

Understanding Chinese Students' Regular Use of the Netease Youdao Dictionary in Malaysian Universities through Service Quality: The Mediating Role of Satisfaction and Learning Motivation

Wenjing Yang^{1*}, Mohamad Nasir Saludin²

¹ Faculty of Business, Information & Human Science, Kuala Lumpur University of Science and Technology
43000 Kajang, Selangor Darul Ehsan, Malaysia

² Universiti Geomatika Malaysia 54200 Kuala Lumpur, Malaysia

*Corresponding Author: wenjinyang789@gmail.com

Received: 28 August 2025 | Accepted: 18 October 2025 | Published: 1 November 2025

DOI: <https://doi.org/10.55057/ijares.2025.7.5.54>

Abstract: *This study aims to explore the regular use of the Netease Youdao Dictionary among Chinese students studying in Malaysian universities, focusing on the role of service quality dimensions in shaping user satisfaction, learning motivation, and regular use. In this study, regular use is conceptualized as a sustained, habitual engagement pattern reflecting students' continuous reliance on the Netease Youdao Dictionary as an integral part of their academic learning process. Adopting a conceptual approach, the study draws upon the Technology Acceptance Model (TAM) as the theoretical foundation. Service quality factors such as perceived usefulness, perceived ease of use, information quality, and system quality are integrated with customer satisfaction and learning motivation to propose a framework explaining sustained usage behavior. The conceptual framework posits that service quality directly influences satisfaction, which in turn enhances learning motivation. Learning motivation significantly predicts the intention to use the dictionary app and also mediates the relationship between satisfaction and usage intention. Furthermore, service quality factors are proposed to directly affect usage intention, highlighting their central role in technology adoption. This study contributes theoretically by extending TAM with satisfaction and motivation constructs in the context of educational technology adoption. Practically, it provides valuable insights for developers to enhance app features and for universities to better support international students through reliable digital learning tools.*

Keywords: Service Quality; Satisfaction; Learning Motivation; Digital Dictionary; International Students

1. Introduction

Over the past two decades, Malaysia has positioned itself as a leading hub for international higher education, attracting a steadily growing number of Chinese students who seek affordable, high-quality academic opportunities in a culturally diverse environment. For these students, language plays a crucial role in their academic integration and overall success, as English remains the primary medium of instruction in most Malaysian universities (Yang, 2024). To bridge linguistic gaps, international students increasingly rely on digital learning tools that provide instant translation, vocabulary expansion, and contextual usage support (Junren et al., 2023). Of these, the Netease Youdao Dictionary has emerged as a popular mobile program that provides bilingual translation, pronunciations, example sentences, as well as AI-

based learning functions designed specifically for Chinese users (LIN et al., 2025). Its portability and flexibility render the Netease Youdao Dictionary as one indispensable study ally for Chinese learners who aim to advance their language abilities, master challenging courses, as well as blend into the study circle in Malaysia (Wang et al., 2025). Thus, understanding why and how such students utilize the Netease Youdao Dictionary on a regular basis shapes significant principles in the synergy among service efficiency, user satisfaction, and learning motivation in digital-aided learning (Yeung, 2023).

Although dictionary apps on mobile devices are popular, existing research leans towards general technology acceptance or learning tools in the digital realm with limited efforts to examine very specific factors driving Chinese international students to continue using dictionary apps such as Netease Youdao within foreign university settings (LIN et al., 2025). A few studies are prone to emphasize the use of digital dictionaries to facilitate vocabulary acquisition and reading comprehension, and few or no studies examine how service quality dimensions such as reliability, usability, responsiveness, and content accuracy play a role in the persistence of use by students (Fasya et al., 2023; X. Lin et al., 2023; Zhong & Liu, 2023). This delay brings into question, unresolved, digital dictionary services' processes of ensuring student persistence in the long term, particularly in the cross-cultural learning context in which the students are subjected to both linguistic as well as academic adaptation challenges (Zhang & Lu, 2023).

Moreover, while student satisfaction and learning motivation have been widely recognized as critical mediators in the adoption of educational technologies, their roles within the context of dictionary app usage remain underexplored (Paposa & Paposa, 2023). Existing theories of digital learning adoption prefer to adopt generic technology acceptance models (e.g., TAM or UTAUT), which are sometimes unable to fully capture the subtle interplay among service quality, satisfaction, motivation, and habitual use behavior in professional tools such as Netease Youdao (Fan et al., 2025; Luarn et al., 2023; Wang et al., 2025). There is limited conceptual models that incorporate these mediating variables to account for why the students repeatedly go back to such apps, apart from first-time adoption. Filling this research gap is critical for theory extension on digital service quality and delivering practical insights into how to improve international students' academic support systems.

The objective of this research is to suggest a conceptual model that accounts for the frequent use of the Netease Youdao Dictionary among Chinese students in Malaysian universities. In particular, the research aims to investigate the mediating effects of satisfaction and learning motivation on the impact of service quality on continued usage. This research contributes theoretically by applying service quality and technology adoption models in the particular setting of dictionary applications, emphasizing the dual mediating roles of satisfaction and learning motivation on regular usage behavior. Regular use is essential as it reflects not only initial acceptance but also sustained integration of the digital dictionary into students' daily academic routines, indicating genuine technology continuance and the successful translation of perceived value into enduring learning behavior. In practice, the research offers usable recommendations to dictionary developers, pedagogues, and university administrators by emphasizing how enhancements in service quality are capable of elevating international students' learning experiences, promoting engagement, and eventually facilitating academic performance in cross-cultural educational environments.

2. Methodology

This study employs a conceptual research design to develop a framework explaining the regular use of the Netease Youdao Dictionary among Chinese students in Malaysian universities.

Unlike empirical studies that depend on primary data, conceptual research synthesizes theories and prior studies to generate a model that advances academic understanding and provides direction for future investigations. Thus, the methodology emphasizes a structured review of literature, theoretical reasoning, and conceptual model building rather than data collection and statistical testing.

The research design is grounded in a qualitative, theory-driven approach that extends existing models of service quality and technology adoption to the specific context of dictionary applications. The design is exploratory, as it seeks to explain underexplored dynamics rather than confirm causal relationships through empirical testing. Following a systematic process, the study identified core variables, examined relevant theories, analyzed interrelationships, and formulated logical linkages to propose a framework that positions service quality as the driver of satisfaction and learning motivation, which in turn influence sustained use.

To ensure rigor, the study relied on an extensive narrative synthesis of existing literature. Sources were retrieved from databases such as Scopus, Web of Science, ScienceDirect, and CNKI, using keywords such as “service quality,” “digital dictionaries,” “learning motivation,” “student satisfaction,” “technology adoption,” and “international students.” Priority was given to recent studies published between 2015 and 2024, with seminal works included where necessary to provide theoretical grounding. The literature review proceeded through three stages: determining service quality dimensions applicable in digital learning tools, combining satisfaction and motivation as intervening variables, and relating these constructs to technology continuance and habitual usage behavior. This procedure facilitated in-depth understanding of how service quality impacts psychological as well as usage outcome in digital learning situations.

The theory was constructed with deductive thinking, from proven theory to applying it to a new situation. The theory posits that high service quality leads to satisfaction and learning motivation, which in turn drive Chinese learners to use the Netease Youdao Dictionary repeatedly. Each postulated relationship was undergirded by prior research, thus producing hypotheses that can inform future empirical validation. While this study does not involve any data gathering, it provides the theory underpinning future quantitative studies in the learning environments of international students.

Because this research is not working with human subjects, there is no requirement for ethical approval. However, academic integrity was observed through the expression of all sources, ensuring openness in the process of concept development, and the absence of plagiarism. Generally, the methodology offers systematic as well as theory-informed means to conceptually develop a framework that advances theory as well as practical knowledge in digital learning tool adoption.

3. Findings

Service Quality and Its Role in Digital Learning Tools

Quality service is generally acknowledged as a primary driver of student utilization of digital learning tools, especially for cross-culturally situated international students. For the Netease Youdao Dictionary, service quality can be examined through reliability, responsiveness, usability, personalization, as well as content quality ([Hazaymeh et al., 2024](#)). Reliability guarantees that the app gives precise translations and definitions reliably, thus establishing user confidence ([Booton et al., 2023](#)). Responsiveness is the capacity of the system to give quick answers in real time and respond rapidly to user needs ([Abdelwahed & Soomro, 2023](#)). Usability and personalization capture the simplicity of the user interface, smooth flow, as well

as adaptive functionalities that can suit diversified levels of language proficiency ([Ramzan et al., 2023](#)). Content quality, however, refers to the extent, readability, as well as contextual relevance of explanations of vocabulary, as well as usage exemplars, which are most important in enabling successful learning in another language ([X. Lin et al., 2023](#)). These form the underpinning of service quality in digital learning tools and have direct impacts on how students assess the entire learning process.

Theoretically, TAM and similar continuance intention models also underscore the significance of perceived usefulness and perceived ease of use in defining satisfaction. For Malaysian university students who are Chinese, perceived usefulness in the Netease Youdao Dictionary is the enhancement of understanding in academic sources, robustness in acquiring vocabulary, and translation assistance on the fly ([Junren et al., 2023](#)). If the app is helpful in attaining these learning objectives, then students are more satisfied with their use experience ([Yunpeng & Khan, 2023](#)). Likewise, perceived ease of use is no less important in that students are more satisfied if the app is easy to use, efficient, and involves low exertion to use ([Yang, 2024](#)). Online tools that lower the barriers to learning as well as simplify access to knowledge fortify satisfaction and prompt sustained use of the platform.

Other than functionality, both information quality and system quality are significant in determining user satisfaction. Information quality is the accuracy, relevance, and comprehensiveness of app content, which means that students can rely on translations and contextual examples ([Coban, 2023](#)). If information is dependable as well as appropriately contextual, then this will increase students' faith in the app as an academic tool ([Alzaydi, 2024](#)). System quality refers to technical soundness, rapidity, as well as reliability. If the app is easy to use, responds quickly, and has few technical glitches, this will greatly improve satisfaction; slow performance or frequent freezing may put users off ([C.-L. Lin et al., 2023](#)). Overall, these suggest that these two dimensions mean that satisfaction is not only dependent on the usefulness and usability of the app, as well as the dependability of content, to technical soundness.

PIa: Perceived usefulness of the Netease Youdao Dictionary app significantly affects customer satisfaction among Chinese students studying in Malaysian universities.

PIb: Perceived ease of use of the Netease Youdao Dictionary app significantly affects customer satisfaction among Chinese students studying in Malaysian universities.

PIc: Information quality of the Netease Youdao Dictionary app significantly affects customer satisfaction among Chinese students studying in Malaysian universities.

PId: System quality of the Netease Youdao Dictionary app significantly affects customer satisfaction among Chinese students studying in Malaysian universities.

Customer Satisfaction and Learning Motivation

Within TAM, customer satisfaction plays a central role in shaping users' psychological responses and subsequent behaviors toward digital tools. Satisfaction emerges when students believe that a technology delivers on its perceived usefulness and is easy to use, both of which lead to positive evaluations of their learning experiences ([Oliver et al., 1997](#)). For Chinese students in Malaysian universities, the Netease Youdao Dictionary becomes a source of satisfaction when it consistently helps them overcome linguistic barriers, comprehend academic content, and navigate daily communication challenges ([Luarn et al., 2023](#)). This positive evaluation does not stop at mere approval but actively influences students' willingness to engage more deeply with their learning, thereby strengthening their motivation to continue using the tool as part of their academic routines ([Darvin & Norton, 2023](#)).

TAM posits that perceived usefulness has a direct positive effect on user attitude, which in turn leads to satisfaction and behavioral intentions. If students find the dictionary app useful in enabling better acquisition of vocabulary, giving precise translations, as well as improved understanding of course content, then the satisfaction thus gained cements their desire to continue learning (Fasya et al., 2023). Just like if the app is easy to use, students are less cognitively strained as well as in control of their learning practices. Such satisfaction leads to increased confidence in the app to aid in their academic life that has a direct effect in motivating them to undertake language learning activities (Felix et al., 2023). Satisfaction is therefore a very important connecting link between the perceived value held by the technology in supporting students as well as students' internal motivation to undertake continuous learning (Zhou & Li, 2023).

Thus, satisfaction from the use of the Netease Youdao Dictionary enhances the mechanisms of motivation outlined in TAM. By verifying students' positive expectations as well as providing rewarding use, satisfaction consolidates their will to contribute more effort to the acquisition of languages and frequent use of the app (Abdelwahed & Soomro, 2023). This shows that satisfaction is not just the outcome of service quality perceptions but also a predictor of motivational outcomes that maintain persistence.

P2: Customer satisfaction with the Netease Youdao Dictionary has a significant effect on learning motivation among Chinese students studying in Malaysian universities.

Learning Motivation and Regular Use

The Technology Acceptance Model (TAM) provides a foundational lens to explain how learning motivation translates into consistent and continuous engagement with digital tools (Davis, 1989). Within this framework, perceived usefulness and perceived ease of use shape positive user attitudes that lead not only to initial adoption but to the ongoing, regular use of a technology (Wang et al., 2025). Learning motivation operates as a deeper psychological driver that sustains these behaviors over time, transforming one-time acceptance into continuous learning habits (Ryan & Deci, 2024). For Chinese students in Malaysian universities, the motivation to enhance language proficiency and succeed academically reinforces their belief that the Netease Youdao Dictionary is both valuable and easy to use (Jing, 2024). This internal drive anchors consistent engagement, fostering a stable pattern of regular use that reflects technology continuance rather than temporary adoption.

Motivation enhances the TAM pathways by strengthening the persistence of use. When learners are intrinsically motivated to improve their English vocabulary or comprehend academic content more effectively, they perceive the Netease Youdao Dictionary not merely as an auxiliary aid but as an indispensable academic partner (Al Yakin & Seraj, 2023). This heightened sense of usefulness reinforces satisfaction and translates into ongoing utilization of the app as part of students' everyday study routines. Motivated learners are also more resilient when encountering usability challenges, as their intrinsic drive reduces perceived effort and fosters adaptive familiarity with the system over time (Ratinho & Martins, 2023). This continuous interaction deepens user competence, creating a reinforcing loop where higher motivation enhances perceived ease of use, and habitual use further consolidates learning motivation (Hellín et al., 2023).

The notion of regular use extends beyond simple frequency; it represents sustained behavioral commitment and habitual engagement that mark the successful internalization of digital learning tools (Agrawal et al., 2023). Motivated learners display continuance behaviors by repeatedly turning to the Netease Youdao Dictionary to meet both immediate academic demands and long-term language development goals (Юйсюань, 2023). Such ongoing

engagement transforms the app from a situational tool into an integral component of the students' academic ecosystem. This perspective aligns with continuance intention theory, which posits that long-term usage arises from positive reinforcement of satisfaction and usefulness through consistent interaction (Pamzan et al., 2023). Thus, learning motivation becomes the psychological mechanism that translates satisfaction into enduring behavioral patterns of use, sustaining the relevance of the dictionary in the learners' academic lives.

***P3:** Learning motivation has a significant effect on the intention to use the Netease Youdao Dictionary among Chinese students studying in Malaysian universities.*

Learning Motivation as a Mediator

Within TAM, customer satisfaction plays a central role in shaping users' psychological responses and subsequent behaviors toward digital tools (Davis, 1989). Satisfaction emerges when students believe that a technology delivers on its perceived usefulness and is easy to use, both of which lead to positive evaluations of their learning experiences (Ryan & Deci, 2024). For Chinese students in Malaysian universities, the Netease Youdao Dictionary becomes a source of satisfaction when it consistently helps them overcome linguistic barriers, comprehend academic content, and navigate daily communication challenges (Ali et al., 2023). This positive evaluation does not stop at mere approval but actively influences students' willingness to engage more deeply with their learning, thereby strengthening their motivation to continue using the tool as part of their academic routines (Junren et al., 2023).

TAM posits that perceived usefulness has a direct positive effect on user attitude, which in turn leads to satisfaction and behavioral intentions. If students find the dictionary app useful in enabling better acquisition of vocabulary, giving precise translations, as well as improved understanding of course content, then the satisfaction thus gained cements their desire to continue learning (Wei, 2023). Just like if the app is easy to use, students are less cognitively strained as well as in control of their learning practices. Such satisfaction leads to increased confidence in the app to aid in their academic life that has a direct effect in motivating them to undertake language learning activities (Hazaymeh et al., 2024). Satisfaction is therefore a very important connecting link between the perceived value held by the technology in supporting students as well as students' internal motivation to undertake continuous learning (Hellín et al., 2023).

Thus, satisfaction from the use of the Netease Youdao Dictionary enhances the mechanisms of motivation outlined in TAM (Oliver et al., 1997). By verifying students' positive expectations as well as providing rewarding use, satisfaction consolidates their will to contribute more effort to the acquisition of languages and frequent use of the app (Pamzan et al., 2023). This shows that satisfaction is not just the outcome of service quality perceptions but also a predictor of motivational outcomes that maintain persistence.

***P4:** Learning motivation mediates the relationship between customer satisfaction and the intention to use the Netease Youdao Dictionary among Chinese students studying in Malaysian universities.*

Direct Effects of Service Quality Dimensions on Regular Use

The Technology Acceptance Model (TAM) emphasizes that perceived usefulness and perceived ease of use are the two most influential predictors of ongoing and habitual technology use (Davis, 1989). Applied to the Netease Youdao Dictionary, these constructs explain how Chinese students in Malaysian universities develop consistent behavioral patterns of engagement with the app as part of their daily academic routines (Hazaymeh et al., 2024). Perceived usefulness reflects the extent to which students believe that the dictionary enhances

their academic performance by facilitating comprehension of course materials, supporting vocabulary acquisition, and providing reliable translations (Oliver et al., 1997). The more students perceive the dictionary as indispensable for achieving their learning objectives, the more likely they are to sustain ongoing and habitual use over time (Booton et al., 2023). Similarly, perceived ease of use lowers psychological and technical barriers to adoption, enabling students to engage with the app naturally and consistently without cognitive strain. When digital tools are intuitive, user-friendly, and require minimal effort, users are more inclined to form positive attitudes and translate those attitudes into consistent and repeated engagement (Abdelwahed & Soomro, 2023).

Beyond these traditional TAM variables, service quality factors such as information quality and system quality are equally crucial in establishing habitual and continuous use behaviors. Information quality encompasses the accuracy, reliability, and contextual relevance of the content provided by the Netease Youdao Dictionary (Ramzan et al., 2023). For international learners, particularly those navigating a second-language environment, the dependability of information ensures that each interaction reinforces trust and promotes repeated engagement. When users consistently encounter accurate and contextually relevant translations, their confidence in the app grows, fostering habitual reliance and continuous usage as part of their learning process (X. Lin et al., 2023).

System quality, on the other hand, reflects the technical robustness, speed, and stability of the platform. A system that operates smoothly, loads quickly, and rarely experiences errors establishes user confidence and reduces friction in the learning process. Over time, this reliability encourages repeated interaction, forming a pattern of ongoing, consistent use that evolves into a stable habit (Qing et al., 2023). Conversely, technical instability or poor performance disrupts continuity, discouraging long-term engagement. Together, these dimensions: perceived usefulness, perceived ease of use, information quality, and system quality, form the structural foundation for sustained and habitual engagement. They align functional benefits with user expectations and psychological reinforcement, ensuring that regular use is not a short-term response but an enduring behavior embedded in learners' academic routines (Singh et al., 2023).

For Chinese students in Malaysian universities, regular use thus represents the culmination of positive user evaluations, stable technical performance, and continuous satisfaction with the app's utility and quality (Fan et al., 2025). It signifies the transformation of the Netease Youdao Dictionary from a supplementary learning tool into an essential, continuously integrated component of academic life, marking the success of service quality in fostering enduring technology continuance behavior. A prior study conducted among students at a private higher learning institution in East Coast Malaysia similarly concluded that system quality significantly influences users' sustained intention to utilize e-campus platforms (Sabarudin & Razak, 2021).

***P5:** Perceived usefulness, perceived ease of use, information quality, and system quality directly affect intention to use the Netease Youdao Dictionary among Chinese students studying in Malaysian universities*

4. Discussion

The findings of this conceptual paper emphasize that service quality dimensions are fundamental in explaining why Chinese students in Malaysian universities rely on the Netease Youdao Dictionary as a regular academic aid. By applying the TAM as the guiding theoretical lens, this study demonstrates that perceived usefulness, perceived ease of use, information quality, and system quality together shape satisfaction, motivation, and intention to use the app

(Junren et al., 2023). Consistent with TAM, usefulness and ease of use remain at the heart of students' evaluations, but in the context of digital dictionary applications, the accuracy of information and the stability of the system are equally important for sustaining engagement. For international students who face academic pressure in a second-language environment, a tool that is both functionally efficient and technically reliable becomes indispensable (Davis, 1989). This reinforces the idea that service quality is not merely a background factor in technology adoption but a central determinant of student satisfaction and subsequent motivational and behavioral outcomes.

The study further highlights that satisfaction plays a critical role in bridging the service quality experience and students' motivational outcomes. When Chinese students find the Netease Youdao Dictionary to be useful, easy to use, accurate, and technically reliable, they express higher satisfaction with their overall learning experience. Within the TAM framework, satisfaction represents a positive evaluation of technology's ability to meet user needs, and this evaluation strengthens attitudes toward continued use (Abdelwahed & Soomro, 2023; Jing, 2024). The findings suggest that satisfaction is not only an endpoint of quality perceptions but also a driver of deeper psychological mechanisms. Satisfied students feel more confident in their academic abilities, more at ease in navigating English-language demands, and more willing to continue relying on the app (Luarn et al., 2023). This emphasizes the importance of continuously enhancing service quality dimensions because improvements in satisfaction lead to more sustainable engagement.

A particularly significant insight of this study is the mediating role of learning motivation, which provides a psychological bridge between satisfaction and intention to use. While TAM traditionally highlights attitudes as the intermediary between perceptions and behavioral intention, this study extends the model by positioning motivation as a core attitudinal outcome of satisfaction (Al Yakin & Seraj, 2023; Pamzan et al., 2023). When students are satisfied with the app, they do not merely approve of it passively; rather, they develop an active drive to invest more effort in language learning. Motivation amplifies the impact of satisfaction by translating it into intentional behavior, as motivated learners are more likely to repeatedly use the app and integrate it into their daily study routines (Yeung, 2023). This finding is especially relevant for international students who must balance academic challenges with cultural adjustment, as motivation sustains their willingness to engage with language learning even when faced with difficulties.

Beyond the mediating function of motivation, the research also verifies that use intention is directly influenced by TAM constructs as well as service quality indicators. Students who find the Netease Youdao Dictionary useful, easy to use, precise in information, and dependable in system performance are more likely to develop robust intentions to use it repeatedly (Wang et al., 2025). This is in line with TAM's proposition that behavioral intention is the most reliable predictor of technology use, yet the use of information and system quality broadens TAM into the realm of learning applications, where information accuracy and system reliability are imperatives. The research implies that use decision is not just about expediency but about the overall faith that students have in the capability of the dictionary app to aid their academic success (Felix et al., 2023). There are significant implications here for developers, who will need to trade technical design off against content reliability to guarantee robust adoption across student users.

Taken together, these findings contribute to both theory and practice by developing a conceptual framework (Figure 1) that integrates service quality, satisfaction, learning motivation, and regular use into a coherent model grounded in TAM. The model demonstrates that international students' satisfaction and regular use are directly affected by service quality

dimensions (usefulness, ease of use, information quality, and system quality), while satisfaction leads to motivation, which in turn mediates the relationship between satisfaction and regular use. Regular use is critical as it signifies not only students' acceptance of the technology but their continuous engagement and integration of the Netease Youdao Dictionary into habitual learning behavior, reflecting true technology continuance and long-term educational impact. The extended model yields a rich understanding of how international students embrace digital dictionary tools in higher education settings.

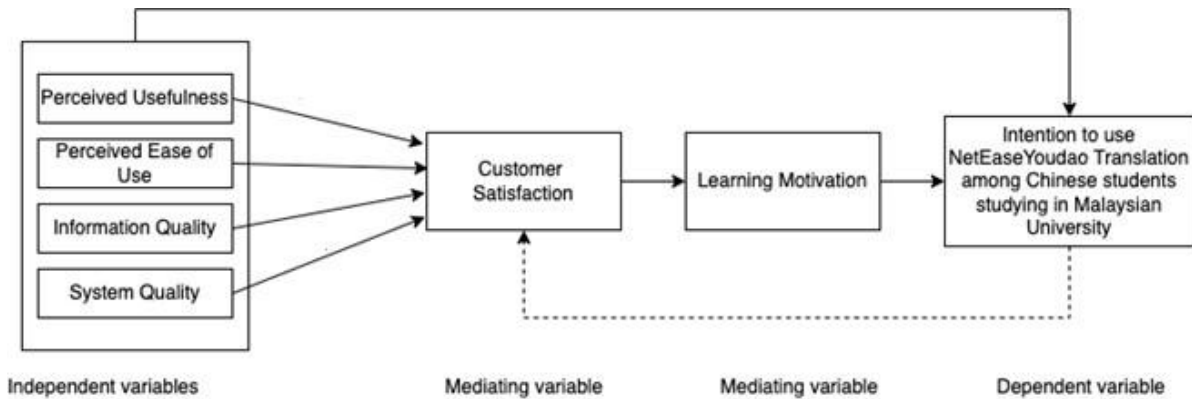


Figure 1: Proposed Conceptual Framework

5. Implications

Theoretical Implications

This study makes some important theoretical contributions by using the TAM into the context of digital learning tools used by foreign students. Traditional TAM suggests perceived usefulness and perceived ease of use as the key predictors of technology adoption. However, this research enhances the model with other dimensions of service quality namely information quality and system quality that are highly applicable in the context of education technologies such as dictionary software. This way, the research acknowledges that online learning tools are not evaluated strictly on convenience and ease of use but on the correctness of their content along with technical integrity. This extension advances TAM scholarship by extending this to a more specific learning context where service quality is the primary focus in user evaluation. Another theory contribution is by way of incorporating satisfaction and motivation to learn into the TAM model. Whereas previous research has considered satisfaction as a consequence of service quality, in this study it is considered one of the major drivers of learning motivation that subsequently forecasts use intention. This introduces motivation as the intervening variable that explains in any cleaner manner why satisfaction is converted into intentional as well as persistent adoption of the technology. This expands the power of explanation of the TAM from basic attitudes to more profound psychological processes underlying long-term academic engagement. This is especially important in the case of the current study among international students whose uptake of learning technologies is highly associated with their learning motivation to overcome their linguistic as well as cultural barriers. Finally, the study contributes to literature on conceptual models for technology adoption by developing an encompassing model that integrates TAM with motivation as well as service quality. Contrary to dictionary apps, this model is also able to anchor research on other computer-assisted digital learning software such as translation apps, e-learning platforms, as well as language-learning software. Through this, the research assigns importance to taking TAM not as a constant model in itself but as one that can be modified as well as expanded in an effort to integrate contextual factors within higher education. Through this process, the research adds to theoretical debates on TAM flexibility as well as confirms the relevance of TAM as an adaptable concept base for comprehending technology adoption in diverse contexts.

Practical Implications

From a pragmatic perspective, this study has significant practical implications for developers, schools, and policymakers. For developers such as Netease Youdao, the study reminds them of the need to improve the utility of functions, design for the user, precision in content, and trustworthiness in systems. Foreign students are more likely to embrace and sustain the use of digital dictionaries when these are perceived as reliable, stable, and tailored to their educational needs. Developers should therefore make efforts towards enhancing translation precision, extending contextual examples, adding personalization features, as well as ensuring smooth functionality in systems that are immune to technical disturbances. This not only improves student satisfaction but also increases the motivation to learn, hence long-term adoption is strengthened. For universities that have large populations of Chinese students, the study provides knowledge on supporting international students' academic transition using technology. Through the validation of reliable tools like Netease Youdao and integration into languages support projects, universities will be in a position to enable students to overcome language gaps, improve their confidence, and remain willing to engage in courses. Universities can additionally collaborate with developers to provide campus versions or orientation courses that introduce students to advanced features in the app. Such initiatives would not only increase student satisfaction levels, but also demonstrate that the university is keen to collaborate in making the learning environment inclusive to international students. At a broader level, the study has policy relevance for educational authorities and internationalization strategies. As Malaysia continues to attract Chinese students, ensuring their successful adaptation and academic achievement becomes a priority. Recognizing the role of digital learning tools in this process allows policymakers to design supportive ecosystems where technology complements institutional efforts. By encouraging the adoption of effective learning apps, educational leaders can enhance student retention, improve learning outcomes, and strengthen Malaysia's position as a desirable destination for higher education.

6. Limitations and Future Directions

Like all conceptual studies, this paper is not without limitations, which open several avenues for future research. The first limitation is that the proposed framework has not yet been empirically tested. While the propositions developed are grounded in the TAM and supported by relevant literature on service quality and motivation, the absence of real-world data limits the ability to draw definitive conclusions about the relationships. Future research should therefore empirically validate the proposed model using robust methodologies such as structural equation modeling (SEM) or partial least squares (PLS-SEM), which would allow scholars to test the mediating effects of satisfaction and motivation more rigorously. By collecting data from Chinese students across multiple Malaysian universities, researchers can generate more generalizable findings that extend beyond a purely conceptual scope. Another limitation is the study's focus on a single application as the context of investigation. While this app is indeed popular among Chinese students, international learners often use multiple digital tools such as Pleco, Google Translate, Baidu Translate, and even AI-driven platforms like ChatGPT for academic support. Focusing only on one app may reduce the broader applicability of the findings. Future research should compare different digital learning tools to identify whether service quality, satisfaction, and motivation operate consistently across platforms or whether some apps hold unique advantages. A comparative analysis could also help pinpoint which features most strongly influence long-term adoption and academic success. The study is also limited by its emphasis on Chinese students studying in Malaysia, which restricts the cultural and geographic generalizability of the framework. Although Chinese students represent one of the largest international cohorts in Malaysian higher education, the experiences of other international student groups such as those from the Middle East, South Asia, or Africa might differ significantly in terms of language needs, cultural adjustment, and

reliance on technology. Future studies could replicate and extend the framework to other student populations in different host countries to test whether the relationships proposed are universal or culturally specific. Such comparative work would enrich the understanding of how service quality and motivation drive technology use across diverse international education contexts. Finally, the study's reliance on TAM, though well-established, presents certain limitations in capturing the full complexity of technology adoption in educational contexts. TAM is highly effective in predicting adoption behavior through perceived usefulness and ease of use, but it does not fully incorporate social, cultural, and contextual influences that may shape student technology use. Future research will enable the model to be enhanced by using theories such as the Unified Theory of Acceptance and Use of Technology (UTAUT) or Self-Determination Theory (SDT) that address social influences, internal motivation, and learning control. This will provide a wider understanding of the impact that dictionary apps and other learning technologies have on the interest and performance of international students.

7. Conclusion

This research endeavored to advance a conceptual framework that accounts for the habitual use of the Netease Youdao Dictionary among Chinese students in Malaysian universities in terms of service quality and the TAM. Akin to prior studies, the research underscored the increased adoption among international students worldwide of digital language learning tools to cross linguistic as well as academic divides, positioning Netease Youdao uniquely as a platform held in esteem. The existing model we utilize integrates service quality dimensions perceived ease of use, perceived usefulness, information quality, and system quality with satisfaction and learning motivation as predictors of prolonged usage intentions. The study shows that customer satisfaction is the intervening variable between perceived service quality and motivation, and learning motivation takes both direct formative roles in the determination of usage intentions and intervening mediator roles in the relationship between satisfaction and long-term adoption. By combining TAM constructs with motivational and satisfaction elements, this conceptual model contributes to the more profound theory that underpins the way digital tools support international student learning. Simultaneously, this is experiential knowledge that can inform app developers in evaluating app design as much as enlighten universities to facilitate students' digital learning pathways. Generally, this study puts service quality along with motivational drivers to adoption in significant focus as preparatory background to future empirical verification as well as cross-cultural application of the framework.

Acknowledgement

The authors would like to express sincere gratitude to everyone who contributed, both directly and indirectly, to the completion of this study.

Conflict of Interest Statement

The authors declare that there is no conflict of interest regarding the publication of this study.

References

- Abdelwahed, N. A. A., & Soomro, B. A. (2023). Attitudes and intentions towards the adoption of mobile learning during COVID-19: building an exciting career through vocational education. *Education+ Training*, 65(2), 210-231.
- Agrawal, K., Athey, S., Kanodia, A., & Palikot, E. (2023). Digital interventions and habit formation in educational technology (*arXiv preprint arXiv:2310.10850*). <https://doi.org/10.48550/arXiv.2310.10850>
- Al Yakin, A., & Seraj, P. M. I. (2023). Impact of metaverse technology on student engagement and academic performance: the mediating role of learning motivation. *International*

- Journal of Computations, Information and Manufacturing (IJCIM)*, 3(1), 10-18.
- Ali, J. K. M., Shamsan, M. A. A., Hezam, T. A., & Mohammed, A. A. (2023). Impact of ChatGPT on learning motivation: teachers and students' voices. *Journal of English Studies in Arabia Felix*, 2(1), 41-49.
- Alzaydi, Z. (2024). Examining the mediating effect of multi-channel integration quality in the relationship with service quality, customer satisfaction and customer loyalty in the Saudi banking sector. *Management & Sustainability: An Arab Review*, 3(2), 132-149.
- Booton, S. A., Hodgkiss, A., & Murphy, V. A. (2023). The impact of mobile application features on children's language and literacy learning: a systematic review. *Computer Assisted Language Learning*, 36(3), 400-429.
- Çoban, M. (2023). Investigation of the relationship between higher education students' service quality perceptions, attitudes, and self-efficacy towards distance education. *International Journal of Lifelong Education*, 42(1), 37-58.
- Darvin, R., & Norton, B. (2023). Investment and motivation in language learning: What's the difference? *Language teaching*, 56(1), 29-40.
- Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS quarterly*, 319-340.
- Fan, Y., Tang, L., Le, H., Shen, K., Tan, S., Zhao, Y., Shen, Y., Li, X., & Gašević, D. (2025). Beware of metacognitive laziness: Effects of generative artificial intelligence on learning motivation, processes, and performance. *British Journal of Educational Technology*, 56(2), 489-530.
- Fasya, A., Darmayanti, N., & Arsyad, J. (2023). The Influence of Learning Motivation and Discipline on Learning Achievement of Islamic Religious Education in State Elementary Schools. *Nazhruna: Jurnal Pendidikan Islam*, 6(1), 1-12.
- Felix, Natu Prihanto, Y. J., & Annas, M. (2023). Analysis of the influence of e-learning service quality factors on student perceived value and student satisfaction, with implication to student loyalty. *Marketing Instytucji Naukowych i Badawczych*, 48(2), 81-110.
- Hazaymeh, W. A., Bouzenoun, A., & Remache, A. (2024). EFL instructors' perspective on using AI applications in English as a foreign language teaching and learning. *Emerging Science Journal*, 8(5), 73-87.
- Hellín, C. J., Calles-Esteban, F., Valledor, A., Gómez, J., Otón-Tortosa, S., & Tayebi, A. (2023). Enhancing student motivation and engagement through a gamified learning environment. *Sustainability*, 15(19), 14119.
- Jing, L. (2024). Application Status Analysis of AIGC Mobile Learning Terminal Technology for Higher Education Teaching. *Frontiers in Educational Research*, 7(10).
- Junren, W., Yann, W. L., & bin Abdullah, M. A. R. (2023). Applying Translation and Interpretation Technology in Teaching and Learning Chinese Slangs Using Youdao Online-Dictionary. Conference Proceedings. Innovation in Language Learning 2023,
- Lin, C.-L., Chen, J.-J., & Ma, Y.-Y. (2023). Ranking of service quality solution for blended design teaching using fuzzy anp and topsis in the post-COVID-19 era. *Mathematics*, 11(5), 1255.
- Lin, X., Mamun, A. A., Yang, Q., & Masukujjaman, M. (2023). Examining the effect of logistics service quality on customer satisfaction and re-use intention. *PloS one*, 18(5), e0286382.
- LIN, Z.-x., SHANG, Z.-q., & BAO, D.-w. (2025). A Study on the English Translation Strategies of Idioms Based on Network—Taking Xi Jinping: The Governance of China (Volume IV) as an Example. *Journal of Literature and Art Studies*, 15(3), 237-242.
- Luarn, P., Chen, C.-C., & Chiu, Y.-P. (2023). Enhancing intrinsic learning motivation through gamification: a self-determination theory perspective. *The International Journal of Information and Learning Technology*, 40(5), 413-424.
- Oliver, R. L., Rust, R. T., & Varki, S. (1997). Customer delight: foundations, findings, and

- managerial insight. *Journal of retailing*, 73(3), 311-336.
- Pamzan, M., Javaid, Z. K., & Ali, A. A. (2023). Perception of students about collaborative strategies employed by teachers for enhancing English vocabulary and learning motivation. *Pakistan JL Analysis & Wisdom*, 2, 146.
- Paposa, K. K., & Paposa, S. S. (2023). From brick to click classrooms: A paradigm shift during the pandemic—Identifying factors influencing service quality and learners' satisfaction in click classrooms. *Management and Labour Studies*, 48(2), 182-196.
- Qing, W., Amin, M. B., Gazi, M. A. I., Khan, W., Al Masud, A., & Alam, M. N. (2023). Mediation effect of technology adaptation capabilities between the relationship of service quality attributes and customer satisfaction: an investigation on young customers perceptions toward e-commerce in China. *Ieee Access*, 11, 123904-123923.
- Ramzan, M., Oteir, I., Khan, M. A., Al-Otaibi, A., & Malik, S. (2023). English learning motivation of ESL learners from ethnic, gender, and cultural perspectives in sustainable development goals. *International Journal of English Language and Literature Studies*, 12(3), 195-212.
- Ratinho, E., & Martins, C. (2023). The role of gamified learning strategies in student's motivation in high school and higher education: A systematic review. *Heliyon*, 9(8).
- Ryan, R. M., & Deci, E. L. (2024). Self-determination theory. In *Encyclopedia of quality of life and well-being research* (pp. 6229-6235). Springer.
- Sabarudin, A. B., & Razak, F. Z. A. (2021). Understanding the effects of system quality on continuance intention to use student's information system management: An empirical evidence from Malaysia. *Journal of Physics: Conference Series*, 1793(1), 012024. <https://doi.org/10.1088/1742-6596/1793/1/012024>
- Singh, V., Sharma, M., Jayapriya, K., Kumar, B. K., Chander, M., & Kumar, B. (2023). Service quality, customer satisfaction and customer loyalty: A comprehensive literature review. *Journal of Survey in Fisheries Sciences*, 10(4S), 3457-3464.
- Wang, X., Meng, F., Zhang, S., & Li, L. (2025). Inaccuracy of an E-Dictionary and Its Influence on Chinese Language Users. *arXiv preprint arXiv:2504.00799*.
- Wei, L. (2023). Artificial intelligence in language instruction: impact on English learning achievement, L2 motivation, and self-regulated learning. *Frontiers in psychology*, 14, 1261955.
- Yang, Q. (2024). A Genre-Based Quality Evaluation of Chinese-English Translation by Online Machine Translation Systems. *Translating the Future: Exploring the Impact of Technology and AI on Modern Translation Studies*, 23-51.
- Yeung, Y. Y. (2023). An Exploration of Online Bilingual Dictionary Use by Chinese University Students Studying in the United Kingdom.
- Yunpeng, S., & Khan, Y. A. (2023). Understanding the effect of online brand experience on customer satisfaction in China: a mediating role of brand familiarity. *Current Psychology*, 42(5), 3888-3903.
- Zhang, K., & Lu, P. (2023). What are the key indicators for evaluating the service satisfaction of WeChat official accounts in Chinese academic libraries? *Library Hi Tech*, 41(3), 788-806.
- Zhong, S., & Liu, X. (2023). Cultural specificities of online dictionaries for English learners: Evidence from a user survey and a multimodal discourse analysis. *Digital Scholarship in the Humanities*, 38(4), 1740-1763.
- Zhou, L., & Li, J. (2023). The impact of ChatGPT on learning motivation: A study based on self-determination theory. *Education Science and Management*, 1(1), 19-29.
- Юйсюань, С. (2023). Исследование применения искусственного интеллекта в преподавании английского языка в университете Китая. *Концепт*(12), 88-103.