

Research On The Influence of We-Chat Applet On Improving User Experience

Kai Liao*, Junlin Wang*

*Student, Dept. of Global Business, Graduate School, Kyonggi University, Suwon, Korea

*Student, Dept. of Global Business, Graduate School, Kyonggi University, Suwon, Korea

[Abstract]

Since there are almost no scales for measuring the size of We-Chat applets, and most of the existing We-Chat applets are grafted through the original APP application, At present, the application scope of We-chat applets which is mainly in /shopping/life/food application. Thus, the purpose of this research is to focus on the iPhone app store, collect data on the top five of APP-STORE through users' comments and The high-frequency words will be obtained for statistics, and the variables of this study will be set up. Last, develop relevant Empirical research on the size and measurement scale of the We-Chat applet. Therefore, how to use We-Chat applets to improve user experience, we can create their own user private domain traffic for We-Chat applets and achieve long-term market competitiveness.

▶ **Key words:** We-chat applets, User experience, Convenient, APP-store

[요 약]

위챗 애플릿에 대해 측정 할수 있는 척도가 없고 현재 대부분의 위챗 애플릿은 기존 어플리케이션에 접목 되어 사용 하며 대부분 쇼핑/생활/음식 등 카테고리를 적용 범위로 다루고 있습니다. 하여 본 연구는 QIMAI데이터 네트워크를 통해 쇼핑/생활/음식 관련 카테고리 어플리케이션 중 5 위 이내의 어플리케이션의 고객이 리뷰한 댓글을 수집 하고 그중 문자 분석을 통해 가장 많이 사용 되는 키워드를 통계하여 본 연구에 적합한 수치를 추출 하며 실증 연구 하는것을 목적으로 하고 있습니다. 위챗 애플릿은 사용자가 다운로드 및 설치를 하지 않아도 사용이 가능한 서비스 이기에 기업과 사용자 간의 즉각적인 대응이 실현 되고 더욱 나아가 고객이 편리하게 상품을 찾을 수 있는 채널 이며 더욱 좋은 가성비로 고객 확보가 가능한 서비스 입니다. 따라서 위챗 애플릿 연구 함으로 고객 체험을 향상 시키고 위챗 애플릿을 통해 기업의 자체 트래픽을 만들고 장기적인 시장 경쟁력을 달성 할수 있습니다.

▶ **주제어:** 위챗 애플릿, 사용자 경험, 편리한, APP-스토어

-
- First Author: Kai Liao, Corresponding Author: Junlin Wang
 - *Kai Liao (kyoismeme@naver.com), Dept. of Global Business, Graduate School, Kyonggi University
 - *Junlin Wang (26602586@qq.com), Dept. of Global Business, Graduate School, Kyonggi University
 - Received: 2021. 06. 01, Revised: 2021. 07. 05, Accepted: 2021. 07. 22.

I. Research Background

In 2013, Baidu President Robin Li announced the launch of the light application platform at the Baidu World Conference, namely the concept of "no need to download, namely search and use." However, after being put into the market, it did not achieve the expected success. Until the official launch of the we-chat applet in 2017, it realized the application of the concept of "available at the touch of the hand, go when you run out". Cheng (2020), the mobile app has long promoted the development of the digital business model. However, smartphone users are increasingly reluctant to download services that are not frequently used. The development of we-chat applets embeds lightweight micro applications into the social information platform of we-chat so that native applications can not meet the specific needs of platform users. [1]

He (2020) WeChat applet has become an auxiliary means for school teachers to teach new students and analyzed the students' willingness to use and the feasibility of using WeChat applet by functional aspects, last it's become a strategy of database application teaching. [16] Therefore, compared with app applications, We-Chat Apps first need R & D cost and later promotion and marketing to get users' installation and use, and every step of the process should be gradual; the former can let them do it at the same time, for example, after the development of kakao taxi app is completed, it can be directly embedded in We-Chat (kakaotalk), but not in mobile phones Kakao taxi is installed, but it can be used normally through kakaotalk. No matter whether the user uses it or not, such a small program is saved in We-Chat in the form of bookmarks, which prompts the user to use it again conveniently.

II. Reconstruction of Volumetric Models

2.1 Literature review

Tang (2014) mentioned that light app is a browser application with the double advantages of web app and native app [3]; Kuang (2017) points out that WeChat app is an online application that can be used without downloading, and can be obtained by scanning QR code or sharing with friends and groups [2]. Zhang (2017) differentiates the WeChat applet from the new applications of PC and app. With the help of the WeChat user base, it is more suitable to connect offline users [4]. Calvo (2017) found through empirical research that: Based on the flow experience theory, users' satisfaction with digital technology mainly comes from their perceived ease of use and the characteristics of the content itself. By providing an easy-to-use and accessible digital platform, users' participation can be enhanced [5]. Guo(2006) obtained through empirical research that experience effect, experience dimension, and experience design are three elements to make users feel positive and unique experience perception (such as pleasure, novelty and selflessness) and the ultimate goal of user experience management [6]. Lachner, F (2016) The proposed a quantitative evaluation model of user experience divides user experience into appearance, feeling, availability [9].Hao (2018) The system implementation and prospects of We-Chat applets are analyzed, and the system architecture, key technologies, and market prospects are studied based on the development of We-Chat applets [10].Li (2020) It is pointed out that We-Chat applets have greatly promoted the connection between online and offline businesses, especially the revolutionary transformation of small physical stores [11].Tae (2020) We surveyed consumers with experience in We-Chat applets and collected 380 valid data. The study found that: 1) Intrinsic motivation (perceived enjoyment) and extrinsic motivation (perceived usefulness) have a

positive effect on continuous use intention, while intrinsic motivation has a greater impact. 2) Compatibility is the strongest predictor of intrinsic motivation and extrinsic motivation, followed by convenience; 3) But convenience has little effect on perceived enjoyment. Wi, & Lee (2019) Through empirical research, it is concluded that the simplicity, relevance, safety, utility, and welfare of We-Chat applets have a positive impact on customer satisfaction, and customer satisfaction also has a positive impact on customer continued use intentions. Pettersson, I (2018) It is believed that the emotion and pleasure of user experience will extend to the advanced features of excitement and identity self-realization after reaching usability [12].

2.2 Research Design

Because there are few scales to measure the dimension of We-Chat applets, and most of the existing We-Chat applets are grafted through the original app application. The current application scope of applets is mainly shopping / Express/life/food and drink in the tool category.

Data collection of the top five user reviews within APP-STORE was conducted through Qimai Data Network, and 50,105 valid reviews were obtained, which were converted into a modern vocabulary for statistics, so as to develop a size and measurement scale suitable for the WeChat applet of this research.

By using the word segmentation tool of Rst-cm software, the high-frequency vocabulary statistics as shown in Table 1-1 is obtained.

According to Liu (2019) in the user experience evaluation research of We-Chat small program mall, the factors affecting user experience are divided into three indicators: product experience, service experience, and reputation experience. [7]

In this study, the highest-evaluation experience vocabulary in Table 1: affordable, cheap, fast, logistics, and test appointment vocabulary, as the first independent variable—|product experience.

the most helpful experience vocabulary in Table-1: guarantee, Convenient, pleasant at a glance, stable, hope vocabulary as the second independent variable—service experience.

the experience vocabulary in the lowest evaluation of Table-1: liar, spam, compulsory, overtime vocabulary as the third independent variable- Credit experience.

in order to build a model that affects the mechanism of WeChat applets (product experience, service experience, trust experience) on user experience, as shown in Figure 1.

Table 1. Hot frequency vocabulary

High frequency vocabulary / frequency	Highest evaluation	Most helpful	Lowest evaluation	Number of comments
Pinduoduo	affordable (1285) cheap (1474) good (1227) recommended (647) things (2469)	price (769) goods (562), guarantee (537) Download (502), convenience (456)	garbage advertisement (4070) Liar (688) false (725)	14723
Rookie wrapping Express	software (1468) express (1949) logistics (1304)	information query (1260) at a glance (1380)	flash back (1350) forced (1030) timeout (1420)	12987
Traffic control 12123	handling violations (1547) appointment examination (1331) convenience (1600)	official (1780) stability (1400) Development update (1334)	congestion (1231) page load slow (1250)	9693
Hungry	Speed (1800) affordable (1100) Punctuality (1720) red envelope (1140)	good (1537) like (1304) Hope (1722)	timeout (1309) garbage compensation (1070)	12702

The independent variable keywords obtained through word segmentation software, based on the research purpose of this article is how to improve user experience as the starting point, thus constructing the following research model Fig 1. PE (Product experience), SE(Service experience) CE(Credit experience). UE (User experience)

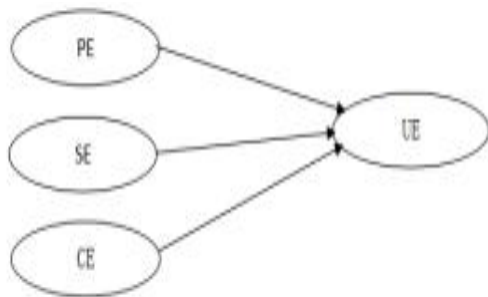


Fig. 1. Research Model

- H1: Product experience has a significant positive impact on user experience
- H2: Service experience has a significant positive impact on user experience
- H3: Reputation experience has a significant positive impact on user experience

2.3 Variable operability definition

The measurement scale of product experience refers to the three measurement items of perceived usefulness proposed by Davis (1989) [13]. The measurement scale for the description of service experience refers to the three measurement questions of expected confirmation level proposed by Tang (2010) [14]. The measurement scale of reputation experience refers to Gefen, D (2003) based on the TAM model for evaluating users’ trust in online stores among the three measurement items [15].

Table 2. WeChat applet Measurement Scale

Variable	Item	Measurement content
Product experience	PE1	WeChat applet reacts more quickly
	PE2	Using WeChat applet is very stable
	PE3	It's very easy to use the WeChat applet
Service experience	SE1	It is very convenient to use WeChat applet
	SE2	The design of the WeChat applet is more concise
	SE3	Simple operation steps for WeChat applet
Credit experience	CE1	I will use the WeChat applet to pay the merchant
	CE2	Use WeChat applet to pay more quickly
	CE3	Friends all use WeChat applet to pay
User experience	UE1	It's a pleasure to use the WeChat applet
	UE2	The information displayed by the WeChat applet is symmetrical with the original ecological app
	UE3	I feel very considerate when using the WeChat applet

III. Research Results

According to the research purpose of this paper and the specific characteristics of the research object, the questionnaire survey will be used. For the Chinese network users, the survey time is from April 1, 2020 to May 30, 2020. First of all, we collected 100 questionnaires, hoping to find out the problems in the questionnaire through the information feedback of 100 customers, so as to improve the modification of the questionnaire, and then we implemented the formal questionnaire. A total of 325 questionnaires were sent out. After the questionnaires were recovered, excel checked the data first, including 21 invalid questionnaires, and with the actual recovery rate of 94%. Finally, 304 valid questionnaires were used for analysis, and SPSS 22.0 was used for reliability analysis, validity analysis, correlation analysis and equation model analysis.

Table 3. Demographic(n=304)

	Project	Frequency	Effective percent age
Sex	Man	115	38%
	Women	189	62%
Age	18-21	76	25%
	22-25	113	37%
	26-29	86	28%
	Over30 years-old	29	10%

3.1 Reliability analysis

Through SPSS 23.0 analysis, we can conclude that the Cronbach's alpha coefficient values in the above tables are all above 0.8, which can judge that the internal consistency of each item exists and has good stability, which fully conforms to the scope of the reliability measurement in this study.

Table 4. Reliability analysis results

	Cronbach' α	Number of Items
PE	0.88	3
SE	0.91	3
CE	0.91	3
UE	0.90	3

3.2 Validity test

The validity model results of the above table were obtained by SPSS23.0 statistical analysis. Using factor analysis, we can see that the weighted values of each variable are more than 0.7, which shows that the scale has good constructive validity.

Table 5. Validity Analysis results

Project	Composition			
	1	2	3	4
CE3	0.862	0.142	0.144	0.150
CE2	0.837	0.271	0.198	0.213
CE1	0.753	0.213	0.289	0.301
SE2	0.203	0.833	0.293	0.290
SE3	0.209	0.790	0.342	0.291
SE1	0.386	0.711	0.278	0.311
PE2	0.178	0.332	0.801	0.287
PE1	0.260	0.295	0.755	0.307
PE3	0.380	0.325	0.651	0.344
UE1	0.175	0.349	0.323	0.769
UE2	0.324	0.309	0.318	0.744
UE3	0.402	0.307	0.336	0.681

3.3 Structural Equation Model

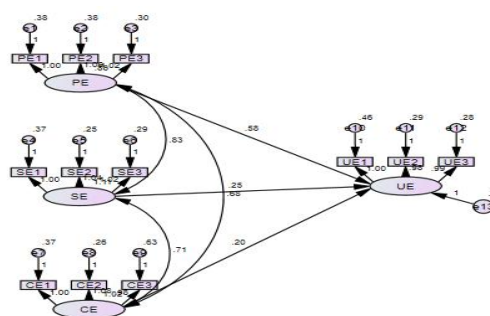


Fig. 2. Results of hypothesis

Table 6. Hypothesis test

			Estimate	S.E.	C.R.	P
UE	<-	PE	.578	.083	6.969	***
UE	<-	SE	.250	.064	3.882	***
UE	<-	CE	.202	.048	4.209	***

In terms of the verification of the basic adaptation index of the model, according to the test method of bogozzi (1988) and other scholars[8], as shown in Figure 2 and.CMIN/DF=3.343,GFI=0.936,AGFI=0.896,RMSEA = 0.074< 0.08, and CFI=0.974 ,RMR=0.054. According to the criteria of index determination, we can completely determine that the result can be judged by the criteria of model fitness.

The evaluation indexes of hypothesis test results are sorted out, as shown in Table 6. According to the hypothesis test results of the construction equation, we can get the following research results: H1: product experience has a significant positive impact on user experience; H2: service experience has a significant positive impact on user experience; H3: reputation experience has a significant positive impact on user experience.

IV. Research Conclusion

4.1 Research result

Through the research of this paper, it is found that in the future, when enterprises develop tools like We-Chat applets, they can enhance users'

experience from three aspects: product experience, service experience, and reputation experience, and attract users to use them.

Product experience: the way to start the app is to scan the code or open the sharing link. Users do not need to install apps on their mobile phones, which is more convenient than downloading the app. In the experience of core functions, it is easier to use than an app, because it only implements the core scene of the app, and there are no miscellaneous elements and redundant functions on the page. Users can use the shortest path to complete the use of a function. After the user completes, they just need to click the close button to exit the applet. The applet does not need to be unloaded. At the same time, an entry is left for subsequent use. Compared with an app, the memory and capacity consumption of a mobile phone are significantly reduced.

Service experience: many fashion luxury brands are trying to improve the consumer experience from store design, customer experience, marketing interaction, member management and other aspects. The We-Chat app just launched by kors, a fashion and luxury brand focuses on member services. With its lighter, more convenient, and smoother user experience, the WeChat app will upgrade the brand member experience. The Wechat app will integrate the services of member courtesy, shopping records, after-sales maintenance, and store information, so as to provide a better service experience for brand members.

Reputation experience: the official WeChat app should strengthen the audit and certification at the beginning of the launch to ensure the information and use the safety of consumers; The other is that for businesses, their services and products can be realized safely. The official WeChat applet should go online in a safe advertising area, and encrypt the input and output interface of the small program, so as to ensure the security of the fund circulation channel, no malicious links, and the safety of users.

4.2 Management Implications

Compared with the traditional app, the development of the We-Chat applet is simpler in system architecture and simpler in page code. For mobile phone users, We-Chat applets touch on the PC web page, official account, H5, APP, which can not be touched. In general, it is born to help users solve some special needs. For example, when users have no time, want to control cell phone memory space, do not want to APP, and so on, the applet can play its value, which is in line with the next-generation mobile Internet. The trend of the "micro, small, and light" industry. It will play a positive and meaningful role in the development of information technology.

4.3 Limitations

On the one hand, in the research method, we use text-mining to build independent variables of the antecedent, which lacks a certain theoretical basis. On the other hand, the use of we-chat apps is only limited to China, and can not be compared with other countries in terms of environment and culture. From the perspective of enterprise management development, due to the hardware attributes of WeChat applet itself, it can not meet the needs of medium and large enterprises, and most of them are small enterprises and convenient living tools.

REFERENCES

- [1] Cheng, K. , Schrieck, M. , Wiesche, M. , & Krcmar, H. . . Emergence of a Post-App Era – An Exploratory Case Study of the WeChat Mini-Program Ecosystem. 15th International Conference on Wirtschaftsinformatik.2020. https://doi.org/10.30844/wi_2020_n1-cheng
- [2] Kuang Wenbo, Li Rui, Ren zhuoro, all aspects of wechat applet, News Forum (2), 15-18. 2017
- [3] Tang Wenjie, Liu Shicheng, Zhang wufei, & Zhu Penghui. Lapp: future development trend of app. Journal of Three Gorges University: Humanities and Social Sciences Edition (S2), 32-34. 2014

- [4] Zhang Xiang. Wechat applet: share the 100 billion bonus of wechat entrepreneurship in the era of 2.0 [M]. Beijing: Tsinghua University Press, 2017
- [5] Calvo-Porrall C, Faña-Medín A, Nieto-Mengotti M. Exploring technology satisfaction: An approach through the flow experience[J]. *Computers in Human Behavior*, 66: 400-408.2017. <https://doi.org/10.1016/j.chb.2016.10.008>
- [6] Guo Hongli. An Empirical Study on the identification of customer experience dimensions -- Taking the telecommunications industry as an example [J]. *Management science*, 019 (001): 59-65,2006
- [7] Liu Rong, & Sun Xiaoya. Research on user experience evaluation of wechat app store. *E-commerce* (8). 2019
- [8] Bagozzi, R.P. ,& Yi,Y.. On the evaluation of structural equation model. *Journal of Academy of Marketing Science*, 16 (1), 74-94.1988
- [9] Lachner, F., Naegelein, P., Kowalski, R., Spann, M., & Butz, A. Quantified ux: Towards a common organizational understanding of user experience. In *Proceedings of the 9th Nordic conference on human-computer interaction* (pp. 1-10).2016. <https://doi.org/10.1145/2971485.2971501>
- [10] Hao, L., Wan, F., Ma, N., & Wang, Y. Analysis of the development of WeChat mini program. In *Journal of Physics: Conference Series*, Vol. 1087, No. 6, pp. 062040. IOP Publishing.2018.doi :10.1088/1742-6596/1087/6/062040
- [11] Li, P. WeChat applet promotion strategies of small shops. In *2020 International Conference on E-Commerce and Internet Technology (ECIT)* (pp. 273-276). IEEE.2020
- [12] Pettersson, I., Lachner, F., Frison, A. K., Riener, A., & Butz, A . A Bermuda Triangle? A Review of Method Application and Triangulation in User Experience Evaluation. In *Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems* (pp. 1-16).2018
- [13] Davis, F. D. Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS quarterly*, 319-340.1989
- [14] Tang, J. T. E., & Chiang, C. H. . Integrating experiential value of blog use into the expectation-confirmation theory model. *Social Behavior and Personality: an international journal*, 38(10), 1377-1389.2010
- [15] Gefen, D., Karahanna, E., & Straub, D. W. Inexperience and experience with online stores: The importance of TAM and trust. *IEEE Transactions on engineering management*, 50(3),30 7-321.2003.DOI: 10.1109/TEM.2003.817277
- [16] He, Fen. "Application research of mixed teaching mode based on Wechat applet." *Journal of Physics: Conference Series*. Vol. 1486. No. 3. IOP Publishing, 2020.

Authors



Kai Liao Graduated from Dhurakij Pundit University. Now studying for a doctor degree at Kyonggi University. During the school period, the main research interest is Global Business.



Junlin Wang Graduated from Konkuk University in Management. Now studying for a doctor's degree at Kyonggi University. During the school period, the main research interest is Global Business.