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Key Drivers of Alumni's Satisfaction and Continuance Intention with a Private University's Service Platform in Chengdu, China

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Abstract

Purpose: This study aims to quantitatively assess alum satisfaction and their willingness to continue using the alum information system at a university in Chengdu. Key factors examined include perceived ease of use, usefulness, perceived usefulness, information quality, system quality, service quality, satisfaction, and continuance intention. **Research design, data, and methodology:** A quantitative survey gathered 494 valid responses from alums using a quota sampling technique. Confirmatory Factor Analysis (CFA) and Structural Equation Modeling (SEM) were employed to analyze the data and explore the causal relationships among the identified factors. **Results:** Statistical analysis supported all hypotheses. Information quality emerged as the most influential factor affecting intention to continue using the system. Additionally, perceived ease of use, usefulness, system quality, and service quality positively influenced both satisfaction levels and intention to continue. **Conclusion:** This study successfully achieved its objectives, suggesting that managers of alum information systems should prioritize enhancing service quality, perceived ease of use, usefulness, system quality, and information quality. By doing so, they can optimize system design, thereby boosting alum satisfaction and fostering continued usage intentions.

Keywords : Alumni Service Platform, Perceived Usefulness, Service Quality, Satisfaction, Continuance Intention

JEL Classification Code: E44, F31, F37, G15

1. Introduction

As university information continues to evolve, the role of the Alumni Service Platform (ASP) in harnessing alum resources will become increasingly important. ASP is a functional tool designed to facilitate the creation of an alum network and to optimize the management of alum information. The ASP aims to enhance the feelings among and between alums and their alma mater and facilitate alum communication (Daoud, 2017). In addition, the platform will facilitate the development of alums work in scientific management, office automation, and information resources (Yu & Zhao, 2015). This will lead to highly efficient information services, simplifying alum records management, facilitating communication, and strengthening alum ties. The ASP helps to facilitate alum communication by providing exceptional service.

The Alumni Information Management System facilitates communication between alums by providing an exceptional service. This system sets a benchmark for managing alum information, fostering a better relationship between alums and their alma mater, and enabling alums to stay connected. In addition, the novel alum data system not only strengthens alum assets and alum ties but also promotes innovative management education and encourages the cultivation of talented individuals. The alum service platform uses modern computer and Internet technology to integrate alum management and services for the university (Zhang et al., 2017).

The alum office urgently needs to rely on the powerful

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data collection and analysis function of the Internet (Malhotra et al., 2017), which can reduce the burden of staff and improve the efficiency of work, and more importantly, provide alums with a comprehensive three-dimensional service covering information collection and release (Wang & Zhang, 2016).

The system collects the alum information of the whole university through this platform, takes care of the alum career and growth track, facilitates the discipline evaluation, provides comprehensive, accurate, and timely alum information for the school's decision-making level, achieves unified management, and achieves the visual presentation of alum information (Wang & Zhang, 2016).

2. Literature Review

2.1 Perceived Ease of use

Davis (1989) identified perceived ease of use as a key cognitive belief affecting user satisfaction and continued use of information systems/information technology. Hong et al. (2006) stated that perceived ease of use develops after the user adopts the technology and affects the willingness to continue using it. Roca et al. (2006) emphasized that perceived ease of use, system quality, and quality of service determine the ease of use of a system. Managers should create systems that are reliable and have consistent interfaces. Ching et al. (2021) found that system quality and satisfaction with the service experience are critical to delivering a high-quality system.McKechnie et al. (2006) argued that perceived usefulness has a greater impact on attitudes than perceived ease of use.highly neurotic people's selection of virtual goods.

H1: Perceived ease of use has a significant impact on perceived usefulness.

H2: Perceived ease of use has a significant impact on satisfaction.

2.2 Perceived Usefulness

Hsu and Lu (2004) demonstrated that perceived usefulness significantly impacts user attitudes, which in turn influences the acceptance and adoption of systems in prior research. Lin (2007) posited that perceived usefulness in the online environment refers to an individual's beliefs about using virtual communities to access information, enjoy services, and exchange ideas to improve performance.

Gefen et al. (2003) further elaborated on this concept, defining perceived usefulness as an individual's assessment of the ability of an information technology system to achieve a specific goal. Davis (1989) defines perceived usefulness as 'the extent to which an individual believes that using a system will improve productivity.

Bhattacherjee and Sanford (2006) proposed that this constituted a significant determinant in users' decisions to adopt new IT. This was perceived as an indicator of acceptance and a subjective measure of the utility provided & by the technology for users' adoption.

H3: Perceived usefulness has a significant impact on satisfaction

2.3 Information Quality

Information quality is a subjective assessment of whether the information's characteristics meet the users' needs and uses. It is one of the key factors in successfully modeling information systems and is objective and neutral. DeLone and McLean (1992) state that assessing and benchmarking information quality is challenging. Wang and Strong (1996) define information quality as the suitability of information characteristics for users. In studies of online reviews, information quality has been defined as the characteristics of the content of the review (Park et al., 2007).

Furthermore, DeLone and McLean (1992) suggested that system success is the main dependent variable in information systems (IS) research. According to them, information quality is determined by the relevance, speed, and accuracy of the information produced by the information system. These aspects are the key criteria for evaluating information quality and are the basis for understanding and improving system performance.

H4: Information quality has a significant impact on satisfaction.

2.4 System quality

Several factors, including ease of use, functionality, reliability, flexibility, data quality, and integration capabilities, determine system quality. System quality is contingent upon the usability and efficiency of system contributors. System quality is important for user satisfaction with online systems (Ahn et al., 2000). Prior research has highlighted the critical importance of system quality, particularly in the context of virtual communities and electronic business (Ahn et al., 2007; Teo et al., 2003). Petter et al. (2008) proposed that these elements can be employed to assess the efficacy of an information system. Lin et al. (2006) identified three main factors influencing user motivation to utilize an information system: system quality, information quality, and service quality. John et al. (2018) further elaborates on this, stating that system quality encompasses the functionality and usability of the system, while information quality assesses the accuracy and reliability of the information provided.

H5: System quality has a significant impact on satisfaction.

2.5 Service Quality

Service quality is mainly associated with the frequency organizations provide certain services. DeLone and McLean (2003) identified service quality as an important organizational characteristic. It was associated with qualities such as up-to-date elements, software development, and the interaction of information system organizational staff. This latent variable can additionally refer to the reliability, uniformity, accessibility, and informational efficiency of the technological system (Rughoobur-Seetah & Zuberia, 2021). Service quality, which provides unique features or assistance to participants, is an important strategy to improve service participation, service operation, and competitiveness effectiveness (Chang, 2012). Saeed et al. (2003) believed that service quality was service effectiveness, which the service providers supplied. Santos (2003) thought it also referred to the customer's all-around measurement of the superior quality of service provided in the virtual market. Numerous preliminary studies correlated service quality with user satisfaction and operational implementation rather than with participants' intentions (Zaied, 2012).
H6: Service quality has a significant impact on satisfaction.

2.6 Satisfaction

Satisfaction is characterized as how individuals observe and understand a commodity or professional. At the same time, pleasure is a specific view influenced by various aspects such as service quality, commodity value, and environment (Chang, 2012). It is indicators such as frequent evaluations as well as participant reviews, as methods to measure satisfaction (DeLone & McLean, 2003; Munadi et al., 2022). Satisfaction is the indicator of the individual's perceived level of enjoyment with materials, websites, and support activities. Determining it is one of the most challenging components of individual satisfaction (Zaied, 2012). Nugroho et al. (2019) posit that satisfaction will directly interfere with continuous intention and perceived value, which relevant researchers have confirmed in a long time of research.
H7: Satisfaction has a significant impact on continuance intention.

2.7 Continuance Intention

Chiu et al. (2009) demonstrated that sustained intention is a subjective tendency to maintain information-sharing behavior. This is expressed as a person's evaluation and feedback of their experience. Lee et al. (2013) showed that resource quality significantly affected sustained intention, with usefulness and validation also having a positive impact. Information usefulness and system usability exert a considerable influence on continuance intention. Continuance intention is the user's intention to continue using the information system (Bhattacherjee, 2001). In mobile social applications, continued use intention can be understood as a subjective state of users indicating their intention to repeat their current use behavior (Chiu et al., 2009). In the context of mobile healthcare applications, continuous use intention refers to the likelihood of users receiving information system services and their intention to continue using them in the future (Zhang et al., 2017). These studies emphasize the pivotal role of continuous use intention and its influencing factors in diverse systems and contexts.

3. Research Methods and Materials

3.1 Research Framework

The present investigation's conceptual framework was constructed by combining the ISSM and TAM assumptions with three theoretical frameworks from previous investigations. Mourougan and Sethuraman (2017) further elucidate that a research problem or declarative question can prompt the researcher to formulate hypotheses, which prompts the search for empirical evidence to support these hypotheses through applying scientific or statistical research methods. The theoretical framework of this study posits the formulation of seven hypotheses, which are to be tested with the expectation that a rigorous research methodology will confirm their validity.

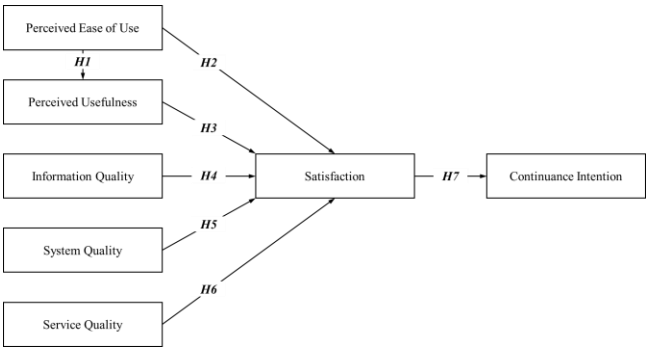

Figure 1: Conceptual Framework

H1: Perceived ease of use has a significant impact on perceived usefulness.
H2: Perceived ease of use has a significant impact on satisfaction.

H3: Perceived usefulness has a significant impact on satisfaction.
H4: Information quality has a significant impact on satisfaction.
H5: System quality has a significant impact on satisfaction.
H6: Service quality has a significant impact on satisfaction.
H7: Satisfaction has a significant impact on continuance intention.

3.2 Research Methodology

The researcher employed a quota sampling method to survey alumni of Southwest Jiaotong University in Beijing, Kunming, Hefei, and Chengdu. The survey sought to ascertain the reasons behind the use of the alumni information system, and the features were rated on a five-point scale.

Four experts from Southwest Jiaotong University with doctoral degrees assessed the items in the content validity assessment. The researcher then distributed a questionnaire to 50 individuals who had used the alumni information system. Subsequently, the items were subjected to a Cronbach's alpha assessment.

Once the research was complete, the researchers distributed the questionnaire to 425 WSU alums from target high schools. The researcher employed a range of statistical techniques to ensure the data was accurate and reliable. Additionally, a test was conducted to validate the research hypotheses, employing SEM and the analysis of related variables.

3.3 Population and Sample Size

The target population for this survey is defined as alumni of Southwest Jiaotong University (SWJTU) from the class of 2019 to 2021, residing in Beijing, Kunming, Hefei, and Chengdu. Based on the total number of latent and observed variables, 425 samples are recommended as the minimum sample size for constructing the advanced structural equation modeling survey framework. The research team employed a rigorous screening, filtering, and non-probability sampling methodology to select 500 samples from 6,103 respondents as the final sample for this survey.

3.4 Sampling Technique

Non-probability sampling is a method that ensures the decision of whether elements of the universe can be included in the sample is not biased (Etikan & Bala, 2017). However, the number of university alums who use the online alum information system remains to be determined. Consequently, non-probability sampling is an efficacious methodology for selecting pertinent sample units. Table 2 illustrates the information about the sampling units and the corresponding proportional sub-sample size:

Table 1: Sample Units and Sample Size

Four Main Cities	Total number of Graduate (from 2019 to 2021)	Proportional Sample Size
Beijing	2188	179
Kunming	850	69
Hefei	946	78
Chengdu	2119	174
Total	**6103**	**500**

Source: Constructed by author

4. Results and Discussion

4.1 Demographic Information

After data collection, 494 valid data were collected after filtering for invalid information. Table 3 summarizes the general demographic information of the 494 respondents. Of the participants, 32.99% were male, and 67.01% were female. According to the survey, 36.03% of the alums were in Beijing, 13.56% were in Kunming, 15.38% were in Hefei, and 35.03% were in Chengdu.

Table 2: Demographic Profile

Demographic Profile (n=481)		Frequency	Percentage
Gender	Male	163	32.99%
	Female	331	67.01%
Location	Beijing	178	36.03%
	Kunming	67	13.56%
	Hefei	76	15.38%
	Chengdu	173	35.03%

4.2 Confirmatory Factor Analysis (CFA)

A confirmatory factor analysis (CFA) was conducted to ascertain whether the components and loading quantities of the scale items were consistent with the predictions set forth by the relevant theories or assumptions. Allen et al. (2009) finding the objective of measurement modeling or confirmatory factor analysis (CFA) is to employ a systematic procedure to determine the relationship between variation and covariation among a set of indicators. Similarly, Brown (2006) supports this view by highlighting CFA as a type of structural equation modeling specifically applied to measurement models to scientifically validate the intrinsic associations between observed and latent variables.

Table 3 illustrates that the composite reliability (CR) of the factor loadings PEOU, PU, IQ, SYQ, SEQ, SAT, and COI are 0.855, 0.857, 0.885, 0.869, 0.800, 0.868, and 0.867, respectively. These values exceed the proposed benchmark value of 0.70 (Hulland, 1999). Meanwhile, in that order, the

average variance extracted (AVE) values of these factor loadings were 0.606, 0.608, 0.659, 0.580, 0.502, 0.688, and 0.623. These values were all greater than the benchmark values proposed（Fornell & Larcker, 1981).

Table 3: Confirmatory Factor Analysis Result, Composite Reliability (CR) and Average Variance Extracted (AVE)

Variables	Source of Questionnaire (Measurement Indicator)	No. of Item	Cronbach's Alpha	Factors Loading	CR	AVE
Perceived ease of use (PEOU)	Davis (1989)	4	0.722	0.586-0.952	0.855	0.606
Perceived usefulness (PU)	Hsu and Lu (2004)	4	0.833	0.585-0.929	0.857	0.608
Information Quality (IQ)	DeLone and McLean (1992)	4	0.783	0.751-0.857	0.885	0.659
System Quality (SYQ)	Lin (2013)	5	0.781	0.538-0.937	0.869	0.580
Service Quality (SEQ)	DeLone and McLean (2003)	4	0.823	0.669-0.791	0.800	0.502
Satisfaction (SAT)	Chang (2012)	3	0.871	0.816-0.837	0.868	0.688
Continuance Intention (COI)	Chiu et al. (2009)	4	0.868	0.657-0.873	0.867	0.623

Furthermore, as evidenced in Table 4, all of the requisite criteria for absolute fit indicators, including CMIN/DF, GFI, AGFI, and RMSEA, as well as incremental fit evaluations, such as CFI, NFI, and TLI, were met. Consequently, all the goodness-of-fit indicators yielded positive results in the CFA evaluation.

Table 4: Goodness of Fit for Measurement Model

Fit Index	Acceptable Criteria	Before Adjustment Statistical Values	After Adjustment Statistical Values
CMIN/DF	<3(Al-Mamary & Shamsuddin, 2015; Awang, 2012)	2.536	1.929
GFI	≥0.90 (Sica & Ghisi, 2007)	0.889	0.916
AGFI	≥0.80 (Sica & Ghisi, 2007)	0.863	0.896
RMSEA	<0.05 (Pedroso et al., 2016)	0.056	0.043
CFI	≥0.90 (Bentler, 1990)	0.933	0.960
NFI	≥0.90 (Wu & Wang, 2006)	0.895	0.921
TLI	≥0.90 (Sharma et al., 2005)	0.923	0.953

Remark: CMIN/DF = The ratio of the chi-square value to degree of freedom, GFI = goodness-of-fit index, AGFI = adjusted goodness-of-fit index, RMSEA = root mean square error of approximation, CFI = comparative fit index, NFI = normalized fit index and TLI = Tucker Lewis index

Table 5 provides a detailed account of the research results employed to assess discriminant validity, accompanied by the corresponding expressions. In this instance, the values on the diagonal line accurately reflect the square root of the average effect size. Schmitt and Stults (1986) asserted that the correlation between any two latent variables should be maintained below 0.80. The results of this study provide compelling evidence that the measurement instrument can effectively differentiate between different latent variables, thereby establishing the study's findings as fully valid.

Table 5: Discriminant Validity

	PEOU	PU	IQ	SYQ	SEQ	SAT	COI
PEOU	**0.778**						
PU	0.325	**0.780**					
IQ	0.008	0.034	**0.812**				
SYQ	0.012	0.012	0.068	**0.762**			
SEQ	0.225	0.176	0.022	0.043	**0.709**		
SAT	0.387	0.305	0.228	0.252	0.378	**0.829**	
COI	0.092	0.086	0.015	0.104	0.423	0.478	**0.789**

Note: The diagonally listed value is the AVE square roots of the variables
Source: Created by the author.

4.3 Structural Equation Model (SEM)

After completing the CFA assessment, the researcher confirmed the findings utilizing the Structural Equation Model (SEM). SEM is generally considered an interpretative simulation technique (Beran & Violato, 2010). SEM investigates the causal connection between the attributes in a matrix and compensates for evaluation bias or deception in the coefficient of determination (Stein et al., 2012). When adjusted by AMOS, the overall values of CMIN/DF, GFI, AGFI, CFI, NFI, TLI, and RMSEA were all above permissible limitations. As the information in Table 7 shows, the SEM's goodness of fit was established.

Table 6: Goodness of Fit for Structural Model

Fit Index	Acceptable Criteria	Before Adjustment Statistical Values	After Adjustment Statistical Values
CMIN/DF	<3(Al-Mamary & Shamsuddin, 2015; Awang, 2012)	2.687	1.998
GFI	≥0.90 (Sica & Ghisi, 2007)	0.882	0.914
AGFI	≥0.80 (Sica & Ghisi, 2007)	0.860	0.897
RMSEA	<0.05 (Pedroso et al., 2016)	0.059	0.045
CFI	≥0.90 (Bentler, 1990)	0.923	0.955
NFI	≥0.90 (Wu & Wang, 2006)	0.883	0.914

Fit Index	Acceptable Criteria	Before Adjustment Statistical Values	After Adjustment Statistical Values
TLI	≥0.90 (Sharma et al., 2005)	0.915	0.950

Remark: CMIN/DF = The ratio of the chi-square value to degree of freedom, GFI = goodness-of-fit index, AGFI = adjusted goodness-of-fit index, RMSEA = root mean square error of approximation, CFI = comparative fit index, NFI = normalized fit index and TLI = Tucker Lewis index

4.4 Research Hypothesis Testing Result

The research model in this article primarily assesses the significance of relationships among its variables by standardizing regression weights and variances. A significance level of $p<0.05$ is considered significant. As indicated in the results presented in Table 7.

Table 7: Hypothesis Results of the Structural Equation Modeling

Hypothesis	(β)	t-value	Result
H1: PEOU→PU	0.294	5.893 *	Supported
H2: PEOU→SAT	0.297	5.338 *	Supported
H3: PU→SAT	0.196	4.289 *	Supported
H4: IQ→SAT	0.260	5.873 *	Supported
H5: SYQ→SAT	0.218	5.136 *	Supported
H6: SEQ→SAT	0.414	8.087 *	Supported
H7: SAT→COI	0.489	9.560 *	Supported

Note: *** p<0.001, ** p<0.01, * p<0.05
Source: Created by the author

The detailed results of the hypothesis testing are presented in Table 7, which indicates that SAT has a direct and significant effect on COI. Furthermore, the quantitative method has the greatest influence, with a beta coefficient value of 0.489 and a t-test statistic of 9.560***. This is followed by the influence of SEQ on SAT, with a beta coefficient value of 0.414 and a t-test statistic value of 8.087***. Furthermore, PEOU significantly influences SAT, with a beta coefficient value of 0.297 and a t-test statistic value of 5.338***.

Furthermore, PEOU significantly influences PU, as evidenced by a beta coefficient value of 0.294 and a t-test statistic value of 5.893***. IQ also has a notable impact on SAT, as indicated by a beta coefficient value of 0.260 and a t-test statistic of 5. SYQ significantly affects SAT, with a beta coefficient value of 0.218 and a t-test statistic value of 5.136***. Finally, despite the relatively modest strength of the effect, the impact of PU on SAT remains significant, with a beta coefficient value of 0.196 and a t-test statistic value of 4.289***.

5. Conclusion and Recommendation

5.1 Conclusion and Discussion

This study aims to systematically investigate the mechanism of alum satisfaction with the Alumni Service Platform (ASP) and its influence on the willingness to Continue Intention at Southwest Jiaotong University (SWJTU). Through extensive theoretical sorting and empirical analyses, this study constructs a theoretical framework that reveals the direct significant effects of Perceived Ease of Use (PEOU), Perceived Usefulness (PU), System Quality (SEQ), Information Quality (IQ), and Service Quality (SYQ) on satisfaction (SAT,) as well as their indirect effects on Continue Intention (COI).

Based on this theoretical framework, seven research hypotheses were formulated and tested through an empirical study with 500 target alums. In the end, 494 valid sample data were successfully collected. To ensure the scientific validity and rigor of the study, a validated factor analysis (CFA) technique was used to quantitatively assess the collected data to test its consistency with the theoretical framework and construct validity. In addition, this study used the structural equation modeling (SEM) technique to further identify the key elements influencing behavioral intention and their mechanisms of action.

The results of testing the research hypotheses indicated that SEQ, PEOU, IQ, SYQ, and PU had a significant direct effect on SAT, with SEQ having the most significant effect, followed by PEOU, IQ, SYQ, and PU. Meanwhile, SAT had a significant positive effect on COI, indicating that the higher the alums's satisfaction with the information system, the stronger their intention to continue using it. In addition, this study also found that PEOU has a significant positive effect on PU, which means that the easier alums find the system to use, the more likely they are to perceive the system as useful.

These findings provide important theoretical support for understanding the formation mechanism of alums' satisfaction with information systems and practical guidance for optimizing and improving alum information systems. By improving system quality, information quality, service quality, and user experience, it is expected that alum satisfaction with the information system and their willingness to continue using it will be further enhanced, thereby strengthening the connection and interaction between alums and their alma mater.

5.2 Recommendation

This study delved deep into the factors that influence alumni satisfaction and their intention to continue using the Alumni Service Platform of Southwest Jiaotong University. Our investigation was thorough and comprehensive, leading to several important conclusions.

First, based on validating the H1 hypothesis, we found that perceived ease of use (PEOU) significantly positively affects perceived usefulness (PU). This finding suggests that if alums perceive the alum service system to be easy to operate and use, they will be more likely to perceive it as useful to them.

Secondly, the results of the validation of hypothesis H2 revealed a positive relationship between perceived ease of use (PEOU) and satisfaction (SAT). This suggests that alums' positive feelings about their experience using the system are directly proportional to their overall satisfaction with it.

Again, hypothesis H3 confirmed the positive effect of perceived usefulness (PU) on satisfaction (SAT). Even if alums perceive difficulty in using the system, as long as they perceive that the system provides them with real value, this perceived usefulness still increases their satisfaction. It promotes their continued use of the system.

Furthermore, the results of hypothesis H4 indicate a positive relationship between information quality (IQ) and satisfaction (SAT). This means that the more accurate, comprehensive, and timely the information provided by the alumni service system, the higher the alumni's satisfaction with the system.

From the perspective of hypothesis H5, there is a significant positive relationship between System Quality (SYQ) and Satisfaction (SAT). This suggests that the higher the alum rate of the system's overall performance, stability, and reliability, the more satisfied they are with their experience.

In addition, the validation of hypothesis H6 further emphasizes the centrality of service quality (SEQ) in influencing satisfaction (SAT). Of all the factors that influence satisfaction with the alumni service system, service quality is considered to be crucial in that it directly influences the level of alumni satisfaction.

Finally, our study underscores the pivotal role of alumni satisfaction in their decision to continue using the system. This finding has profound implications for the management of the Alumni Service Platform, as it highlights the importance of enhancing alumni satisfaction to ensure the system's long-term stability.

5.3 Limitation and Further Study

This study focuses on the alum group of Southwest Jiaotong University (SWJTU). However, the general applicability of the results is limited because alums from different universities or backgrounds have different expectations and experiences with the Alumni Service Systems. Even though several key factors, including perceived ease of use, perceived usefulness, information quality, system quality, and service quality, have been fully considered throughout the research process, it is not possible to rule out the existence of certain potential influencing factors that have not been taken into account. Such factors may include personal preferences and usage habits. Moreover, although this study demonstrates the correlation between the factors, the causal mechanisms behind them have yet to be explored in depth.

Consequently, future research can be extended and deepened in the following ways: Firstly, the sample should be broadened to include alums from different universities and backgrounds to improve the generalisability and reliability of the findings. Secondly, the potential influencing factors, such as individual preferences and usage habits, should be further explored to gain a more comprehensive understanding of the usage behavior of the alum service system. Finally, the causal mechanism between the factors should be explored in depth using experimental design, causal inference, and other advanced statistical methods to provide more precise and targeted suggestions for optimizing the alum service system.

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