Lost in Translation: The Influence of Translated Information Quality on Foreign Shoppers

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Abstract

Global e-retailing continues to soar in popularity, but scant attention is being paid to the role of translation services that combine people power with machines to enable business opportunities. This paper details a study investigating whether improving translated information quality of product descriptions increases the customers' information satisfaction and their intention to use an online shopping website. Both machine and crowdsourced translation methods were used for written language translation from English to Simplified Chinese, as these are the official languages of the two largest economies (U.S.A and China) that also have large e-tailing markets. A research model based on DeLone & McLean's (Updated) Information Systems Success Model was used for testing the impact of translated information quality. The results of the analysis demonstrate the use of a new translated information quality construct, and that translation method has a moderating effect on information satisfaction and intention to use.

Keywords machine translation, crowd sourcing, information quality, online shopping.

1 Introduction

E-retailing has evolved from novelty to the largest driver of retail sales growth and language translation plays a significant role in the business world. Global e-retailing sales reached US$1.25 trillion in 2013, and sales grew at a rate of 20% per annum during 2012 and 2013, led by China with 86% growth. The sales of cross-border e-retailing are expected to soar to more than 30% of global e-retailing by 2020 (IMRG 2015). As e-retailers expand into foreign markets, languages for communication diversifies and this barrier necessitates translation costs. Demand for translation is increasing but professional service firms are expensive and much of the content cannot justify the costs where the benefits are perceived to be minimal. To effectively manage costs, two approaches are utilised: machine translation (e.g. Google Translate) and crowdsourced translation (e.g. Gengo).

In the e-retailing context, information quality, referring to "*the usefulness of the available information about attributes of a product*" (Gao et al. 2012), has been extensively investigated. However, the effect of the same information, but differing in quality due to translation, on potential consumers' intention to use an online store, and how MT and CS translation methods moderate that effect, is unknown. The aim of this study is to examine the effects of translated information quality and consumers' perception of the quality of information being translated, on potential consumers' intention to use an online shopping website. Moreover, it investigates whether the quality of information translated by the more cost-effective methods of MT and CS translation is useful and acceptable to online consumers in an e-retailing context. To address the above issues, we propose the following research question:

> *What is the relationship between the translated information quality and potential consumers' intention to use a shopping website in the global e-retailing context?*

This research is timely as China recently allowed full foreign ownership of e-commerce companies and recently approved the country's first "cross-border e-commerce pilot zone". This indicates support to increase online cross-border trade and provides a lucrative opportunity for foreign companies to sell their goods to the Chinese market, provided they can effectively communicate. As demand for translation increases, there are practical benefits to identifying alternatives to more expensive professional translation services. The role of translation lacks exploration in e-commerce research, and the language pair (English to Chinese) is seldom explored in cross-border e-retailing contexts.

The paper proceeds as follows. First, the theoretical foundations are discussed (Section 2), followed by hypotheses development and research model (Section 3), research method (Section 4), analysis of results discussed (Section 5), concluding statements (Section 6) and future research (Section 7).

2 Related Work

In this section, the model used as the theoretical foundation and the related constructs in this research are elaborated, with a focus on effects of translation method.

2.1 Updated Information Systems Success Model

After an extensive literature search, we were unable to find a model for using translated information quality (TIQ) as an independent variable. Therefore, we propose that the Delone and McLean's Updated Information Systems (IS) Success Model (Delone and McLean 2003) is a fitting basis for evaluating the impact of TIQ on a consumer's intention to use an e-retailing website. To do so, "information quality" is placed as an exogenous latent variable and "intention to use" as the endogenous latent variable. We use "intention to use" to understand what motivates consumers' intention, which is the key to surviving in a competitive e-retailing context (Chen and Cheng 2009).

The Updated IS Success Model indicates that information quality, system quality and service quality jointly influence user satisfaction and their intention to use a particular system. As this research involves information quality, we focused on the part of the model that depicts the constructs related to information quality, while system quality and service quality were controlled for. The proposed research model does not include net benefits because the purpose is to investigate whether TIQ will influence consumer intention to use the website, rather than examine how much money or effort has been saved by the consumer when they use an online shopping website.

2.2 Information Quality

While information quality (IQ) is often used as a predictor of traditional ISs success (Chen and Cheng 2009), e-commerce has elevated it to higher levels of significance (Molla and Licker 2001). Ghasemaghaei and Hassanein (2015) find that the website type influences the importance of IQ.

For retail websites, the "product" is the primary focus for the consumer and, as such, the information is just a means for the consumer to determine the right product to obtain. Ghasemaghaei and Hassanein (2015) suggest to use representational IQ measures (interpretability and easy of understanding) when the product is what consumers want to buy instead of information itself. This emphasize on the importance of conveying the meaning of information. Additionally, Delone and McLean (2004) summarized variables used in previous studies for measuring IQ in an e-commerce context: accuracy, currency, relevance, completeness and understandability. The questionnaire used in this research includes items of all these measures, except for currency, as the task scenario suggests the information is current and therefore less likely influenced by the translation method manipulation.

2.2.1 Information Categories in E-Retailing

Web content should be personalised, easy-to-understand, complete and relevant, if e-retailers expect potential consumers to making transactions through their online store and continue to use that website regularly (Delone and McLean 2003). According to Park and Kim (2003) e-retailing information is divided into three categories: product information (e.g. attributes), service information (e.g. order and delivery information) and navigation information (e.g. user interface structure).

Chen and Cheng (2009) posit the most critical function of an e-retailing website is to present product and service information. Product information helps evaluate and compare products prior to the purchasing decision. Service information influences brand loyalty building and motivates impulse buying. Both information types require navigation information to be well-presented and the relevant components of system quality (e.g. "ease of navigation"), could reduce uncertainty related to the site itself (Karahanna et al. 2013). Therefore, this study standardises the webpage appearance and controls for service and navigation information in order to limit their confounding effects.

2.2.2 Information Requirements for different Product Types

Previous studies find that consumer online purchasing behaviours (e.g. information search, channel selection, and brand evaluation processes) are influenced by the product type. There are multiple ways of classifying products and this research ultimately follows the information-oriented product classification method proposed by Kiang et al. (2011). Kiang et al. (2011) find that it is easier to persuade consumers to use an e-retailing website to purchase search goods while it is more challenging to sell experience and credence goods. However, they admit that the distinction between each product type is narrowing because of the widespread online availability of consumer reviews and product test. Nevertheless, the experiment in this study includes products of all three product types (face cream for experience, supplements for credence and facial sauna for search) in each treatment. The purpose of doing so is to create a believable story about the product descriptions being from four real online stores that sell a wide range of products, from which they can select as a present for a close friend (the vignette). This will be more realistic for participants when evaluating the e-retailer website and can help to avoid participants' preference of purchasing a particular type of product online.

2.2.3 Information Quality in Global E-Retailing

Despite numerous studies examining various fields of e-retailing, literature about the impact of TIQ in global e-retailing has yet to be the targeted focus of research. Selling to foreign (language) consumers necessitates that information goes through a translation process. Therefore, we propose that translation quality is a part of IQ, as an aspect of the understandability and interpretability quality measures. Few studies (e.g. Asasongtham and Wichadee 2014 and Rivera et al. 2004) have addressed the influence of TIQ on foreign consumers' satisfaction, but the importance of language and translation in global e-retailing has been noticed. Gibbs et al. (2003) argue that language is identified as an inhibitor of global e-retailing for non-English-speaking consumers, particularly in Asia where most of the older generation is not familiar with the spoken and written English language. Low English proficiency restricts growth of cross-border online shopping in China, but Chinese show strong foreign product interest, being the "top spending tourists" worldwide (Borderfree 2013). Among the multilingual, a preference remains for digesting content in their local language (Gibbs et al. 2003).

Companies need to deliver signals that help to improve consumer perceptions of IQ, by providing good quality translations. Purchasing from foreign brands will complicate consumer perceptions as what constitutes standard product information varies between countries and e-retailers need to be wary of the different information requirements of foreigners. Waheeduzzaman et al. (2011) found that Chinese consumers desire very detailed information before conducting transactions, including product quality information, visual description of the product exterior, provision of order information, provision of differentiated products for comparison, delivery information and other consumers' evaluation.

2.3 Translation Methods

The language diversity of consumers' needs to be considered when localising e-retailing websites. However, e-retailing requires numerous images and product specifications so viewers can have an adequate feeling of the product and its quality, as if he or she were viewing it in a physical store. The generic MT and CS translation are discussed in this research, as they are easily accessible and more economical than professional human translation and specialised machine translation methods. To the best of our knowledge, no research exists about whether these techniques are workable, at this stage, for translating product description and advertisement without further post-editing. So it remains unknown whether it is feasible to apply large scale machine or CS translation in the e-retailing space, and whether these methods can achieve an acceptable quality level to satisfy foreign online consumers.

2.3.1 Machine Translation (MT)

MT is the production of translation by computerised systems from one natural language into another. According to DePalma (2006), MT "*parses text into parts of grammar, such as nouns, verbs, and adjectives*" and then "*processes these linguistic components according to linguistic rules, statistical algorithms, or a combination of these methods*".

While translations from MT are often post-edited, there are situations where MT output can be left unedited, or only lightly corrected (Levitt and Limburg 2011). Though MT cannot universally replace professional human translators, there are cases where MT is both more practical and more effective. For example, when browsing a foreign language website, the reader may only require a quick translation that results understandable content (even if only somewhat so). Mistakes, lack of clarity and unnatural wording may still be deemed acceptable by the reader under such conditions.

2.3.2 Crowdsourced Translation

Crowdsourced (CS) translation is one form of human translation by exploiting knowledge gained by separating translations into small pieces and assigning them to bilingual people. After all the smaller pieces are translated, they are combined together to form the completed target text. To do so, CS utilises the existence of online communities (i.e. the "crowd") which are willing to complete translation tasks where they are typically paid per word while maintaining a minimum level of quality. There are three main advantages of this translation method: multilingual support; quick solution; and monetary benefits (Anastasiou and Gupta 2011). Previous studies (e.g. Anastasiou and Gupta 2011) demonstrate that through crowdsourcing, it is likely to obtain high-quality translations on a large scale at low cost from non-professional translators. Beyond providing access to lower cost and scalable translation services, it also increases accessibility to bilingual people for a wider range of language pairs.

2.4 Intention to Use

2.4.1 Determinant of Intention to Use — Information Quality

While it is common to see IS Success Model and IS success theory research not hypothesising the direct effect of IQ on intention to use (Wang 2008; Xu et al. 2013) at either individual or organisational levels, doing so remains contentious. The meta-analysis by Petter and McLean (2009) aggregates the result of previous 52 studies examining relationships in the Updated IS success model at the individual level, and find that the relationship between IQ and intention to use is strongly supported. However, Petter et al. (2008) conduct a qualitative literature review to summarise 90 empirical studies related to the Updated IS Success Model and claim the reason is that researchers tend to treat IQ as "*a component of user satisfaction measures, rather than being evaluated as a separate construct*". Among the studies they review, only 3 out of 6 studies involving this relationship show that the result is significant. Additionally, Nicolaou et al. (2013) find this relationship is not supported in the B2B commerce context. Clearly further research in e-retailing is needed, so this research includes a direct effect between IQ and intention to use.

2.4.2 Determinant of Intention to Use — Information Satisfaction

Consumers visit an online store for gathering information (Karahanna et al. 2013), so that they can make a comparison between alternatives, assess product quality and make a decision on what to buy and from which vendor. Koo et al. (2013) states user satisfaction is a result of the information quality and product quality they perceived. The IQ determines whether it facilitates or hinders consumers' knowledge of product features, quality, prices, delivery service and other services, as well as vendor trustworthiness, so thereby influencing consumers' information satisfaction. The Updated IS Success Model indicates that user satisfaction, subdivided into information satisfaction, system satisfaction

(Wixom and Todd 2005) and service satisfaction (Xu et al. 2013), is an important predictor of consumers' intention to use and their actual use. Molla and Licker (2001) also show that the IQ and the extent to which that information meets the requirements and expectations of consumers affect the success of the e-retailers and determine if a consumer will stay on the site or move to the next (one click away) site. Subramanian et al. (2014) mention that online consumers' want greater satisfaction to continue to use an e-retailing store and this needs further investigation

3 Research Model & Hypotheses Development

From the literature discussed in the previous section, a research model has been developed for examining consumers' online shopping behaviour in a global e-retailing context where TIQ needs to be considered. For the key moderating factor affecting this model, we examine "Translation method". The research model diagram presented in Figure 1, is followed by the hypotheses development discussion.

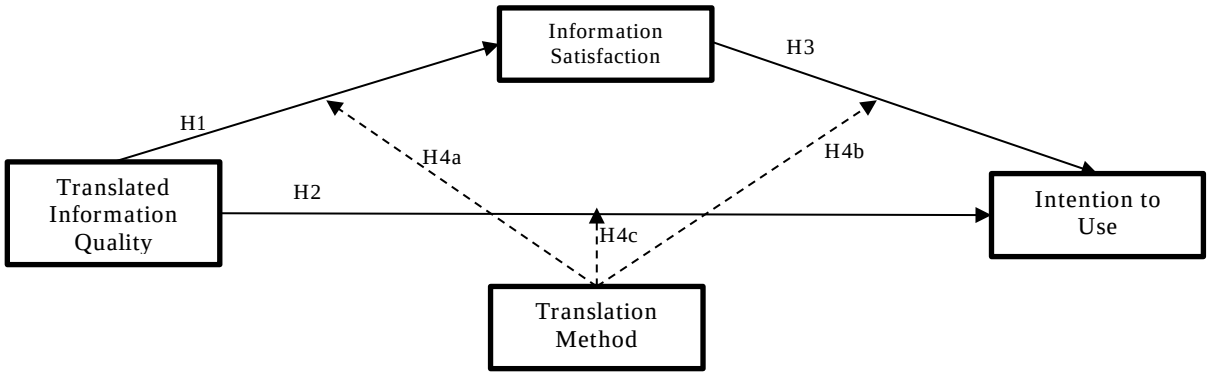

Figure 1: Research Model

3.1 Information Quality and its Impact

The relationship between IQ and information satisfaction is hypothesised according to the theoretical and empirical work of DeLone and McLean (2003; 2004). The Updated IS Success Model shows IQ is positively related to user satisfaction. Wixom and Todd (2005) separate IS Success Model user satisfaction into information satisfaction and system satisfaction, to which Xu et al. (2013) add service satisfaction. As the objective of this research is to address the effect of IQ, the satisfaction is derived from the product information provided to the user (i.e. the e-tailer consumer). Both Wixom and Todd (2005) and Xu et al. (2013) suggest that IQ positively impacts consumer's information satisfaction. Several studies in the field of marketing find that IQ is the antecedent of consumer satisfaction as well (Chae et al. 2002; Rodgers et al. 2005; Spreng et al. 1996). By acquiring related product information, consumers can establish confidence in realising the expected benefits of their purchases. It is surmised that the higher TIQ (of product information) is, the higher consumer information satisfaction will be.

H1 – Translated information quality is positively related to potential consumers' information satisfaction.

3.2 Direct Determinants of Intention to Use

Information quality as the output of an information system can directly influence consumers' intention to use that system. Recent studies by Brown and Jayakody (2008) and Sharkey et al. (2010) confirm that IQ is significantly related to intention to use an e-retailing website and conducting transactions in an e-commerce context. Other studies (like Yun et al. 2011) built on marketing theories and conducting research in the e-commerce context show that the IQ is an important antecedent of users' attitude and intention as well.

H2 – Translated information quality is positively related to potential consumers' intention to use a particular e-retailing website.

The Updated IS Success Model shows user satisfaction influencing the intention to use an information system. Wixom and Todd (2005) show information satisfaction is part of user satisfaction, and Park and Kim (2003) state that information satisfaction helps greatly to form e-commerce site commitment. Devaraj et al. (2002) empirically showed consumer (user) satisfaction is an important predictor of consumers' channel preference. Broadly speaking, extant literature states that satisfied consumers have a greater intention to use company's products, a greater intention to continue its use,

more positive word-of-mouth, and a lower propensity to look for alternative product suppliers (Wang 2008).

H3 - Potential consumers' information satisfaction is positively related to their intention to use a particular e-retailing website.

3.3 Moderating Effect - Translation Method

Two translation methods are used in this study, machine translation (MT) and crowdsourced translation (CS). Translations done by humans are usually easier to understand and more smooth than those gained from machines (Anastasiou and Gupta 2011). When using an unfamiliar or a foreign online website, consumers feel uneasiness and anxiety. However, when they have a better user experience or when they notice pleasant affective consideration given by e-retailers, the product uncertainty and the associated uneasiness and anxiety are likely to be reduced (Luo et al. 2012). Therefore, we propose that satisfaction of the product information will be higher for CS translation, leading to higher intention to use.

H4a - The effect of translated information quality on information satisfaction will be higher when translation is provided by CS and lower when it is provided by MT.

H4b - The effect of translated information satisfaction on intention to use will be higher when translation is provided by CS and lower when it is provided by MT.

Both translation methods indicate that the e-retailer realises language needs of foreign consumers, while CS translation has the higher probability of making consumers feel that the e-retailer is putting more effort into "making the sale". When using MT, the IQ will drive for intention to use more directly (i.e. path coefficients for TIQ->IU should be higher) as MT information would be less useful to the shopper and can immediately influence whether consumers want to use a website or not.

H4c - The effect of translated information quality on intention to use will be higher when translation is provided by MT and lower when it is provided by CS.

4 Research Method

4.1 Participants

The voluntary participants were 57 students from a large Australian university (19 males and 38 females) with 82% aged between 18 and 24 years of age. Participants were required to be older than 18 years old and to be active users of the Internet and online shopping websites. They all had a mainland Chinese education and tertiary level Chinese language proficiency. Participants were randomly assigned treatment orders and informed consent was obtained from all. Paper invitation flyers were posted on campus and electronic flyers through communication tools, such as Wechat and QQ. All subjects received $10 (as advertised) for their participation to compensate them for travel expenses.

The study uses convenience sampling, so issues of external validity need to be considered and the extent to which the conclusions from an experiment are generalisable. Park and Stoel (2005) found university students have a high possibility to be potential Internet shoppers because their characteristics align with Internet shopper demographics. In terms of e-retailing shopping patterns, Stranahan and Kosiel (2007) reported that participants who were younger, college-educated, and from higher income households, shop and spend the most in e-retailing. To further enhance generalisability of results, the experiment involved a wide range of participants across levels of study and disciplines.

4.2 Materials

For each product, we measure the understandability, smoothness, sufficiency and usefulness of product information to examine whether participants perceive the translation quality to be similar when using the same translation method and different between the two translation methods. For each treatment, we administer questions measuring the constructs in the research model. After undergoing all treatments, participants will complete a post-experiment questionnaire where they volunteer information about their experience and issues they have faced.

The reflective independent variable *translated information quality* (quality of translated product information provided by e-retailers for product and e-retailer evaluation) used indicators from Chen and Cheng (2009) for "sufficiency" (IQ1)," accuracy" (IQ2) and "overall information quality" (IQ3).

The reflective dependent variable *intention to use* (the willingness of participants to use an online store of a specific retailer) used indicators "purchase intention" (IU1) from Delone and McLean

(2004), and "intention to regularly use the shopping website" (IU2) and "intention to continue using the shopping website" (IU3) from Chen and Cheng (2009).

The reflective mediating variable *information satisfaction* (consumers' satisfaction with product information provided by an e-retailer) used indicators from Park and Kim (2003) for "overall information satisfaction" (IS1), "information satisfaction in terms of meeting expectation" (IS2) and "satisfaction about the website comparing with its counterparts" (IS3).

4.2.1 Manipulation of Translation Methods

MT was provided by Google translator because it is free, has a large market exposure and higher accuracy than other MT service providers. Though it has some issues with correct grammar, people can get the general gist. CS translation was provided by Gengo as it is a well-known service provider used by major e-commerce websites such as Airbnb, Esty, Rakuten and Alibaba. It offers access to pre-vetted translators with defined quality and cost levels. When using human translation, the key is to find the right translator (Brown 2014). Gengo provides a service to help consumers find the trained translator with a good track record of quality work. Additionally, after several translation tasks being completed, consumers can pick their preferred translators from those who completed work. "Standard quality" translations were used (Gengo's recommendation) at a cost of 0.06 USD per word.

We consulted an accredited translation practitioner for the language pair, to provide an objective evaluation of translation quality provided by the two different translation methods. The average scores given to CS translation was 8.3 and MT was 3.3 (both out of 10). However, the perception of translation quality from translation experts and from average people may be different. In the experiment, participants were also required to give their evaluation of each of the 12 translations in terms of the understandability and the smoothness based on a five-point Likert scale. A paired-sampled T test was conducted to explore the impact of translation methods on participants' evaluation of the understandably and smoothness of product description. There was a statistically significant difference ($t(56)$=7.844, p<0.001) in the understandably score between translations from CS (M=4.400, SD=0.427) and from MT (M=3.386, SD=1.045). In addition, there was a statistically significant difference ($t(56)$=10.078, p<0.001) in the smoothness score between translations from CS (M=4.392, SD=0.428) and from MT (M=2.968, SD=1.046). Results indicate perceived differences in texts from the two translation methods.

4.3 Design

This research controlled for potential confounding variables, used a within-subject design to reduce selection bias, and a Latin Square design to reduce history, demand characteristics and regression towards the mean effects. Translated information quality is the factor being manipulated by use of machine translation and crowdsourced translation. Participants were required to evaluate 12 product descriptions (6 per treatment) and complete an electronic questionnaire recording their choices and perceptions. The experiment task, choice of brands, choice of products, content of product descriptions and questionnaire items were all carefully pilot-tested before conducting the final experiment. Seven-point Likert agreement scales were utilised for the construct items, like the original pre-validated survey instruments. A range of other questions were also included (e.g. gift suitability, demographics).

4.4 Procedure

Informed by the pilot-test, the full experiment was conducted in a large Apple iMac computer lab where the computer configurations were identical. Each session involved around 1-5 participants simultaneously to expedite data collection but still allow for a high-level of control.

After the researcher made self-introduction and explained what participants needed to do, participants followed a strict standardised procedure. They were provided with an information sheet, consent form and opportunity to raise any questions. Once consent was given, participants could use Google Chrome to load the Qualtrics survey webpage and start the online shopping task by reading the task vignette (fixed budget, gift for a special friend). They were presented with a product webpage (face cream) containing the translated product description and a range of questions for evaluating its IQ. This was repeated for 11 more product description webpages across 4 different retailers. For each retailer, participants also rate agreement for the model constructs - IQ, information satisfaction, and intention to use. After viewing all product webpages, participants were requested to choose a preferred gift(s) to buy and rank overall IQ of webpages. This was followed by questions about Internet experience, online shopping experience and basic demographic information. Finally upon completion, the payment sheet was signed and a $10 payment given. This research was conducted under a low-risk ethics protocol according to The Australian National University's "Responsible Conduct of Research" policy.

5 Data Analysis & Results

The data collected from the experiment sessions were first screened and cleaned (e.g. identification and treatment of straight lining) before being analysed with SmartPLS 3 to perform Partial Least Square Structural Equation Modelling (PLS-SEM). The PLS-SEM approach was chosen as the goal as to predict key driver constructs and is a suitable for the analysis of reflective constructs and the relationship between them (Hair et al. 2013). It has been used to test the proposed relationship between IQ and online consumers' intention to use, and the mediating effect of information satisfaction and perceived product risk. A Partial Least Squares-Multi Group Analysis (PLS-MGA) was used to investigate the moderating effects of translation method. Due to strict space limitations, the full range of results tables for reliability, validity and loadings could not be included. The sample size was 228 observations, which meets and well exceeds the "10 times" rule of thumb.

5.1 Measurement model

The PLS-SEM path model analysis was performed as per Hair et al (2013). As this research uses a reflective measurement model, a systematic evaluation of reliability and validity was performed. The composite reliability (and Cronbach's alpha) values for constructs exceeded the 0.7 value required to be regarded as satisfactory. Values exceeding 0.9, while not desirable, were judged to be acceptable when considered the use of validated measurement items that were distinctly worded. Indicator reliability was high with statistically significant outer loadings for each construct indicator and convergent validity was established with average variance extracted (AVE) values all exceeding 0.5. While there were issues with some VIF values exceeding 5, discriminant validity was verified using both cross-loadings approach, as well as Fornell-Larcker criterion assessment.

5.2 Structural model

First, we examine the ungrouped structural model estimation, with a bootstrap resampling technique of 5000 subsamples used to calculate the values of the t-test. It can be seen that shopper's TIQ perceptions (β = .912, t = 86.356) has a positive and significant direct effect on their Information Satisfaction. Furthermore, both TIQ (β = .373, t = 3.904) and Information Satisfaction (β = .485, t = 5.231) have positive and significant direct effects on Intention to Use. These results support H1, H2 and H3, and are consistent with existing literature. All f^2 effect sizes were small ($0.02 < x < 0.15$) except for the large effect size between TIQ and Information Satisfaction (>0.35). Predictive relevance was found by using blindfolding to calculate Q^2 values, with both Information Satisfaction (.76) and Intention to Use (0.629) being larger than zero.

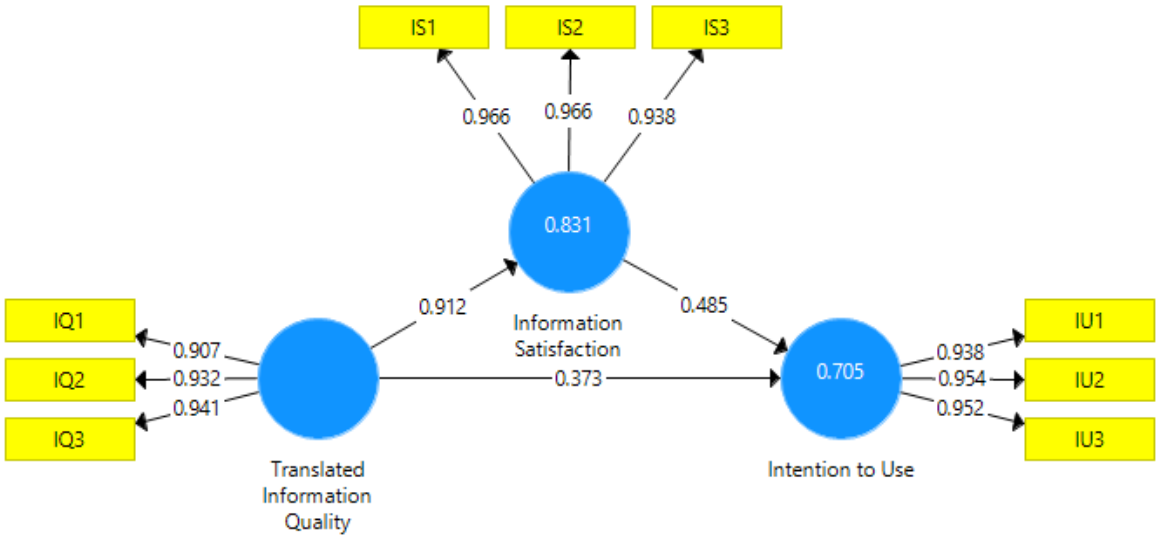

Figure 2: Structural model

5.3 Moderating effect of translation method

Translation method was hypothesised to moderate the effects of IQ and information satisfaction (IS) on intention to use (IU). To examine this effect, all participants (n=57) viewed product descriptions across 4 stores (two stores with MT and two stores with CS translation), resulting in 114 (57 x 2)

observations for each translation method. To compare between these two groups, the non-parametric PLS-MGA technique was used after first confirming the model for each separate group complied with all requirements. The first step of the MGA is to then perform a measurement invariance test, with a comparison of AVE and CR values. The findings of this step was that there is measurement invariance. Next, when analysing the content of Table 1, it can be seen that translation method plays a moderating role in relationships concerning use intentions. The effect of TIQ on IU is more of a determinant ($p < 0.05$) for machine translation, while the effect of IS on IU is more of a determinant ($p < 0.05$) for crowdsourced translation. The effect of TIQ on IS is more of a determinant for machine translation, but not significantly ($p > 0.05$).

Relations	Groups	Path coefficients	*t*	Differences		
				Path coefficients	*t*	p
TIQ -> IS	MT	0.902***	52.788	0.033	1.349	0.092
	CS	0.869***	46.689			
TIQ -> IU	MT	0.532***	4.049	0.370	2.067	0.020
	CS	0.162	1.275			
IS -> IU	MT	0.324*	2.417	0.288	1.632	0.050
	CS	0.612***	5.375			

Significance levels for path coefficients are *** p<0.001, ** p<0.01, * p<0.05

Table 1. Moderating effect of translation method

When comparing the amount of total variation explained between translation methods, Information Satisfaction substantially comprises 76% and Intention to Use moderately comprises 57% in the model for Crowdsourced Translation, while Information Satisfaction substantially comprises 81% and Intention to Use moderately comprises 70% in the model for Machine Translation. Differences due to gender were examined (potential confounding factor), but were not found to be statistically significant.

6 Conclusion

There were two important justifications underpinning the need for this research. First, language translation plays a significant role in the business world. According to DePalma (2006), the possibility of a successful online transaction was four times higher when the website content was presented in a consumer's native language. In addition, Gengo's investigation reveals that 56.2% of respondents believe that when buying from an online store, information presented in their own language is more important than a lower price. Furthermore, even among the multilingual who also understand the original source language, consumers' preferences for local/native language content are still evident across countries (Gibbs et al. 2003). The results of our study support that TIQ does drive information satisfaction with a strong positive effect (H1 supported), and to a lesser extent drives intention to use with a positive effect (H2 supported). Furthermore, information satisfaction is a driver for intention to use with a positive effect (H3 supported).

Second, the quality of MT and CS translation is improving quickly and changing the face of translation. However, there is very limited research (Anastasiou and Gupta 2011) that examines their characteristics and compares the translation quality of these two methods. In addition, whether or how these two methods can influence the impact of IQ on other constructs in information system success or the marketing field is yet to be explored. The results of our study shed some light on this by showing that there is a significant difference in coefficients for some paths, but not all. Translated information quality is a larger driver of intention to use when machine translation is used (H4c supported) and information satisfaction is a larger driver of intention to use when crowd sourced translation is used (H4b supported). While both methods result in TIQ driving information satisfaction, the difference was not significant (H4a not supported).

7 Future Work

Although we take measures to minimize potential bias, there are some major limitations in this study. First, the focused language pair (from English to Chinese) limits the participants' origin. Previous studies show that participants' origin influences the relationship between IQ and satisfaction. In

addition, this also influences the quality of translation as the chosen languages do not belong to the same phylum which increases the translation difficulty. The student subjects and the constrained content (only involving product descriptions) constrain the generalizability of the findings.

This paper is the first attempt at formally presenting results from early exploratory work investigating the role of translation in influencing shopper's intention to use an e-commerce website. This "small bite" will be extended, with further analysis still being undertaken. Future work in a translation context will examine the roles of many variables that were controlled for, such as brand awareness, gender, product type (search, experience and credence goods), system quality, service quality and price sensitivity. Further work is also needed for the development and validation of new indicator items for the TIQ construct, and sophistication of statistical analysis.

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