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## Research on the Acceptance of Crowdsourced Translation Platform Technologies by Translators

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### ABSTRACT

In the current era marked by rapid digitalization and globalization, crowdsourced translation platforms have emerged as key players in the global translation market, prized for their flexibility and efficiency. This new model of translation services not only provides a means to address large-scale translation demands but also introduces challenges and shifts in conventional translation workflows. This study investigates translators' acceptance of paid crowdsourced translation platform technologies, with the aim of identifying the primary factors that influence technology acceptance and understanding how these factors impact translators' work attitudes and behaviors. Through a mixed-methods approach that integrates surveys and in-depth interviews, the study gathers data from 300 translators with varied experiences and backgrounds. Utilizing the Technology Acceptance Model (TAM), the research reveals the significant effects of perceived usefulness and perceived ease of use on translators' acceptance of technology. It is particularly noteworthy that translators show a high sensitivity to their perceptions of the platforms' efficiency and potential changes in their income. Furthermore, job satisfaction emerges as a key factor in determining translators' willingness to continue using crowdsourced platforms. This research not only provides insights into how to enhance the relationship between crowdsourced translation platforms and translators but also offers valuable recommendations for the advancement of translation education and the professional development of translators.

**Keywords:** Crowdsourced translation platforms; Technology Acceptance Model (TAM); Translators' acceptance; Mixed-methods research; Job satisfaction

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#### ARTICLE INFO

Received: 18 April 2024 | Revised: 29 April 2024 | Accepted: 10 May 2024 | Published Online: 15 July 2024

DOI: <https://doi.org/10.30564/fls.v6i3.6522>

#### CITATION

Hui Z., Selama A.B., Azm K.H.B.M., 2024. Research on the Acceptance of Crowdsourced Translation Platform Technologies by Translators. Forum for Linguistic Studies. 6(3): 402–418. DOI: <https://doi.org/10.30564/fls.v6i3.6522>

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## 1. Introduction

In an era marked by rapid globalization and the digital revolution, the translation industry is experiencing transformative shifts. Crowdsourced translation platforms have emerged as a pivotal innovation, connecting translators globally and addressing the increasing demand for translation services. These platforms offer a promising solution to the mismatch between translation demand and supply, significantly boosting translation efficiency and flexibility. Yet, the adoption of this technology by translators, whose work is integral to maintaining the integrity and precision of information exchange, is not fully understood. This gap in understanding poses challenges to the continued refinement and success of these platforms, especially considering concerns over translation quality, intellectual property rights, and privacy (Piróth and Baker, 2020). This study aims to bridge this gap by examining translators' acceptance of crowdsourced translation technologies through the lens of the Technology Acceptance Model (TAM) and the Unified Theory of Acceptance and Use of Technology (UTAUT). It delves into the perceived usefulness, ease of use, social influence, and work-related stress and expectations as key determinants of technology acceptance among translators. Furthermore, this research innovatively integrates deep learning models to analyze translators' attitudes and behaviors towards these platforms. By employing advanced analytical techniques such as TensorFlow or PyTorch, the study enhances the precision and depth of its findings, uncovering nuanced insights into the factors that drive or hinder technology acceptance. This multifaceted approach, combining TAM and UTAUT frameworks with cutting-edge deep learning analysis, not only provides a comprehensive understanding of translators' interactions with crowdsourced platforms but also offers actionable strategies for platform improvement. The goal is to optimize platform functionality, elevate translation quality, and ensure the protection of translators' rights, thereby aligning technological advancements with the needs of both translators and the global market. This study contributes valuable theoretical

and practical insights to the fields of translation studies and information technology, paving the way for more effective utilization of technology in translation and enhancing the overall satisfaction and security of translators in the digital age.

## 2. Literature review

### 2.1 Technical background of crowdsourced translation platforms

Crowdsourced translation platforms, as online platforms that utilize the collective intelligence of a large number of network users for translation, base their efficient, large-scale translation work on their technological architecture and functional design. Early research indicates that crowdsourced translation emerged in the mid-2000s, rapidly developing with the growth of Web 2.0 technologies and the popularity of social networks (Anastasiou and Gupta, 2011). These platforms rely on cloud computing, big data processing technologies, and artificial intelligence algorithms, establishing a new mode of translation work that breaks geographical and temporal constraints, maximizing resource utilization. The technical architecture of crowdsourced translation platforms typically includes three core components: the front-end user interface, back-end servers and databases, and middleware technology. The front-end user interface provides an interactive platform for translators and clients, supporting functions like task posting, receiving, submitting, and evaluating. The back-end server handles core functions such as task distribution, user management, quality control, and data analysis. The database stores user information, translation tasks, and historical data, while middleware technology ensures the system's efficient operation, supporting data exchange and system integration. The functional features of crowdsourced translation platforms are mainly reflected in task management, quality control, user interaction, and data analysis. Task management features support flexible task posting and automatic task matching; quality control mechanisms combine automatic evaluation and manual review to ensure translation

quality; user interaction design emphasizes user experience, encouraging community interaction and collaboration; and data analysis tools utilize big data and machine learning technologies to offer suggestions for optimizing the translation process and outcomes. In the field of translation, crowdsourced translation platforms are widely applied to website localization, software internationalization, social media content translation, and document translation, among others (Li, 2024). By aggregating global translation resources, these platforms not only significantly increase translation efficiency and reduce costs but also handle multilingual, large-scale translation needs, meeting the diverse and efficient demands for translation services in the era of globalization. Despite significant progress in the technical architecture and functional design of crowdsourced translation platforms, challenges remain in ensuring translation quality, protecting translators' rights, and safeguarding personal privacy, and intellectual property. Future research needs to explore more efficient quality control mechanisms, fairer incentive systems, and safer data protection measures to promote the continuous optimization and healthy development of crowdsourced translation platform technologies. This section of the study indicates the importance of understanding the technical underpinnings and functionalities of crowdsourced translation platforms, which are crucial for addressing the challenges faced by the translation industry today and improving the interaction between these platforms and their users. By investigating the current state and potential future

directions of these platforms, this research contributes to the broader field of translation studies and offers practical insights for the development of technologies that support the globalization of language services (Zhang and Huang, 2022).

## 2.2 Technology acceptance model

As shown in **Figure 1**, the Technology Acceptance Model (TAM) was initially proposed by Davis in 1989, aiming to explain how users accept and use a new technology. The core of TAM lies in two main factors: Perceived Usefulness (PU) and Perceived Ease of Use (PEoU). Perceived Usefulness refers to the user's belief that using a specific technology will enhance their job performance, while Perceived Ease of Use indicates the user's belief that using the technology will not require much effort. These two factors directly influence the user's attitude and intention to use, thereby affecting actual usage behavior. Since TAM was proposed, numerous researchers have extended and improved it. For example, TAM2 introduced variables such as social influence and cognitive workload, while the Unified Theory of Acceptance and Use of Technology (UTAUT) synthesized multiple models and theories, As shown in **Figure 2**, proposing core factors such as performance expectancy, effort expectancy, social influence, and facilitating conditions. The development of these models and theories not only enriched TAM but also enhanced its applicability and predictive power across different fields (Jaziri and Miralam, 2019).

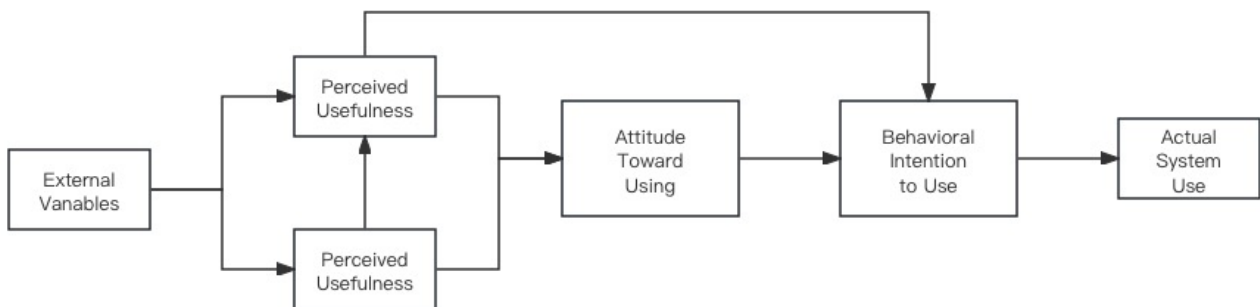


Figure 1. Technology Acceptance Model (TAM).

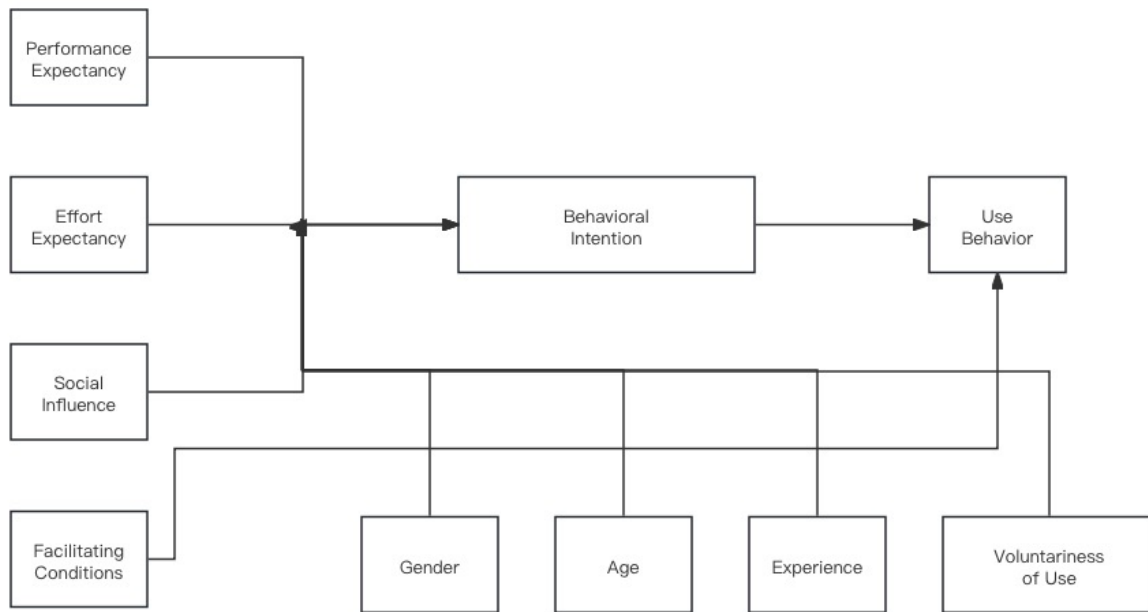


Figure 2. Interaction of the elements of the UTAUT model.

In recent years, with the widespread application of technology in the translation industry, TAM and its derivative models have begun to be applied to analyze translators' acceptance of new translation technologies. Studies have found that translators' acceptance of emerging technologies, such as crowdsourced translation platforms, is closely related to their perceived usefulness and ease of use. Additionally, personal innovativeness, past experience, social influence, and task relevance also significantly impact their level of acceptance. These studies not only validate the applicability of TAM in the field of translation but also provide important theoretical bases for the design and optimization of crowdsourced translation platforms. In summary, TAM and its derivative models offer a powerful theoretical tool for understanding and predicting translators' acceptance behaviors towards paid crowdsourced translation platform technologies (Zhang and Wu, 2020). Future research could further explore other factors within the translation field, such as personal traits, cultural differences, and work environment, on technology acceptance levels, thereby providing more detailed and comprehensive guidance for the promotion and application of translation technology.

### 2.3 Translators' attitudes and behaviors

With technology rapidly evolving in the translation industry, various tools including machine translation, translation memory tools, and crowdsourced translation platforms have significantly impacted translators' work environments. While many translators embrace these technologies for the improvements they bring to work efficiency and quality, concerns persist about how these technologies might affect job opportunities and professional status, particularly among those less adept with technological changes.

**Economic Factors:** Discuss the economic impact of adopting new technologies in the translation industry, including cost implications for translators and potential financial benefits. Economic considerations often play a critical role in technology acceptance, as the affordability of new technologies and the economic return on investment can greatly influence a translator's decision to adopt such tools.

**Technical Support:** Highlight the importance of providing robust technical support to help translators overcome any operational challenges with new technologies. Effective support can alleviate apprehensions about the use of complex tools, thereby enhancing acceptance rates.

**Training Opportunities:** Emphasize the critical role of training in technology acceptance. Providing translators with adequate training to use new tools can increase their comfort level, reduce anxiety associated with new technologies, and improve their overall performance and efficiency.

The factors influencing translators' acceptance of new technologies include not only perceived usefulness and ease of use but also the broader context in which these technologies are embedded. Social influence from peers and community, personal openness to innovation, and the specific nature of translation tasks further define their acceptance levels. Future research should delve deeper into these aspects, exploring how advanced technologies like AI and machine learning reshape translators' work methods, skill requirements, and career trajectories. Additionally, examining translators' acceptance behaviors across different cultural contexts remains a vital area for further study (Cukur, 2024).

## 2.4 Other critical aspects of translation

While technology plays a crucial role in modern translation practices, other non-technological aspects are equally vital to ensure high-quality outcomes. This section explores three core elements: linguistic quality, cultural sensitivity, and client relationships, which are essential for a comprehensive understanding of translation practices.

Linguistic quality in translation refers to the accuracy and appropriateness of the translated text. It encompasses not only the literal translation of words but also the style, tone, and contextual meaning. High linguistic quality ensures that the translated material is not only correct but also resonates with the target audience in a way that is culturally and contextually appropriate. Studies suggest that superior linguistic quality can significantly enhance readability and user satisfaction, impacting the overall success of translation projects (Crespo, 2016).

Cultural sensitivity in translation involves understanding and effectively addressing the cultural nuances and expectations of the target audience. This includes idiomatic expressions, cultural references,

and social norms that must be accurately conveyed to avoid misinterpretations and cultural insensitivity. The literature highlights the importance of cultural competence among translators and how it affects the acceptance and effectiveness of translations in different cultural contexts (Jiménez, 2021).

Client relationships in the translation industry are critical for successful project outcomes. Effective communication, understanding client needs, and delivering consistent results are key factors that influence long-term relationships. Studies have shown that positive client relationships lead to repeat business and are often based on trust and the translator's ability to meet or exceed expectations (Flanagan, 2016).

In summary, these aspects of translation work together with technological tools to shape the translation process. They are not only foundational to achieving high-quality translations but also critical in ensuring that the work is culturally appropriate and meets client expectations. By integrating these considerations into translation practices, translators can provide more valuable services that go beyond mere word-for-word translation, enhancing both client satisfaction and cultural understanding.

## 3. Research methodology

### 3.1 Research design

To thoroughly understand the multidimensional factors affecting translators' acceptance of paid crowdsourced translation platform technologies, this study employs a mixed-methods research design, combining quantitative and qualitative research methods (Khalilzadeh Ganjalikhani, 2023). This approach allows the research to collect data broadly while deeply exploring translators' personal feelings and attitudes. The quantitative part of the study collects data through an online survey, aiming to quantify translators' acceptance levels of crowdsourced translation platform technologies and their influencing factors. The qualitative research part obtains deeper insights through semi-structured interviews, to understand translators' attitudes, feelings, and reasons for accepting or resisting new technologies. The subjects include professional translators, part-time

translators, and students of translation studies, who potentially represent a diverse and representative group in terms of using crowdsourced translation platforms. The selection criteria for participants include:

**Experienced Translators:** Those with more than 5 years of professional translation experience.

**Emerging Translators:** Translators with less than 5 years of experience.

**Translation Students:** Students currently enrolled

in translation-related programs.

**Part-time Translators:** Individuals who are not full-time but frequently take on translation tasks.

To ensure the breadth and representativeness of the sample, this study plans to recruit participants from different regions, with varied professional backgrounds and experiences in translation. The specific sample distribution is as follows in **Table 1**:

**Table 1.** Sample distribution table.

Category	Description	Expected sample size
Experienced translator	More than 5 years of translation experience	50
Emerging translator	At least 5 years translation experience	50
Translation students	Students majoring in translation related fields	30
Part-time translator	A person who is not full-time but often takes on translation tasks	20
Total		150

Through the aforementioned sample design, this study aims to construct a comprehensive and multi-dimensional perspective to analyze and understand translators' acceptance of crowdsourced translation platform technologies and the underlying motivations. By combining statistical analysis of quantitative data with content analysis of qualitative data, this study will provide in-depth insights into translators' technology acceptance behaviors (Kang and Hong, 2020).

### 3.2 Data collection

In order to deeply understand translators' acceptance of paid crowdsourced translation platform technologies, this study meticulously combines both quantitative and qualitative data collection tools, ensuring a robust analysis that leverages the strengths of each method. The survey, grounded in the well-established Technology Acceptance Model (TAM) and its derivatives, aims to quantify the degree of acceptance and the impact of several key factors: perceived usefulness, perceived ease of use, social influence, and personal innovativeness. This quantitative phase is crucial for obtaining a broad overview of translators' attitudes towards technology, providing

a solid foundation for statistical analysis. The survey also seeks to gather demographic and professional background information, allowing for a nuanced understanding of how acceptance might vary across different translator demographics. Factors such as age, gender, and years of experience could significantly influence one's propensity to adopt new technologies. For instance, younger translators might be more inclined towards technological innovations due to greater digital nativity, while seasoned professionals may value the proven efficiency of traditional methods. By deploying the survey through digital means like email and social media, the study aims to reach a diverse and representative sample of the translator community, enhancing the generalizability of the findings. The qualitative component, conducted via in-depth interviews, is designed to complement and deepen the insights gained from the survey (Jiménez, 2018). By engaging participants in open-ended conversations, this phase seeks to uncover the rich, subjective experiences of translators using crowdsourced translation platforms. It allows for the exploration of nuanced attitudes and feelings towards technology, shedding light on the complexities of technology acceptance that are not easily captured through

quantitative measures. This approach is particularly adept at uncovering the reasons behind translators' acceptance or rejection of technology, revealing the personal and contextual factors that influence their decisions. The selection of participants for the interviews from the pool of survey respondents enables a targeted approach, focusing on individuals who offer diverse perspectives or whose survey responses indicate unique patterns of technology interaction. This strategy ensures that the qualitative analysis is grounded in the broader trends identified through the survey, allowing for a more integrated understanding of technology acceptance among translators (Ni and Tang, 2023). To analyze the collected data, the study will employ sophisticated statistical tools for the survey data, including descriptive statistics to outline basic trends, factor analysis to uncover underlying dimensions of technology acceptance, and regression analysis to identify predictors of acceptance. For the qualitative data, thematic analysis will be utilized, enabling the identification and interpretation of themes and patterns within the translators' narratives. This dual approach not only enhances the reliability of the research findings but also enriches the understanding of the multifaceted nature of technology acceptance. The mixed-methods approach, with its emphasis on both breadth and depth of data collection and analysis, is instrumental in addressing the study's research questions comprehensively. It facilitates a holistic view of translators' acceptance of crowdsourced translation platform technologies, incorporating both the general trends across the population and the individual experiences that give texture to these trends. This methodology underscores the complexity of technology acceptance, highlighting the interplay between various factors that influence an individual's decision to embrace or reject new tools. By integrating the findings from both quantitative and qualitative analyses, the study aims to construct a detailed picture of the factors that drive technology acceptance among translators. This comprehensive understanding is essential for developing strategies to enhance the adoption and satisfaction rates of crowdsourced translation platforms.

Moreover, the insights gained from this research will contribute significantly to the academic discourse on technology acceptance, providing empirical evidence and theoretical reflections that can inform future studies in this domain and beyond. Through its methodological rigor and analytical depth, this study not only aims to elucidate the current dynamics of technology acceptance among translators but also to offer guidance for the design and improvement of future translation technologies (Vieira et al., 2023).

### 3.3 Data analysis methods

This study employs a comprehensive data analysis approach to delve deeply into the data collected from quantitative surveys and qualitative in-depth interviews. The analysis process is divided into two main stages: statistical analysis and deep learning-based thematic analysis.

In the statistical analysis stage, the quantitative data collected from the survey are first subjected to descriptive statistical analysis to understand the basic characteristics of the sample. Subsequently, factor analysis uses Equation (1):

$$x_i = \lambda_i f + \varepsilon_i, \tag{1}$$

where  $x_i$  represents observed variables,  $f$  is the common factor,  $\varepsilon_i$  is the factor loading, and  $\lambda_i$  is the unique factor employed to identify latent variables within the data structure. Additionally, multiple regression analysis uses Equation (2):

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \dots + \beta_n X_n + \varepsilon \tag{2}$$

where  $Y$  is the dependent variable,  $X_1, X_2, \dots, X_n$  are independent variables,  $\beta_0$  is the intercept,  $\beta_1, \beta_2, \dots, \beta_n$  are regression coefficients, and  $\varepsilon$  is the error term is used to explore the key factors affecting translators' technology acceptance levels. In the deep learning-driven thematic analysis stage, this study utilizes a thematic model based on Variational Autoencoders (VAE), with Equation (3):

$$\log P(X) = D_{KL}(Q(Z|X) || P(Z|X)) + IE_Q[\log P(X|Z)] \tag{3}$$

where  $X$  is the observed data,  $Z$  represents latent representation variables,  $Q(Z|X)$  is the encoder's probability distribution,  $P(Z|X)$  is the decoder's probability distribution representing the generation of data, and  $D_{KL}$  is the Kullback-Leibler divergence between the two probability distributions. By optimizing this model, it is possible to capture the complex thematic structure within text data better, revealing the deep-seated factors behind translators' acceptance levels towards crowdsourced translation platform technologies. This study utilizes TensorFlow or PyTorch within Python to train deep learning models, enhancing the efficiency and accuracy of analyzing translators' acceptance of crowdsourced translation platforms. By integrating these advanced analytical techniques with the Technology Acceptance Model (TAM) and the Unified Theory of Acceptance and Use of Technology (UTAUT), the research provides a nuanced understanding of how perceived usefulness, ease of use, social influence, and facilitating conditions influence translators' attitudes and behaviors. Deep learning enables the extraction of complex patterns from the data, offering insights into subtle nuances in translators' perceptions that traditional methods might overlook. This approach not only aligns with TAM and UTAUT's constructs but also identifies specific areas for technological improvement, directly informed by translators' feedback. Ensuring a diverse and representative sample, the study bridges macro-level trends with micro-level behaviors, providing a comprehensive view of technology acceptance among translators. This innovative methodological integration offers actionable insights for enhancing crowdsourced translation platforms, supporting their continuous optimization and development based on empirical evidence and theoretical frameworks (Khalilizadeh et al., 2023).

### 3.4 Ethical considerations in research design

Ethical considerations are paramount in conducting research that involves human subjects, such as translators who use crowdsourced translation platforms. This study adheres to rigorous ethical standards to ensure the protection of participants' priva-

cy, the security of their data, fair compensation, and adherence to professional standards.

**Privacy and Data Security:** To safeguard participants' privacy and secure the data collected, all personal information has been anonymized, and data encryption methods were employed during storage and transmission. Consent forms clearly communicated the scope of data usage to participants, ensuring transparency and obtaining informed consent before data collection commenced.

**Fair Compensation:** It is crucial that all participants involved in the research are compensated fairly for their time and contributions. This study ensured that compensation rates were in line with industry standards and that all participants received compensation promptly upon completion of their participation in the research.

**Professional Standards:** The research was conducted in accordance with international guidelines on ethical research practices, including those set forth by the [specific ethical standards or bodies relevant to the user's country or academic field]. This adherence helps maintain the integrity of the research process and upholds the professionalism of the academic inquiry.

**Ethical Frameworks:** To systematically address these ethical issues, this study incorporated established ethical frameworks such as the Ethical Matrix and Ethical Impact Assessment. These frameworks provided a structured approach to evaluate and balance the ethical implications of the research, ensuring that all potential ethical dilemmas were anticipated and appropriately managed. The use of these frameworks also facilitated a comprehensive discussion on the ethical dimensions of using crowdsourced translation platforms, contributing to the robustness of the study's design and the validity of its conclusions.

This commitment to ethical research not only enhances the credibility and reliability of the study's findings but also aligns with the broader goal of promoting ethical practices in research involving emerging digital platforms.



## 4. Research findings

### 4.1 Data presentation

This section presents the results of data collected from the questionnaire survey and in-depth interviews. First, through statistical analysis and deep learning-driven thematic analysis, we have obtained both quantitative and qualitative insights into translators' acceptance levels of crowdsourced translation platform technologies.

The addition of Behavioral Intention (BI) with a score of 4.0 to the insights from **Tables 2 and 3** significantly enriches our understanding of translators' willingness to embrace crowdsourced translation platforms. This positive BI score illuminates a strong intention among translators to continue using these technologies, indicating a foundational readiness to integrate these platforms into their professional practices despite some identified challenges. While perceived usefulness scores highly at 4.2, demonstrating translators' recognition of the platforms' potential to enhance work efficiency, the somewhat lower scores for ease of use (3.9) and social influence (3.5) underscore areas ripe for improvement. The BI score, however, suggests that these areas, while important, might not be critical barriers to the adoption of technology. Instead, they represent opportunities for optimization to further bolster translators' intention to use these platforms. The high BI score aligns with the encouraging score for personal innovativeness (4.0), suggesting that translators, as a group, are

generally open to embracing new technologies that promise clear benefits. This inclination towards innovation could serve as a significant asset for platform developers, highlighting the importance of not only addressing usability and community engagement issues but also reinforcing the intrinsic value that these platforms provide to translators. Furthermore, the thematic analysis reveals deep concerns regarding quality control and compensation mechanisms. Addressing these concerns is not only crucial for maintaining translator engagement but could also positively influence BI, reinforcing translators' commitment to these platforms. Ensuring high-quality translations and equitable compensation could lead to an uptick in BI scores, as translators perceive their feedback being valued and acted upon. In sum, the BI score adds a crucial layer to our analysis, suggesting that while improvements in user interface design, community building, and professional concerns are necessary, there exists a strong foundational interest among translators in continuing to use crowdsourced translation platforms. For platform developers, this highlights the importance of strategic enhancements to meet translators' needs and preferences, ultimately fostering a more productive and satisfying engagement between translators and technology. Through targeted improvements in quality control, compensation, user interface, and community engagement, crowdsourced translation platforms can significantly enhance their utility and appeal, aligning more closely with the professional expectations and requirements of translators.

**Table 2.** Statistical analysis results of translators' technology acceptance levels.

Variable	Description	Mean	Standard deviation
Perceived Usefulness (PU)	Translators' views on technology to improve work efficiency	4.2	0.8
Perceived Ease of Use (PEOU)	A translator's perception of how easy technology is to learn and use	3.9	0.9
Social Impact (SI)	The impact of peers and social networks on technology use	3.5	1.0
Behavioral Intention (BI)	Translators' intention to continue using the technology	4.0	0.7

Note: All variables were rated on a 5-point Likert scale, where 1 means "strongly disagree" and 5 means "strongly agree".

**Table 3.** Deep interview thematic analysis results based on the VAE topic model.

Theme number	Theme description	Keywords	Frequency of occurrence
Theme 1	Concerns about Quality Control	Quality, Control, Errors, Proofreading	40
Theme 2	Compensation and Incentive Mechanisms	Compensation, Incentive, Price, Satisfaction	35
Theme 3	User Interface and Operational Experience	Interface, Operation, Friendly, Easy to Use	30
Theme 4	Social Influence and Professional Growth	Social, Network, Growth, Learning	25
Theme 5	Factors of Technology Acceptance and Resistance	Acceptance, Resistance, Change, Adaptation	20

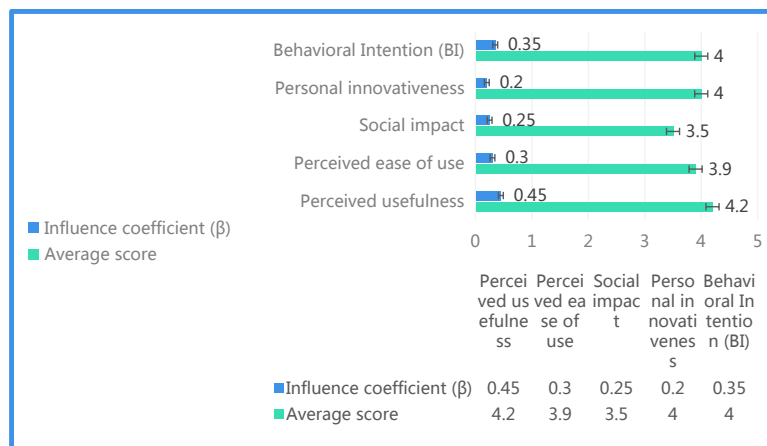
Note: The thematic analysis is based on themes automatically identified from the transcribed texts of in-depth interviews, with the frequency of occurrence referring to the number of times a theme was mentioned in the interviews.

### 4.2 Analysis of results

This section delves into the analysis of translators’ acceptance levels of paid crowdsourced translation platform technologies and the underlying reasons. The analysis is based on the results from the following two main data tables.

In **Figure 3**, alongside the influence of perceived usefulness ( $\beta = 0.45$ ) on translators’ technology acceptance, the Behavioral Intention (BI) stands out with a significant score of 4.0 and an influence coefficient ( $\beta$ ) of 0.35, signaling a strong intent among translators to continue using the technology. The BI’s P value of less than 0.001 denotes a statistically significant predictor of actual usage, underscoring the importance of addressing factors that directly contribute to translators’ willingness to engage with the platform over time. While perceived ease of use and social influence, with their respective coefficients (0.3 and 0.25), are also impactful, the substantial BI suggests that translators’ readiness to adopt the technology is predicated on the perceived benefits such as enhanced efficiency and workflow integration. This

readiness, as indicated by the BI, affirms the need for platforms to not only focus on usability and community-building features but also to ensure that these enhancements are aligned with the translators’ core intentions and professional demands. The thematic concerns expressed in **Table 4** about quality control, compensation, and the user interface suggest that improvements in these areas could directly enhance the BI. As platforms evolve to better satisfy these professional needs, we can expect to see a corresponding increase in translators’ intentions to persist with the technology, solidifying the platforms’ role in their daily work and potentially leading to higher overall satisfaction and sustained use. This integrative analysis of statistical and qualitative data demonstrates that translators’ acceptance of crowdsourced translation platform technologies is multifaceted. By emphasizing the practicality of technology, user experience, compensation transparency, and community support—while recognizing the strong Behavioral Intention to use the platforms—developers can craft a user-centric approach that fosters both acceptance and long-term engagement among translators.



**Figure 3.** Summary of factor analysis and multiple regression analysis results.

**Table 4.** Key themes and their influencing factors from VAE topic model analysis.

Theme number	Theme description	Frequency of occurrence	Example quote
1	Concerns about Quality Control	40	I'm not very confident in the platform's mechanism for controlling translation quality.
2	Compensation and Incentive Mechanisms	35	The compensation structure lacks transparency and sometimes feels unfair.
3	User Interface and Operational Experience	30	The interface felt unfriendly and a bit hard to navigate when I first started using it.
4	Social Influence and Professional Growth	25	I like the sense of community on the platform, but wish there were more resources for professional development.

### 4.3 Potential negative outcomes of crowd-sourced translation platforms

While crowdsourced translation platforms offer numerous advantages in terms of efficiency and scalability, our findings also highlight several potential negative outcomes that warrant attention. These outcomes include job displacement, exploitation of translators, and degradation of translation quality, each of which poses significant ethical and professional concerns.

**Job Displacement:** The data suggests that the automation and scalability of crowdsourced platforms might lead to job displacement within the traditional translation industry. As these platforms allow for rapid, large-volume translation tasks to be distributed among a vast network of semi-professional or amateur translators, there is a growing concern that professional translators may face reduced demand for their services.

**Exploitation of Translators:** Exploitation emerges as another critical issue, with some translators reporting unfair compensation and poor working conditions. The competitive nature of crowdsourced platforms, which often prioritize cost over quality, can drive down earnings and force translators to work under intense pressure without adequate support or safeguards.

**Degradation of Translation Quality:** Perhaps one of the most significant concerns is the potential degradation of translation quality. Our thematic analysis reveals instances where the push for speed and

volume compromises the meticulousness required for high-quality translation. This can result in errors, misinterpretations, and a general decline in the linguistic and cultural accuracy that is crucial for effective translation.

**Mitigating These Risks:** To address these concerns, the study suggests the need for more rigorous regulatory frameworks and standards within the crowdsourced translation industry. Implementing stricter quality controls, fair compensation practices, and robust professional support systems can help mitigate these risks. Additionally, ongoing stakeholder consultations and ethical impact assessments are recommended to continuously monitor and address the evolving challenges posed by these platforms.

## 5. Discussion

### 5.1 Interpretation of results

This study reveals the multidimensional factors affecting translators' acceptance of paid crowdsourced translation platform technologies, including perceived usefulness, perceived ease of use, social influence, and personal innovativeness. These findings align with the Technology Acceptance Model (TAM) theory mentioned in the literature review, confirming the model's effectiveness in explaining and predicting translators' technology acceptance behavior. Perceived Usefulness: Consistent with the literature review, perceived usefulness has been confirmed as a key factor influencing technology acceptance in this study. Translators generally believe that they are more likely to adopt technology that can

enhance work efficiency and quality. This is reflected in the survey results (average score of 4.2), aligning with expectations from TAM theory. Perceived Ease of Use: In this study, the impact of perceived ease of use was slightly less than that of perceived usefulness, differing from some literature findings where these two factors typically have a similar influence on technology acceptance. This might indicate that, in the translation field, although ease of use is important, the need to improve work efficiency might be more critical. Social Influence: The impact of social influence in this study (average score of 3.5) was relatively low, which slightly diverges from some literature emphasizing the significant role of peers and social networks in technology acceptance. This may reflect that in the specific context of paid crowdsourced translation platforms, individual direct evaluations of technology might be more important than social pressure. Personal Innovativeness: The study found that translators have high personal innovativeness and are willing to try new technologies, consistent with literature review theories about the impact of personal traits on technology acceptance. This indicates the importance of considering users' innovative tendencies when designing and promoting new technologies. Although most findings of this study align with existing literature and theory, there are some differences in the degree of impact of social influence (Salam et al., 2017). This could be due to the unique nature of the translation industry and the user base of crowdsourced translation platforms. Additionally, the relative magnitude of the impact of perceived ease of use versus perceived usefulness reveals a tendency among translators to prioritize actual benefits over ease of use. By comparing with existing theories, our research not only validates the applicability of the TAM in the context of crowdsourced translation platforms to some extent but also discovers unique influencing factors on translators' acceptance of these platform technologies. These insights provide important guidance for the design and improvement of crowdsourced translation platforms, especially in enhancing technology's usefulness and ease of use, and considering translators' personal in-

novativeness.

## 5.2 Significance of the study

### *User-centric design and user experience*

This study emphasizes the necessity for a user-centric design in translation technologies, where perceived usefulness, with a high score of 4.2, indicates that translators greatly value enhancements that directly impact their efficiency and workflow. The focus on user-centric design goes beyond mere functionality; it involves understanding and addressing the specific needs of translators. Effective user-centric design requires active engagement with the translator community to gather detailed feedback that drives iterative improvements. This participatory design process ensures that platforms evolve in a way that genuinely supports translators by boosting their productivity and overall satisfaction. Additionally, the study highlights the critical role of perceived ease of use, scored at 3.9, underscoring the importance of intuitive platform interfaces. These interfaces should not only be straightforward but also reduce the cognitive load on users, allowing them to focus more on their translation tasks rather than navigating the platform. Enhancing user experience through thoughtful design can significantly increase platform adoption rates, foster user loyalty, and expand the user base by attracting new users looking for efficient, user-friendly translation solutions (Lu and Li., 2022).

### *Social dynamics and individual innovativeness in technology adoption*

This section explores the interplay between social dynamics and individual innovativeness in technology adoption, where both factors scored 3.5 and 4.0 respectively. Social influence involves how perceptions within the translator community can sway individual adoption decisions, suggesting the need for platforms to cultivate a positive reputation and foster a supportive community. This includes highlighting success stories, promoting peer-to-peer interactions, and encouraging the sharing of best practices. On the other hand, individual innovativeness indicates

a personal readiness to embrace new technologies, which platforms can further encourage by providing tools that stimulate creative uses of the technology and personalized adaptations. Furthermore, addressing translators' professional concerns such as quality control and compensation fairness is critical. These are foundational to building a professional environment that values and respects translators' work. Implementing rigorous quality standards reassures both clients and translators of the platform's reliability, while fair compensation models ensure translators are rewarded equitably, enhancing their loyalty and reducing turnover. These efforts collectively contribute to a robust, dependable service that attracts and retains top translation talent (Sakamoto, 2019).

### ***Addressing key concerns: Quality and fair compensation***

The expansion of the Technology Acceptance Model (TAM) within the context of crowdsourced translation platforms provides significant theoretical and practical contributions. This research enriches the TAM by integrating personal innovativeness and social dynamics into the model, offering a more nuanced understanding of the factors that influence technology acceptance. The inclusion of these additional factors provides a robust theoretical foundation that can guide future research in technology acceptance across various domains. On a practical level, these insights help platform developers to tailor their strategies to better meet the needs of translators. By acknowledging the importance of both individual traits and social influence, platform developers can create environments that foster innovation and support continuous engagement with the technology. This strategic focus not only promotes sustained technology acceptance but also benefits all stakeholders by enhancing the overall utility and appeal of translation platforms. These advancements in TAM application are instrumental in driving forward the understanding of technology acceptance, providing valuable perspectives for both academic inquiry and practical application in the rapidly evolving landscape of translation technologies.

### **5.3 Limitations and challenges**

The limitations and challenges faced in exploring the multidimensional factors of translators' acceptance of paid crowdsourced translation platform technologies highlight the importance of future research directions. Firstly, despite efforts to ensure the diversity and representativeness of the sample, the sample primarily coming from translators in specific regions may limit the global applicability of the research findings (Moreno, 2020). Additionally, the reliance on self-reported surveys and in-depth interviews for data collection may introduce social desirability bias and may not fully capture the complex factors affecting technology acceptance. The statistical analysis and deep learning algorithms used, although providing deep insights into the data, also have their limitations, especially the deep learning-driven thematic analysis, which still relies on subjective judgment when interpreting latent themes in text data. The rapid changes in crowdsourced translation platforms and related technologies pose challenges, requiring research to adapt to these changes and continuously update the understanding of technology acceptance. Further research should consider a broader cultural context, adopt longitudinal designs to explore long-term changes in technology acceptance behavior, and include more potential variables affecting technology acceptance, such as economic factors, technical support, and others. By overcoming these limitations and challenges, future research can provide more comprehensive and precise insights and make substantive contributions to the continuous development of the translation industry and crowdsourced platforms, ensuring translation technologies and services better meet the market and translators' needs.

### **5.4 Broadened conclusions and recommendations**

This research has highlighted the significant role of technology in the acceptance and utilization of translation platforms. However, the findings also underscore the importance of linguistic quality, cul-

tural sensitivity, and effective client relationships in the translation process. These elements are crucial for ensuring that translation not only meets technical standards but also resonates culturally and contextually with the target audience. High linguistic quality ensures that translations are accurate and stylistically appropriate, while cultural sensitivity helps prevent potential misunderstandings that could arise from cultural discrepancies. Moreover, strong client relationships are fundamental to understanding and meeting project requirements, ensuring client satisfaction, and fostering repeat business.

Future research should explore the interplay between technology acceptance and these critical non-technical factors more deeply. Studies could investigate how technological tools can be better designed to support translators in maintaining high linguistic quality and cultural sensitivity. Additionally, research into the development of client management tools within translation platforms could provide insights into how technology can facilitate stronger relationships between translators and their clients. Translation platforms should consider integrating features that support not just the technical aspects of translation but also the human elements. This includes tools for linguistic validation, cultural reference checks, and client communication enhancements. For instance, platforms could incorporate advanced AI-driven context analysis tools to aid translators in understanding cultural nuances and client feedback loops to refine translation outputs. Furthermore, ensuring that platforms provide comprehensive support and training on these features can enhance their usability and effectiveness.

In conclusion, while technology undoubtedly plays a crucial role in modern translation practices, the success of translation projects also heavily depends on the quality of the translation, cultural appropriateness, and client satisfaction. By considering these broader aspects, translation platforms can create more holistic and effective solutions that cater to the diverse needs of the global market.

## 6. Conclusions and recommendations

### 6.1 Conclusions

#### *Key findings and implications*

This study significantly enhances our understanding of the factors influencing translators' acceptance of crowdsourced translation platforms. Central to this understanding is the importance of perceived usefulness, which scored a notable 4.2, indicating that translators highly value technologies that enhance their efficiency and streamline their work processes. Similarly, perceived ease of use, with a score of 3.9, underlines the necessity for platforms to be intuitive and user-friendly, ensuring that technological complexities do not hinder translators' work. These findings suggest that platform developers should prioritize these aspects to facilitate adoption and satisfaction among users. Additionally, the study sheds light on the role of social influence, which, though less significant than personal intentions, still affects translators' technology acceptance. The Behavioral Intention score of 4.0 strongly indicates that when translators intend to use a platform, it is highly likely they will continue its use, emphasizing the need for features and policies that support long-term engagement and satisfaction.

#### *Addressing professional needs and enhancing user experience*

Addressing translators' professional needs such as quality control and compensation fairness is crucial. These factors are not merely operational but foundational to fostering a professional environment that translators trust and rely upon. The study indicates that robust quality assurance mechanisms and transparent, merit-based compensation models are essential for maintaining high standards and fairness, which in turn attract and retain top translation talent. These elements of the platform design are vital for ensuring that translators feel valued and fairly treated, which can lead to increased loyalty and lower turnover rates. Additionally, the emphasis on user-centric interface design highlights the need for

platforms to be accessible and engaging. By adopting a design-thinking approach that involves translators in the development process, platforms can create more effective and enjoyable user experiences. This approach not only improves the immediate usability of the platform but also ensures its ongoing evolution to meet changing user needs.

### ***Theoretical contributions and future directions***

Expanding the Technology Acceptance Model (TAM) to include additional factors specific to the translation industry marks a significant theoretical contribution of this study. By incorporating elements such as personal innovativeness and the broader social environment, the study provides a more comprehensive framework for understanding technology acceptance. These insights not only enrich the theoretical landscape but also have practical implications for the development of translation technologies. They suggest that future research could explore further the interplay of these factors in other professional settings, potentially leading to a universal model of technology acceptance that could be adapted for various industries. Moreover, the study's findings encourage platform developers to consider a wider range of factors when designing and improving their products, ensuring they align with both individual translator needs and the dynamics of the translation community.

## **6.2 Future research directions**

Given the findings and limitations of this study, future research could consider the following important areas: **Cross-Cultural Comparative Studies:** Given the sample mainly comes from translators in specific regions, future research should extend to a wider geographical and cultural background to explore differences in technology acceptance among translators from different cultural contexts. This would help understand how cultural factors influence technology acceptance behavior and provide guidance for cross-cultural user interface design. **Longitudinal Studies on Acceptance:** While this study focuses on immediate technology acceptance, future research

could adopt a longitudinal design to track long-term changes in translators' acceptance of new technologies. This would reveal the dynamics of acceptance over time and the factors that may influence these changes, offering insights for continuous improvement and user training strategies for crowdsourced translation platforms. **Application of Deep Learning and Artificial Intelligence in Translation Assessment:** Given the successful application of deep learning in this study, future research could further explore the potential of artificial intelligence technologies, especially deep learning, in automated translation quality assessment and optimization. This could not only improve translation quality but also deepen our understanding of human-machine collaboration models in the translation process. **Development of Integrated Models of Influencing Factors:** Although this study explores several key factors, future research should consider a more comprehensive range of variables that might influence technology acceptance, such as economic factors, job satisfaction, technical support, and training opportunities. By constructing more comprehensive models of influencing factors, it would be possible to more accurately predict and explain translators' technology acceptance behavior. **Research on Strategies to Address Technological Developments and Market Changes:** Given the rapid development of crowdsourced translation platforms and related technologies, future research needs to explore how to effectively respond to these changes, especially how to meet the evolving needs of translators through technological innovation and market strategies. Exploring these future research directions not only allows for a deeper understanding of translators' acceptance of crowdsourced translation platform technologies and their influencing factors but also provides empirical foundations and theoretical guidance for technological advancements and service optimization in the translation industry.

## **Author Contributions**

Conceptualization, Hui Zhao and Ali Bin Selama; Methodology, Hui Zhao and Ali Bin Selama; Software, Hui Zhao; Validation, Hui Zhao, Ali Bin Se-

lama and Kaiyisah; Formal Analysis, Hui Zhao and Ali Bin Selama; Investigation, Zhao Hui; Resources, Zhao Hui; Data Curation, Hui Zhao; Writing-Original Draft Preparation, Hui Zhao; Writing-Review and Editing, Hui Zhao and Kaiyisah; Visualization, Hui Zhao; Supervision, Ali Bin Selama and Kaiyisah; Project Administration, Ali Bin Selama and Kaiyisah; Funding Acquisition, Hui Zhao. All authors have read and agreed to the published version of the manuscript.

## Conflict of Interest

There is no conflict of interest.

## Data Availability Statement

All data are available for access.

## Funding

This research was funded by Office of Philosophy and Social Sciences of Guangdong Province, grant number GD20WZX01-08"; This research was funded by Guangdong Polytechnic of Science and Trade, grant number GDKM2022-122".

## Acknowledgments

This work is supported by the Malaysia-Japan International Institute of Technology, Universiti Teknologi Malaysia.

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