

# An Empirical Study of the Influencing Factors on the Satisfaction and Reuse Intention of Middle-aged Web Novel Users

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## Abstract

*The purpose of this study is to empirically identify factors that affect the satisfaction and continuous use of middle-aged web novel users. To this end, a survey was conducted on 580 middle-aged users in their 40s to 60s based on these surveys are as follows. First, the convenience, usefulness, and responsiveness of middle-aged web novel users in the process of using related websites and contents had a positive effect on the flow of web novel users. Second, the characteristics of web novels except usefulness had negative (-) effects on users' resistance. Third, the immersion of middle-aged web novel users was found to have a positive effect on the satisfaction of web novel users, and the negative resistance felt by middle-aged people in the process of using web novel was analyzed to have a negative effect on customer satisfaction. Fourth, the satisfaction of middle-aged web novel users had a positive effect on the intention to use continuously. The results of this study show that, in order to increase the satisfaction of middle-aged web novel users and to improve the resistance and immersion of middle-aged web novel users, the middle-aged web novel users need to reduce the negative resistance and to have a strategic approach to increase the immersion. Moreover, it is necessary to make efforts to improve the web novel so that it can be used more easily and quickly and to feel more convenient and enjoyable in the process of use.*

**Keywords:** Middle-aged, Web novel, Perceived characteristics, Flow, Resistance, Customer satisfaction, Intention of reuse

## 1. Introduction

Recently, the e-book market is continuously growing worldwide due to the expansion of smart devices such as smart phones and tablet PCs. Global consulting firm PWC expected that the global e-book market would reach \$ 17.437 billion in 2015, \$ 20.18 billion in 2016, and \$ 22.799 billion in 2017. According to the Digital Content Weekly Report of the Information and Communication Industry Promotion Agency published on April 21th in 2017, the Korean e-book publishing market rose 14.5% in 2015 to \$ 989 million, and by 2020 it is expected to reach \$ 1,622 million with an average annual growth rate of 10.4%. Korea has a wide range of infrastructure for wired and wireless internet, and the utilization rate of smart devices is high, so the environment of e-book activation by using apps is very well equipped.

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### Article history:

Received (January 4, 2021), Review Result (February 9, 2021), Accepted (March 14, 2021)

According to the distribution by age of web novels users announced by the Korea Creative Content Agency in 2018, middle-aged people have a low usage rate of 18.2% in their 40s, 8.4% in their 50s, and 3.4% in their 60s or older but their usage rate continues to rise. Therefore, this study aims not only to expand the continuously growing web novel market of middle-aged people preparing for the aging society but also to approach it as an academic subject for providing more efficient services.

## **2. The theoretical background**

### **2.1. Precedent studies of web novels**

The term e-book first appeared in the 'Gutenberg Project' in the United States in 1971. Early e-books were created to establish a virtual library that stores digitized books and serves them free of charge [1]. The current e-books are thought of as contents that can be conveniently used in exclusive-use or general-purpose terminals by downloading the printed paper-type books from the Internet using computer communication as an exclusive format file, and are called various names such as online book, file book, digital book, etc. Since 2010, the spread of smart devices has created an opportunity for content platforms to move from online to mobile, and consumers have become more inclined to enjoy content in a short time by using mobile and devices.

As a result, various types of snack-culture web contents such as webtoons, web novels, and web dramas are emerging as next generation killer contents. In the study on the structural relationship between the quality factors of mobile e-books, customer satisfaction and loyalty, Kim Jeong Soo et al., [2] verified that system qualities, information qualities and service qualities have a significant effect on customer satisfaction of e-book services. Ko Min Jung [3] conducted a study on the growth and potentiality of Korean web novels [3], and Jo Su Yeon and Oh Ha Young [4] studied readers' inner needs and characteristics through the analysis of keywords about web novels only to understand the main motifs and trends of web novels [4]. As shown above, research on middle-aged web novel users is insufficient in previous studies on web novels so far. Therefore, in this study, we intend to expand the research to middle-aged users.

### **2.2. Characteristics of use in web novels**

The Technology Acceptance Model (TAM) is a research model developed as a theoretical framework to identify what factors are affecting the acceptance of organizational members using the information technology which is introduced to improve the performance of the organization. Davis [5] explains the user's intention to use information system using two concepts of perceived usefulness and perceived ease of use. Meanwhile, there are studies on the attributes in using web novels such as Lee Ae-ri et al., [6] and Woo Jeong-hwa and Joo Chung-min [7].

These studies were mainly conducted by expanding and applying TAM. Meanwhile, the importance of service quality is increasing in modern society, and web novel service is not an exception either. This study aims to expand the relationship by adding service quality factors separately as the perceptual characteristics of middle-aged web novel users.

Therefore, this study is to apply the perceived convenience, perceived usefulness and responsiveness factors used in previous studies as the perception characteristics of the system and service of middle-aged web novel users.

### **2.3. Flow and resistance**

Hoffman & Novak [8] argued in study that if Internet users experience immersion, web use and exploratory behavior may increase and time distortion may appear. In fact, the experience of immersion in the online environment has resulted in positive results such as helping learning, promoting exploratory behavior, and strengthening subjective experience. This means that immersion has a positive effect on satisfaction while using the service or contents provided through the web or app [7]. On the other hand, the resistance as another variable is defined as emotional anxiety that middle-aged web novel users encounter. Generally, emotion, which usually refers to the state of an individual's mind, can be said in various expressions and languages such as affect, mood, and feeling. In most studies, the concept of emotion, emotion, and mood is often used in a mixture.

In the case of web novels in terms of resistance of users, it can be said that they are provided as innovative products to middle-aged users by digital convergence of existing paper books. Therefore, this study aims to investigate how the flow and resistance as emotional responses of middle-aged web novel users are presented.

### **2.4. Customer satisfaction and intention of continuous use**

Generally, customer satisfaction as a “sense of joy or disappointment” that occurs after comparing the effects of experiencing and feeling a product directly and its expectations. Nam Young-Joon and Choi Sung-Eun [9] conducted a study on the satisfaction of university library e-book service users, and verified the novelty factor of e-book as a new medium has a great influence on satisfaction. On the other hand, the intention to use is an intermediate variable between an individual's attitude and actual behavior which shows the subjective state of the individual.

On the other hand, the intention to use continuously means evaluating the service used by the customer based on the current time point and determining whether to use the service at the future time [10]. It is the willingness or belief to form a positive attitude and perform specific actions in the future [11]. Woo Jeong-hwa and Joo Chung-min [7] demonstrated the relationship between commitment, satisfaction and intention to use web novels.

Therefore, this study aims to investigate how the characteristics and emotional responses perceived by the users of middle-aged web novels affect the satisfaction and continuous intention of middle-aged web novels.

## **3. Research design**

### **3.1. Research hypothesis**

The purpose of this study is to structurally verify the effect of convenience, usefulness and responsiveness as characteristics perceived by middle-aged web novel users in the process of using web novels on the flow and resistance, and furthermore, satisfaction and intention of continuous use. For this purpose, the middle-aged men and women who use web novel service were selected as research subjects and a survey was conducted on them.

Based on the results of previous studies such as Lee Ae-ri et al. [6], Kim Jung-soo et al. [2], Woo Jeong-hwa, Jung Chung-min [7], and Kim Min-jung, Lee Soo-beom [11], the study hypotheses were set as follows to empirically verify the structural relationship between the characteristics of middle-aged web novel users (convenience, usefulness, responsiveness), flow, resistance, satisfaction and intention of continuous use.

Hypothesis 1: Convenience of using web novels will have a positive (+) effect on flow.

Hypothesis 2: Convenience of using web novels will have a negative effect on resistance.

Hypothesis 3: The usefulness of using web novels will have a positive (+) effect on flow.

Hypothesis 4: The usefulness of using web novels will have a negative (-) effect on resistance.

Hypothesis 5: Responsiveness of using web novels will have a positive effect on flow.

Hypothesis 6: Responsiveness of using web novels will have negative (-) effect on resistance.

Hypothesis 7: The flow of web novels will have a positive effect on user satisfaction.

Hypothesis 8: The user resistance of web novels will have a negative effect on user satisfaction.

Hypothesis 9: User satisfaction of web novel will have a positive effect on the intention to use continuously.

### **3.2. Design of surveys**

The survey for the empirical study was conducted for three months from August to October 2020, and the online and offline surveys were conducted in parallel. Middle-aged (40s-60s) web novel users in Seoul and Busan were selected as the subject of study. The survey results showed that 588 questionnaires were collected, but 580 questionnaires were used for empirical analysis except for 8 questionnaires including missing or insincere responses.

SPSS 26.0 and AMOS 26.0 were used for the statistical analysis. Frequency analysis was conducted to identify the general characteristics of the subjects, and reliability analysis and exploratory factor analysis were conducted to verify the reliability and validity of the measurement tools used in the empirical study. In addition, correlation analysis was conducted to verify the validity of discrimination between confirmatory factor analysis and construct concepts using AMOS 26.0. Finally, structural equation model (SEM) analysis was conducted to test the research hypothesis.

## **4. Result of empirical study**

### **4.1. General characteristics of data**

The results of analyzing the demographic characteristics and the characteristics of web novels for the respondents of the questionnaires collected for this study are as follows.

First, 75.5% of women were male, and 36.6% of 40 ~ 44 years old were the most. As for profession, office workers accounted for 40.7%, and college graduates were the most common by academic background. Also, smartphone is the most used device for web novel, and the most preferred web novel genre is romance novel field. And the most frequent period of using web novel service was 50.2% over 3 years, and the most frequent period of use was 32.1% for 30 minutes to less than 1 hour.

### **4.2 Reliability and validity analysis**

In this study, reliability analysis and exploratory factor analysis were conducted to verify reliability and validity of the constructs such as perceived characteristics (convenience, usefulness, responsiveness), flow, resistance, user satisfaction and intention of continuous use for web novel systems and services. As a result of factor analysis, 7 discernible factors were derived.

The explanatory power of the factors for the whole was 83.82%. The test results of KMO and Bartlett are approximation  $\chi^2=22,675.511$ , d.f.=465, and  $p=.000$ , which are valid. In addition, the reliability analysis showed that the Cronbach'  $\alpha$  value representing internal consistency was very high at 0.8 or higher for all factors, thus securing reliability.

#### 4.3. Confirmatory factor analysis and correlation analysis

In this study, confirmatory factor analysis (CFA) was conducted to test the single dimension of each measurement item using multi-items. As confirmatory factor analysis results show the appropriateness index value  $\chi^2=634.858$  (d.f.=292,  $p=.001$ ),  $\chi^2/\text{d.f.}=2.174$ , RMR=.018, GFI=.925, AGFI=.903, NFI=.969, CFI=.983, and RMSEA=.045, etc., which are satisfying the generally recommended standard value.

In addition, the composite reliability value of each factor was 0.7 or more and the average variance extracted value (AVE) was 0.5 or more. And correlation analysis was conducted to verify the discriminant validity between each factor whose concentration validity was verified by the confirmatory factor analysis result. The correlation coefficient value is not found to be large compared to the square root value of the variance extraction index (AVE) value, so it can be seen that the discrimination validity is secured.

#### 4.4. Verification of research hypothesis and discussion

The results of the verification of the research hypothesis are as follows. First, as a result of verifying hypothesis 1 to find out how convenience perceived by web novel users affects the immersion of adult users, the standardization coefficient was .381,  $t=7.872$  ( $p=.000$ ), which was statistically significant at its significance level .01, so hypothesis 1 was adopted.

Second, as a result of verifying hypothesis 2 set to find out how convenience perceived by adult web novel users affects the resistance of use, the standardization coefficient was -.222,  $t=-2.042$  ( $p=.041$ ), which was statistically significant at the significance level of .05. So hypothesis 2 was adopted.

Third, as a result of verifying hypothesis 3 to find out how usefulness perceived by web novel users affects the flow of adult users, the standardization coefficient was .405,  $t=11.024$  ( $p=.000$ ), which was statistically significant at the significance level .01. So hypothesis 3 was adopted.

Fourth, the hypothesis 4 was verified to find out how ease of perception of adult web novel users affects the resistance of users, and  $t=1.679$  ( $p=.093$ ) was not statistically significant. So hypothesis 4 was rejected.

Fifth, as a result of verifying the hypothesis 5 set to find out how the responsiveness (responsiveness) perceived by web novel users affects the immersion of adult users, the standardization coefficient was .206,  $t=3.192$  ( $p=.001$ ), which was statistically significant at its significance level .01. So, hypothesis 5 was adopted.

Sixth, as a result of the verification of hypothesis 6 set to find out how the responsiveness perceived by adult web novel users affects the resistance of users, the standardization coefficient was -.249,  $t=-3.175$  ( $p=.001$ ), which was statistically significant at the significance level .01. So, hypothesis 6 was adopted.

Seventh, as a result of verifying the hypothesis 7 set to examine how the immersion of adult web novel users on web novel affects customer satisfaction, the standardization coefficient was .929,  $t=24.353$  ( $p=.000$ ), which was statistically significant at the significance level .01. So hypothesis 7 was adopted. Eighth, as a result of verifying the hypothesis 8 set to examine how resistance as a negative emotion felt by adult web novel users affects customer satisfaction, the

standardization coefficient was  $-.189$ ,  $t=-4.144$  ( $p=.000$ ), which was statistically significant at the significance level  $.01$ . So, hypothesis 8 was adopted.

Finally, as a result of verifying hypothesis 9 to confirm how customer satisfaction with the use of web novels of adults affects the intention to use continuously, the standardization coefficient was  $.948$ ,  $t=27.772$  ( $p=.000$ ), which was statistically significant at the significance level  $.01$ . So, hypothesis 9 was also adopted.

## 5. Conclusion

The purpose of this study is to verify how the system and service characteristics felt while using web novels, which increasingly draw middle-aged people's attention, affect the flow and resistance as emotional response factors. Furthermore, it verifies their effect on the customer satisfaction and intention of continuous use. For this purpose, a survey was conducted on 580 middle-aged people from their 40s to 60s who use web novels, and empirical research was conducted based on the results. The results analysis showed that the convenience, usefulness and responsiveness perceived by middle-aged web novel users had a positive effect on the user's flow.

Furthermore, they formed a positive effect on customer satisfaction and intention of continuous use. Besides, the more positive the convenience, usefulness and responsiveness perceived by middle-aged web novel users, the less negative resistance of web novel users, and the more significant the influence on customer satisfaction and intention of continuous use. However, it was not confirmed that the usefulness factor perceived by web novel users had a significant effect on the resistance factor of web novel users. Centered on the analysis results of the structural relationship above, in order to improve the satisfaction and continuous intention of web novel users in terms of influence relationship, the design of web novel should be convenient and concise for middle-aged people when designing screen designs, and further efforts to improve the use procedures should be preceded by considering type sizes of smart phones and related devices for the use of the web novel users.

Moreover, not only is it necessary to develop and operate some useful and diverse web novel contents that can help middle-aged people use time and leisure, but it is also necessary to have marketing strategy to plan differentiated services and events targeting middle-aged people.

## Acknowledgement

Folling are results of a study on the "Leaders in INdustry-university Cooperation +" Project, supported by the Ministry of Education and National Research Foundation of Korea.

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