to monetize audiences. In live commerce, a creator can introduce the product information with a link on the screen. By clicking the link, audiences can be redirected directly to the e-commerce website to shop. The most considerable part is that audiences can buy the product without closing the App, which maintains the engaging experience. Audiences are rewarded with an instant discount to stimulate their purchase behavior. In addition, creators can also display commodities on their homepage or create a virtual store. Users can convert money to virtual coins, which can be used to buy virtual gifts and send to their favorite creators. All of the revenue (e.g., donations, red envelopes, or gifts) from the audiences can be shared by the creators and companies.

The platform intends to make the monetization activity not unobtrusive, immersive, and attractive (Chin, 2019). Ads or product information are blended into the feed content by matching content. When a user is watching a video of a scenic spot, its name and location will be displayed with a link to the tourist service, to stimulate travel. The ads are inserted into the videos with similar topics instead of played randomly, which aims to reduce the intrusive feeling.

3. METHODOLOGY/APPROACH

Deductive reasoning is ‘the mental process of making inferences that are logical’ (Johnson-Laird, 2010, p. 8). This research takes a deductive approach with the process of hypothesis formulation, data collection, data analysis, and hypothesis acceptance or rejection. In the following section, first, the research model and hypothesis development in this study are introduced. Then, a questionnaire was developed to collect data. After that, a model was constructed with the structural equation modeling method.

3.1 Research Model and Hypothesis Development

Theoretical propositions consist of relationships between abstract constructs (Pelz, 2022). Testing theories require measuring these constructs accurately and correctly, and scientifically, before the strength of their relationships can be tested (Bhattacharjee, 2012). Therefore, first, we define watching, creation, sociality, and monetization as the constructs based on the wireframe of TikTok (Figure 1). Overall, this study builds upon previous research and hypothesizes as following:

- H1. Watching experience impacts on creation experience on the short video platform.
- H2. Watching experience impacts social experience on the short video platform.
- H3. Creation experience impacts social experience on the short video platform.
- H4. Social experience impacts monetization experience on the short video platform.

Measurements for the experience of watching, creation, sociality, and monetization were taken from previous studies. As these studies were conducted mainly on social media platforms instead of focusing on short video platforms, some items were adjusted to fit the context of the study. This study received no funding from any organizations and declares no conflict of interest with all social media companies mentioned in this article.

3.2 Questionnaire Developments and Data Collection

To test our hypothesis and the research model, a questionnaire was developed, divided into two parts. The first part aims to screen a sample of respondents, selecting eligible participants who have already used a short video platform at least once. The first part of the questionnaire also aims to assess the basic demographic information of the respondents. The second part of the questionnaire aims to test the research hypothesis. All items were measured on a five-point Likert scale ranging from 1 ("strongly disagree") to 5 ("strongly agree") to indicate the degree of importance of the factors (Morimoto & Ash, 2005).

This study applied an online crowdsourcing platform with functions equivalent to Amazon Mechanical Turk in mainland China. 300 participants were recruited through the Macau University of Science and Technology student channel. These students are the main target users of TikTok and have a high chance to be valid users of the platform. To ensure valid responses, the attention check questions were asked at the start and the end of the questionnaire. Subjects that failed the attention check were dropped (N=39). Assisted by SmartPLS, the data was analyzed using Structural Equation Modelling to measure model constructs and relationships between variables (SEM). SEM is selected over other modeling methods for its ability to enable researchers to simultaneously model and estimate complex relationships among multiple dependent and independent variables (Hair et al., 2021, p.4). It can condense large datasets into a few, theory-driven dimensions, its direct modeling of variable covariances and its missing data management. It models the correlation matrix of the observed data, and model adequacy is assessed in part by how well the specified model recovers the correlation structure (Joreskog, 1982). The items were divided into conceptual subgroups before the surveys were sent, depending on their wording and the attributes to which they most obviously pertained. Those subgroups are watching experience (WE), creation experience (CE), social experience (SE), and monetization experience (ME).

4. RESULTS AND DISCUSSION

4.1 Description of Respondent

The final sample consisted of 261 fully completed responses. Respondents were 46 % of male and 54 % of female (M=120, F=141). 74% of respondents are aged between 15 to thirteen years old (N=193), and a representative group identified as heavy users of social media. 57% of the sample is students (N=149).

Demographic characteristic		No.	Percentage
Gender	Male	120	46
	Female	141	54
Age	15-22 Years	122	47
	23-30 Years	71	27
	31-45 Years	44	17
	Above 40 Years	24	9
Occupation	Student	149	57
	Working people	86	33
	Freelancer	21	8
	Retire	5	2

TABLE 1: Respondent's Profile.

4.2 Analysis of the Measurement Model

It is important to ensure that a construct is valid before further analysis. To ensure construct validity, the items were examined following the recommendations from the literature (Chin, 2010). The convergent validity was determined at the individual indicator level, as well as at the construct level (Table 3). The constructs fulfilled the validity and reliability requirement (Hair et al. 2011). All of the outer loadings are with a value above 0.70, above the minimum value of 0.40 (Hair et al., 2016). Kaiser-Meyer-Olkin (KMO) method was performed with a KMO value of 0.83. Therefore, construct validity is achieved.

Construct	Cronbach's alpha	Rho_A	CR	AVE
WE	.752	.835	.853	.663
CE	.888	.924	.923	.752
SE	.879	.893	.926	.807
ME	.945	.958	.961	.859

TABLE 2: Outer Loading.

Cronbach's alpha and its composite reliability (CR) were used to test the consistency of the constructs (Götz et al., 2010). The Cronbach's alpha value exceeds the criterion of 0.70, which shows consistent results, as recommended by Hair et al (2016). The most common measure to assess convergent validity in PLS-SEM is the average variance extracted (AVE). It is used to test the square root of each AVE and whether the correlation is greater than each latent construct. The tests reveal that all items meet recommended AVE value > 0.50. It means that on average, a construct accounts for more than half of the variance of its indicators (Hair, et al., 2014). Another indicator known as rho_A is verified (Henseler, 2009), where all constructs exceed the value of 0.7. Table 4 shows that all the constructs meet this criterion. Thus, confirming the high validity of all tested items (Chin, 2010).

Constructs	CE	ME	SE	WE
CE	.928			
ME	.720	.936		
SE	.804	.787	.905	
WE	.557	.567	.742	.809

TABLE 3: Cronbach's alpha, Rho_A, CR, and AVE.

The loading value of the other constructs must be smaller than the loading value of the intended construct. In this research, the construct has adequate discriminant validity (Hair et al, 2016).

Construct	Items	Outer Loading
WE	WE1	.890
	WE2	.883
	WE3	.846
CE	CE1	.890
	CE2	.740
	CE3	.905
	CE4	.921
SE	SE1	.951
	SE2	.887
	SE3	.854
	ME1	.905
ME	ME2	.964
	ME3	.948
	ME4	.890

TABLE 4: Fornell-Larcker Criterion.

Discriminant validity can be used to determine if the construct has appropriate discrimination by the loading value of the targeted construct to the loading value of the other constructs (Rönkkö & Cho, 2020). The targeted construct's loading value must be higher than the other constructs. Because the value in the diagonal line below is bigger than the values in the same column below it, it is clear that the construct has appropriate discrimination. Therefore, the construct has adequate discriminant validity (Hair et al, 2021).

4.3 Structural Equation Modelling

Hair et al. (2021) suggested using a bootstrapping approach with a resample of 5000 to assess the structural model by looking at the R square, beta, and corresponding t-values. They also advised that researchers should state the predictive relevance (Q square) and effect sizes in addition to these fundamental measurements (f square). Accordingly, we began by examining the relationships between the variables.

	CE	ME	SE	WE
CE1	.904	.739	.781	.582
CE2	.947	.689	.762	.545
CE3	.934	.562	.688	.481
ME1	.601	.917	.715	.593
ME2	.651	.967	.695	.466
ME3	.624	.957	.675	.456
ME4	.791	.902	.835	.589
SE1	.730	.757	.954	.729
SE2	.719	.716	.894	.687
SE3	.737	.662	.865	.595
WE1	.482	.563	.700	.899
WE2	.604	.534	.688	.899
WE3	.223	.145	.299	.618

TABLE 5: Cross-loading.

Watching experience positively affected creation experience ($\beta=0.557$; $p < 0.01$) and social experience ($\beta=0.454$, $p < 0.01$). Creation experience positively affected social experience ($\beta=0.525$, $p < 0.01$). Social experience positively affected monetization experience ($\beta=0.766$, $p < 0.01$). Thus H1, H2, H3, and H4 were all supported (Figure 2). Moreover, watching experience explains 31.1% of the variance in creation experience. Watching experience and creation

experience explain 74.7% of the variance in social experience. Social experience explains 58.7% of the variance in monetization experience. The R square values of 0.337, 0.761, and 0.620 are greater than the 0.26 value suggested by Cohen (1988) as indicating a significant model.

After that, we evaluated the effect sizes (f square). The p-value indicates the significance of the relationship, but it does not show the size of an effect. Hence, it would be hard to interpret data and results. As a result, both substantive significance (f square) and statistical significance (p) must be explained. According to Hair et al. (2016) changes in the R square value should also be analyzed. According to Cohen's (1988) guidelines, the effect size was measured: 0.02 for small effects, 0.15 for medium effects, and 0.35 for large effects. Figure 2 demonstrated that all relationships had at least a medium effect.

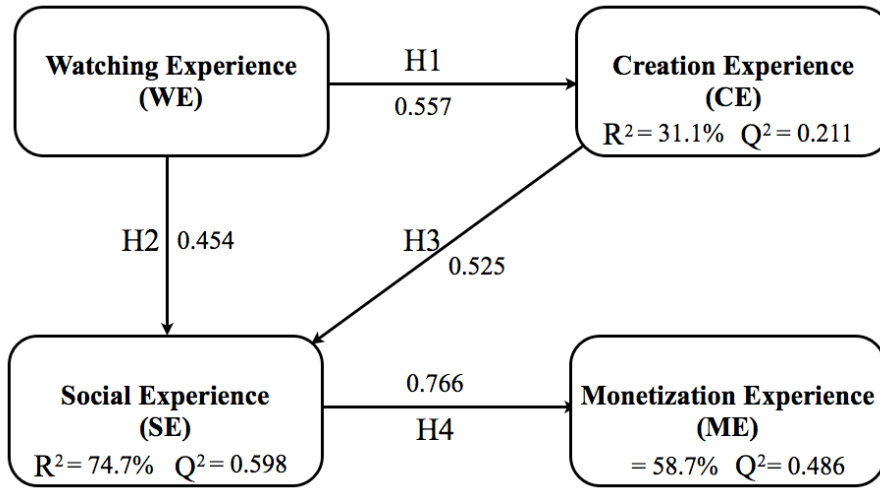


FIGURE 2: UE-SVP Model by the authors.

The predictive sample reuse technique (Q square) can effectively display predictive significance in addition to the size of R and f squares (Chin et al., 2008). The Q square demonstrates how well data can be empirically reconstructed using the model and PLS parameters. Q square was calculated by utilizing cross-validated redundancy techniques in this research. A Q square greater than 0 indicates that the model is predictively relevant, whereas a Q square less than 0 indicates that the model is not. Q squared demonstrates acceptable predictive relevance. The t value is greater than 2.58, indicating that $p < 0.01$ is present. The impact is very significant.

Hypothesis	Beta	T Value	Decision	f square
H1: Watching → Creation	.557	7.650**	Supported	.451
H2: Watching → Sociality	.454	6.180**	Supported	.561
H3: Creation → Sociality	.525	6.985**	Supported	.752
H4: Sociality → Monetization	.766	19.953**	Supported	1.422

Notes: Critical t-values. *1.96 (P < 0.05); **2.58 (P < 0.01).

TABLE 6: Hypothesis Testing.

4.4 Relationship Among Constructs

From the results, it can be concluded that watching experience impacts the creation experience on the short video platform. When users are watching content they preferred, the intelligent algorithm can constantly learn and serve them with more similar content (Müller et al., 2016). The more of these contents are watched, the more chance they are listed on the top rank and discovered by more audiences (Baluja, et al., 2008). The more clicks the users are made, the more rewards the creator will get. Some creators can adjust the contents according to audiences'

preferences and experiences. If users prefer quirky, trivial, nonsensical videos, creators will continue to create such things, and users will continuously be served with such videos. Thus, creators are to some extent “trained” by this curated strategy. Similarly, Hepp (2018) studied how to curate a pioneer community through franchising. As the boundary between consumers and creators blurs, creators are also the audiences of the content. When they are watching interesting, humourous, or touching content success on the platform, they are inspired to create similar ones. They also participate in the co-creation activities, such as challenges and duets with the same sound, filter, or topic (TikTok, 2019). In this way, the relationship between watching and creation was established.

Watching experience and creation experience impact social experience on the short video platform. Similar phenomenon has been found in Wang (2020), where watching experience influence users’ social experience and technology-adoption intent. The pursuit of admiration and social acknowledgment are regarded as major intrinsic human needs, according to Maslow’s pyramid of needs (Lakhani & Wolf, 2005). It is also the most important desire in social media (Schweyer & Callahan, 2012). Online services and applications extend the influencing opportunities of traditional word-of-mouth (Helm, et al., 2013). By watching, creating, or interacting with others, celebrities, KOLs, or ordinary people can be known by others. Their talents, personality, and opinions can be acknowledged. Especially people who are “left out of conversations” in everyday offline life can seek attention in this way. Some content creation, especially live streaming is highly social connected (Lu & Lu, 2019). Zimmer, Scheibe, and Stock (2018) described a status called “parasocial interactions”, where users, strangers, or friends, are connected intimately in a virtual space by watching, creating, and sharing. This relationship is also a social and emotional bond. By connecting to an event in a specific environment at a specific time, all of the participants witness and make an event, and such build a sense of belonging to the event, or the community (Manzo & Devine-Wright, 2013). For some users, social media is treated as a form of escapism. Some of their actual lives can be stressful, chaotic, or messy. By watching the lives of others, they may be comforted temporarily or at least escape from anxieties in real life.

Social experience also influences monetization experience. This phenomenon was also observed in other social media. Guan et al. (2019) conducted a study and also found that social experience encourages purchase of virtual gifts in live streaming. Users are attracted to social media due to factors related to product innovation, quality of communication, joy, and social recognition, which in turn can improve their experience and enhance the trust towards sellers’ products, and thus their willingness to watch and purchase. According to Mohd and Rosli, as a subset of e-commerce, social commerce connects sellers and buyers through social networking platforms (Mohd & Rosli, 2015). The effect of the purchase is amplified further by algorithms, which enable the platform to know users better than they know themselves (Davis, 2019). Users may not tell us their stated desires, but their behavioral preferences may. By in-depth analyzing user data, the platform knows how to influence their choices, which are exactly what advertising and vendors are looking for (Davis, 2019). Similarly, streamers know how to increase user engagement, guide conversation, or affect their purchase behavior. It is likely that content curation strategy would target users with their “wanted product” based on their interests, therefore encouraging the sale of ideas, services, and products (Wang, 2020). The social connection of followers and KOLs may form a social bond with personal conversation, creating more traffic, which can be monetized through ads or live streaming. Users can exchange opinions and experiences about using the products, which makes the information shared more “real” and persuasive (Wongkitrungrueng, 2020). All the social experiences can boost the monetary exchange.

All in all, we see the main contribution of our research in the demonstration of the interplay of watching, creation, socialization, and monetization on the SVP. Previous research analyzes each constructs separately which may fall short of its complexity. Our study revealed that each construct is essential for the integrity of UX. It took a further step to investigate 1) what is the relationship among the four constructs; 2) how the four constructs are related in an integrated

way; 3) why the relationship exists. Based on the findings, we establish a UE-SVP model. The model can be used for 1) startups to build their platform; 2) companies already in the domain to evaluate or refine their current offerings from users' perspectives; 3) researchers to assess the performance, actions, and strategies of SVP; 4) designers to make design decisions for actionable elements in improving UX of SVP. The research implies that good UX does not only rely on one construct but the halo effect of the four together. Companies previously emphasized mainly one or two specific constructs (e.g., creation or watching), while the development of all the four constructs comprehensively can sustain the continuous growth of SVP.

5. CONCLUSION

Within a short period, Tik Tok dominated the market during the peak of the SVP storm. In previous research, its success is mainly attributed to advanced algorithms. While we stated that UX also contributes a lot to it (Yu, 2019; Chin, 2021), TikTok provides a new type of equal mix between content, social, and commercial. On the scale between utilitarian APP and emotional APP, it integrated both elements, which makes it a lifestyle as well as a working tool. It is not only designed to be a channel for content discovery, but also for inspiring creativity, intuitive participation and sharing, and making and transforming commercial value. As an endless watching platform, it enables users to watch the short and fun videos with low effort. Users instant attention has been stimulated and the content snowball keeps growing. The platforms' algorithms are adapted to each user's preferences. As it continually detects user behaviors such as watch time, sharing activity, and frequently used keywords, sounds and hashtags, tailored contents are curated and provided to each user, resulting in an engaging and personalized digital experience for everybody. As a creation platform, its primary functions are content production, discovery, and playback optimization. As a social networking platform, it allows users to interact with content, other users, creators, KOLs, or celebrities, to express themselves, or to be acknowledged by others. As a monetization platform, it maximizes the lifetime value of every user and highlights live commerce and virtual exchange while integrating different revenue stream options to create a hybrid monetization model. These four modules as fundamental constructs of SVP interplay with each other. Based on the constructs and their relationship, we built a model named the UE-SVP model. The model can be further used for measurable improvements in user experience on the short video platform in future studies.

Overall, this study contributes to both the theoretical and the empirical understanding of experience in a social media context. It identified how different types of user experiences on the SVP influenced each other. As a new phenomenon, much remains to be discovered. It offers implications for designers and development teams who intend to improve the user experience overall. For instance, to strengthen the monetization experience, the platform can improve the social experience, such as creating a trust-worthy community with a friendly and "real" atmosphere. Streamers can be more persuasive in such an environment, which can influence audiences' purchase behavior. However, the perfectly matched UX may have its side effect. The delicately designed watching experience has a pattern of forced continuity (Yu, 2019). As long as a user launches the system, it is easy to get hooked on watching videos and find it hard to break free. Users can be misled by the shares, likes or comments pushed by mysterious AI algorithm and do crazy things. The social experience of the platform can also have privacy issues, which have already been criticized by many scholars before. With the limited resource and time, we cannot exhaustively explore the reasons why the constructs are related in such ways, what are the attributes that influence their relationship, or the exact actions that practitioners can apply in the industry, both of which can be studied in the future research.

6. REFERENCE

Arai, K., & Tolle, H. (2010). Automatic e-comic content adaptation. *International Journal of Ubiquitous Computing*, 1(1), 1-11.

Abidin, C. (2020). Mapping internet celebrity on TikTok: Exploring attention economies and visibility labours. *Cultural Science Journal*, 12(1), 77-103.

Anderson, K.E. (2020), Getting acquainted with social networks and apps: it is time to talk about TikTok, *Library hi tech news*, Vol. 37 No. 4, 7-12.

Armstrong, R., Hall, B. J., Doyle, J., & Waters, E. (2011). Scoping the scope of a cochrane review. *Journal of public health*, 33(1), 147-150.

Baker, R. (1993). *Designing the future: the computer transformation of reality*. Thames and Hudson, Hong Kong.

Baluja, S., Seth, R., Sivakumar, D., Jing, Y., Yagnik, J., Kumar, S., ... & Aly, M. (2008). Video suggestion and discovery for youtube: taking random walks through the view graph. In *Proceedings of the 17th international conference on World Wide Web* (pp. 895-904).

Basch, C., Hillyer, G. & Jaime, C. (2020). COVID-19 on TikTok: harnessing an emerging social media platform to convey important public health messages, *International journal of adolescent medicine and health*, Online ahead of print, doi: 10.1515/ijamh-2020-0111.

Battarbee, K., & Koskinen, I. (2005). Co-experience: user experience as interaction. *CoDesign*, 1(1), 5-18.

Bevan, N., & Macleod, M. (1994). Usability measurement in context. *Behaviour & information technology*, 13(1-2), 132-145.

Bhattacharjee, A. (2012). *Social science research: Principles, methods, and practices*. Global Text Project.

Bland, J. & Altman, D. (2003). Applying the right statistics: analyses of measurements studies. *Ultrasound in Obstetrics & Gynecology*, 21, 283–9.

Brand House. (2020, Mar 24). KOL marketing in China – What is it and Why should you know about it? Retrieved Oct 30, 2020, from <https://brand.house/2020/03/24/kol-marketing-in-china-what-is-it-and-why-should-you-know-about-it/>

Bytedance. (2020). Retrieved Oct 30, 2020, from <https://www.bytedance.com/en/>

Chen, L. (2000). The Significance and Methods of Case Study, *Counseling and Guidance*, 57, 37-39.

Chen, L. (2018). The unknown 35-year-old behind the world's most valuable startup. *The Sydney Morning Herald*. Retrieved Oct 30, 2020, from <https://www.bloombergquint.com/business/35-year-old-unknown-creates-the-world-s-most-valuable-startup>

Chen, L., Chan, V., Roof, K. & Huang, Z. (2020). TikTok owner's value exceeds \$100 billion in private markets. *Bloomberg*. Retrieved Oct 30, 2020, from <https://www.bloomberg.com/news/articles/2020-05-20/tiktok-owner-s-value-surpasses-100-billion-in-private-markets?sref=gni836kR>

Chen, P., & Zhang, X. (2020). Evaluation and empirical study on the information service quality of TikTok government accounts. *Eurasian Journal of Social Sciences*, 8(2), 53-69.

Chen, Z., He, Q., Mao, Z., Chung, H. & Maharjan, S. (2019). A study on the characteristics of Douyin short videos and implications for edge caching. In: *Proceedings of the ACM Turing Celebration Conference – China*, pp. 1–6. ACM, New York.

Cheng, Y., Ji, X., Li, X., Zhang, T., Malebary, S., Qu, X., & Xu, W. (2020). Identifying child users via touchscreen interactions. *ACM Transactions on Sensor Networks (TOSN)*, 16(4), 1-25.

Chi, E. H., Rosien, A., & Heer, J. (2002). LumberJack: Intelligent discovery and analysis of web user traffic composition. In *International Workshop on Mining Web Data for Discovering Usage Patterns and Profiles* (pp. 1-16). Springer, Berlin, Heidelberg.

Chin, Z. (2021). 5 Ways TikTok Demonstrates Great User Experience Design. Retrieved on June 22, 2022 from <https://blog.snappymob.com/5-ways-tiktok-demonstrates-great-user-experience-design>

Cockton, G. (2012). UCD: Critique via Parody and a Sequel. In *CHI'12 Extended Abstracts on Human Factors in Computing Systems* (pp. 1-10).

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Erlbaum.

Cooke, M., & Buckley, N. (2008). Web 2.0, social networks and the future of market research. *International Journal of Market Research*, 50(2), 267-292.

Cuofano, B. (2020). TikTok business model: the rise of creative social media powered by AI, FourWeek MBA(online). Retrieved Oct 30, 2020, from: <https://fourweekmba.com/tiktok-business-model/>.

Cyr, D., & Head, M. (2008). Hedonic and utilitarian outcomes of website social presence: the impacts of framing and time constraints.

Davis, J. (2019). The TikTok Strategy: Using AI Platforms to Take Over the World. Insead Knowledge. Retrieved Oct 30, 2020, from <https://knowledge.insead.edu/entrepreneurship/the-tiktok-strategy-using-ai-platforms-to-take-over-the-world-11776>

Dulenko, V. (2020). How TikTok Design Hooks You Up. Retrieved on June 22, 2022, from <https://uxplanet.org/how-tiktok-design-hooks-you-up-6c889522c7ed>

Eghtesadi, M. & Florea, A. (2020). Facebook, Instagram, Reddit and TikTok: a proposal for health authorities to integrate popular social media platforms in contingency planning amid a global pandemic outbreak, *Can Journal Public Health*, 111(3), 389–391.

Federoff, M. A. (2002). Heuristics and usability guidelines for the creation and evaluation of fun in video games (Doctoral dissertation, Indiana University).

Forlizzi, J., & Battarbee, K. (2004, August). Understanding experience in interactive systems. In *Proceedings of the 5th conference on Designing interactive systems: processes, practices, methods, and techniques* (pp. 261-268).

Götz, O., Liehr-Gobbers, K., & Krafft, M. (2010). Evaluation of structural equation models using the partial least squares (PLS) approach. In *Handbook of partial least squares* (pp. 691-711). Springer, Berlin, Heidelberg.

Gould, C. (2019). Disrupting TV: How short-form video is upending the entertainment industry. Retrieved Oct 30, 2020, from <https://www.opalitemedia.com/2019/03/17/disrupting-tv/>

Guan, Z., Hou, F., Li, B., Chong, A. Y. L., & Phang, C. W. D. (2019). What Encourages Purchase of Virtual Gifts in Live Streaming: Cognitive Absorption, Social Experience and Technological Environment. In *ICIS*.

Gurbani, V.K., Migliosi, A., State, R., Payette, C., Cilli, B. & Engel, T. (2015). A characterization of short-video and distributed hot-spot activity in Instagram. In: *Proceedings of the Principles, Systems and Applications on IP Telecommunications*, pp. 28–34. ACM, New York

Gutiérrez, C., Garbajosa, J., Diaz, J., & Yagüe, A. (2013). Providing a consensus definition for the term "Smart Product". In *Engineering of Computer Based Systems (ECBS), 2013 20th IEEE International Conference and Workshops*, 203-211.

Hassenzahl, M. (2003). The thing and I: understanding the relationship between user and product. In *Funology* (pp. 31-42). Springer, Dordrecht.

Hassenzahl, M., & Tractinsky, N. (2006). User experience-a research agenda. *Behaviour & information technology*, 25(2), 91-97.

Hair Jr, J. F., Hult, G. T. M., Ringle, C. M., Sarstedt, M., Danks, N. P., & Ray, S. (2021). *Partial least squares structural equation modeling (PLS-SEM) using R: A workbook*.

Hayes, C., Stott, K., Lamb, K. J., & Hurst, G. A. (2020). "Making Every Second Count": Utilizing TikTok and Systems Thinking to Facilitate Scientific Public Engagement and Contextualization of Chemistry at Home. *Journal of Chemical Education*, 97 (10), 3858-3866.

Helm, R., Möller, M., Mauroner, O., & Conrad, D. (2013). The effects of a lack of social recognition on online communication behavior. *Computers in Human Behavior*, 29(3), 1065-1077.

Hepp, A. (2018). What Makes a Maker?-Curating a pioneer community through franchising. *Nordisk Tidsskrift for Informationsvidenskab Og Kulturformidling*, 7(2), 3-18.

Hoffmann, C.P., Lutz, C. & Meckel, M. (2015). Content creation on the Internet: a social cognitive perspective on the participation divide. *Inf. Commun. Soc.* 18(6), 696–716

Hooper, M. A., & Sant, P. (2018). A Disruptive Contexts Model for Mobile Commerce Systems. *International Journal of Ubiquitous Computing*, Volume (3) : Issue (1).

Hu, H. & Ma, X. (2020). MCN attacked the circle of KOL, network celebrities perfected the value chain of the traffic platform industry-advertising marketing MCN special research report. *New Times Securities*. Retrieved Oct 30, 2020 from http://pdf.dcfw.com/pdf/H3_AP202001071373638172_1.pdf.

Hutchinson, A. (2020). TikTok Adds New 'Adjust Clips' Video Editing Feature. *Social Media Today*. Retrieved Oct 30, 2020, from <https://www.socialmediatoday.com/news/tiktok-adds-new-adjust-clips-video-editing-feature/577153>.

Influencer Marketing Hub, (2020). What is TikTok? Influencer Marketing News and Resources, Retrieved Oct 30, 2020, from <https://influencermarketinghub.com/zh/>.

Jiang, X. (2019). Research on TikTok APP Based on User-Centric Theory. *Applied Science and Innovative Research*, 3(1), 28-36.

Johnson, J. (2020). *Designing with the mind in mind: simple guide to understanding user interface design guidelines*. Morgan Kaufmann.

Johnson-Laird, P. (2010). Deductive reasoning. *Wiley Interdisciplinary Reviews: Cognitive Science*, 1(1), 8-17.

Jöreskog, K. G., & Wold, H. (1982). The ML and PLS techniques for modeling with latent variables: Historical and comparative aspects. In H. Wold & K. G. Jöreskog (Eds.), *Systems under indirect observation, part I* (pp. 263–270). Amsterdam: North-Holland.

Karapanos, E., Zimmerman, J., Forlizzi, J., & Martens, J. B. (2009). User experience over time: an initial framework. In *Proceedings of the SIGCHI conference on human factors in computing systems* (pp. 729-738).

Kaye, DBV, Chen, X, and Zeng, J. (2020). The co-evolution of two Chinese mobile short video apps: Parallel platformization of Douyin and TikTok. *Mobile Media & Communication*, Online first: 1–25. DOI: <https://doi.org/10.1177/2050157920952120>

Kazais, A. (2021). What makes the UX of Tiktok's feed so successful. Retrieved online on June 21, 2022 from <https://uxdesign.cc/what-makes-the-ux-of-tiktoks-feed-so-successful-1c15e7e82dcd>

Ketola, P., & Roto, V. (2008). Exploring user experience measurement needs. In *Proc. of the 5th COST294-MAUSE Open Workshop on Valid Useful User Experience Measurement (VUUM)*. Reykjavik, Island (pp. 23-26).

King, G., Keohane, R. O., & Verba, S. (1994). *Designing social inquiry: Scientific inference in qualitative research*. Princeton university press.

Klug, D. (2020). It took me almost 30 minutes to practice this. *Performance and Production Practices in Dance Challenge Videos on TikTok*. arXiv preprint arXiv:2008.13040. Retrieved Oct 30, 2020, from <https://arxiv.org/abs/2008.13040>

Kobie, K. (2019). TikTok breaks all the rules of app design – but somehow it still works. Retrieved on June 22, 2022 from <https://www.wired.co.uk/article/tiktok-snapchat-app-design>

Koleson, J. (2020). TikTok is on the Clock, Will Democracy Stop? *SLU Law Journal Online*. 45. Retrieved Oct 30, 2020, from <https://scholarship.law.slu.edu/lawjournalonline/45>

Kumar V D, Prabha M S. (2019). *Getting glued to TikTok – Undermining the psychology behind widespread inclination toward dub-mashed videos*. *Arch Ment Health* 20 no.2 (2019): 76-77

Kue (2019). Short Video User Insight Report. Kue User Research Institute. Retrieved Oct 30, 2020, from <http://www.woshipm.com/it/2522354.html>

Lakhani, K. R., & Wolf, B. (2005). Why hacker do what they do. Understanding motivation and effort in free/open source software projects. In *J. Feller, B. Fitzgerald, S. Hissam, & K. R. Lakhani (Eds.), Perspectives on free and open source software* (pp. 3–22). Cambridge.

Leavitt, M. O., & Shneiderman, B. (2006). *Based web design & usability guidelines*. Health and Human Services Department.

Lin, G. (2019). Marketing and martech: low-key taiwanese TikTok executives showed up to share the first-line short video trends and ideas, *Business Next*. Retrieved Oct 30, 2020, from <https://www.bn>

Löwgren, J., Larsen, H. S., & Mads, H. (2013). Towards Programmatic Design Research. *Designs for learning*, 6.

Lu, X., Lu, Z. (2019). Fifteen seconds of fame: a qualitative study of Douyin, a short video sharing mobile application in China. In: Meiselwitz, G. (ed.) *HCI 2019. LNCS*, vol. 11578, pp. 233–244. Springer, Cham (2019). https://doi.org/10.1007/978-3-030-21902-4_17

Mahoney, L. M., & Tang, T. (2016). *Strategic social media: From marketing to social change*. John Wiley & Sons.

Manzo, L., & Devine-Wright, P. (2013). *Place attachment: Advances in theory, methods and applications*. Routledge.

Matera, M., Rizzo, F., & Carughi, G. T. (2006). Web usability: Principles and evaluation methods. In *Web engineering* (pp. 143-180). Springer, Berlin, Heidelberg.

McRoberts, S., Bonsignore, E., Peyton, T., Yarosh, S. (2016). Do it for the viewers!: audience engagement behaviors of young YouTubers. In: Proceedings of the 15th International Conference on Interaction Design and Children, pp. 334–343. ACM, New York.

Medina Serrano, J. C., Papakyriakopoulos, O., & Hegelich, S. (2020). Dancing to the partisan beat: A first analysis of political communication on TikTok. In *12th ACM conference on web science* (pp. 257-266).

Mhalla, M., Yun, J., & Nasiri, A. (2020). Video-sharing apps business models: TikTok case study. *International Journal of Innovation and Technology Management*, 17(07), 2050050.

Mohd, F., & Rosli, M. H. B. (2015). Social commerce (S-Commerce): Towards the future of retailing market industry.

Morimoto, R., Ash, J., & Hope, C. (2005). Corporate social responsibility audit: From theory to practice. *Journal of Business ethics*, 62(4), 315-325.

Müller, S., Atan, O., van der Schaar, M., & Klein, A. (2016). Context-aware proactive content caching with service differentiation in wireless networks. *IEEE Transactions on Wireless Communications*, 16(2), 1024-1036.

Nansen, B., Chakraborty, K., Gibbs, L., MacDougall, C., & Vetere, F. (2012). Children and Digital Wellbeing in Australia: Online regulation, conduct and competence. *Journal of Children and Media*, 6(2), 237-254.

Neyaz, A., Kumar, A., Krishnan, S., Placker, J., & Liu, Q. (2020). Security, privacy and steganographic analysis of FaceApp and TikTok. *International journal of computer science and security*, 14(2), 38-59.

Nielsen, J. (1994). Usability inspection methods. In *Conference companion on Human factors in computing systems* (pp. 413-414).

Norman, D. A. (2005). Human-centered design considered harmful. *Interactions*, 12(4), 14-19.

Omar, B. & Dequan, W. (2020). *Watch, Share or Create: The Influence of Personality Traits and User Motivation on TikTok Mobile Video Usage*. International Association of Online Engineering. Retrieved August 2, 2022 from <https://www.learntechlib.org/p/216454/>.

Nygren, E., Sutinen, E., Blignaut, A. S., Laine, T. H., & Els, C. J. (2012). The UFractions Mobile Manipulative Game: Opportunities For South African Grade 8 Learners. *International Journal of Ubiquitous Computing*, 2(1).

Pangrazio, L., & Cardozo Gaibisso, L. (2020). Beyond Cybersafety: The Need to Develop Social Media Literacies in Pre-Teens. *Digital Education Review*, 37, 49-63.

Pavlik, A. (2020). Use TikTok to engage with future students. *Enrollment Management Report*, 24(2), 6-7.

Pelz, B. (2022). Research Methods for the Social Sciences. <https://courses.lumenlearning.com/suny-hccc-research-methods/>

Rhea, D. K. (1992). A new perspective on design: focusing on customer experience. *Design Management Journal (Former Series)*, 3(4), 40-48.

Rönkkö, M., & Cho, E. (2022). An updated guideline for assessing discriminant validity. *Organizational Research Methods*, 25(1), 6-14.

Ryan, F, Fritz, A and Impiombato, D. (2020). TikTok and WeChat: Curating and controlling global information flows. *Policy Brief Report No. 37/2020*. Canberra, Australia: Australian Strategic Policy Institute, Retrieved on July 1, 2022 from <https://www.aspi.org.au/report/tiktok-wechat>.

Salameh, A. A., & Hassan, S. B. (2015). Measuring service quality in m-commerce context: A conceptual model. *International Journal of Scientific and Research Publications*, 5(3), 1-9.

Savic, M. (2021). Research Perspectives on TikTok & Its Legacy Apps| From Musical. ly to TikTok: Social Construction of 2020's Most Downloaded Short-Video App. *International Journal of Communication*, 15, 22.

Scalvini, M. (2020). Negotiating morality and ethics: the social media user's perspective on TikTok. *Erasmus University Rotterdam*.

Seow, S. C. (2005). Information theoretic models of HCI: A comparison of the Hick-Hyman law and Fitts' law. *Human-computer interaction*, 20(3), 315-352.

Schweyer, A., & Callahan, B. (2012). Social recognition: Is the latest application of social media the most powerful yet? Retrieved on July 1, 2022 from <http://bit.ly/29hvjjx>

Seffah, A., Donyaee, M., Kline, R. B., & Padda, H. K. (2006). Usability measurement and metrics: A consolidated model. *Software quality journal*, 14(2), 159-178.

Sehl K. (2020). *Everything brands need to know about TikTok In: Hootsuite*, editor; 2020. Retrieved on July 1, 2022 from: <https://blog.hootsuite.com/what-is-tiktok/>.

Shao, G. (2009). "Understanding the appeal of user-generated media: a uses and gratification perspective," *Internet Res.*, vol. 19, no. 1, pp. 7–25. <https://doi.org/10.1108/10662240910927795>

Shutsko, A. (2020). User-generated short video content in social media. A case study of TikTok. In *International Conference on Human-Computer Interaction* (pp. 108-125). Springer, Cham.

Sidorenko-Bautista, P., Herranz de la Casa, J. M., & Cantero de Julián, J. I. (2020). Use of New Narratives for COVID-19 reporting: from 360° videos to ephemeral TikTok videos in online media. *Tripodos*, number 47, vol. 1 | 2020 | 105-122. ISSN: 1138-3305

Su, Y., Baker, B. J., Doyle, J. P., & Yan, M. (2020). Fan engagement in 15 seconds: Athletes' relationship marketing during a pandemic via TikTok. *International Journal of Sport Communication*, 13(3), 436-446.

Swathi, G.K. & Devakumar, C. A. (2020). Study to Analyze the Impact of TikTok App on Students Academics and Psychology. *JETIR* March 2020, Volume 7, Issue 3.

Tang, A. K. (2016). Mobile app monetization: app business models in the digital era. *International Journal of Innovation, Management and Technology*, 7(5), 224.

TikTok (2019). DIY: Duets & Reactions on TikTok Retrieved on June 29, 2022 from <https://newsroom.tiktok.com/en-gb/diy-duets-reactions-on-tiktok>

TikTok Statistics, F. (2021). *TikTok Statistics – Updated July 2022*. Wallaroo. Retrieved from on July 1 <https://wallaroomedia.com/blog/social-media/tiktok-statistics/#:~:text=Total%20App%20Downloads%20%E2%80%93%20The%20TikTok,quarter%20by%20any%20app%2C%20ever.>

Vanderdonckt, J., & Pribeanu, C. (2005). State of the art of web usability guidelines. *The Handbook of Human Factors in Web Design*.

Wang, Y. (2020). Humor and camera view on mobile short-form video apps influence user experience and technology-adoption intent, an example of TikTok (DouYin). *Computers in Human Behavior*, 110, 106373.

Xu, S., Li, Y., Sun, B., Xiao, X., & Li, S. (2020). Research on Business Model Innovation of Short Video Enterprises from the Perspective of Community Economy—Taking “Douyin” as an Example. *In 2019 3rd International Conference on Education, Economics and Management Research (ICEEMR 2019)* (pp. 324-330). Atlantis Press.

Yang, C. (2020). Why TikTok is Addictive: A Product Design and UX Analysis. Retrieved on June 22, 2022 from <https://chougeena.medium.com/why-tiktok-is-addictive-a-product-design-and-ux-analysis-149f429d55c3>

Yu, S. (2019). *Why is Tik Tok sweeping over the world? — an app critique*. Retrieved from on June 22, 2022 <https://uxdesign.cc/why-is-tik-tok-sweeping-over-the-world-e06ab94262e8>

Zarour, M., & Alharbi, M. (2017). User experience framework that combines aspects, dimensions, and measurement methods. *Cogent Engineering*, 4(1), 1421006.

Zimmer, F., Scheibe, K., Stock, W.G. (2018). A model for information behavior research on social live streaming services (SLSSs). In: Meiselwitz, G. (ed.) *SCSM 2018*. LNCS, vol. 10914, pp. 429–448. Springer, Cham. https://doi.org/10.1007/978-3-319-91485-5_33