

An Exploration of System Quality Factors Influencing University Students' Satisfaction with WeChat Official Account Applications in Xi'an City, Shaanxi Province, China

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Abstract

This study examined university students' satisfaction with WeChat Official Account applications in Xi'an City, Shaanxi Province, China, based on the system quality construct of the Information Systems Success Model. It had two objectives: to examine the levels of system quality across five dimensions (adaptability, availability, reliability, response time, and usability) and of satisfaction, and to analyse the influence of these system quality dimensions on satisfaction. Data were collected from 400 university students who had used a university WeChat Official Account, selected through proportional stratified sampling, using a five-point Likert-scale questionnaire. The data were analysed using descriptive statistics and stepwise multiple regression. The results showed that both system quality (mean = 2.21) and satisfaction (mean = 2.12) were rated at low levels. The stepwise regression model was statistically significant ($F = 406.344$, $p < 0.001$) and explained 80.3% of the variance in satisfaction (Adjusted $R^2 = 0.803$). Usability ($\beta = 0.281$), response time ($\beta = 0.256$), availability ($\beta = 0.223$), and reliability ($\beta = 0.223$) were each significantly and positively associated with satisfaction, while the adaptability dimension could not be reliably assessed, as its scale did not achieve internal consistency. These findings suggest that usability, response time, availability, and reliability are significant system quality factors associated with student satisfaction. As the four dimensions carried closely comparable weights, universities seeking to improve satisfaction should strengthen them together rather than prioritising any single one.

Keywords: System Quality, User Satisfaction, WeChat Official Account, Information Systems Success Model, University Students

Introduction

The digital economy is a novel economic paradigm driven by digital technology, leveraging technological capabilities to enhance efficiency and generate added value across sectors including manufacturing, transportation, sales, and services. In the realm of education, institutions are progressively transitioning toward becoming "digital universities" to align their operations with the rapid changes observed in today's educational landscape (Maltese & Giunchiglia, 2017). Amid the challenges posed by the COVID-19 pandemic, universities have been compelled to continually adapt to digital services (Choudhury, 2020), expanding digital infrastructure to support teaching, learning management, research activities, and online community services. In this context, easily accessible applications serve as vital conduits through which students access information and services. (Alenezi, 2023)

WeChat has emerged as one of the most influential digital platforms in this transition. It is a multifunctional social media, messaging, and payment application used by over half of China's population, ranking among the top social networks globally. By the second quarter, the combined monthly active users of Weixin and WeChat had reached approximately 1.29 billion worldwide (Tencent Holdings Limited, 2022). The platform supports approximately 20 million active WeChat Official Accounts, which serve as effective tools for content promotion, follower engagement, and service delivery. In recent years, WeChat has garnered increasing attention from university information departments and student associations because of its convenience, rapid accessibility, diverse interactive functions, and flexibility. As of 2018, a total of 1,634 universities nationwide had established official WeChat public platforms (Li, 2018), through which they deliver campus news, academic information, and a range of student services such as campus-card linkage, grade inquiries, and course selection.

Despite this widespread adoption, the value of a university's WeChat Official Account depends not only on the services it offers but also on the quality of the system that delivers them. In the Information Systems Success Model, DeLone and McLean treat system quality as a key determinant of user satisfaction, separate from information quality and service quality (DeLone & McLean, 2003). System quality concerns the desirable characteristics of the information system itself. Among the attributes DeLone and McLean (2003) identify as valued qualities of a system are adaptability, availability, reliability, response time, and usability, and this study adopts these five as its dimensions of system quality. When a system is unstable, slow, or hard to navigate, even rich content and responsive service may leave users dissatisfied. For university students who depend on WeChat Official Accounts to obtain academic information, system quality is therefore likely to be an important factor in their overall satisfaction.

While the DeLone and McLean model has been applied to WeChat Official Accounts in Chinese higher education, prior studies have mostly approached the platform through

service content, user engagement, or composite indicator systems. Zhang and Lu (2023), for example, applied the updated D&M model to academic-library WeChat Official Accounts, but they used the Delphi method and grey relational analysis to select satisfaction indicators rather than to test the effect of system quality on satisfaction. The question of how the individual dimensions of system quality (adaptability, availability, reliability, response time, and usability) relate to student satisfaction has therefore received limited direct attention. This question carries practical value, since establishing which dimensions are associated with satisfaction helps universities decide where to focus platform improvements. The present study addresses this issue by analysing the influence of system quality and its dimensions on university students' satisfaction with WeChat Official Account applications in Xi'an City, Shaanxi Province, China.

Research Objectives

1. To examine the levels of system quality (adaptability, availability, reliability, response time, and usability) and satisfaction with WeChat Official Account applications among university students in Xi'an City, Shaanxi Province, China.
2. To analyze the influence of system quality factors (adaptability, availability, reliability, response time, and usability) on university students' satisfaction with WeChat Official Account applications in Xi'an City, Shaanxi Province, China.

Conceptual Framework

This study draws on the Information Systems Success Model of DeLone and McLean (2003), focusing on the system quality construct and its relationship with user satisfaction. System quality is examined through five dimensions: adaptability, availability, reliability, response time, and usability. Each dimension is treated as an independent variable, and satisfaction with the WeChat Official Account application is the dependent variable. The conceptual framework is presented in Figure 1.

The study examines system quality rather than the model in full, on both theoretical and empirical grounds. Information quality concerns content that university units produce independently of the platform, and service quality concerns support from an information systems function that students do not engage with directly, so neither construct describes the platform itself as students encounter it. Empirically, Petter et al. (2008) found the system quality and user satisfaction association among the most consistently supported in the model, and Abdullah et al. (2025), in Malaysian public hospitals, reported that system quality predicted user satisfaction while information quality did not. The five attributes DeLone and McLean (2003) identify within system quality are therefore treated as separate predictors rather than as one composite construct.

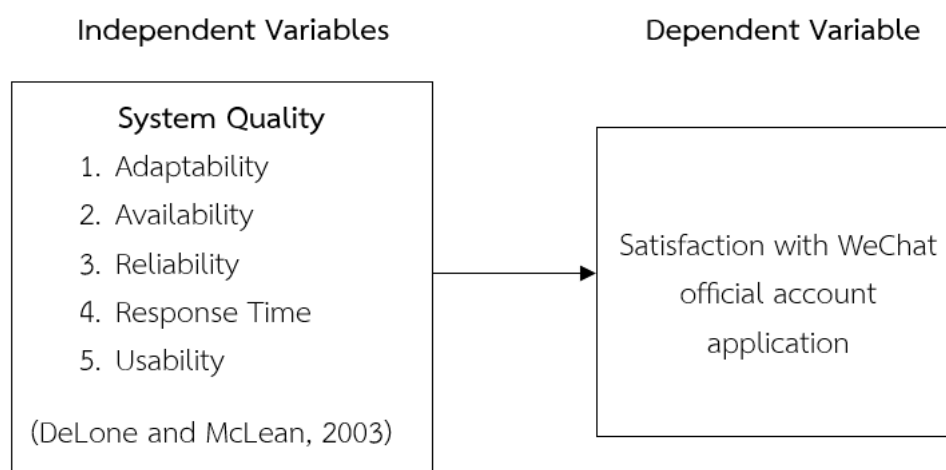


Figure 1 Conceptual Framework

Source: Adapted from DeLone and McLean (2003)

Research Hypotheses

H1: Adaptability has an influence on university students' satisfaction with WeChat Official Account applications in Xi'an City, Shaanxi Province, China.

H2: Availability has an influence on university students' satisfaction with WeChat Official Account applications in Xi'an City, Shaanxi Province, China.

H3: Reliability has an influence on university students' satisfaction with WeChat Official Account applications in Xi'an City, Shaanxi Province, China.

H4: Response time has an influence on university students' satisfaction with WeChat Official Account applications in Xi'an City, Shaanxi Province, China.

H5: Usability has an influence on university students' satisfaction with WeChat Official Account applications in Xi'an City, Shaanxi Province, China.

Literature Review

System Quality in the Information Systems Success Model

System quality is one of the core constructs in the Information Systems Success Model of DeLone and McLean. It refers to the desirable characteristics of an information system itself, as distinct from the information it produces or the service that supports it (Petter et al., 2008). Petter et al. (2008) describe system quality in terms of attributes such as ease of use, system reliability, flexibility, and response time. Earlier work in the same tradition treats system quality as a measure of the technical performance of an information system, covering its operational characteristics and the efficiency of its processing.

In the 2003 revision of their model, DeLone and McLean identify adaptability, availability, reliability, response time, and usability as attributes that characterise the quality

of a system (DeLone & McLean, 2003). These five attributes form the basis of the present study and are defined as follows:

1. **Adaptability** refers to the capacity of a system to accommodate change and to evolve in response to new requirements and technological developments.
2. **Availability** refers to the extent to which a system remains operational and accessible to users with minimal downtime.
3. **Reliability** refers to the consistency with which a system delivers accurate and dependable results without failure.
4. **Response time** refers to the speed with which a system processes user requests and returns feedback.
5. **Usability** refers to the ease with which users can learn, navigate, and interact with a system.

System Quality and User Satisfaction

User satisfaction is one of the six interdependent dimensions of success in the model of DeLone and McLean (2003). It differs from the three quality constructs in that it records the user's evaluative response to a system rather than a property of the system itself, and it is directed at a particular system used in a particular setting rather than at technology in general. Within the structure of the model it occupies an intermediate position: system quality, information quality, and service quality shape satisfaction, and satisfaction contributes in turn to the net benefits users derive from the system. Petter et al. (2008) note that satisfaction is often adopted as a stand-in for success as a whole, partly because it is convenient to measure, and they caution that this practice obscures the separate contributions of the quality dimensions. The present study follows that caution by treating satisfaction as the dependent variable while retaining the five system quality dimensions as separate predictors.

The relationship between system quality and user satisfaction is well established within this tradition. In their review of ninety empirical studies, Petter et al. (2008) found the association to be supported in every one of the twenty-one studies examined at the individual level of analysis. DeLone and McLean position system quality as one of the determinants of user satisfaction, on the premise that a system that performs reliably and responds efficiently supports a more satisfactory user experience (DeLone & McLean, 2003). In a study of hospital information systems in Malaysian public hospitals, Abdullah et al. (2025) used structural equation modelling with 1,376 respondents and found that system quality had a significant positive effect on user satisfaction ($\beta = 0.480$, $p < 0.001$), while information quality did not.

In the WeChat context specifically, Wang et al. (2023) applied structural equation modelling to identify the factors shaping user attention toward a WeChat Official Account, and found that information quality and system quality were among the primary determinants,

while service quality had limited influence. This finding is relevant to the present study in two respects: it supports the treatment of system quality as a meaningful determinant in the WeChat setting, and it suggests that the system dimension may matter more than the service dimension in this platform. Tian and Xu (2017) likewise examined satisfaction with WeChat Official Accounts and reported that system quality, alongside information quality and service quality, significantly influenced user satisfaction.

WeChat Official Accounts in Higher Education

WeChat Official Accounts have been studied as service platforms in Chinese higher education, though largely from perspectives other than system quality. Zhang and Lu (2023) applied the updated DeLone and McLean model to academic-library WeChat Official Accounts, using the Delphi method and grey relational analysis to identify key satisfaction indicators, and reported service responsiveness, information timeliness, and system security as the most important. Other studies have approached student use of WeChat through engagement and social outcomes rather than system performance. Zhang et al. (2019) examined how WeChat use intensity relates to college students' campus life satisfaction through bridging social capital, while Liang et al. (2025) drew on uses and gratifications theory to explain university students' engagement with WeChat Official Accounts. Neither treated the platform as an information system to be evaluated on system quality dimensions.

What this body of work leaves unaddressed is the level at which system quality has been examined. Tian and Xu (2017) tested it as a single composite construct, and the indicator rankings reported by Zhang and Lu (2023) reflect expert judgement rather than relationships estimated in a sample of users. Whether adaptability, availability, reliability, response time, and usability carry separate and distinguishable associations with satisfaction when estimated together in one model has not been established, and the present study addresses this question.

Research Methodology

Research Design

This study used a quantitative research design to examine the influence of system quality on university students' satisfaction with WeChat Official Account applications. Data were collected through a survey questionnaire and analysed using the SPSS statistical package with descriptive statistics and multiple regression analysis.

Population and Sample

The population was undergraduate and junior-college students at higher education institutions in Xi'an City, Shaanxi Province, China, who had previously used a university's WeChat Official Account. According to the Xi'an Bureau of Statistics (2023), the city had

63 higher education institutions with a combined enrolment of 835,600 students (46 undergraduate institutions with 582,663 students and 17 junior colleges with 252,937 students).

The sample size was determined using Taro Yamane's (1967) formula with a 5% margin of error, which yielded a required sample of 400 students. A proportional stratified sampling procedure was applied. Institutions were first classified into two strata, undergraduate and junior college, and the sample was allocated in proportion to the population of each stratum, giving 279 respondents from undergraduate institutions and 121 from junior colleges. Fifty per cent of the institutions in each stratum were randomly selected, and the online questionnaire was then distributed to students in the selected institutions until the target number for each stratum was reached.

Research Instrument

The questionnaire began with screening questions to confirm that respondents were university students in Xi'an who had used a WeChat Official Account. It then collected demographic information on gender, age, education level, and major. System quality was measured through five dimensions (adaptability, availability, reliability, response time, and usability) using 15 items, and satisfaction was measured with five items. All system quality and satisfaction items used a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree).

Mean scores were interpreted using five levels based on equal class intervals of 0.80. For system quality, scores of 4.21–5.00 indicated "strongly agree," 3.41–4.20 "agree," 2.61–3.40 "not sure," 1.81–2.60 "disagree," and 1.00–1.80 "strongly disagree." For satisfaction, scores of 4.21–5.00 indicated "definitely satisfied," 3.41–4.20 "likely satisfied," 2.61–3.40 "uncertain about satisfaction," 1.81–2.60 "unlikely to be satisfied," and 1.00–1.80 "definitely not satisfied."

Validity and Reliability

The content validity of the questionnaire was assessed by three experts using the Item-Objective Congruence (IOC) index. All items obtained IOC values between 0.67 and 1.00, with an overall index of 0.92, exceeding the 0.60 criterion. Reliability was assessed through a pilot test with 50 students who were not part of the main sample. Cronbach's alpha (Cronbach, 1951) was 0.943 for the system quality scale and 0.873 for the satisfaction scale, both exceeding the 0.70 threshold for acceptable reliability (Nunnally, 1978).

Reliability was further examined at the dimension level in the main sample ($n = 400$). Cronbach's alpha was .752 for availability, .763 for reliability, .797 for response time, .777 for usability, and .853 for satisfaction, all above the .70 criterion (Nunnally, 1978). The adaptability dimension returned an alpha close to zero, with inter-item correlations ranging from $-.032$ to $.020$, indicating that its three items did not form an internally consistent scale in this sample.

Findings involving this dimension are therefore interpreted with caution, and the implications are considered in the Discussion.

Data Analysis

Descriptive statistics (frequency, percentage, mean, and standard deviation) described respondents' demographic characteristics and their levels of system quality and satisfaction. Stepwise multiple regression then examined the influence of the five system quality dimensions on satisfaction, retaining only dimensions with a statistically significant contribution. Significance was set at 0.05.

Stepwise entry was used because the study addresses an applied question, namely which dimensions of system quality are associated with satisfaction in a setting where the five dimensions are substantially intercorrelated. The Information Systems Success Model treats system quality as a determinant of satisfaction but does not order its sub-dimensions, so no theory-based entry sequence was available. Because stepwise selection is data-driven, the model was re-estimated in two further ways to examine its stability: simultaneous entry of all five dimensions, and hierarchical entry with demographic controls in the first block (Table 5). Before interpreting the regression results, the assumptions underlying multiple regression were examined. Multicollinearity was assessed through tolerance and variance inflation factors. Independence of residuals was supported by a Durbin-Watson statistic of 1.953. The distribution of the standardized residuals was approximately normal, with skewness of .419 and kurtosis of .132, both within the ± 1 range generally regarded as acceptable. Linearity was examined through the plot of standardized residuals against standardized predicted values, which did not indicate a curvilinear pattern. Homoscedasticity was assessed using the Breusch-Pagan procedure, in which the squared residuals were regressed on the four retained predictors, and the test did not indicate a significant departure from constant error variance, $F(4, 395) = 2.091, p = .081$.

Because all variables were measured with a single self-report instrument administered at one point in time, the potential for common method bias was assessed using Harman's single-factor test. Principal component analysis of the twenty items measuring system quality and satisfaction, extracted without rotation, produced a first component accounting for 50.64% of the total variance, marginally above the 50% level commonly used as a reference point, and three components had eigenvalues greater than one. Responses were collected online and anonymously, and no identifying information was requested. The implications of this result are considered in the Limitations of the Research.

Research Results

1. Demographic Characteristics of Respondents

Of the 400 respondents, 218 (54.5%) were male and 182 (45.5%) were female. By age, 189 (47.25%) were 18–22 years old, 130 (32.5%) were over 22, and 81 (20.25%) were under 18. In terms of education, 279 (69.75%) were studying at the bachelor's degree level and 121 (30.25%) at the diploma level. Respondents came from thirteen major categories, the largest being Mathematics and Humanities (56 each, 14.0%), followed by Chemistry (51, 12.75%) and Economics and Management (39, 9.75%).

2. Levels of System Quality and Satisfaction

The levels of system quality across its five dimensions are presented in Table 1.

Table 1 Mean and standard deviation of system quality dimensions

System Quality Dimension	Mean	S.D.	Interpretation
Adaptability	2.71	0.51	Not sure
Availability	2.07	0.94	Disagree
Reliability	2.10	1.00	Disagree
Response time	2.07	1.03	Disagree
Usability	2.09	1.01	Disagree
Overall	2.21	0.78	Disagree

As shown in Table 1, the overall mean of system quality was 2.21 (S.D. = 0.78), which falls in the "disagree" range, indicating that on average respondents did not perceive the system quality of university WeChat Official Accounts favourably. Among the five dimensions, availability (2.07), response time (2.07), usability (2.09), and reliability (2.10) all fell in the "disagree" range. Adaptability recorded a higher mean (2.71), but this value should not be read as a substantive level, because the three items forming this dimension did not constitute an internally consistent scale, as reported in the Validity and Reliability section. The higher mean was produced mainly by one item concerning security updates, which received an "agree"-level rating, while the remaining two items stayed at the "disagree" level.

The levels of satisfaction are presented in Table 2.

Table 2 Mean and standard deviation of satisfaction

Satisfaction Item	Mean	S.D.	Interpretation
1. Generally satisfied with the WeChat Official Account	2.11	1.19	Unlikely to be satisfied
2. The experience met expectations	2.12	1.26	Unlikely to be satisfied
3. Willing to give a high evaluation	2.13	1.23	Unlikely to be satisfied
4. Satisfied with the account currently used	2.10	1.23	Unlikely to be satisfied
5. It is wise to choose the commonly used account	2.16	1.23	Unlikely to be satisfied
Overall	2.12	0.97	Unlikely to be satisfied

As shown in Table 2, the overall mean of satisfaction was 2.12 (S.D. = 0.97), within the "unlikely to be satisfied" range. Respondents were therefore generally not satisfied with the WeChat Official Account applications they used. These descriptive results address the first research objective: both system quality and satisfaction were rated low in this sample.

3. Influence of System Quality on Satisfaction

Stepwise multiple regression was used to test the influence of the five system quality dimensions on satisfaction. The overall model is presented in Table 3.

Table 3 Analysis of variance for the regression of system quality dimensions on satisfaction

Source	SS	df	MS	F	Sig.
Regression	304.965	4	76.241	406.344	<0.001
Residual	74.113	395	0.188		
Total	379.078	399			

As shown in Table 3, the regression model was statistically significant ($F = 406.344$, $p < 0.001$), indicating that the system quality dimensions were jointly associated with satisfaction with the WeChat Official Account application. The coefficients for the individual dimensions are presented in Table 4.

Table 4 Stepwise regression coefficients for system quality dimensions predicting satisfaction

Dimension	B	SE	β	t	Sig.	Tolerance	VIF
(Constant)	0.123	0.054	-	2.253	0.025	-	-
Usability	0.271	0.039	0.281	6.937	<0.001	0.303	3.305
Response time	0.242	0.038	0.256	6.350	<0.001	0.304	3.291
Availability	0.231	0.044	0.223	5.295	<0.001	0.278	3.591
Reliability	0.217	0.041	0.223	5.289	<0.001	0.278	3.594

$R = 0.897$, $R^2 = 0.804$, Adjusted $R^2 = 0.803$, $SE = 0.433$, Durbin-Watson = 1.953

Note. Tolerance and VIF are reported for the four dimensions retained in the model. When all five dimensions were entered simultaneously, the tolerance and variance inflation factor for adaptability were .736 and 1.358.

As shown in Table 4, four of the five system quality dimensions made a statistically significant contribution to satisfaction and were retained in the model, which together explained 80.3% of the variance in satisfaction (Adjusted $R^2 = 0.803$). Adaptability did not make a significant contribution and was not retained.

Multicollinearity was not a concern in this model. Tolerance values ranged from 0.278 to 0.304 and variance inflation factors from 3.291 to 3.594, all within conventional limits. The value for adaptability was the lowest of the five dimensions, which indicates that its exclusion from the stepwise model is not attributable to redundancy with the other dimensions.

Because stepwise selection is data-driven, the model was re-estimated under two further specifications to examine whether the results depend on the selection procedure. The three specifications are compared in Table 5.

Table 5 Comparison of three model specifications

Dimension	Stepwise β	Enter β	Hierarchical β
Usability	0.281	0.270	0.270
Response time	0.256	0.248	0.248
Availability	0.223	0.220	0.222
Reliability	0.223	0.222	0.219
Adaptability	not retained	0.042 ($p = .104$)	0.041 ($p = .115$)
Adjusted R²	0.803	0.803	0.802

Note. All coefficients for the four retained dimensions were significant at $p < 0.001$ in all three specifications. The hierarchical model entered gender, age, and education level in the first block.

Table 5 shows that the four retained dimensions carried almost identical weights across the three specifications, with standardised coefficients differing by no more than 0.011, and that adaptability failed to reach significance in both specifications in which it was retained. The demographic block entered at the first step of the hierarchical model was not significant overall ($F(3, 396) = 1.738, p = .159$) and accounted for 1.3% of the variance in satisfaction. In the first block, gender showed a small association with satisfaction ($\beta = -0.105, p = .036$), but it did not remain significant once the system quality dimensions were entered ($p = .966$), and none of the three demographic variables was significant in the final model. Adding the system quality dimensions increased the explained variance by 79.3% ($F \text{ change} = 319.982, p < 0.001$). The findings therefore do not depend on the selection procedure or on the demographic composition of the sample.

Each of the four retained dimensions was significantly and positively associated with satisfaction. A one-unit increase in usability corresponded to a 0.271-unit increase in satisfaction, and the corresponding values were 0.242 for response time, 0.231 for availability, and 0.217 for reliability. The standardised coefficients ranged from 0.223 to 0.281, a span of 0.058, and their ordering is not treated here as a ranking of relative importance, since the order of availability and reliability is not stable across the specifications reported in Table 5. The regression equation in raw-score form was:

$$\text{Satisfaction} = 0.123 + 0.271(\text{Usability}) + 0.242(\text{Response time}) + 0.231(\text{Availability}) + 0.217(\text{Reliability})$$

4. Summary of Hypothesis Testing

The results support four of the five hypotheses, as summarised in Table 6.

Table 6 Summary of hypothesis testing

Hypothesis	Result
H1: Adaptability has an influence on satisfaction with WeChat Official Account applications.	Not supported
H2: Availability has an influence on satisfaction with WeChat Official Account applications.	Supported
H3: Reliability has an influence on satisfaction with WeChat Official Account applications.	Supported
H4: Response time has an influence on satisfaction with WeChat Official Account applications.	Supported
H5: Usability has an influence on satisfaction with WeChat Official Account applications.	Supported

Note. The result for H1 is treated as inconclusive rather than as evidence that adaptability is unrelated to satisfaction; see the accompanying text.

These results address the second research objective. Usability, response time, availability, and reliability were each significantly and positively associated with satisfaction. Adaptability was not retained in the model, but this outcome should not be read as an absence of influence. As reported in the Validity and Reliability section, the adaptability scale did not meet the internal consistency criterion in the main sample, so its non-retention cannot be interpreted as a substantive finding. The coefficients for the four retained dimensions are estimated from scales that met the reliability criterion. Although the absolute levels of system quality and satisfaction were low, variation in the four retained dimensions still accounted for a substantial proportion of the variation in satisfaction.

Discussion

The present study examined the influence of five system quality dimensions on university students' satisfaction with WeChat Official Account applications in Xi'an City, and the results address both research objectives. The stepwise regression model was statistically significant ($F = 406.344$, $p < 0.001$) and accounted for 80.3% of the variance in satisfaction (Adjusted $R^2 = 0.803$). This finding is consistent with the core proposition of the Information Systems Success Model, in which system quality operates as a determinant of user satisfaction (DeLone & McLean, 2003). It corresponds with Tian and Xu (2017), who reported that system quality significantly influenced user satisfaction with WeChat Official Accounts, and with the broader IS Success literature synthesised by Petter et al. (2008), in which system quality attributes were repeatedly associated with user satisfaction across study settings. Earlier work in the WeChat setting also supports the relevance of the system dimension on this platform: Wang et al. (2023) found that system quality was among the primary factors shaping users' attention intention toward WeChat Official Accounts, which indicates that the technical performance of the platform matters to users even when the outcome under study is not satisfaction itself.

Among the five dimensions, four made a significant positive contribution and were retained in the model, with standardised coefficients of 0.281 for usability, 0.256 for response time, and 0.223 for both availability and reliability. These values span a range of only 0.058, and the order of availability and reliability reverses across model specifications, so they are treated here as closely comparable rather than as an ordered set. What the pattern indicates is that students respond to the platform as a working system rather than to any single property of it: the ease of navigating it, the speed with which it responds, its accessibility, and its dependable operation all register in their overall evaluation at a similar level. The finding for usability is consistent with Petter et al. (2008), who identified ease of use as one of the most frequently supported system quality attributes in relation to satisfaction, and with the emphasis DeLone and McLean (2003) place on usability as a characteristic that shapes the user's experience of a system. The contribution of response time is consistent with Zhang and Lu (2023), who examined WeChat Official Accounts of academic libraries and identified service responsiveness and information timeliness among the most important satisfaction indicators. A comparable pattern was reported by Abdullah et al. (2025) in a hospital information system context in Malaysian public hospitals, where system quality had a significant positive effect on user satisfaction ($\beta = 0.480$, $p < 0.001$). Although that study concerned a different platform and user group, its result reinforces the present finding that system quality is consistently associated with satisfaction across information system settings.

These four results support hypotheses H2 through H5. They also carry a practical implication that addresses the second research objective. Because the four dimensions carried closely comparable weights, improvements to interface design, system responsiveness, accessibility, and dependable operation are all likely to contribute to student satisfaction, and none of them can be identified from these data as the single most productive point of intervention.

Adaptability did not make a significant contribution and was not retained in the model, so H1 was not supported. This result should not be read as evidence that adaptability is unrelated to satisfaction. The adaptability scale did not achieve internal consistency in this sample, and the pattern was already visible at the item level: the item concerning security updates averaged 4.08 while the remaining two items averaged 1.93 and 2.11. The three items behaved as unrelated indicators rather than as a single dimension. The collinearity diagnostics reported in Table 4 further show that adaptability had the lowest variance inflation factor of the five dimensions, so its exclusion cannot be attributed to redundancy with the other predictors. Because the construct was not measured reliably, the absence of a significant effect is attributable at least in part to measurement, and no conclusion about the influence of adaptability can be drawn from these data.

The levels of system quality and satisfaction warrant further comment. Both were rated low. The overall mean of system quality was 2.21, in the "disagree" range, and the overall mean of satisfaction was 2.12, in the "unlikely to be satisfied" range. The distribution of satisfaction scores adds further detail to this picture. Rather than clustering around a uniformly low level, respondents fell into two groups: 278 respondents (69.5%) rated their satisfaction at 2.00 or below, while 65 respondents (16.3%) rated it at 3.60 or above, with comparatively few respondents in the middle of the scale. The low overall mean therefore reflects a large group of clearly dissatisfied users alongside a smaller group of satisfied users, rather than moderate dissatisfaction shared across the sample. The low levels and the positive association are not contradictory. The descriptive results, which address the first objective, describe how favourably students currently evaluate the platform, while the regression results, which address the second objective, describe the direction and strength of the relationship between system quality and satisfaction. Because the four retained dimensions accounted for a substantial proportion of the variance in satisfaction, raising the quality of these dimensions is the most direct route to improving satisfaction, even though the present levels of both are low.

These results contribute to the literature on WeChat Official Accounts in three ways. Earlier studies in this setting treated system quality as a single construct or ranked indicators by expert judgement, whereas the present findings show that four of its attributes carry separate and closely comparable associations with satisfaction, which indicates that the construct operates as a set of related but distinguishable properties rather than as one undifferentiated quality. The results also show that a platform can be evaluated poorly by its users while the relationship between system quality and satisfaction remains strong, so low absolute levels and a strong association are not in conflict. Finally, the behaviour of the adaptability dimension indicates that the attributes DeLone and McLean (2003) list within system quality are not equally straightforward to measure, and that work applying the model at the level of individual attributes needs to establish the internal consistency of each before treating it as a dimension.

Recommendations

Recommendations from the Research Findings

To improve student satisfaction with the WeChat Official Account, universities should focus on four aspects of system quality: usability, response time, availability, and reliability. Usability can be improved by simplifying the interface and clarifying the navigation path, so that students reach the information they need with fewer steps. Response time can be improved by making the platform load faster, especially when connecting to linked university web pages. Availability can be improved by reducing downtime and keeping access stable, so that the account is usable whenever students need it. Reliability can be improved by making the service more consistent and secure, so that students can depend on the platform and

trust the information it provides. Because the four dimensions carried closely comparable weights in this sample, universities with limited resources should treat them as a single programme of improvement rather than addressing them in a fixed order.

Limitations of the Research

This study has six limitations that should be considered when interpreting the results. First, the sample was confined to university students in Xi'an City, so the findings may not generalise to students in other regions of China or to other user groups, whose evaluations of WeChat Official Accounts may differ. Second, the data were collected at a single point in time, which provides a snapshot rather than a view of how satisfaction changes as the platform and its users evolve. Because of this design, the analysis establishes association rather than causal order, and it remains possible that students who are more satisfied with the platform also evaluate its system qualities more favourably. Third, the study relied on self-reported questionnaire data in which the independent and dependent variables were measured with the same instrument from the same respondents. The single-factor test reported in the Data Analysis section produced a first component slightly above the 50% reference level, so common method variance cannot be ruled out, and no marker variable was included in the questionnaire to allow a more precise assessment.

Fourth, the questionnaire did not record how frequently respondents used the platform or their level of digital literacy, so these variables could not be included among the controls. Fifth, the adaptability scale did not achieve internal consistency in this sample, so the study cannot determine whether adaptability is associated with satisfaction, and the conceptual boundaries between usability and response time and between availability and reliability were not tested directly. Sixth, the stepwise regression procedure selects predictors on a data-driven basis, and although the model was re-estimated under two further specifications with consistent results, the exclusion of adaptability reflects this specific sample and should be confirmed in further studies before it is treated as a general pattern.

Recommendations for Future Research

The adaptability construct requires a redesigned measurement scale before its relationship with satisfaction can be tested. Future work should develop a balanced set of items for this dimension and establish their internal consistency before the dimension is entered into a model. The model could also be extended beyond system quality and satisfaction to include other constructs of the Information Systems Success Model, such as information quality, system use, and net benefits (DeLone & McLean, 2003), in order to trace the fuller path from system quality to outcomes. Replicating the study in other cities and at other types of institution would test the generalisability of the findings. A longitudinal design would allow the direction of the relationship to be examined, and a mixed-methods design incorporating interviews or usability testing would provide the explanatory depth that a quantitative survey cannot offer on its own.

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