Examining satisfaction with the experience during a live chat service encounter- implications for website providers.

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ABSTRACT

This paper furthers our understanding of online customer support with regard to online live chat systems. Online live chat systems allow customers to seek service related information from an organisation via online-based synchronous media with a human service representative who provides answers through such media. With use of a web-based survey involving 302 respondents of real-life live chat service experiences with mobile phone network providers in the UK and through the use of structural equation modelling, the aim of this research is to understand the variables capable of influencing a customer's satisfaction with their experience during an online live chat service encounter. The results indicate the importance of service quality, information quality and system quality variables influencing satisfaction with the experience, while such influence is dependent on the purpose of use. Additionally, the results outline the role of emoticons, presence of service reps picture, automated 'canned' responses and the presence of response time estimations in moderating the influence of service quality, information quality and system quality variables on satisfaction with the experience.

INTRODUCTION

Advancements in technology continue to provide organisations with opportunities to enhance their online service delivery. Many organisations are now offering customer service and online support through instant messaging platforms, known as 'live chat' systems (McLean and Wilson, 2016; Turel et al, 2013). These services allow customers to seek service related information from an organisation via online-based synchronous media and a human service representative who provides answers through such media (Verhagen et al, 2010). Despite the environment, whether it be online or offline, organisations realise the importance of high quality customer service (McColl-Kennedy et al, 2015). Therefore, in an attempt to provide effective online customer service, online helpdesks and live chat functions are being adopted as customer service platforms (Chattaraman et al. 2012). Online support services such as live chat interfaces are considered a cost-effective means of providing customer assistance, as there is the potential to increase customer satisfaction by providing instantaneous 24-hour

access to service personnel, increase levels of trust, while also encouraging repeat visit (Etemad-Sajadi, 2014; Turel et al, 2013; Yoon, 2010; Yoon et al, 2008).

While live chat services have numerous potential advantages, the success of such facilities depend on the experience encountered during use. Typically, customers have various options when it comes to seeking customer service assistance, including face-to-face, telephone, social media and email (Gebauer, 2007; Turel and Connely, 2013). In spite of this, many customers now prefer to use online live-chat facilities for service related questions such as inquiries about products, orders, shipping options and access to information (Lockwood, 2017; Turel et al, 2013; Chattaraman et al. 2012). Despite the usefulness of online live chat systems in enhancing service experience, research to further our understanding of the dynamics and influencing factors of this concept is scarce in the extant literature. Thus, understanding the variables capable of influencing a customer's service encounter with a live chat operator becomes exceptionally important.

Drawing upon the DeLone and McLean's (2003) Information System Success model, this research explores the variables capable of influencing a customer's satisfaction with their experience during an online live chat service encounter with a human service representative. To our knowledge, there are no empirical studies that examine the variables influencing satisfaction with the live chat experience, despite the growing number of organisations and customers adopting live chat as a customer support function. As a result, this study aims to fill such a gap in knowledge by providing an empirical perspective to further our understanding of online customer support with regard to online live chat systems. We therefore, incorporate key facets from both Service Marketing literature and Information Science literature and draw upon DeLone and McLean's (2003) Information Systems Success model to help gain an understanding of customer perceptions of web-based support. Thus, being the first to explore service, information and technological variables influencing a live chat service encounter in the varying purposes of use, along with specific live chat features, this research makes a significant contribution to theory by providing essential insights that extend our understanding on online customer support services in the form of live chat facilities. The following section will discuss the conceptual background.

CONCEPTUAL BACKGROUND

Web-based Live Chat Facilities

According to role-theory (Solomon, 1985), individuals learn to expect a certain level of service in particular situations, as expectations are often built on pervious experiences (Brehm, 1966). Customers learn the role of service-receivers and service providers from offline encounters through repeated experiences and are therefore likely to expect similar behaviour during online service encounters (Turel et al, 2013). Thus, customers often expect to have the option to communicate and encounter a similar service in the online environment as they would in the offline environment regardless of technological restraints (Tomb and McColl-Kennedy, 2003). Based on social presence theory, previous research highlights that customers often see a computer (website) as a social actor rather than simply a channel or medium (Lee and Jeong, 2010; Nass and Moon, 2000), yet, until recent years' social interaction with service personnel has been somewhat limited in the online environment (McLean, 2017; Chatteraman et al. 2012; Hassanein and Head, 2007). Due to the seemingly distant and computer-mediated nature of the Internet, it has been difficult for firms to convey feelings of social presence in online service settings (Hassanein et al, 2007). However, live chat facilities provide both customers and organisations media that allows two-way synchronous communication (Turel et al, 2013). Numerous organisations provide customers with a live chat facility to chat with a customer representative to help overcome problems, answer questions and obtain assistance in search and navigation of a website (Turel and Connelly, 2013). Chattaraman et al (2012) assert that live chat facilities serve three key purposes, firstly to serve as a search support function, secondly to serve as a navigational support function and thirdly to serve as a basic decision support function. Previous research notes that individuals often use live chat facilities to gather information from a knowledgeable service provider and to reduce the time investment on the task (McLean and Wilson, 2016; Turel and Connelly, 2013; Chattaraman et al, 2012). Yet, there is little understanding on the variables influencing satisfaction with the customer's experience during such a service encounter. Given that web-based communication is characteristically lower in media richness in comparison to the offline environment where face-to-face service interactions can take place, it is important that we examine the variables capable of influencing a customer's satisfaction with their experience during such a computer-mediated service encounter (Darley, 2010).

Potential variables influencing the experience

Customers develop attitudes and behavioural intentions based on their experience during their service encounter (Verhoef et al, 2009). Voss et al (2008) highlight that the customer experience is a holistic process made up from the customer journey, deriving from the sequence of touch-points a customer has with a service provider. Over recent years, many research studies have focused on customers' perceptions of websites and the overall service quality, introducing E-Servqual (Parasuraman et al 2005). A comprehensive review of the literature from over the past fifteen years including E-Servqual and WebQual reveals various variables capable of influencing the online customer experience. The e-servicescape (involving: websites aesthetics, design and ambience), enjoyment, ease of use, usefulness, customisation, information quality, web credibility, responsiveness, efficiency, wait time and focussed attention (flow) have been outlined by a number of studies as influencing the online customer experience (see: Zeithaml et al, 2000, Yoo and Douthu, 2001; Loiacono et al, 2002; Yang et al, 2003; Parasuraman et al, 2005; Kim et al, 2006; Loiacono et al, 2007; Song and Zinkhin, 2008; Hoffman and Novak, 2009; Lee and Jeong, 2010; Lee and Cranage 2011; Rose et al, 2012; Klaus, 2013; Martin et al, 2015; McLean and Wilson, 2016). However, this study is focussing specifically on the online experience with a service representative through an online live chat facility. The online live chat facility provides customers instantaneous transmission of text-based messages from customer to service representative and vice versa. In this context, the technology is a 'platform' for the human service provider thus, some of the 'website' variables become less relevant in the service encounter with a live chat operator. DeLone and McLean's (2003) updated IS Success Model outlines three key dimensions that influence customer satisfaction with an information system, 'Service Quality' (Assurance, Reliability, Empathy and Assurance), 'System Quality' (Usability- Ease of Use and Usefulness) and 'Information Quality' (Reliability, Completeness, Ease of Understanding). Therefore, we incorporate each of these dimensions as proposed by DeLone and McLean (2003) within our conceptual development. Thus, in the following sections we discuss service quality dimensions followed by information quality. Subsequently, system quality dimensions are discussed relating to the usability of the system derived from the technology acceptance model (TAM), namely perceived ease of use and perceived usefulness. In addition, we incorporate specific live chat features as well as the purpose of use into our conceptual development.

Service Quality

Service quality and its measures have received much attention over the past number of years. DeLone and McLean (2003) outline service quality dimensions as proposed by Parasuraman et al (1991) as important indicators in assessing the service quality of an information system, namely, reliability, assurance, empathy and responsiveness. Reliability refers to the consistency of performance and dependability of the service provider. Assurance involves competence, courtesy, credibility and security. Responsiveness refers to the willingness and readiness of service staff to provide the service in a timely manner. Lastly, Empathy refers to the level of customer understanding and communication provided by service personnel (Kalia, 2013).

In contrast to traditional face-to-face service encounters, online service encounters can appear artificial and present challenges in expressing non-verbal cues and authentic emotional displays of reliability, empathy and assurance (Turel et al, 2013). Live chat representatives often use automated 'canned' responses with customers upon chat initiation and for frequently asked questions (Kim et al, 2010). Lockwood (2017) conceptualises that such use of automated responses may negatively influence a customer's perception of the live chat representative's reliability as the experience becomes robotic due to the representative abandoning meaningful customised interaction. As a result, many customers may consider the online environment as inferior to traditional service options (Chattaraman et al, 2012). Additionally, while lean media (such as that available through live chat functions) is high in synchronicity, it is limited in being able to transmit multiple cues simultaneously i.e. due to the lack of visual body language and facial expressions (Sundar, 2008; Featherman et al, 2006) thus, being able to convey reliability, empathy and assurance to customers may become more difficult in the online environment. However, it has become a service norm that customers evaluate the authenticity and the emotional display of a service representative (Turel et al, 2013). Individuals often rely on facial movements to evaluate a service providers understanding and emotional display in the traditional face-to-face service environment. However, such evaluation is not possible when interacting online. In contrast, individuals often rely on text based cues to assess the true meaning of the message (Lucassen et al, 2013; Turel and Connelly, 2013). In spite of this, previous research suggests that pictures of service agents can enhance perceptions of social presence within the online environment and in turn influence positive attitudes towards usage of a live chat function (Verhagen et al, 2011). Additionally, Sundar (2008) and Steinbrueck et al (2002) assert that individuals have the

belief that 'pictures do not lie' and thus have a trust enhancing influence over consumers. In turn, the presence of a service rep's picture within a live chat function may enhance a customer's perception of assurance. Additionally, service providers that utilise 'emoticons' can help to convey emotions to potentially enhance the feeling of empathetic behaviour (Derks et al, 2008). Emoticons are pictorial representations of facial expressions that can be used during text-based conversation through lean media such as live chat. Luor et al (2010) explain emoticons as "emotional icons" that serve as a creative and visually striking means to express emotion. Appendix 1 provides examples of emoticons.

Wait Time

Wait Time is often treated as secondary to the core service experience, when in reality, it is often the first touchpoint in the sequence of experiences that customers have with an organisation (Dixon and Verma, 2009; Chase and Dasu, 2001) and an important part of service quality. Customers often expect service representatives to be responsive and willing to help in a timely manner (Verhoef, 2009). Waiting for service in a retail store for example is an experience that can often lead to dissatisfied customers (Katz et al, 1991). Customers often overestimate their potential waiting time (Katz et al., 1991; Pruyn and Smidts, 1998), as such these estimated wait times have a significant effect on satisfaction than objective waiting time (Katz et al., 1991; Davis and Heineke, 1998). Thus, as perceived wait time increases, individual's affective reactions become increasingly negative (Folkes et al, 1987; Hui et al, 1998), consequently such wait time becomes less acceptable and has a negative effect on the customer experience (Clemmer and Schneider, 1989; Antonides et al, 2002).

Previous research has outlined the time conscious nature of customers in the online environment (McLean and Wilson, 2016). Generally, customers will only wait between 8 to 15 seconds for a basic web page to load (Hong et al, 2013). Time perception theories aid in informing research on managing online wait time, as such theories explain how individuals estimate the passage of time (Hong et al, 2013). Memory based models (Block, 1989; 2003) suggest that the number of memory cues associated with the wait time has an effect on wait time calculations, therefore the more information cues that an individual can recall, the longer the wait time estimation. On the other hand, attention based models (Brown, 1997) suggest that there is a relationship between the level of attention allocated to the passage of time and wait time estimates (Brown, 1997; Casini and Macar, 1997). Therefore, attention based models suggest that there is a cognitive timer that individuals use to calculate the length of

time waiting, should stimulus interfere with an individual's ability to conduct time calculations the individual would perceive to spend less time (Hong et al, 2013). Resource allocation theory (Zakay, 1989) combines both memory based models and attention based models, importantly highlighting that individuals are aware of the passage of time and conduct time calculations during an activity such as online shopping. A complimentary feature of a live chat function is the ability to reduce the length of time customers spend on a task in comparison to going in store or contacting customer support via the telephone (Chattaraman et al, 2012; McLean and Wilson, 2016), however, customers appear to be sensitive to wait time in the online environment, thus those customers who perceive to wait longer than perceived necessary often have a negative experience (Hong et al, 2013; McLean and Wilson, 2016). In contrast, to other forms of customer support, live chat systems often provide customers estimates on the service rep's response time during discussions. Previous research outlines the importance of keeping customers up to date on waiting time to prevent customers becoming dissatisfied with their experience (Hong et al, 2013).

Information Quality

Moreover, DeLone and McLean's (2003) IS success model outlines information quality as a vital component to an information systems success. A key purpose of a web-based live chat facility is to provide customers with information relevant to the customer's query (Turel et al, 2013). Information that is clear, current, relevant, accurate, complete and reliable is believed to be of high quality (Guo et al, 2012). Due to the large quantity of information available to customers online with no real gatekeeper over the quality of the information, customers are often left in a situation where they are open to poor quality information (Rieh, 2010). In turn, individuals often seek clarification or further information through other confirming sources such as service staff, friends or family (Metzger and Flanagin, 2013). Individuals often make evaluations on the quality of information provided, however this can be problematic for those who are not experts within the topic area (Lucassen et al, 2013), thus domain novices often rely on further support that is competent, credible and dependable (Metzger and Flanagin, 2013; Guo et al, 2012; Rieh, 2010). Web-based live chat facilities provide customers with an online form of instantaneous web-support that allows customers to clarify information sought (Chattaraman et al, 2012).

System Quality

Drawing upon DeLone and McLean's (2003) IS success model, the performance of a technological system such as a live chat facility is highly important in order for customers to adopt and use such technology (Park, 2009; DeLone and McLean, 2003). The technology acceptance model (TAM) (Davis, 1989) has been widely used in order to understand why customers adopt particularly technologies. Two cognitive beliefs are theorised by the TAM, perceived usefulness of the system and perceived ease of use of the system. While other studies have extended the technology acceptance model (TAM 2 and TAM 3) over recent years (e.g., Ha and Stoel, 2009; Hsu and Lu, 2004), perceived usefulness and perceived ease of use of the technology have continued to be the most important influential factors in the adoption of new technologies (Kim et al, 2017). Numerous researchers (Rose et al, 2012; Martin et al, 2015) have subsequently examined the role of perceived ease of use and perceived usefulness on levels of customer satisfaction. Web-based live chat systems are computer mediated technological functions, customers' expectations with technological functions are continually raising (McLean and Wilson, 2016), thus the ease of use and usefulness of such facilities may have an effect on the overall customer experience with live chat systems.

Hypotheses Development

Based on role theory (Solomon et al, 1985), during face to face service encounters, customers learn to evaluate aspects of service such as the reliability of the service representative, the level of assurance from the representative, empathy shown, and how responsive the service representative is to the situation (Parasuraman et al, 1991; Turel et al, 2013). Customers often conduct such evaluations to assess whether the service representative seems to care about the customer's situation (Steinmetz and Tabenkin, 2001). This however can be more difficult in the online environment due to the lean-medium that is relied on for communication (Daft and Lengel, 1986) as individuals using live chat services lack any facial or voice cues which are often used in the offline environment to assess emotions and intentions of service staff (Yogo et al, 2000). In the absence of facial or voice cues, incorporating emoticons in live chats is likely to generate an enhanced emotional effect compared to the use of only plain messages (Luor et al, 2010). As a result, the use of emoticons may provide the feeling of authentic empathy towards the situation. Service receivers are more receptive of good-natured, understanding service staff. Thus, regardless of technological restraints, due to increasing

service expectations it is important that service staff convey understanding and show empathy towards customers during a web-based live chat service encounter as we hypothesise:

H1a: Empathy shown to customers through a web-based live chat facility will result in a positive customer experience.

H1b: The use of emoticons by a service representative will positively strengthen the relationship between empathy and satisfaction with the experience.

Moreover, through extrapolations (role learning) from the offline environment, customers expect service staff to provide reliable information that is current, relevant, accurate and complete. A customer's repeated service experiences teach them what to expect when in the role of a service receiver, either online or offline. Therefore, it is reasonable for customers of web-based live chat facilities to expect a service representative to provide reliable information. Reliability is a key dimension of Parasuraman et al's (1991) Servqual measurement of service quality. It is rational to think that the reliability of the service representative will play an important role in a web-based live chat service encounter. Additionally, the extant literature outlines service representatives use of automated 'canned' responses in live chat discussions, we answer Lockwood's (2017) call to analyse the potential negative effect of automated 'canned' responses from a live chat service representative through analysing the effect between perceptions of the service representative's reliability and perceived information quality. Therefore, we hypothesise:

H2a: The perceived reliability of the web-based service representative will strengthen the perceived quality of information provided through a live chat facility.

H2b: The use of automated 'canned' responses by the service representative will influence the relationship between a service rep's reliability and perceived information quality.

Furthermore, customers expect service representatives to provide competent and trustworthy information that will satisfy their information needs (Flanigan and Metzger, 2007). Assurance from a service representative over the quality of the information is an important dimension of service quality (Parasuraman et al, 1991). Fogg (2003) highlights that the trustworthiness and perceived credibility of a service provider in the online environment is an important part of the information evaluation process. Building on Verhagen et al (2011) assertion that a picture of the service representative can enhance perceptions of social presence and Sundar's (2008)

findings that the presence of pictures can enhance trust, we suggest that the presence of a service rep's picture will enhance the perceived service rep's assurance on the perception of the quality of information provided by the live chat representative, which will subsequently influence satisfaction with the experience. Thus, we hypothesise:

Ha3: The perceived assurance provided by a web-based service representative will strengthen the perceived quality of information provided through a live chat facility.

H3b: A service rep's picture will positively influence the relationship between a service rep's assurance and perceived information quality.

H4: Perceived high quality information provided by the web-based service representative will have a positive effect on a customer's satisfaction with their experience.

Research within the offline environment has shown that as wait time increases, satisfaction decreases (Davis and Volman, 1990; Taylor, 1994). Individuals consider time as a scarce resource, which should be spent prudently (Jacoby et al, 1976). Therefore, customers often view the length of time spent waiting increases the investment that is required to be made to obtain the service and in return reduces the utility that can be derived from it (Berry et al, 2002). As discussed, a key dimension of Parasuraman et al's (1991) service quality dimensions is the responsiveness of the service representative. However, when customers are forced to wait longer than they perceive as acceptable, the service provider may be perceived as being unresponsive (McGuire et al, 2010). Previous research illustrates that wait time estimations can have a positive effect on the customer experience in the offline environment (Hong et al, 2013). Thus, as customers cannot see a service representative carrying out tasks related to their service enquiry within the online environment, wait time estimations from the live chat system during the service encounter may play a role in the perception of an appropriate wait time. Reducing the perceived wait time appears to be important within the online environment (McLean and Wilson, 2016; Hong, 2013) thus we hypothesise:

H5: A responsive web-based live chat service representative will reduce a customer's perceived wait time.

H6a: Customers who perceive to spend an appropriate wait time during a live chat service encounter will have a positive customer experience.

H6b: The provision of response estimations by the live chat system will positively strengthen the relationship between perceived wait time and satisfaction with the experience.

Furthermore, DeLone and McLean (2003) illustrate the importance of System Quality in the success and satisfaction with a technology system. Technological factors of perceived ease of use and perceived usefulness have been heralded as influential variables in the adoption and use of new technologies (Kim et al, 2017). Further research highlights that such variables originally derived from the Technology Acceptance Model (TAM) have an impact on customer satisfaction (Rose et al, 2012). While a customer's interaction during a live chat discussion is with a human service representative, such service is provided within a computer-mediated environment and therefore technological factors may become influential on the customer's satisfaction with their experience. Thus, we hypothesise:

H7: The perceived ease of use of the live chat system will positively influence satisfaction with the experience.

H8: The perceived usefulness of the live chat system will positively influence satisfaction with the experience.

Lastly, in line with Chattaraman et al (2012), this study acknowledges the varying purposes in which live chat technology is used, namely (1) as a search support function, (2) as a navigation support function and (3) as a decision support function. A search support function refers to the live chat representative providing information to the customer based on their search query. A navigation support function refers to the live chat representative guiding the customer to appropriate areas of the website based on their needs. Lastly, a decision support function refers to a live chat representative assisting the customer on decisions between products, services and information. As such, the variables outlined in figure 1 may have a stronger or weaker influence on the customer's experience depending on the purpose of use. Thus we hypothesise:

H9: The variables influencing satisfaction with the experience will be determined by the purpose of use.

Figure 1 outlines a graphical representation of the hypothesised model.

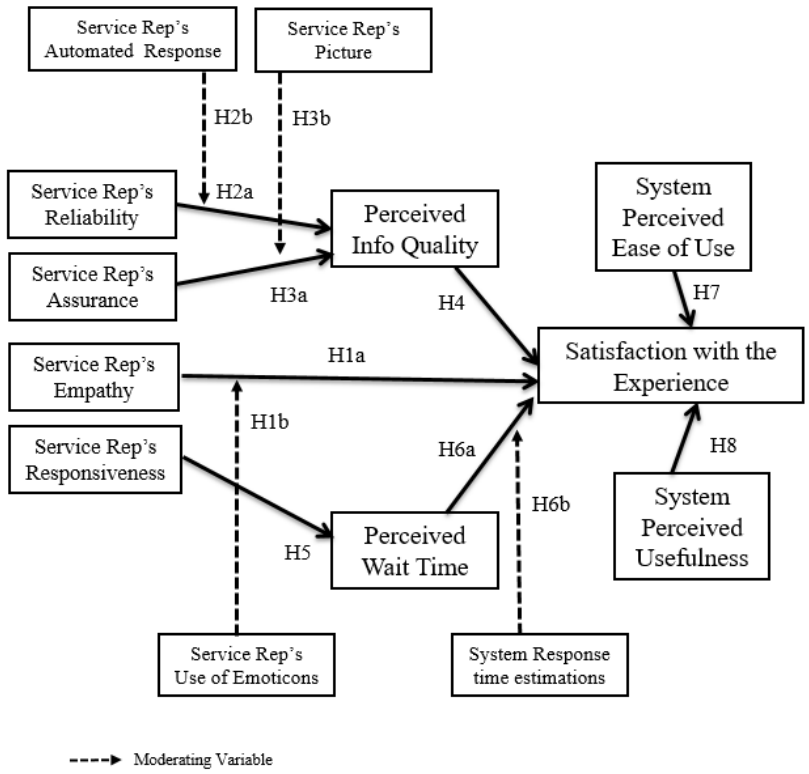

Figure 1 Hypothesised Model

METHODOLOGY

An online questionnaire was used in order to capture the data required to test the hypothesised relationships. Data was collected from individuals in the UK that used a mobile phone network provider's web-based live chat facility within 5 days of taking the survey. Mobile phone networks have adopted web based live chat facilities as one of the main methods of seeking customer support, therefore they offered an interesting context to study. Each mobile network's website used by the respondent was captured. Respondents were purposively selected to participate in the study. As a non-probability sampling technique, this procedure is criticised for its subjectivity. However, Green et al (1988) assert that a purposive sample apart from being representative is argued to be convenient, requires fewer resources (cost and time), and is as good as probability sampling. A pilot study was conducted with a sample of 22 respondents prior to collecting the data to assess the logic and design of the questionnaire. Analysis of the pilot study indicated all scales measured a Cronbach alpha $\alpha > 0.7$ with correlation significance of $p < 0.05$. In addition, all scale items measured a corrected

item-total correlation of > 0.3. These findings indicated the robustness of the scales and justify their inclusion in the questionnaire used in the main study (Osei-Frimpong et al, 2016)

In total, 4 different mobile network providers' live chat facilities were used in the main study namely, o2 (n=84), Vodafone (n=59), EE (n=94) and Three (n=65). Each live chat system was powered by various platforms, however, each system allowed individuals to conduct two-way synchronous communication with a human service representative. The service representative used some automated responses for frequently asked questions and greetings with the live chat system. Due to the range of live chat systems that were used in their natural setting for true customer support enquiries we are able to produce generalisable results. In total, 343 responses were collected with 302 usable questionnaires, which is an adequate sample size for structural equation modelling with analysis of moment structures (Byrne, 2013). The benefit of structural equation modelling is that the hypothesised model can be tested simultaneously in an analysis of the whole model of variables.

Demographic details of respondents were collected; the sample achieved a relatively even split between males (43%) and females (57%). In terms of age, the study achieved a broad representation, 18-25 (39%), 26-35 (25%), 36-45 (19%), 45-54 (12%) and 55-65 (5%). Education level of the sample found 10% had graduated from high-school, 49% graduated from further education (College) and 41% had graduated from higher education (University). The sample were regular users of the Internet with 96% of the sample using the Internet more than once per day. In addition, 39% of respondents were extremely confident using the Internet, 55% were confident at using the Internet and 6% were neither confident or not confident at using the Internet.

The majority of questionnaire scales were adapted from established scales within the literature to measure Reliability, Assurance, Empathy, Responsiveness, Perceived Wait Time, Perceived Information Quality, Perceived Usefulness, Perceived Ease of Use, and Satisfaction with the Experience. Four new scales were introduced to measure, attitudes towards the service rep's picture, system response time estimations, use of emoticons and automated 'canned' responses. Thus, 51 items on a 7 point Likert scale ranging from (1) Strongly Disagree to (7) Strongly Agree were used to measure each variable. Table 1 outlines the scales and the items used in this research.

Table 1 Measurement Scales

Variable	Scale Reference	Adapted Scale	Cronbach's Alpha
Reliability	Adapted from: Parasuraman et al (1991)	• When the live chat rep promises to do something, they do so. • When you have a problem, the live chat rep shows a sincere interest in solving it • The live chat rep performs the service right the first time. • The live chat rep provided accurate records	.831
Responsiveness	Adapted from: Parasuraman et al (1991)	• The live chat rep tells you exactly when services will be performed. • The live chat rep provides prompt service • The live chat rep was always willing to help you. • The live chat rep was never too busy to respond to your request	.860
Assurance	Adapted from: Parasuraman et al (1991)	• The behaviour of the live chat rep instils confidence in you. • You feel safe in your discussion with the live chat rep. • The live chat rep was consistently courteous with you. • The live chat rep had the knowledge to answer your questions.	.792
Empathy	Adapted from: Parasuraman et al (1991)	• The live chat rep gives you individual attention • The live chat rep is available at convenient hours • The live chat rep provides you personal attention • The live chat rep has your interests at heart • The live chat rep understands your specific needs	.915
Perceived Wait Time	(McLean and Wilson, 2016)	• I waited an appropriate length of time during the live chat session • It took the length of time I expected • The length of time I spent waiting during the live chat session was acceptable	.877
Perceived Information Quality	Flanagin and Metzeger (2000); Guo et al (2012)	• The information provided by the live chat rep was current. • The information provided by the live chat rep was complete and comprehensive. • The live chat rep provided accurate information for my needs. • The information provided by the live chat rep was easily understandable.	.783

Perceived Usefulness	Davis (1989); Yoon and Kim (2007)	• The live chat system enables me to accomplish tasks quickly • The live chat system enhances my performance • Using the live chat system increases my productivity • Using the live chat system enhances my effectiveness • The live chat system is useful	.788
Perceived Ease of Use	Davis (1989); Yoon and Kim (2007)	• Learning to operate live chat systems was easy for me • I found the live chat system easy to use • It was easy for me to become skilful at using the live chat system	.810
Customer Experience	Song and Zinkhan (2008)	• I am satisfied with the experience. • The experience is exactly what I needed. • This experience has worked out as well as I thought it would. • I am happy with my experience • My experience has been disappointing (R)	.916
Picture of Live Chat Rep	New Scale	• It is good to see a picture of who I am talking too • It is pleasant to see a picture of the live chat rep • It is reassuring to see a picture of the live chat rep • It feels more lifelike to see a picture of the live chat rep	.873
System Response Time Estimations	New Scale	• Response time updates were useful for me to see • Response time updates kept me well informed • Response time updates were beneficial	.831
Emoticons	New Scale	• The use of emoticons by the service rep added value to the conversation • The use of emoticons showed the service rep's emotion • The use of emoticons by the service rep made the conversation feel human like • The conversation benefited from the service rep's use of emoticons	.799
Automated Responses	New Scale	• I felt like I was receiving automated responses • I felt like the response was pre-prepared • I felt like the response was pre-determined	.811

RESULTS

Preliminary Analysis

Various analyses were carried out before structural equation modelling. Firstly, scale reliability tests were conducted, calculating Cronbach's alpha coefficient as shown in table 1. Each of the scales used in the research were above the critical value of .7 (Pallant, 2013), thus we can consider the scales to be reliable measures of their corresponding variables. As we introduced four new scales, following our reliability tests we conducted an exploratory factor analysis (EFA) using the principal component analysis and Varimax rotation (Pallant, 2005). The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was 0.806, exceeding the cut-off value of 0.6 with a ρ-value < .0001 for Bartlett's Test of Sphericity (Kaiser, 1970). All Items loaded well on constructs they were intended to measure averaging above .7 and there was no evidence of cross loading.

Furthermore, MANOVA tests were calculated across all four websites used by respondents in the research to identify if any differences existed between the websites. The results highlighted that there was no significant difference between the websites with regard to any of the variables in the study Wilks' Lambda = .97, f (9, 294) = 2.43, p = .179. Additionally, MANOVA tests were conducted with regard to age, Wilks Lambda = .67, f (9, 294) = 1.68, p = .151 and gender, Wilks Lambda = .63, f (9, 294) = 2.34, p = .164 again highlighting no significant difference between males and females and the aforementioned age groups.

Structural Equation Modelling

In order to test the research hypothesis previously outlined, Structural Equation Modelling (SEM) was adopted in this study with the use of AMOS Graphics 24. Structural equation modelling with an analysis of moment structures takes a confirmatory approach to SEM (Byrne, 2013). The first step is to estimate the CFA measurement model followed by the structural model. The CFA measurement model outlines the causal relationships between the exogenous and endogenous variables or among endogenous variables. As a result, the measurement model was specified and estimated. The fit statistics outline good fit of the measurement model ($x^2_{(621)}$ = 1,016.524, ρ = .001, x^2/df = 1.637, RMSEA = .046, RMR = .015, SRMR = .041, CFI = .951, NFI = .953). In line with the statistics all loadings were adequate and significant p < .05.

In addition, convergent and discriminant validity were supported due to the following, (1) all loadings were significant ($p < .001$), (2) the composite reliability for each construct exceeded the recommended level of .70 (Fornell and Larcker, 1981), and (3) the average variance extracted (AVE) for each construct fulfilled the recommended benchmark of .50, and also meets the requirement of above the maximum shared variance (MSV) (Hair et al, 2010) as seen in table 2.0. Furthermore, the discriminant validity is assessed, by calculating the square root of the AVE for each construct, where it should exceed the inter-correlation for each construct (Hulland, 1999; Hair et al, 2010), as shown in table 2.0. In addition, as some higher values are shown in our inter-correlation tests, we conducted further analysis through a variance inflation factor (VIF) analysis in SPSS and found no variable to be above the benchmark of 3.0 (Hair et al, 2010), thus we can conclude that we have no multi-collinearity issues.

Additionally, we checked for common method bias in our results, which if present could result in misleading conclusions (Podsakoff *et al.*, 2003). The construct scale items were randomly mixed throughout the questionnaire as a precaution to minimise the chance of common method bias (Ranaweera and Jayawardhena, 2014). Furthermore, following Podsakoff *et al.* (2003), we introduced a common latent factor and assigned it with all the items or indicators of the principal constructs included in the model in AMOS Graphics as an extension of the confirmatory factor analysis. The variances of each item as explained by the principal construct were computed and examined. The CLF value = 0.567, to which the common method variance is the square of such value, which = 0.3214. Therefore, the common latent factor suggests that there is no significant common method bias in this data as the calculated variance (32.1%) is below the threshold of 50% (Ranaweera and Jayawardhena, 2014).

Table 2.0 Convergent and Discriminant Validity Tests

	CR	AVE	MSV	REL	RES	ASS	EMP	PWT	PIQ	PEOU	PU	SE	EMO	AR	PIC	SRTE
REL	0.861	0.734	0.502	**0.856**												
RES	0.902	0.751	0.513	0.411	**0.866**											
ASS	0.911	0.682	0.425	0.347	0.221	**0.825**										
EMP	0.857	0.733	0.124	0.266	0.362	0.461	**0.856**									
PWT	0.910	0.741	0.334	0.464	0.523	0.216	0.729	**0.860**								
PIQ	0.864	0.726	0.162	0.443	0.159	0.519	0.334	0.421	**0.852**							
PEOU	0.810	0.713	0.324	0.211	0.125	0.168	0.201	0.109	0.224	**0.833**						
PU	0.788	0.741	0.212	0.311	0.285	0.243	0.129	0.188	0.241	0.325	**0.879**					
SE	0.853	0.713	0.443	0.411	0.367	0.334	0.464	0.318	0.326	0.222	0.282	**0.844**				
EMO	0.799	0.744	0.346	0.321	0.244	0.231	0.459	0.202	0.197	0.247	0.362	0.401	**0.862**			
AR	0.811	0.731	0.411	0.349	0.298	0.309	0.198	0.312	0.278	0.304	0.318	0.216	0.221	**0.854**		
PIC	0.873	0.726	0.367	0.310	0.195	0.401	0.220	0.231	0.241	0.216	0.311	0.343	0.247	0.166	**0.852**	
SRTE	0.831	0.699	0.501	0.342	0.313	0.277	0.171	0.314	0.263	0.294	0.327	0.403	0.209	0.326	0.186	**0.836**

(REL = Reliability, RES = Responsiveness, ASS = Assurance, EMP = Empathy, PWT = Perceived Wait Time, PIQ = Perceived Information Quality, PEOU = Perceived Ease of Use, PU = Perceived Usefulness, SCE = Satisfaction with the Customer Experience, EMO = Emoticons, AR = Automated Response, PIC = Picture of Service Rep, SRTE = System Response Time Estimations)

Furthermore, due to the good fit of the measurement model and subsequent analyses, the second stage of the SEM process can take place by specifying and estimating the hypothesised structural model shown in figure 1. The fit statistic of the structural model showed goodness of fit ($x^2_{(28)} = 45.067$, $p < .05$, $x^2/df = 1.610$, RMSEA = .045, SRMR = .018, RMR = .012, CFI = .958, NFI = .961, GFI = .983) and provided supporting evidence for the hypothesised relationships. The standardised path coefficient regression weights and statistical significance can be seen in table 3.

Table 3 SEM Standardised Regression Estimates

Hypotheses				Standardised Estimate β	t-value	R^2
H1a	Empathy	→	Satisfaction with the Experience	.681 **	2.10	.58
H2a	Reliability	→	Perceived Info Quality	.694 ***	3.45	.48
H3a	Assurance	→	Perceived Info Quality	.683 ***	4.51	.48
H4	Perceived Info Quality	→	Satisfaction with the Experience	.714 **	2.14	.58
H5	Responsiveness	→	Perceived Wait Time	.597 ***	4.32	.36
H6a	Perceived Wait Time	→	Satisfaction with the Experience	.725 **	2.18	.58
H7	Perceived Ease of Use	→	Satisfaction with the Experience	.761 ***	6.11	.58
H8	Perceived Usefulness		Satisfaction with the Experience	.681 **	2.08	.58

***$\rho < 0.001$, **$\rho < 0.05$

The results outlined in table 3 show strong regression coefficients and statistically significant relationships ($p < .05$), supporting hypothesised relationships. The results highlight that empathy shown by customer representatives increases a customer's level of satisfaction with their experience during the live chat service encounter supporting H1a. The results also outline that a responsive live chat service representative influences a customer's perception of waiting an appropriate length of time during the web-based chat session, supporting H5.

Further, the results indicate that the reliability of the service representative and assurance provided by the service representative has an effect on the perceived information quality. Thus, service representatives that perform tasks correctly, provide accurate records and show

a genuine interest in solving the customer's problem will result in customer's perceiving the information obtained during the service encounter to be of high quality, supporting H2a. In support of H3a, the results show that assurance in the form of knowledgeable service representatives that are courteous and instil confidence in the customer during their live-chat discussion leads customers to perceive the information as accurate, complete and comprehensive, thus of high quality.

Furthermore, the results outline the importance of the perceived information quality. The level of quality in the information provided by a service representative during a live chat discussion has a significant effect on the customer's satisfaction with the service experience, supporting H4. In support of H6a, the results indicate that an appropriate perceived wait time during the live chat discussion influenced by the responsiveness of the service representative will positively influence a customer's satisfaction with their experience. Lastly, the perceived ease of use and perceived usefulness of the live chat facility have a positive effect on a customer's satisfaction with their experience, supporting both H7 and H8, thus highlighting the importance of not only the service quality and information quality variables but also the technological variables of system quality in influencing the experience. The following section will discuss the findings from the interaction moderation analysis.

Interaction Moderation Analysis

Following the evaluation of the structural model, moderating effect analysis was conducted to assess H1b, H2b, H3b and H6b. Moderating effects were assessed hierarchically using moderated SEM with AMOS 24 (Xanthopoulou et al., 2007) within the global structural model. Following Ranaweera and Jayawardhena (2014) and Matear et al. (2002), additional variables were created in SPSS to test the interactive effects of each moderating variable. In the first step, we adapted the continuous independent variable (Service Rep's Empathy) and moderating variable (Emoticons) through mean centring, and subsequently created an interactive term through multiplying the independent variable and the moderating variable. This resulted in the following interactive term: 'Service Rep's Empathy X Use of Emoticons'. The dependent variable (Satisfaction with the Experience) was regressed on the independent (Service Rep's Empathy), the moderator (Use of Emoticons), and the interactive term (Service Rep's Empathy X Use of Emoticons).

A significant interactive effect was found during testing of the whole model, supporting H1b, with the analysis of the whole model indicating goodness of fit as illustrated in table 4. The

results show that a service representatives use of emoticons during the live chat service encounter significantly moderates the influence of a Service Rep's Empathy on Satisfaction with the Experience.

Table 4 Emoticons Interaction Moderation Analysis

Path	Standardised Estimate β	t-value	R^2
Service Rep's Empathy → Satisfaction with Exp	.773 ***	5.61	.60
Use of Emoticons → Satisfaction with Exp	.341 ***	5.23	
Service Rep's Empathy X Use of Emoticons → Satisfaction with Exp	.569 ***	5.44	
Model fit indices	$x^2_{(66)} = 105.32$, $\rho < 0.001$, RMSEA = .044, SRMR = .019, RMR = .011, CFI = .951, NFI = .959, GFI = .979		

****ρ < 0 .001***

In addition, the interaction moderation effects were plotted to illustrate the extent of the effects in support of H1b. The plot illustrates that from a low moderating effect of emoticons, there is little effect on the path. However, a high moderating effect of emoticons shows a positive slope, which suggests that Emoticons strengthens the positive relationship between Customer Rep's Empathy and Satisfaction with the Experience.

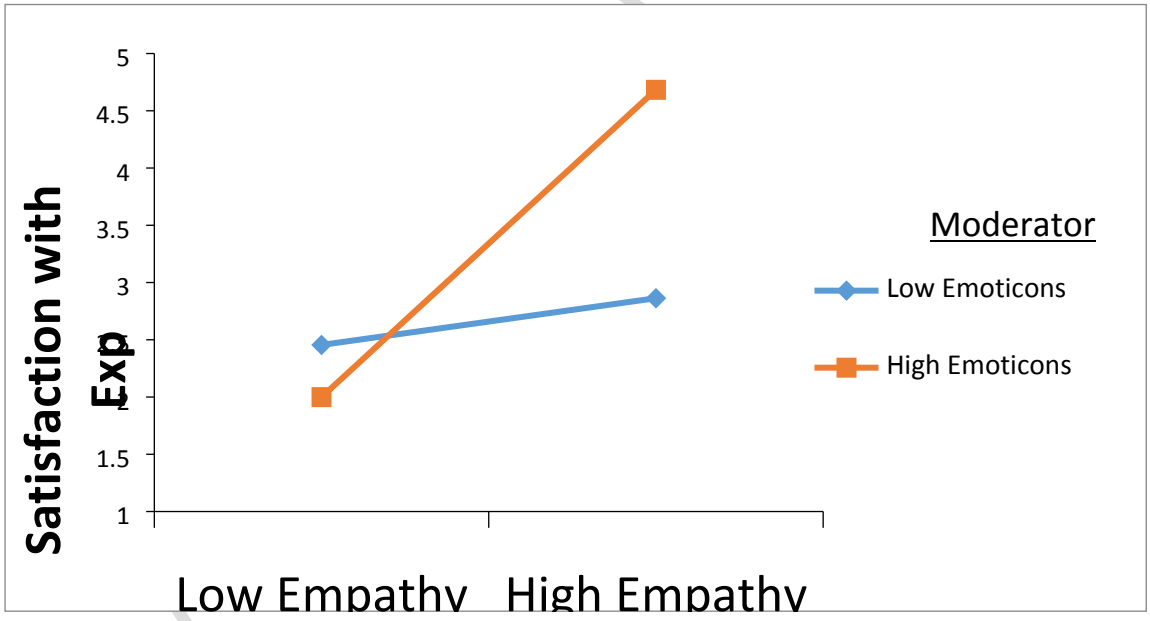

Figure 2 Interaction Moderation Effects of Emoticons between Rep's Empathy and Satisfaction with Experience

Following the steps outlined above, the interaction effects of the service representative use of automated 'canned' responses between service rep's reliability and perceived information quality was examined as shown in table 5. It can be seen that there was no significant moderation effect of the live chat rep's use of automated responses on the relationship between the service rep's reliability and perceived information quality, thus rejecting H2b.

Table 5 Automated 'Canned' Responses Interaction Moderation Analysis

Path	Standardised Path Coefficient	t-value	R^2
Service Rep's Reliability → Perceived Information Quality	.601 **	2.04	.36
Use of Canned Responses → Perceived Information Quality	.103 ns	1.27	
Service Rep's Reliability X Service Rep's Ratings → Perceived Information Quality	.110 ns	1.32	
Model fit indices	$x^2_{(66)} = 106.41$, $\rho < 0.001$, RMSEA = .045, SRMR = .016, RMR = .012, CFI = .947, NFI = .965, GFI = .977		

***$\rho < 0.001$, **$\rho < 0.05$, ns = not significant*

Moreover, in the assessment of H3b, the interaction effects of the presence of the service representative picture being displayed on the chat function between service rep's assurance and perceived information quality was examined as shown in table 6. It can be seen that there was a significant positive moderation effect of customers' attitudes towards the presence of live chat rep's picture on the relationship between the service rep's assurance and perceived information quality, thus supporting H3b.

Table 6 Presence of Service Rep's Picture Interaction Moderation Analysis

Path	Standardised Path Coefficient	t-value	R^2
Service Rep's Assurance → Perceived Information Quality	.689 ***	4.77	.47
Presence of Service Rep's Picture → Perceived Information Quality	.116 **	2.06	
Service Rep's Assurance X Presence of Service Rep's Picture → Perceived Information Quality	.156 **	2.11	
Model fit indices	$x^2_{(66)} = 102.78$, $\rho < 0.001$, RMSEA = .043, SRMR = .015, RMR = .014, CFI = .953, NFI = .961, GFI = .979		

***$\rho < 0.001$, **$\rho < 0.05$*

Again, following the analysis in table 6, the interaction moderation effects were plotted to illustrate the extent of the effects in support of H3b. The plot illustrates that from a low moderating effect of attitudes towards the presence of the live chat rep's picture, there is some effect on the path. However, a high moderating effect of attitudes towards the presence of a service rep's picture shows a more positive slope, which suggests that positive attitudes towards the presence of a service reps picture strengthens the positive relationship between Customer Rep's Assurance and Perceived Information Quality.

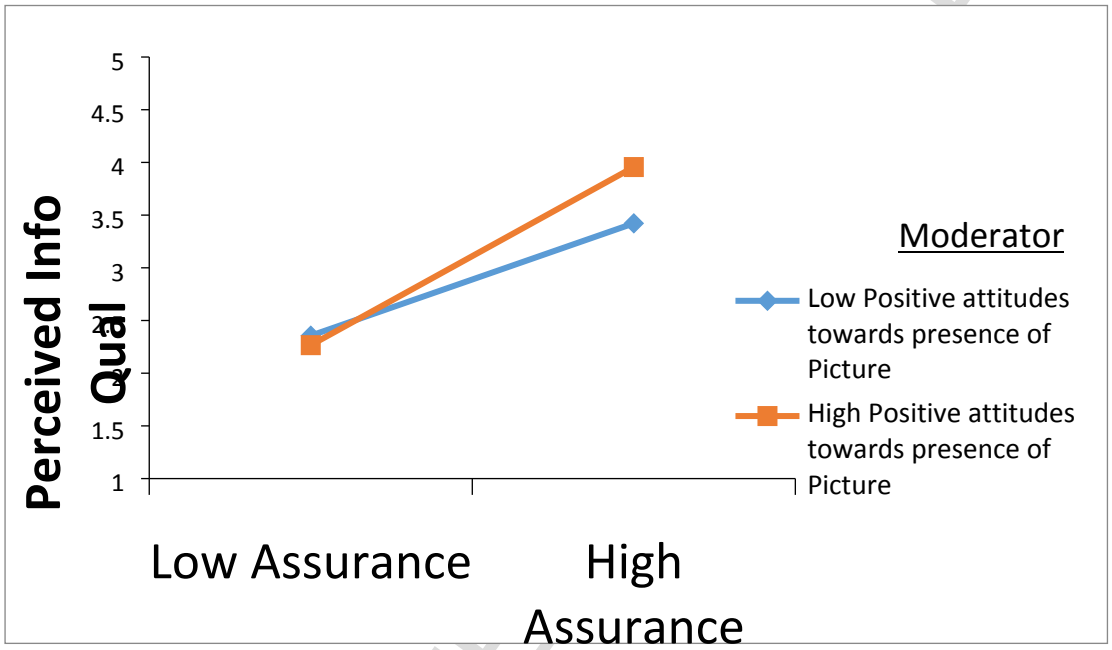

Figure 4 Interaction Moderation Effects of Presence of Service Reps Picture

Lastly, the interaction effects of the system response time estimations being displayed on the chat function between the perceived wait time and satisfaction with the experience was examined as shown in table 7. It can be seen that there was a significant positive moderation effect of the system response time estimations being displayed on the relationship between the perceived wait time and a customer's satisfaction with their experience, thus supporting H6b.

Table 7 System Response Time Estimations Interaction Moderation Analysis

Path	Standardised Path Coefficient	t-value	R^2
Perceived wait time → Satisfaction with the experience	.746 ***	4.61	.56
System Response Time Estimations → Satisfaction with the experience	.214 **	2.08	
Perceived wait time X System Response Time Estimations→ Satisfaction with the Experience	.333 **	2.18	
Model fit indices	$x^2_{(66)}$ = 100.86, ρ < 0.001, RMSEA = .042, SRMR = .018, RMR = .014, CFI = .955, NFI = .966, GFI = .981		

****ρ < 0 .001,* ***ρ < 0 .05***

Furthermore, following the analysis in table 7, the interaction moderation effects were plotted to illustrate the extent of the effects in support of H6b. The plot illustrates that from a low moderating effect of System Response Time Estimations, there is little effect on the path. However, a high moderating effect of System Response Time Estimations shows a more positive slope, which suggests that system response time estimations strengthen the positive relationship between Perceived Wait Time and Satisfaction with the Experience.

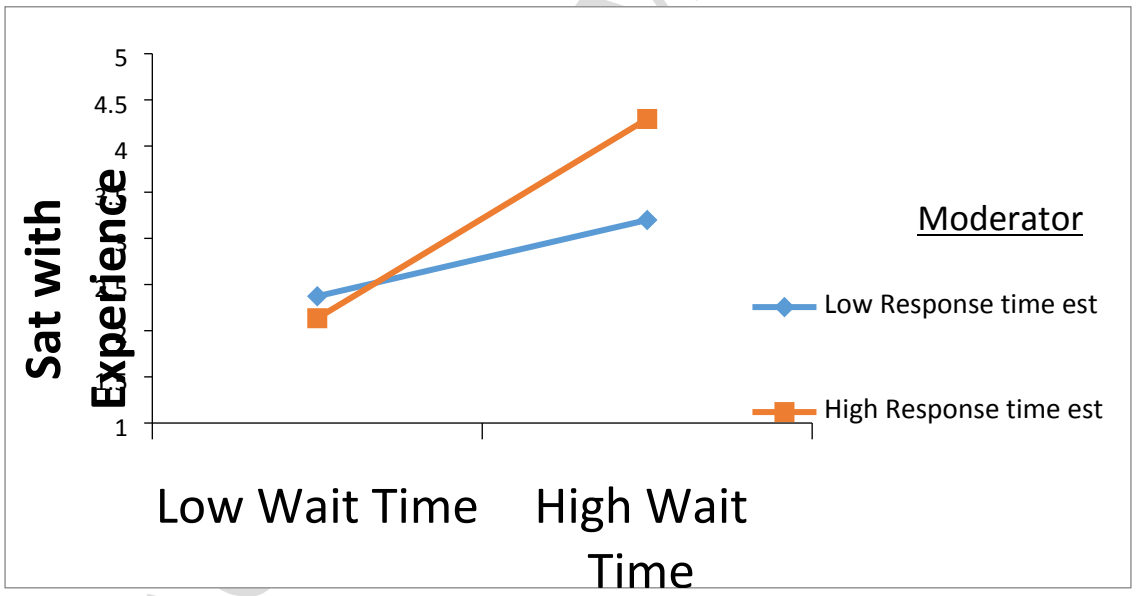

Figure 5 Interaction Moderation Effects of System Response Time Estimations

Multi-group Analysis

Furthermore, multi-group effect analysis was conducted in AMOS 24 to assess the effects of the purpose of using live chat based on Chattaraman et al (2012) three distinct categories,

namely, (1) as a search support function, (2) as a navigation support function and (3) as a decision support function.

The multi-group analysis in AMOS allowed for comparison between paths within the structural models for the three identified purposes of live chat support. While a chi square difference test has been conducted for a comparison of the entire model between each purpose, criticism has been aimed at such an approach (Hair et al, 2010), thus a comparison between each path for each 'purpose' (group) was also conducted providing an estimate and confidence interval for each path between each purpose (Hair et al, 2010). Groups were created for each purpose of live chat ((1) Search Support n = 97, (2) Navigation Support n = 77 and (3) Decision Support n = 129), each regression path was named for analysis, followed by selecting bootstrapping, where the bootstrapping confidence output outlines the confidence interval between each group. This procedure was repeated for each hypothesized relationship for each of the three purposes as outlined by Chattaraman et al (2012). Firstly, we found that there was no significant difference on any of the hypothesised paths between search support and navigation support. Additionally, the chi square difference test found there was no significant difference between each structural model. This was not surprising considering navigation support and search support are both about locating specific information. Table 8 outlines the non-significant difference between each purpose.

Table 8 Multi-group Analysis (Search Support Vs Navigation Support)

Relationship (Hypotheses)	**Search Support (SS) Path Coefficient (β, p, R^2)**	**Navigation Support (NS) Path Coefficient (β, p, R^2)**	**SS-NS Significant Difference 'P value'**
(H1a) EMP→SE	β =.419, p=.046, R^2 =.50	β =.421, p=.047, R^2 =. 51	p = .371
(H2a) REL→PIQ	β =.266, p =.048, R^2 =.25	β =.260, p=.050, R^2 =. 25	p = .279
(H3a) ASS→PIQ	β =.361, p=.039, R^2 =.25	β =.369, p=.035, R^2 =. 25	p = .363
(H4) PIQ→SE	β =.161, p=.063, R^2 =.50	β =.169, p=.060, R^2= .51	p = .354
(H5) RES→PWT	β =.700, p<.001, R^2 =.49	β =.702, p<.001, R^2 =. 49	p = .189
(H6a) PWT→SE	β =.761, p<.001, R^2 =.50	β =.784, p<.001, R^2 = . 50	p = .324
(H7) PEOU→SE	β =.689, p<.001, R^2 =.50	β =.609, p<.001, R^2 = .50	p = .261
(H8) PU→SE	β =.699, p<.001, R^2 =.50	β =.715, p<.001, R^2 = .50	p = .316

(EMP = Empathy, SCE = Satisfaction with the Customer Experience, REL = Reliability, ASS = Assurance, PIQ = Perceived Information Quality, RES = Responsiveness, PWT = Perceived Wait Time, PEOU = Perceived Ease of Use, PU = Perceived Usefulness)

With a non-significant result between each purpose (Search Support and Navigation Support) we combined these two purposes together to make Search/Navigation Support. Thereafter we conducted further analysis as shown in table 9 comparing the paths influencing satisfaction with the experience between Search/Navigation Support and Decision Support.

Table 9 Multi-group Analysis (Search/Navigation Support Vs Decision Support)

Relationship (Hypotheses)	**Search/Navigation Support (SNS) Path Coefficient (β, p, R^2)**	**Decision Support (DS) Path Coefficient (β, p, R^2)**	**SNS-DS Significant Difference 'P value'**
(H1a) EMP→SE	β =.417, p=.048, R^2=0.51	β =.713, p > .001, R^2=0.63	p = .037
(H2a) REL→PIQ	β =.267, p = .051, R^2=0.25	β =.777, p<.001, R^2=0.51	p = .026
(H3a) ASS→PIQ	β =.368, p = .037, R^2= 0.25	β =.702, p<.001, R^2=0.51	p = .021
(H4) PIQ→SE	β =.162, p = 0.61, R^2=.51	β =.681, p<.001, R^2=0.63	p = .036
(H5) RES→PWT	β =.697, p <.001, R^2=0.49	β =.497, p = .039, R^2=0.25	p = .027
(H6a) PWT→SE	β =.779, p<.001, R^2=0.51	β =.211, p = .062, R^2=.63	p = .010
(H7) PEOU→SE	β =.611, p <.001, R^2=.63	β =.341, p=.036, R^2=0.51	p = .028
(H8) PU→SE	β =.709, p < .001, R^2=.63	β =.214, p=.048, R^2=0.51	p = .011

(EMP = Empathy, SCE = Satisfaction with the Customer Experience, REL = Reliability, ASS = Assurance, PIQ = Perceived Information Quality, RES = Responsiveness, PWT = Perceived Wait Time, PEOU = Perceived Ease of Use, PU = Perceived Usefulness)

The results in table 9 outline significant differences for each path in the model regarding search support and decision support, thus supporting H9. In addition, the chi square difference test found there was a significant difference between each structural model. Therefore, while the results outline that each path has an effect on satisfaction with the customer experience with exception to the perceived wait time, the multi-group analysis shows that a service rep's empathy, assurance and reliability as well as perceived information quality is more important in influencing satisfaction with the experience when a live chat discussion is initiated for decision support. In comparison, the responsiveness of the service representative, the perceived wait time along with technology variables of perceived ease of use and perceived usefulness have a larger effect on satisfaction with the experience when a live chat is initiated for search/navigation support. Interestingly, the perceived wait time does not have a significant impact on a customer's satisfaction with their experience when live chat is used for the purpose of decision support, yet a highly significant effect is found when

live chat is used for search/navigation support. Such a finding is in line with Klaus (2013) who conceptualises that the variables influencing satisfaction with the online experience is context specific.

DISCUSSION

Theoretical Implications

This research provides empirical evidence in support of understanding key influencing variables of online customer support services in the form of live chat systems. In line with DeLone and McLean's (2003) Information System success model, we find that 'Service Quality', 'Information Quality' and 'System Quality' variables influence a customer's satisfaction with the experience. However, the results establish the importance of the purpose of using a live chat system (namely, for search/navigation support or decision support) in determining the level of importance and significance of variables influencing a customer's satisfaction with their experience during use of a live chat facility.

The results outline the importance of empathy influencing the customer's experience during a live chat discussion, particularly when the discussion is initiated for decision support. Research within the offline environment has outlined empathetic customer service representatives as having a positive effect on the customer's experience (Parasuraman et al, 1991). However, the importance of empathy within the online environment has received little attention. Websites that do not offer customers a live chat facility are unable to provide the human warmth and understanding of an empathetic customer service representative. Despite the inability to see the service representative due to technological constraints, customers still expect a social experience that exhibits care and understanding during the service encounter with a live chat representative. This finding is an interesting one, as in line with social presence theory (Nass and Moon, 2000), customers view computers as social actors, however, in the absence of live chat facilities, customers are often let down in terms of a social experience in the online environment. Unlike traditional forms of customer support (face-to-face and telephone), customers are unable to assess a service representative's empathetic behaviour through facial expressions and tone of voice within the online environment. However, in this computer-mediated environment, the results highlight that the use of emoticons (a pictorial representation of facial expressions, see appendix 1) can

significantly enhance the perception of empathetic behaviour from a service representative and improve the customer experience. Despite emoticons being a pictorial representation of a facial expression, such use by a service representative not only shows empathy but also shows a human presence in being able to convey emotion through a computer-mediated environment. Such expressions can aid text based information, which can often lack the ability to convey any emotion due to low media richness.

Furthermore, live chat facilities are often outlined as a time saving measure for both customers and organisations (Chattaraman et al, 2012). From a customer's point of view, they are able to *multi-task* while 'chatting' with a live chat customer representative and thus reduce the perception of spending time on the task in comparison to telephone and in-store customer service facilities. However, previous research has outlined that customers within the online environment are conscious of the length of time spent on a task (McLean and Wilson, 2016). This is particularly relevant when a live chat function is used for search/navigation support, however, in contrast, the experience of those customers initiating a live chat discussion for the purpose of decision support is not influenced by the perceived wait time.

However, the responsiveness of the live chat customer representative reduces the perception of spending time on the task in both purposes of use. Based on the above, this is particularly important when a live chat function is used for search and navigation support. While conveying responsiveness in the online environment can be challenging as customers are unable to actively see the service representative handling the enquiry, service representatives should inform customers when tasks will be performed, with prompt updates which provides the stimulus to reduce a customer's likelihood of calculating time estimations on the task. Resource allocation theory suggests that stimulus can reduce the perception of spending longer than perceived necessary on a task (Zakay, 1989). Thus, in support of resource allocation theory, the use of response time estimates from the live chat system has a positive effect on strengthening a customer's attitudes towards the wait time and subsequently satisfaction with the experience. In this vein, the study posits that customer's seeking search/navigation support that perceive to spend an appropriate length of time during their service encounter will have increased levels of satisfaction with the service experience.

Previous research has highlighted that a fundamental purpose of a live chat system is to provide customers with information that satisfies an information need (Elmorshidy, 2013; Turel et al, 2013). Information that is clear, current, relevant, accurate, complete and reliable

is believed to be of high quality (Guo et al, 2012). This study finds that high quality information is an important factor in achieving satisfaction with a live chat experience, in particular when the live chat function is used for decision support. A live chat customer representative that provides customers with information that is current, comprehensive, easily understandable and meets the information need increases a customer's level of satisfaction. The reliability and assurance provided by the live chat customer representative influences a customer's perception of the quality of the information. Due to the technological constraints of not being able to see the customer representative, customers are required to assess the assurance of the service representative through text based information cues. However, in support of social presence theory, the presence of a picture of the live chat representative strengthens the relationship between the service rep's assurance and perceptions of information quality. Furthermore, customers assess the reliability of a live chat representative based on accurate records provided, fulfilling promises to do something and the representative's ability to perform the service adequately. Kim et al (2013) outlined that live chat reps often use automated 'canned' responses upon chat initiation and for frequently asked questions. Lockwood (2017) conceptualised the negative effect of such responses, however, in contrast, our results indicate that automated responses have no effect on a customer's perception of the service representative's reliability in providing quality information. Thus, highlighting customer acceptance of artificial intelligence within live chat systems. In terms of assurance, customers make assessments based on the live chat representative's knowledge to answer the questions posed by the customer, along with the confidence the live chat rep instils in the customer. Therefore, assurance and reliability of the customer representative are important antecedents of perceived information quality. Customers' perceiving information provided by a live chat representative to be of high quality, based on the reliability and assurance offered by the live chat representative will result in a positive experience, particularly for those seeking decision support.

A distinguishing feature of live chat customer support is its delivery through a computer mediated environment. The results of this study found that the technology variables of perceived ease of use and perceived usefulness of a live chat facility have a significant effect on the customer's experience during a live chat service encounter, particularly when a chat discussion is initiated for search/navigation support. Thus, while the 'service quality' variables of the service representative are important within the online environment, an additional technology dimension is added within such an environment that customers are not

faced with during traditional service encounters (face-to-face and telephone). A live chat facility that is difficult to use would have a significant negative effect on the customer experience. Therefore, the results of this study are in line with research on technology acceptance (Park, 2009) and system quality (DeLone and McLean, 2003), highlighting both the ease of use and usefulness of the technology system influences the customer's experience during their use of the system.

Practical Implications

This study proposes numerous practical implications for managers of websites and providers of online customer support through live chat facilities. Managers should note that while the service quality dimensions, information quality and technology variables influence the satisfaction with the experience during use of a live chat system, specific variables have a greater influence on the experience when the system is used for search/navigation support or decision support. In terms of search/navigation support, managers should be aware that the responsiveness of the service rep, wait time, system perceived ease of use and system perceived usefulness are most important. On the other hand, during decision support, the service rep's assurance, reliability and empathy, as well as information quality are the most significant factors influencing satisfaction with the experience.

While live chat customer service representatives converse with customers through text-based communication and thus facial expressions are often unavailable, it is important in order to achieve a satisfactory experience that managers ensure customer service representatives show empathetic behaviour towards the customer. Based on role theory (Solomon, 1985) and past experiences (Brehm, 1966), individuals learn the role of service-receivers and service providers from offline encounters through repeated experiences and therefore often expect similar behaviour during online service encounters. As a result, the findings highlight to managers that despite the technological constraints, customers require an online service representative that is understanding, caring and can provide individual attention, while showing an interest in the customer's needs and being available when required, particularly while customers seek decision support. Thus, the empathetic behaviour from the human customer service representative is as important in the online environment as previous research illustrates in the offline environment, despite the technological barriers and constraints. Managers and website providers should note the importance of emoticons as a way to express emotions in text based communication to enhance the feeling of empathetic

behaviour and showing human emotion through such a system that is inherently low in media richness (Huang, 2008).

Live chat systems have been outlined as a customer support mechanism that saves both customers and organisations valuable time. Customers seeking search/navigational support are time sensitive within the online environment and are unwilling to spend longer than perceived necessary. Managers should note that customers calculate time estimations during the course an online activity, with an online live chat service encounter being no different. Thus, live chat providers ought to understand the importance of a responsive customer service representative that provides high quality information in order to reduce customer perceptions of the wait time during their online service encounter. In turn, it is important that customer service representatives handle a limited number of 'chat sessions' simultaneously in order to provide customers with a prompt, individual service in a timely manner and thus never appear too busy to respond to the customer's request. Additionally, the findings illustrate that individual attention and a willingness to help the customer reduces the perceived wait time. In addition, managers should note that live chat systems that provide response time estimations during a discussion strengthens positive perceptions of perceived wait time. Paying close attention to managing customer wait time during a live chat discussion and implementing wait time estimations will result in an enhanced customer experience.

The use of automated 'canned' responses appear to have no effect on a customer's perception of the live chat rep's reliability and perceptions of information quality. Thus, automated 'canned' responses could be used for frequently asked questions and opening exchanges within the live chat system. In turn, this would likely increase the responsiveness of the service representative. Such automation, would be beneficial in handling search/navigation support enquiries, while customised human interaction would be required for decision support, providing a more empathic customer service.

Moreover, website providers should note the importance of the usability of the system. As such systems rely on technology and self-usage of such technology, website providers must offer customers a live chat facility that is easy to use, performs well and is seen as useful technology to the customer. A system that is perceived as being complex to use will have a significant negative effect on the customer experience, in particular for those seeking search/navigation support. As such, step-by-step instructions on how to initiate a live chat

discussion with a service representative along with success rates in solving customer enquiries would be advantageous in highlighting the ease of use and usefulness of the system.

Furthermore, during a live chat discussion, customers evaluate the quality of the information received from the service representative. High quality information has a significant effect on a customer's satisfaction with their experience. Thus, service providers should ensure that customer service representatives provide a reliable service while offering customers assurance to ensure high quality information is delivered. Therefore, service providers should ensure customer representatives receive appropriate training on showing curtsey and interest in the customer's problem utilising emoticons where appropriate, while having access to accurate records to offer customers a customised experience, in turn providing service representatives the ability to perform the service correctly the first time thus showing knowledge and instilling confidence in the customer.

LIMITATIONS AND FUTURE RESEARCH

The findings and implications of this study are somewhat constrained by certain limitations, some of which provide opportunities for future research. This research has provided an understanding on the variables influencing a customer's level of satisfaction with their experience during a live chat service encounter. While this study highlights that wait time influences the customer experience, we did not measure the exact length of time customers are willing to wait during a live chat service encounter, future research could examine the length of time customers are willing to wait while seeking search and navigation support through the live chat system, particularly through the use of an experimental research design.

Future research could further our understanding of emoticons during a live chat discussion through assessing customer's emotional response to a service representative's use of such pictorial representations of emotion. Additionally, we exert some caution over our finding on the use of automated 'canned' responses. In order to further our understanding, future research should investigate the impact of high and low usage of automated responses on a customer's satisfaction with their experience.

Other avenues of research could explore comparisons on the variables influencing satisfaction with the experience between live chat customer support and alternative customer support functions such as telephone, email and social media.

Additionally, the non-probabilistic sampling technique employed in this study could introduce some level of bias in our findings. Although, this approach is not alien to quantitative research (e.g., Mai and Olsen, 2015), we treat the findings with caution and rather encourage future research to test our model in other context using a probability-sampling technique to ascertain our findings.

CONCLUSION

This research has advanced our theoretical understanding with regard to online customer support services in the form of live chat facilities. Due to a lack of empirical research, we had little understanding on the variables capable of influencing satisfaction with the experience during an online live chat discussion with a service representative. The results outline the importance and draw upon DeLone and McLean's (2003) Information Systems success dimensions of service quality, information quality and system quality in influencing satisfaction with the experience during use of a live chat system. The results establish that the importance and significance of the variables influencing satisfaction with the experience during use of a live chat function depends on the purpose of use, namely for search/navigation support and decision support. In terms of search/navigation support, we find the responsiveness of the service rep, perceived wait time, system perceived ease of use and system perceived usefulness are most important. On the other hand, during decision support, the service rep's assurance, reliability and empathy, as well as information quality are the most significant factors influencing satisfaction with the experience, while perceived wait time has a non-significant effect. Additionally, the results outline the usefulness of emoticons, presence of service reps picture and the presence of response time estimations in positively moderating the influence of independent variables on corresponding dependent variables. Moreover, in contrast to previous conceptualisations, the results find that a live chat service rep's use of automated 'canned' responses has a non-significant effect on the reliability of the service representative in providing quality information.

Appendix 1: Examples of Emoticons

Icon											Emoticons	Meaning
:-) :)	:-] :]	:-3 :3	:->> :>	8-) 8)	:-} :}	:o)	:c)	:^)	=]	=)		Simile or happy face
:-D :D	8-D 8D	x-D xD	X-D XD	=D	=3	B^D						Laughing, big grin,
:-(:(	:-c :c	:-< :<	:-[:[	:-||	>:[	:{	:@	>:(				Sad, angry, pouting
:'-(:'(												Crying
:'-) :')												Tears of happiness
D-':	D:<	D:	D8	D;	D=	DX						Horror, disgust, sadness, great dismay
:-O :O	:-o :o	:-0	8-0	>:O								Surprise, shock, yawn
:-* :*	:×											Kiss
;-) ;)	*-) *)	;-] ;]	;^)	:-,	;D							Wink, smirk
:-P :P	X-P XP	x-p xp	:-p :p	:-Þ :Þ	:-þ :þ	:-b :b	d:	=p	>:P			Tongue sticking out, cheeky/playful
:-/ :/	:-.	>:\	>:/	:\	=/	=\	:L	=L	:S			Sceptical, annoyed, undecided, uneasy, hesitant

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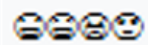
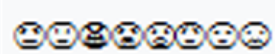
Icon	Emoticons	Meaning
:-) :) :-] :] :-3 :3 :-> :> 8-) 8) :-} :} :o) :c) :^) =] =)		Simile or happy face
:-D :D 8-D 8D x-D xD X-D XD =D =3 B^D		Laughing, big grin,
:-(:(:-c :c :-< :< :-[:[:-|| >:[:{ :@ >:(		Sad, angry, pouting
:'-(:'(		Crying
:'-) :')		Tears of happiness
D-': D:< D: D8 D; D= DX		Horror, disgust, sadness, great dismay
:-O :O :-o :o :-0 8-0 >:O		Surprise, shock, yawn
:-* :* :x		Kiss
;-) ;) *-) *) ;-] ;] ;^) :-, ;D		Wink, smirk
:-P :P X-P XP x-p xp :-p :p :-Þ :Þ :-þ :þ :-b :b d: =p >:P		Tongue sticking out, cheeky/playful
:-/ :/ :-. >:\ >:/ :\ =/ =\ :L =L :S		Sceptical, annoyed, undecided, uneasy, hesitant

Highlights:

- Service, information & system quality influence satisfaction with chat experience.
- Variables influencing the experience are dependent on purpose of using live chat
- Emoticons can influence a positive experience during a live chat discussion.
- A Service rep's use of automated responses does not influence the experience.