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Optimization and User Behavior Analysis of Accounting Online Informatization Service Platform Using UTAUT

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Abstract. In order to optimize the accounting online informatization service platform and gain in-depth insights into user behavior, this work first analyzes the user behavior of the accounting online informatization service platform based on the core variables of the Unified Theory of Acceptance and Use of Technology (UTAUT). Next, a correlation analysis model is constructed to validate the impact of four variables—age, gender, occupation, and years of service—on user behavior. The research results indicate that the relationship between age and gender and the willingness of users to engage in usage behavior is not significant, while there is a significant positive correlation between occupation and years of service and the willingness of users to engage in usage behavior. The findings contribute to the continuous improvement of the accounting online informatization service platform and enhance user experience.

Keywords: Accounting; UTAUT model; Online Informatization Service Platform; User Behavior; Correlation Analysis.

1. Introduction (Heading 1)

With the rapid advancement of information technology and the widespread use of the Internet, the accounting industry has gradually ushered in the wave of informatization. As an important part of accounting informatization, the accounting online informatization service platform provides convenient and efficient financial management and accounting services for businesses and individuals [1]. However, with the continuous changes in user demands and increasing competition, optimizing the accounting online informatization service platform and enhancing its functionality and user experience have become urgent issues to address.

The Unified Theory of Acceptance and Use of Technology (UTAUT) model plays a crucial role as a comprehensive theoretical framework in researching the optimization of accounting online informatization service platforms and analyzing user behavior [2]. Mujalli et al. (2022) found that the UTAUT model, by clearly defining core variables such as perceived usefulness, perceived ease of use, social influence, and cognitive outcomes, provided researchers with a systematic analytical perspective. Besides, this model helped them deeply understand the underlying motivations of users' acceptance and usage behavior on the platform [3]. Pourghanbari et al. (2022) revealed that the UTAUT model could assist in identifying and analyzing key influencing factors, such as age, gender, occupation, and years of service, providing a more comprehensive understanding of the characteristics and patterns of user behavior [4]. Almagrashi et al. (2023) suggested that combining the UTAUT model with regression models could verify the impact of different influencing factors on user behavior, offering specific data support and a decision-making basis for platform optimization [5].

In order to optimize the accounting online informatization service platform and gain a deeper understanding of user behavior, this work first selects the UTAUT model as the framework for a comprehensive analysis of user behavior on the platform. Next, a regression model is constructed to verify the impact of key variables such as age, gender, occupation, and years of service on user behavior. The main research innovation lies in the integrated use of the UTAUT framework and the in-depth exploration of key factors influencing user behavior tailored to the characteristics and requirements of the accounting online informatization service platform. By systematically analyzing

the impact of key variables such as age, gender, occupation, and years of service on user behavior, this work reveals the potential mechanisms through which these factors influence users' behavior on the accounting online informatization service platform. Furthermore, a correlation analysis model is established to validate these influencing factors and quantify their impact on user behavior. This research design not only provides specific data support and a decision-making basis for the optimization of the accounting online informatization service platform but also offers new perspectives and methods for research and practice in this field. By exploring the key factors of user behavior, this work provides in-depth theoretical guidance for the functional improvement and user experience optimization of accounting online informatization service platforms, contributing new insights and contributions to the relevant field of study.

2. Literature Review

UTAUT model, as a classic technology acceptance model, has received widespread attention and application in research both domestically and internationally. In domestic research, scholars have conducted numerous empirical studies based on the UTAUT model, validating its applicability in the Chinese culture and environment. They continuously expand and optimize the model to explain and predict user behavior in adopting new technologies. Additionally, domestic researchers have explored more influencing factors on technology adoption behavior by combining the UTAUT model with other theories.

Chen et al. (2023) constructed an improved UTAUT model targeting the elderly, providing essential theoretical and practical guidance for understanding the acceptance and usage behavior of wearable devices among the elderly [6]. Yang et al. (2023) utilized the UTAUT to collect data on the differences and correlations in smartphone usage behavior among the elderly through a questionnaire survey. They compared the changes before and after constructing the UTAUT model, providing important empirical data and theoretical guidance for understanding the changes in smartphone usage behavior among the elderly [7]. Based on the UTAUT model and the characteristics of express packaging, Zhan et al. (2023) selected performance expectancy, effort expectancy, social influence, and perceived value as core variables, with gender, age, and frequency as moderating variables. Through investigation and analysis, they established a structural equation to study the factors influencing consumers' willingness to recycle express packaging [8]. Bakhodirovich (2023) found that the UTAUT model could be used to study independent systems of accounting for small business entities, simplifying accounting methods in small businesses, improving accounting practices for small businesses and individual entities, and ensuring their effective operation [9]. Pourghanbari et al. (2022) argued that in the adoption of accounting information systems, there was a direct and positive correlation between factors such as self-efficacy, effort expectations, performance expectations, and cognitive technological adaptability. However, no significant correlation was found on the facilitating conditions constructed. This research is significant for a deeper understanding of the influencing factors in the adoption of accounting information systems and their successful application in organizations [10]. Shbail et al. (2022) used the UTAUT as a theoretical basis when studying the factors influencing the acceptance of electronic accounting by employees in small and medium-sized enterprises. The findings revealed that the UTAUT model played a crucial role in exploring and focusing on the application of new technology in small and medium-sized enterprises [11].

From the above literature, it is evident that the UTAUT model has been widely applied and received attention in both worldwide research. Its characteristics include extensive application, empirical verification, expansion and optimization, and integration with other theories. However, in the field of accounting research, although the UTAUT model has been adopted by some researchers, there are still some shortcomings.

3. Research Methodology

3.1. UTAUT model

The UTAUT model is a framework used to explain and predict individuals' behavioral intentions and actual usage of information technology. This model integrates multiple preceding technology acceptance models, serving as an amalgamation and extension of existing theories [12].

The UTAUT model considers four core factors: Performance Expectancy, Effort Expectancy, Social Influence, and Facilitating Conditions. Performance Expectancy refers to individuals' perceived extent to which using a specific technology enhances work performance. Effort Expectancy is individuals' perception of the expected cost or effort associated with using a specific technology. Social Influence is individuals' perception of the expectations and pressures from others regarding their use of a specific technology. Facilitating Conditions involve individuals' perception of the resources and support required for using a specific technology [13-15]. Figure 1 illustrates the structure of the UTAUT model.

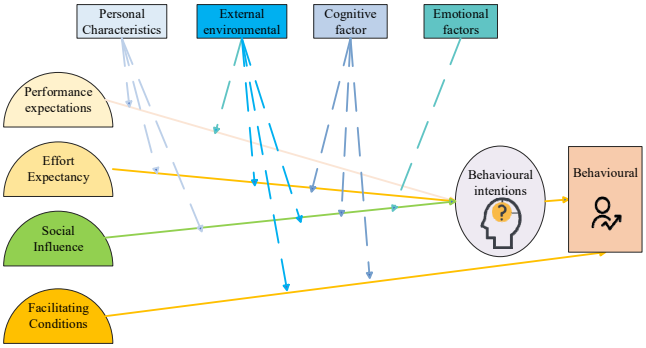

Figure 1. UTAUT Model Structure

The computational equations of the UTAUT model are typically based on regression analysis or structural equation modeling, where the weights and influences of various factors can be estimated and validated through statistical methods. These weights and influences can be utilized to predict individuals' adoption behavior towards specific technologies [16]. PE represent Performance Expectancy, EE represent Effort Expectancy, SI represent Social Influence, and FC represent Facilitating Conditions. The equation for the calculation of Behavioral Intention (BI) is as follows [17]:

$$BI = \alpha_0 + \alpha_1 PE + \alpha_2 EE + \alpha_3 SI + \alpha_4 FC \quad (1)$$

Where α_0, α_1, α_2, α_3, and α_4 are regression coefficients. The equation for the calculation of AU is as follows [18]:

$$AU = \beta_0 + \beta_1 BI + \beta_2 FC \quad (2)$$

β_0, β_1, and β_2 are regression coefficients.

3.2. Online Accounting Information Service Platform

An online accounting information service platform refers to a platform that utilizes information technology and network technology to provide online services and solutions in the field of accounting [19]. Such platforms may include accounting software, financial management systems, electronic invoicing and reporting systems, online bookkeeping services, data analysis tools, and more. Through these platforms, users can achieve online data entry, storage, processing, and analysis of financial data, enhancing the efficiency and accuracy of accounting work. Additionally, these platforms provide real-time financial information and decision support for businesses [20]. Figure 2 illustrates the research structure for user behavior under the integrated online accounting information service platform.

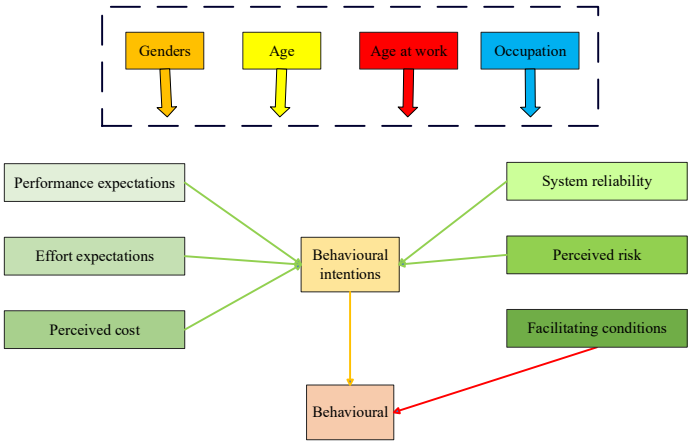

Figure 2. Research Structure of User Behavior under the Integrated Online Accounting Information Service Platform

This work categorizes the measurement dimensions of users' behavioral intentions to use online accounting service platforms based on the UTAUT model, as illustrated in Figure 3.

Classify	Dimension
Y1	Willingness to learn about accounting online service platforms
Y2	Willingness to use the accounting online service platform
Y3	Willingness to recommend the accounting online service platform

Figure 3. Categorization of Measurement Dimensions for Users' Behavioral Intentions to Use According to the UTAUT Model

4. Experimental Design and Performance Evaluation

4.1. Datasets Collection

This work uses the Questionnaire Star system for an online survey. The system provides a convenient online survey platform to assist researchers in designing, publishing, and managing surveys. Through the Questionnaire Star system, researchers can easily create customized surveys and distribute them to respondents for completion through links or QR codes. Respondents can complete the survey on any device with internet connectivity, enhancing the convenience and flexibility of survey completion.

Overall, 311 surveys are collected in this survey, and after screening, 289 valid surveys are obtained, resulting in an effective response rate of 92.9%. This outcome indicates the effectiveness and reliability of the Questionnaire Star system. Additionally, the reliability of the survey data is 0.887, and the validity is 0.820, suggesting high data reliability and validity, making it suitable for subsequent research analysis and data mining.

Data analysis is conducted using Statistical Package for the Social Sciences (SPSS) 26.0 software. SPSS is a statistical analysis software widely used in data processing and analysis across various disciplines. Through SPSS software, researchers can perform calculations and analyses for various statistical methods, including descriptive statistics, analysis of variance, regression analysis, factor analysis, and cluster analysis, to explore information behind the data and derive scientific conclusions and research findings. SPSS software is known for its user-friendly interface, powerful functionality,

and reliable results, making it an essential tool for researchers in data analysis. SPSS 26.0 software is employed here for conducting reliability analysis, validity analysis, regression analysis, and other statistical methods on survey data to validate research hypotheses and draw scientific conclusions.

4.2. Performance Evaluation

Figure 4 presents the results of the correlation test for user behavior under the integrated online accounting information service platform.

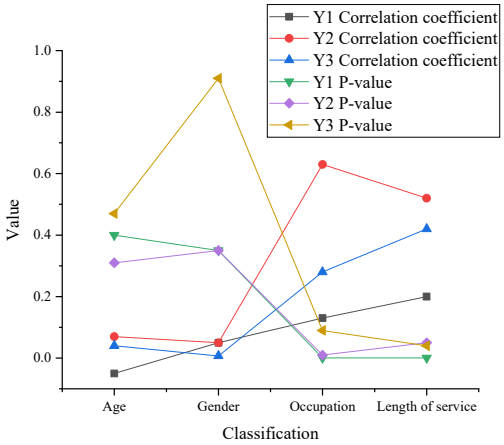

Figure 4. Correlation Test Results for User Behavior under the Integrated Online Accounting Information Service Platform.

Figure 4 indicates that the correlation coefficients between age and Y1, Y2, Y3 are -0.05, 0.07, and 0.04, respectively. The correlations are low, and the P-values are relatively high (0.4, 0.31, and 0.47), suggesting that the relationship between age and these three variables is not significant. Gender has a minor impact on Y1, Y2, Y3, with correlation coefficients close to 0, and high P-values, indicating an insignificant relationship between gender and these variables. Occupation has a more significant impact on Y1, Y2, Y3, with correlation coefficients of 0.13, 0.63, and 0.28. Moreover, the P-values for Y1 and Y2 are both below 0.05, indicating a significant relationship between occupation and these two variables. Similarly, the years of service significantly influences Y1, Y2, Y3, with correlation coefficients of 0.20, 0.52, and 0.42. Additionally, the P-values for Y1 and Y3 are both below 0.05, indicating a significant relationship between years of service and these two variables.

4.3. Discussion

Based on the analysis results of the model, this work believes that formulating a reasonable intelligent transformation strategy is crucial. First, personalized service plans can be designed based on user characteristics such as age, gender, and occupation to enhance user experience and satisfaction. Next, user stickiness and platform activity can be increased by developing an intelligent recommendation system that provides personalized service recommendations based on user's historical behavior and preference data. This work reveals that occupation and years of service significantly influence user behavior. Therefore, targeted user education and training activities can be conducted for users with different occupations and years of service to enhance their understanding and proficiency in platform functions and operations, reducing usage barriers. Introducing an intelligent customer service system is also crucial, and artificial intelligence technology is used to provide 24/7 online service, resolving user issues, and offering immediate support. Finally, utilizing user behavior data for analysis and prediction helps identify user needs and trends, allowing timely adjustments to platform strategies and service models, providing robust support for the continuous optimization and development of the platform. In summary, the intelligent transformation strategy should combine user characteristics and behavioral data, adopting personalized, intelligent, and data-driven approaches, providing strategic guidance and implementation paths for the optimization and development of the accounting online information service platform.

5. Conclusions

In order to optimize the online accounting information service platform and gain deeper insights into user behavior, this work initially analyzes user behavior based on the core variables of the UTAUT model. Subsequently, it constructs a correlation analysis model, validating the impact of four key variables, namely age, gender, occupation, and years of service, on user behavior. The results indicate a significant positive correlation between occupation and years of service with user behavior on the accounting online information service platform, while age and gender exhibit weaker influences. Specifically, the impact of occupation on Y1 and Y2 is statistically significant, and years of service similarly has a significant effect on Y1 and Y3. These findings provide crucial insights for a more in-depth understanding of user behavior, aiding in further optimizing the service platform and enhancing user experience.

The research limitations include a small sample size and potential biases in data sampling. Additionally, this work does not consider factors other than age, gender, occupation, and years of service that might influence user behavior. This could lead to biased or incomplete results, limiting the research interpretability and practicality. In order to enhance the quality and applicability of future research, efforts should focus on improving data collection and analysis, ensuring an adequate sample size, and considering more potential influencing factors. Moreover, the use of various models for comparison, uniform measurement methods, and definitions of variables can provide a more comprehensive understanding of user behavior, offering more targeted recommendations and strategies for optimizing the online accounting information service platform.

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