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The Exploration on Satisfaction and Loyalty: A Case of Non-Teacher Training Major Students in Chuxiong Normal University, China

Weiya Feng*

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Abstract

Purpose: Talent training is the fundamental mission of the sustainable development of colleges and universities. This paper aimed to examine the factors impacting student satisfaction and loyalty, using a case of non-teacher training major students at Chuxiong Normal University, China. The conceptual framework contained academic aspect, reputation, service quality, facility, student satisfaction, and student loyalty. **Research design, data, and methodology:** The quantitative method distributed online questionnaires to 500 students. The sampling techniques involve judgmental sampling, quota sampling, convenience sampling, and snowball sampling. The index approved the construct validity of item-objective congruence (IOC). For the reliability test, each construct was verified by Cronbach's Alpha coefficient values in the pilot test of 30 participants. The data were analyzed by confirmatory factor analysis (CFA), including the goodness of model fit, reliability, and validity. Furthermore, structural equation modeling (SEM) was implemented to test hypotheses. **Results:** The findings were that academic aspects, service quality, and facility significantly impact student satisfaction. Additionally, student satisfaction had a significant impact on student loyalty. Conversely, reputation had no significant impact on student satisfaction. **Conclusions:** The improvement of student satisfaction and loyalty can be achieved by promoting a good reputation, strengthening the academic aspects, and enhancing service quality and facilities.

Keywords: Academic Aspect, Reputation, Service Quality, Student Satisfaction, Student Loyalty

JEL Classification Code: E44, F31, F37, G15

1. Introduction

In a macro perspective of China, higher education in China is the world' largest. The education system includes Bachelors, Masters and Doctoral degrees, as well as non-degree programs. There were 3,012 colleges and universities, with over 240 million college graduates. The enrollment rate to higher education raised from 30 percent in 2012 to 57.8 percent in 2021, an increase of 27.8 percentage points, which marks higher education in China has arrived the propagation stage. In 2022, large corporates and local governments have jointly established 151 new colleges and universities. Provincial and ministerial co-construction of local universities obtained a total of more than 100 billion yuan in investment during the 13th Five-Year Plan period, effectively improving the overall level of

1 *Weiya Feng, Ph.D. Candidate in Technology, Education and Management, Assumption University, Bangkok, Thailand. Email: 894430106@qq.com

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university construction and the ability to serve national and regional major strategic capabilities (Global Times, 2022).

Chuxiong Normal University is a full-time undergraduate university in Yunnan Province approved by the Ministry of Education in 2001. The university was established on the basis of the merger of the former Chuxiong Teachers College and the Chuxiong Teachers College for Nationalities. The university has a long history of running a non-teacher training major. It has a relatively strong influence in the province. The non-teacher training major is specialized and niched. The problem can be stated that there is not much demand of students acquiring this major. In addition, limited researchers examine this particular group. Therefore, the satisfaction and loyalty of non-teacher training students are very important for the improvement of programs, service quality and facilities (Chuxiong Normal University, 2022).

Talent training is the fundamental mission of the sustainable development of colleges and universities. Students, as direct participants in education and teaching activities, are keen achieve their academic goals. Student satisfaction and loyalty can be explored as indicators for the quality improvement of education (Chandra et al., 2019). Therefore, this study raises the significance of study to examine the factors influencing the student satisfaction and loyalty which are academic aspect, reputation, service quality and facility, using a case of non-teacher training major students in Chuxiong Normal University, China.

2. Literature Review

2.1 Academic Aspect

Several scholars have examined the impact of academic aspect on student satisfaction. Academic aspects are such as programs, access and reputation (Abdullah, 2005). According to Pham et al. (2022), academic aspect can be conveyed as skills provided to students to achieve their learning goals such as mathematical logic, language proficiency, creativity and analytical ability. Some literatures interpreted academic level, atmosphere and system as academic aspects. Afzal et al. (2010) explicated eight dimensions of higher education service quality which include design, delivery and assessment, academic facilities, non-academic facilities, recognition, guidance, student representation, study opportunities and group size. Bitner and Zeithaml (1996) confirmed that the teaching skills of the academic faculty and their interaction with students as academic aspects can also elevate student satisfaction. The results from the study of Ali et al. (2016) revealed that students have positive attitude towards academic aspects in a university will have higher level of satisfaction. Therefore, a hypothesis is developed per below:

H1: Academic aspect has a significant impact on student satisfaction.

2.2 Reputation

Reputation is the judgment of an individual on the behavior and characteristics of the other individual. The reputation reflects credibility, transparency and brand image. The essence of reputation is a signal that can dictate positive thoughts and behavior of a person towards a person, a company or a product/service (Kreps et al., 1982). Most firms push a lot of effort to build its long-term reputation to stay competitive in the market. Reputation can be voiced through the public relations or marketing communications to establish the brand in the top of customers' mind. Successful brand emphasizes its reputation with product/service quality, high-skilled staff and corporate social responsibility. In educational service, most schools and universities have thrived to uplift their brand image and ranking in order to satisfy students and attract more enrollment (Ali et al., 2016). Thereby, this study hypothesizes the significant relationship between reputation and student satisfaction per following:

H2: Reputation has a significant impact on student satisfaction.

2.3 Service Quality

Service quality can be a psychological measure on how the service can meet customer's needs and expectation. Service quality was proposed by Parasuraman et al. (1988). Service quality has gained largely attention among numerous scholars in various field of study. In the context of education, there are five key dimensions comprising of tangibility, responsiveness, reliability, empathy and assurance to measure the service quality (Yousapronpaiboon, 2014). The service quality is perceived by students on how the university provides academic and non-academic support to help them to accomplish their learning and life goals (Cao & Jittawiriyanukoon, 2022). Educational service quality and its elements can be evaluated through student satisfaction survey. Perceived service quality refers to the comparison between the expected service and the actual received service based on the students' needs and expectations. Chandra et al. (2019) confirmed that service quality is significantly related to student satisfaction. Based on the above discussion, a following hypothesis is set:

H3: Service quality has a significant impact on student satisfaction.

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2.4 Facility

The general term of facility is tangible fixed assets such as land and real estate, equipment and other physical components. According to Song (2022), facilities refer to tangible assets, including buildings, facilities and equipment. For a university, it includes classroom, library, dormitory, sport complex, laboratory, parking lot and etc. (Yusoff et al., 2015). Facility can be covered in basic academic activities, such as computer, network equipment, audio-visual equipment, etc. Facility is an important element contributing to student satisfaction. Kärnä and Julin (2015) pointed out that student satisfaction significantly impacted by facilities. Hanssen and Solvoll (2015) explained that students measure their level of satisfaction on the university on how good facilities are provided for them to maximizing their learning performance and career development. Song (2022) also studied factors influencing student satisfaction and loyalty in higher education in China and found the significant relationship between facility and student satisfaction. Based on the previous literatures, this study hypothesized that:

H4: Facility has a significant impact on student satisfaction.

2.5 Student Satisfaction

The concept of student satisfaction came in the 1960s. Due to the influence of Customer Satisfaction Research, most scholars define the meaning of student satisfaction on the concept of customer satisfaction. Some scholars referred students as customers of educational service. Student satisfaction refers to students' evaluation of whether a need has been met according to their expectation form a service provider (Song, 2022). Student satisfaction is the fundamental indicator for the development and improvement plan among colleges and universities. The relationship between satisfaction and loyalty has been examined for over decades. The enhancement of customer satisfaction can predict customer loyalty (Clemes et al., 2013). Oliver (1999) denoted that satisfaction can lead to loyalty when an individual feel satisfied with the brand and become a brand lover or advocator. The support relationship between satisfaction and loyalty has been confirmed by many literatures (Alves & Raposo, 2007; Chong & Ahmed, 2012; Clemes et al., 2013; Gronholdt et al., 2000; Song, 2022) Hence, a hypothesis per below proposes a significant relationship between student satisfaction and student loyalty:

H5: Student satisfaction has a significant impact on student loyalty.

2.6 Student Loyalty

In a term of marketing, loyalty has been applied into consumers' behavior which can be formed as psychological aspect or habit. Therefore, most enterprises aim to establish good product quality, reputation and impression into consumers' mind, so that consumers are willing to continue to buy products or services (Lovelock & Wirtz, 2007). In the higher education context, university management should take satisfaction measures to improve the student loyalty by improving overall educational system and its components to attract the enrollment, and to improve the loyalty of students. Student loyalty is an essential indicator to pursue the core competitiveness of colleges and universities (Dado et al., 2012). Student satisfaction is the premise of loyalty. In the light of this, high satisfaction may lead to high student loyalty, reflecting from their support by continuing their study or recommend their university to others (Song, 2022).

3. Research Methods and Materials

3.1 Research Framework

In Figure 1, the conceptual framework was developed from four previous literatures, containing key six variables which are academic aspect, reputation, service quality facility, student satisfaction and student loyalty. Firstly, Ali et al. (2016) studied academic aspect and non-academic aspect, access, reputation and student satisfaction in Malaysian public universities. Secondly, Chandra et al. (2019) examined the impact of service quality, university image on student satisfaction and student loyalty. Thirdly, Mallika Appuhamilage and Torii (2019) explored the effect of student loyalty on the student satisfaction in higher education. Lastly, Marzo-Navarro et al. (2005) investigated university management and student satisfaction.

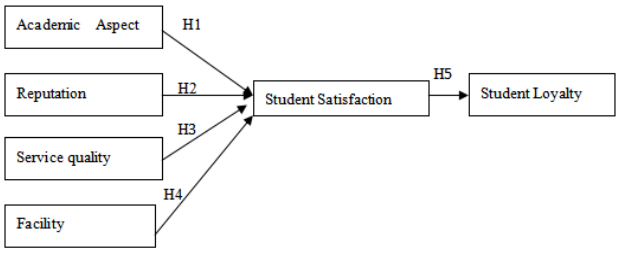

Figure 1: Conceptual Framework

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3.2 Research Methodology

The online questionnaire was developed from an online-based software namely "questionnaire star". There are three parts in a questionnaire. Firstly, the screening questions were applied to qualify participants. Secondly, measuring items were conducted with five-point Likert scale, scoring from strongly disagree (1) to strongly agree (5). Lastly, the demographic information involves gender, hometown and preference to refer the university.

Item Objective Congruence (IOC) Index was applied to validate contents or scale items by three experts, scoring from 1 (can measure), 0 (unsure) and -1 (not measure). The results of IOC showed all items were passed at a score 0.6 or over. In the pilot test, all constructs were approved at a score 0.7 or above (Nunnally & Bernstein, 1994), including academic aspect (0.871), reputation (0.761), service quality (0.956), facility (0.725), student satisfaction (0.856) and student loyalty (0.912). Afterwards, SPSS Amos statistical software was implemented to analyze the data, using confirmatory factor analysis (CFA) and structural equation modeling (SEM).

3.3 Population and Sample Size

The target populations are non-teacher training major students of Chuxiong Normal University in Yunnan Province, China. According to Kline (2011), the minimum sample size for structural equation models is recommended to be at least 200 respondents. The online questionnaire was distributed to approximately 800 respondents. As a result, 500 responses were received and passed the data screening.

3.4 Sampling Technique

In this research, the sampling techniques are judgmental sampling, quota sampling, convenience sampling and snowball sampling. For judgmental sampling, non-teacher training major students of Chuxiong Normal University were selected per the judgment of researcher. In 2022, the number of non-teacher training major at Chuxiong Normal University was 4,849. The quota sampling was employed to allocate the sample size as demonstrated in Table 1. Convenience sampling was carried out to distribute online surveys during March to June 2022. Snowball sampling method was applied to encourage the sharing of survey link among students.

Table 1: Population and Sample Size by University

Grade (Teacher-training major)	Population Size	Proportional Sample Size (N=500)
Class of 2021	1180	122
Class of 2020	1085	112
Class of 2019	1235	127
Class of 2018	1349	139
Total	**4849**	**500**

Source: Academic Affairs Office of Chuxiong Normal University (2022)

4. Results and Discussion

4.1 Demographic Information

The demographic profile of 500 respondents is demonstrated in Table 2. The respondents are 212 males and 298 females, accounting for 42.4 percent and 59.6 percent respectively. 395 respondents (79 percent) are residents of Yunnan province where Chuxiong Normal University is located, and 105 respondents (21 percent) were from outside the province. Most respondents would refer the school to others of 80.4 percent while 19.6 percent of respondents would not.

Table 2: Demographic Profile

Demographic and General Data (n=500)		Frequency	Percentage
Gender	Male	212	42.4%
	Female	298	59.6%
Hometown	Inside Yunnan	395	79.0%
	Outside Yunnan	105	21.0%
Would you refer the school to others?	Yes	402	80.4%
	No	98	19.6%

4.2 Confirmatory Factor Analysis (CFA)

In this research, confirmatory factor analysis (CFA) was assessed by Cronbach's alpha reliability, factor loading, t value, average variance extraction (AVE) and composite reliability (CR). All estimates of CFA were significant as shown in Table 3. Cronbach's alpha coefficient values are greater than 0.7 (Nunnally & Bernstein, 1994), therefore, the internal consistency of each item is approved. According to Fornell and Larcker (1981), factor loading of all loading items were greater than 0.50 and mostly were above 0.70, ranging from 0.579 to 0.867. The results of CR in this study were all higher than 0.7, ranging from 0.748 to 0.905. The results of AVE were also above 0.4, ranging from 0.502 to 0.705.

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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
Academic Aspect (AA)	Ali et al. (2016)	8	0.894	0.580-0.831	0.895	0.522
Reputation (R)	Ali et al. (2016)	3	0.741	0.579-0.821	0.748	0.502
Service Quality (SQ)	Chandra et al. (2019)	4	0.859	0.725-0.826	0.862	0.611
Facility (F)	Chandra et al. (2019)	3	0.848	0.784-0.822	0.850	0.654
Student Satisfaction (SS)	Marzo-Navarro et al. (2005)	4	0.904	0.824-0.867	0.905	0.705
Student loyalty (SL)	Marzo-Navarro et al. (2005)	4	0.844	0.647-0.841	0.845	0.579

As of Table 4, the measurement model was measured by the goodness of fit criteria including CMIN/DF, GFI, AGFI, NFI, CFI, TLI, and RMSEA. The first model showed unacceptable fit. After the adjustment, the model presented acceptable fit. Consequently, convergence validity and discriminant validity were also verified in the measurement model.

Table 4: Goodness of Fit for Measurement Model

Index	Acceptable Values	Statistical Values After Adjustment
CMIN/DF	≤ 5.0 (Wheaton et al., 1977)	665.633/237 2.809
GFI	≥ 0.85 (Sica & Ghisi, 2007)	0.898
AGFI	≥ 0.80 (Sica & Ghisi, 2007)	0.870
NFI	≥ 0.80 (Wu & Wang, 2006)	0.920
CFI	≥ 0.80 (Bentler, 1990)	0.947
TLI	≥ 0.80 (Sharma et al., 2005)	0.938
RMSEA	≤ 0.10 (Hopwood & Donnellan, 2010)	0.060
Model Summary		**Acceptable Model Fit**

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, NFI = Normed fit index, CFI = Comparative fit index, TLI = Tucker-Lewis index, and RMSEA = Root mean square error of approximation
Source: Created by the author.

Fornell and Larcker (1981) pointed out that the convergent validity and discriminant validity are approved by the square root of average variance extracted determining all the correlations are above the corresponding correlation values for that variable. The results of discriminant validity are approved as shown in Table 5.

Table 5: Discriminant Validity

	AA	R	SQ	F	SS	SL
AA	**0.722**					
R	0.018	**0.708**				
SQ	0.632	-0.036	**0.781**			
F	0.631	-0.004	0.691	**0.809**		
SS	0.629	-0.013	0.745	0.773	**0.840**	
SL	0.580	0.007	0.670	0.657	0.713	**0.761**

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

4.3 Structural Equation Model (SEM)

Structural equation modeling (SEM) was used to analyze relationships between variables based on their covariance matrix (Hair et al., 2010). The goodness-of-fit index of the structural model was measured as demonstrated in Table 6. The results were acceptable fit including CMIN/DF = 2.377, GFI = 0.897, AGFI = 0.873, NFI = 0.918, CFI = 0.943, TLI = 0.943 and RMSEA = 0.053.

Table 6: Goodness of Fit for Structural Model

Index	Acceptable Values	Statistical Values After Adjustment
CMIN/DF	≤ 5.0 (Wheaton et al., 1977)	675.140/284 2.377
GFI	≥ 0.85 (Sica & Ghisi, 2007)	0.897
AGFI	≥ 0.80 (Sica & Ghisi, 2007)	0.873
NFI	≥ 0.80 (Wu & Wang, 2006)	0.918
CFI	≥ 0.80 (Bentler, 1990)	0.951
TLI	≥ 0.80 (Sharma et al., 2005)	0.943
RMSEA	≤ 0.10 (Hopwood & Donnellan, 2010)	0.053
Model Summary		**Acceptable Model Fit**

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, NFI = Normed fit index, CFI = Comparative fit index, TLI = Tucker-Lewis index, and RMSEA = Root mean square error of approximation
Source: Created by the author.

4.4 Research Hypothesis Testing Result

The model can explicate the significance of each variable according to the regression weight and R2 variance of each variable. In Table 7, the results show that all assumptions are significantly supported at p-value<0.05. Student satisfaction is the most significant factor (β = 0.762), followed by facility (β = 0.649), service quality (β = 0.544), academic aspect (β = 0.197) and reputation (β = 0.003).

Table 7: Hypothesis Results of the Structural Equation Modeling

Hypothesis	(β)	t-value	Result
H1: AA→SS	0.197	5.287*	Supported
H2: R→SS	0.003	0.075	Not Supported
H3: SQ→SS	0.544	11.648*	Supported
H4: F→SS	0.649	13.176*	Supported
H5: SS→SL	0.762	13.637*	Supported

Note: * p<0.05
Source: Created by the author.

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The results in Table 7 can be interpreted that:

H1 approves the relationship between academic aspect and student satisfaction, representing the standardized coefficient value of 0.197 (t-value = 5.287). The hypothesis result aligns with previous literatures that academic aspect as skills provided to students to achieve their learning goals can determine their level of satisfaction (Abdullah, 2005; Afzal et al., 2010; Ali et al., 2016; Pham et al., 2022).

H2 fails to support the relationship between reputation and student satisfaction with standardized coefficient value of 0.003 (t-value = 0.075). The result contradicts with several scholars that credibility, transparency and brand image of the university can predict student satisfaction (Ali et al., 2016; Kreps et al., 1982).

The result of **H3** shows that service quality has a significant impact on student satisfaction with standardized coefficient value of 0.544 (t-value = 11.648). The result supports that statement that students measure their satisfaction based on service quality of higher education (Cao & Jittawiriyanukoon, 2022; Chandra et al., 2019; Yousapronpaiboon, 2014).

H4 affirms the significant relationship between facility and student satisfaction, representing standardized coefficient value of 0.649 (t-value = 13.176). The result signifies that tangible fixed assets and equipment significantly influence student satisfaction (Hanssen & Solvoll, 2015; Kärnä & Julin, 2015; Song, 2022; Yusoff et al., 2015).

For **H5,** the relationship between student satisfaction and student loyalty are supported with standardized coefficient value of 0.762 (t-value = 13.637). There is consensus among researchers that student satisfaction leads to student loyalty in higher education to further support and recommend the university to others (Alves & Raposo, 2007; Chong & Ahmed, 2012; Clemes et al., 2013; Gronholdt et al., 2000; Song, 2022).

5. Conclusions and Recommendation

5.1 Conclusion and Discussion

This research aims to examine the determinants of Chinese college students' satisfaction and loyalty using a case study of Chuxiong Normal University. From the data collection and analysis of 500 students of Chuxiong Normal University, CFA and SEM were employed in SPSS AMOS statistical software to ensure the validity and reliability of the data. Hypotheses testing results were that academic aspect, service quality, and facility significantly impact student satisfaction. Furthermore, student satisfaction has a significant impact on student loyalty. On the other hand, reputation has no significant impact on student satisfaction.

In the discussion, the findings highlight the implications based on theories and practices. Firstly, student satisfaction has the strongest impact on student loyalty. The research supports that student satisfaction is the key performance indicator that enhances student loyalty. The relationship between satisfaction and loyalty has been confirmed and can be further used in future studies (Clemes et al., 2013; Oliver, 1999). To support this, demographic information showed that 80.4 percent of students prefer to recommend others to attend the university. Therefore, the university should consistently conduct a satisfaction survey to determine the overall improvement for a higher level of satisfaction and loyalty of students.

Secondly, the facility measures student satisfaction as referred to by previous literature (Hanssen & Solvoll, 2015; Kärnä & Julin, 2015; Song, 2022; Yusoff et al., 2015). Subsequently, the university should always maintain and improve physical assets and equipment to ensure high student satisfaction. Thirdly, service quality is a vital factor affecting student satisfaction (Cao & Jittawiriyanukoon, 2022; Chandra et al., 2019; Yousapronpaiboon, 2014). Considering that educational services are the core value of higher education, the university can improve its competitive advantages by improving service quality from admission to graduation.

Fourthly, the academic aspect is significantly related to student satisfaction (Abdullah, 2005; Afzal et al., 2010; Ali et al., 2016; Pham et al., 2022). Academic aspects are considered service quality, which greatly affects students' satisfaction. Therefore, improving academic aspects such as programs, teaching materials, and staff should be focused on enhancing student satisfaction.

Lastly, reputation has no significant impact on student satisfaction. It can be assumed that reputation can only attract the awareness of prospective students but cannot yet determine the level of student satisfaction because students need more indicators to evaluate, such as service quality, facility, teaching materials, learning performance, career development, etc. Reputation can be a complex and intangible concept, such as ranks, fame, number of graduates, etc., requiring future scholars to interview to figure out why reputation and student satisfaction are unrelated.

5.2 Recommendation

The findings of this study lead to several recommendations for academic practitioners and educational stakeholders. It was found that academic aspects, service quality, and facility are the key factors affecting the satisfaction and loyalty of students at Chuxiong Normal University in China. Consequently, the university is recommended to emphasize these significant factors to

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enhance student satisfaction and loyalty. Because student satisfaction showed the highest impact on student loyalty, it is necessary to measure the level of student satisfaction regularly. Additionally, non-academic activities should be organized to build a strong bond between students and the institution, such as students club, networking parties, music events, alums societies, etc.

Facilities are the tangible components for students to be surrounded by a good environment, from the building to teaching and learning equipment in the classroom. Innovative technologies can be adapted to provide convenience and benefits for students to achieve their learning goals, such as mobile applications, online or mobile learning systems, and many more. Furthermore, service quality can enhance student satisfaction in many ways. Universities should consider academic and non-academic services for better satisfying students, such as registration services, job placement services, transportation services, etc.

Even though reputation does not significantly impact student satisfaction, it does not mean not building a good reputation with the public. It can be assumed that reputation can only partially determine student satisfaction compared to other factors. However, other aspects can be further investigated, such as teaching quality, competitive advantages, sustainability, etc. Additionally, future scholars and educators should conduct a qualitative interview to provide more insights about this insignificant relationship. In summary, improving student satisfaction and loyalty can be achieved by promoting a good reputation, strengthening the academic aspects, and enhancing service quality and facilities.

5.3 Limitation and Further Study

This study has several limitations that should be further explored in future studies. Firstly, the sample size was scoped to only the group of students from Chuxiong Normal University in China. There could be different results in different geographical areas or regions. Secondly, further examination of factors affecting student satisfaction and loyalty, such as university image, teaching quality, learning performance, and so on, should be further examined. Lastly, the qualitative study, such as focus groups and interviews, should be conducted for better interpretation and insights.

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