

## TITLE

### **How live chat assistants drive travel consumers' attitudes, trust and purchase intentions: the role of human touch.**

#### **Purpose (mandatory)**

By adopting a Social Presence Theory perspective, the study investigates the influence of perceived usefulness of live chat services and of their unique human attributes on customer attitudes, beliefs and behaviours in the context of online travel shopping.

#### **Design/methodology/approach (mandatory)**

Based on a cross-sectional survey research involving 8 travel provider websites and 631 travel consumers, this work applies structural equation modeling to analyse the data.

#### **Findings (mandatory)**

The results illustrate that the perceived usefulness from the communication with a human live chat assistant positively influence customer attitudes and trust towards the website as well as increasing purchase intention. The findings further illustrate the role of the human social cues conveyed by live chat facilities, namely human warmth, human assurance, human attentiveness and human customised content in positively moderating this effect.

#### **Research limitations/implications (if applicable)**

The study is limited to specific human attributes. Future research could investigate the role of other human characteristics as well as assess the ability of artificial intelligent powered *chatbots* in replicating the human elements outlined in this research.

#### **Originality/value (mandatory)**

The study provides a unique contribution to the travel literature by offering empirical insights and conceptual clarity into the usefulness of human operated live chat communication on travellers' attitudes, trust towards the website and purchase intentions.

**Keywords:** Live chat, social presence, online customer support, online communication, online travel providers.

**Type:** Research paper

## 1. Introduction

Nowadays, the Internet has arguably become the most popular and effective means for individuals to seek vacation information and purchase vacation packages, with 81% of consumers booking a vacation with an online travel provider (ABTA, 2018). The travel industry relies heavily on the dissemination of information (Amaro and Duarte, 2015), yet such information can often be overwhelming for consumers to comprehend without assistance or advice from service personnel (Liu and Park, 2015; Wilson *et al.*, 2012; Lu *et al.*, 2016).

Today, advancements in online communication technology offer travel providers with the prospect of enhancing their online service delivery (Navío-Marco *et al.*, 2018) through live chat support functions. Such services help website providers enable customers to engage in synchronous communication with a human service representative (Chattaraman *et al.*, 2012). They also provide real time support for service-related enquiries, including questions about products, account information, payment and technical support (McLean and Wilson, 2016; Rajaobelina *et al.*, 2019; Turel *et al.*, 2013). Live chat facilities are often considered a cost-effective form of customer assistance whilst having the ability to enhance the customer experience and perceptions of control (McLean and Wilson, 2016; McLean and Osei-Frimpong, 2017), by conveying a sense of social presence (Aslanzadeh and Keating, 2014).

Research on live chat services are generally recent and few in number (Elmorshidy *et al.*, 2015; Kang *et al.*, 2015; McLean and Osei-Frimpong, 2017; Rajaobelina *et al.*, 2018). For instance, McLean and Osei-Frimpong (2017) showed how live chat interactions drive customers' satisfaction through improved service, information and system quality, while Kang *et al.* (2015) demonstrated how live chat can positively influence the perceived interactivity of consumers, in turn increasing purchase intentions. Other studies have analysed the use of live chat services, specifically through the lens of the Technology Acceptance Model (TAM) (Elmorshidy *et al.*, 2015; Kang *et al.*, 2015). While live chat communication is considered important in online service interactions (McLean and Osei-Frimpong, 2017), its potential influence on travel customer attitudes, beliefs and behaviours remains unexplored. Considering the growing adoption of this technology (Lockwood, 2017) and its more personalised and human-contact options, live chat services present an interesting area on which to focus in order to examine how live chat communications drive travel customers' responses.

To address this gap, this study aims to provide an empirical perspective investigating the potential effect of human operated live chat communications in the context of online travel

shopping. The objective is two-fold: first, to ascertain the potential influence of the perceived usefulness of live chat communication on consumer attitudes (towards the website), beliefs (trust towards the website) and behaviour (purchase intention). Second, to understand the moderating effects of unique human attributes of the service assistants in live chat.

To our knowledge, there are no empirical studies that examine the variables influencing consumers' attitude, trust and purchase intentions with the live chat experience, despite the growth in these systems at the expense of telephone-based sales and support (Chattaraman *et al.*, 2012; Lockwood, 2017). Although some firms are trialling artificial intelligent powered *chatbot* facilities (Chung *et al.*, 2018; Tung and Law, 2017), this research focuses on human operated live chat facilities with the aim of furthering our understanding of the human role in such service technology.

This research directly responds to Navío-Marco *et al.* (2018) and Xiang *et al.* (2015)'s call to further explore the traveller segment in the online environment and it contributes to the tourism and travel field by extending our understanding on travellers' shopping and support experience in the form of live chat systems. Further, the study extends Amaro and Duarte's (2015) conceptualisation of trust and purchase intentions in online travel shopping.

## **2. Conceptual Background**

### ***2.1 Travel Service Computer-Mediated Interactions***

During a service encounter, the display of human understanding, assurance, attentiveness and the individualised attention that service representatives provide to customers is critical as it can influence customer attitudes and behavioural intentions (Zeithaml *et al.*, 1996), yet the online service interaction is distinctly different.

Until recently, travellers within the online environment have been unable to interact with service staff in the same way as they do within the offline environment (McLean, 2017). Role theory (Solomon *et al.*, 1985) pertains that through extrapolations from previous service encounters, customers expect a certain standard of service from providers whether that service is delivered online or offline. As a result, the expectation of social presence and the ability to communicate with service personnel is often taken into the online environment (McLean and Wilson, 2016). Thus, online travel providers face new complexities in conveying social presence in digital service settings, partly because of the lack of physical presence (Ye *et al.*,

2018), social cues (Cyr *et al.*, 2009; Lee 2018), and human warmth (Gefen and Straub, 2003; Hassanein and Head, 2007).

Short *et al.* (1976, p.65) defined social presence as ‘the degree of salience of the other person in the communication and the consequent salience of the inter-personal relationships’. Prior research posits that immediacy and intimacy are two components of social presence (Gefen and Straub, 2003). Immediacy refers to the psychological attentiveness between both communicators and how this attentiveness results in a willingness and readiness to communicate, whereas, intimacy refers to the warmth and empathetic affiliation between communicators.

According to social presence theory, the ability of a communication medium to transmit social and human cues can influence an individual’s attitudes, beliefs and behaviours (Rice and Case, 1983). Thus, the level of perceived social presence changes according to the communication media types. Face to face communication for instance is regarded as providing a higher level of social presence (Lu *et al.*, 2016), while e-mail, providers’ websites and instant messaging communication lack important human cues such as body language, voice intonations, and immediate feedback, resulting in a perceived low social presence.

However, according to Gefen and Straub (2003), the integration of personalised, human-contact cues and synchronicity, may encourage the perception of a higher level of social presence. For instance, Aslanzadeh and Keating (2014) showed how the integration of video chat interactions into a travel provider’s website enhances the perceived level of social presence and, as a result, affects consumers’ channel preferences.

In the context of e-commerce, social presence has been investigated as an important element that can affect online consumers’ loyalty, (Cyr *et al.*, 2007), attitude (Hassanein and Head, 2007), trust (Ogonowski *et al.*, 2014; Ye *et al.*, 2019), experience and satisfaction (McLean and Osei-Frimpong, 2017; Song *et al.*, 2019), as well as online purchase intentions (Lu *et al.*, 2016).

As such, live chat services offer travel providers the unique opportunity to convey human social cues in computer-mediated travel service interactions (Turel and Connelly, 2013). Still, very limited research has focused on these specific service facilities (Elmorshidy *et al.*, 2015; Kang *et al.*, 2015; McLean and Osei-Frimpong, 2017; Rajaobelina *et al.*, 2019) and, to our knowledge, no empirical studies have analysed them through the lens of social presence theory.

## ***2.2 Live Chat Service***

Live chat technology refers to web-based services that enable users to interact in real time with a human service representative (Chattaraman *et al.*, 2012). McLean and Osei-Frimpong (2017) highlight two key purposes of live chat technology: firstly, to serve as a search support function and secondly, to serve as a basic decision support function. In this sense, consumers may benefit from interaction with live chat before, during and after their transactions as live chat technology can support them all the way through their customer journey.

By enabling synchronous and bidirectional live interaction with a real person, live chat is similar to face-to-face and/or telephone-based communications. However, text-based chat services are different in that they are inherently lower in media richness and thus communication may be interpreted differently than its original intention leading to miscommunication (Turel and Connely, 2013). Live chat services also differ from *chatbots*, which are artificial intelligence-based service robots designed to provide human-computer interaction via natural conversation language (Chung *et al.*, 2018; Hill *et al.*, 2015; Tung and Law, 2017). Consumer's interactions with chatbots mainly result in shorter conversations and messages due to the limited ability of such e-service agents to have extended goal-directed discussions (Hill *et al.*, 2015). Conversely, live chat services offer the advantage of providing a more online 'human touch' as the conversations held by human representatives are often more customised (Elmorshidy *et al.*, 2015; McLean and Osei-Frimpong, 2017).

By involving a human representative, live chat facilities may offer travel website providers the ability to enhance the online social presence and to provide human warmth (Gefen and Straub, 2003), attentiveness (McLean and Osei-Frimpong, 2017), assurance (Hamari *et al.*, 2017), and personalised content (Elmorshidy *et al.*, 2015). Thus, through the use of live chat facilities, travel providers can deliver a full social experience in line with what occurs in the 'real world' (McLean and Osei-Frimpong, 2019).

Research on live chat systems is relatively recent and limited in number. The majority of these studies have analysed the variables affecting the perceived usefulness and the customers' willingness to use live chat services (Elmorshidy *et al.*, 2015; Kang *et al.*, 2015). Only the study conducted by McLean and Osei-Frimpong (2017) has focused on the effects of live chat interactions and has shown how such online services may drive customer satisfaction through perceived service, information, and system quality. Yet, the influence of the perceived usefulness of live chat services and of their potential human touch on consumers' attitude, trust and purchase intentions remains unclear.

### ***2.3 Attitudes, Trust and Online Purchase Intentions***

In line with the service and technology adoption literature (e.g. Davis, 1989) we outline that travel service receivers form attitudes and behavioural intentions based on their service encounters. Numerous variables have been identified as influencing customer attitudes in the online environment such as perceived website quality, perceived benefits, enjoyment, e-WOM, and perceived social presence (Chung *et al.*, 2018; Hassanein and Head, 2007). Social presence in the form of synchronous customer support has been outlined as positively influencing customer attitudes within the offline environment (Tombs and McColl-Kennedy, 2003). Thus, it could be expected to observe the same effect in the online environment. Specifically, it could be argued that the effect of synchronous communication with a human live chat assistant and its perceived usefulness could influence customer attitudes towards the website. Formally:

*H1a The perceived usefulness of live chat communication will positively influence customer attitudes towards the website*

The usefulness of live chat communication provides relevant information that is likely to influence the consumer's attitudes, which could affect their willingness to purchase (Lu *et al.*, 2014). Within e-commerce research, consumer attitudes towards a website have been found to significantly affect online consumer behaviour (Dedeke, 2016; Ayeh *et al.*, 2013). Drawing from the above, it could be argued that a travel consumer's attitude towards an online travel provider's website is likely to influence the consumer's purchase intentions. Formally:

*H1b The attitudes towards an online travel provider's website will positively influence customers' purchase intentions*

Trust has been the subject of much research over recent years within the online environment (Corritore *et al.*, 2003; Jeon and Jeong, 2017), and it has been highlighted as one of the most important factors that makes e-commerce successful in the travel industry (Lu *et al.*, 2016). Due to the absence of physical elements and lack of human interaction, consumers in the context of e-commerce may feel more vulnerable compared to offline environments, thus in this specific context the establishment of a trustworthy interaction is a fundamental factor that can decrease the perceived risk of a transaction and positively influence customers' purchasing behaviours (Hassanein and Head, 2007; Kim *et al.*, 2011; Filieri, 2016; Ponte *et al.*, 2015).

While some website providers have utilised FAQ sections and help-forums in a *digital* attempt to establish a line of communication, travel providers within the online environment still have the added challenge of assuring customers in order to build trust (Ye *et al.*, 2019). In addition,

vacation purchases are often of high value, which in turn increases a customer's risk (Cyr *et al.*, 2007; Flavian *et al.*, 2006; Gao and Wu, 2010), highlighting the importance of establishing trust during online travel shopping. Previous studies have analysed how trust develops in online settings particularly focusing on the identification of the key antecedents and the trust-building mechanism (Filieri, 2016; Lu *et al.*, 2016). Most of these studies have analysed the effects of functional attributes of the e-commerce platforms such as usability, ease of use, and feedback mechanisms (Corritore *et al.*, 2003), and little attention has been given to the social elements that influence the development of users' trust (Lu *et al.*, 2016; Ye *et al.*, 2019) except for studies investigating the effect of web interface social presence (Gefen and Straub, 2004; Hassanein and Head, 2007). When interacting through a live chat service, the real-time communication between the travel service provider and the service receiver and its perceived usefulness may influence an individual's trust towards the website, while trust may also influence purchase intentions (Wen, 2009). Formally:

*H2a The perceived usefulness of live chat communication will positively influence a customer's trust towards a website.*

*H2b Trust towards a website will positively influence a customer's purchase intention on the website.*

Recently, research on the influence of social presence on purchase intention using online travel websites has increased (Liu and Park, 2015; Tseng, 2017). Studies have found that customers often rely on fellow customer reviews to aid them in their purchasing decisions and on occasion engage in asynchronous communication with other online consumers to reduce uncertainty, avoid risk and seek reassurance (Filieri, 2016; Xiang *et al.*, 2017). In spite of this, all of these actions have one element in common in that people often seek the advice of others as part of their decision making when making travel plans (Lu *et al.*, 2016). Following Kuhlthau's (1994) assertion that an individual's decision making process is influenced by the service provider's support, it could be argued that while live chat systems on online travel websites provide customers with the ability to communicate and seek the advice of a service assistant, there is a likelihood this could influence the customer's purchase intention. Formally:

*H3 The perceived usefulness of live Chat communication will positively influence customers' purchase intention on a travel provider's website.*

## ***2.4 The moderating role of online ‘Human’ Social Presence***

The previous sections have highlighted how live chat facilities have the potential to provide unique human cues in travel computer-mediated service interactions. Specifically, thanks to the human representative involved, live chat services may convey ‘Human Warmth’ (Turel *et al.*, 2013), ‘Human Assurance’ (Hamari *et al.*, 2017; Ponte *et al.*, 2015), ‘Human Attentiveness’ (McLean and Osei-Frimpong, 2017) and ‘Human Customised Content’ (Kalia, 2013). Such variables have been outlined as being capable of enhancing the consumers’ service experience both in offline service (Zeithaml *et al.*, 1996) and in computer-mediated interactions (McLean and Osei-Frimpong, 2017). The display of human understanding, the knowledge of the travel service representative, the ability to customise the service and the provision of the service in a timely manner are important prerequisites for satisfactory and successful service interactions (Eisingerich and Bell, 2008). Thus, they will be discussed in relation to their potential moderating role in influencing the impact of the perceived usefulness of live chat communication on consumers’ attitudes, trust and behavioural intentions.

### **Human warmth**

Human warmth refers to the degree of understanding and compassion shown by a service representative (Kalia, 2013). It is often overlooked within the online environment due to the distant and computer mediated form of interactions (McLean and Osei-Frimpong, 2017; Turel *et al.*, 2013;) yet customers desire empathy and understanding within the online environment (Lu *et al.*, 2016). While it is easier to assess human warmth elements in the offline environment, such assessments are not so obvious with web-based services where customers are unable to assess body language and voice tones to judge emotions and intentions (Daft and Lengel, 1986). Hence, in the absence of facial cues, live chat representatives are required to carefully think about their text-based response with the possibility of incorporating emoticons (Luor *et al.*, 2010; McLean and Osei-Frimpong, 2017). For instance, McLean and Osei-Frimpong (2017) found significant interaction effects of the live chat assistant’s picture and use of emoticons on customer satisfaction with the experience during live chat communication. In this regard, it could be argued that human warmth elements demonstrated during live chat communication are likely to enhance the effects of the perceived usefulness of such an activity on travel customers’ perceptions (trust, attitude, and purchase intention). Formally:

*H4. Human Warmth from the online travel representative will positively strengthen the effect of the perceived usefulness of live chat communication on customer’s trust toward*



*(H4a), attitude towards (H4b) and purchase intention from (H4c) the travel provider's website.*

### **Human assurance**

The extant literature outlines assurance as an important variable enhancing an individual's interaction with websites (Gao and Wu, 2010) by positively increasing customer's trust and attitude (Hamari *et al.*, 2017; Ponte *et al.*, 2015). The concept of assurance is often defined as the confidence consumers have towards the service provider in delivering competent and trustworthy information (Lee and Cranage, 2011). Being a higher value product, online purchases of travel/vacation packages lead to higher perceived risk, thus requiring further assurance (Zeithaml *et al.*, 1996). In this sense, live chat may enable website providers to offer customers human assurance replicating the offline environment, which could enhance their perceptions. Specifically, the level of human assurance displayed during the online interaction is likely to strengthen the effect of the perceived usefulness of live chat communication on travel customer's attitudes, beliefs and behaviours. Formally:

*H5. Human Assurance from the online travel representative will positively strengthen the effect of the perceived usefulness of live chat communication on customer's trust towards (H5a), attitude towards (H5b), and intention to purchase from (H5c) the travel provider's website.*

### **Human customised content**

The increased use of technology in tourism service delivery has generated interest in understanding technology's role in providing customised content (Turel and Connelly, 2013). Cheyne *et al.* (2005) highlighted the importance of personalisation services from travel agents in influencing a customer's choice of channel during the booking stage of travel and vacation planning, while previous studies outlined how content customisation saves customers' time, enhances their understanding, experience, and increases their perception of quality towards the website by reducing frustration and confusion while browsing a website (Srinivasan *et al.* 2002). Personalisation services within the online environment often rely on automation, still Hill *et al.* (2015) posit that human customised content is unrivalled by any other online feature. Hence, we expect that the ability of the human assistant to customise online contents for travel customers is likely to strengthen the relative effects of live chat communication on their perceptions. Formally:

*H6. Human customised content from the online travel representative will positively strengthen the effect of the perceived usefulness of live chat communication on customer's trust towards (H6a), attitude towards (H6b), and purchase intention from (H6c) the travel provider's website.*

### **Human Attentiveness**

The attentiveness of a service representative can increase satisfaction as wait time decreases (McLean and Osei-Frimpong, 2017). Previous studies have highlighted how customers appear to be even more sensitive to wait time in the online environment where the perception of waiting longer than perceived necessary may result in a negative experience (Hong *et al.*, 2013). In contrast to other forms of service support, live chat functions are able not only to provide customers with updates on the estimated waiting time, but also to reduce the length of time customers perceive spending on a specific task (McLean and Wilson, 2016). In this sense, human live chat assistants can uniquely offer website visitors an attentive service encounter, which is expected to enhance the effects of the perceived usefulness of live chat communication. Formally:

*H7. The human attentiveness of the online travel representative will positively strengthen the effect of the perceived usefulness of live chat communication on customer's trust towards (H7a), attitude towards (H7b), and purchase intention from (H7c) the travel provider's website.*

Figure 1 summarises the research hypotheses.

**- INSERT HERE Figure 1 -**

### **3. Methodology**

A questionnaire was distributed online to gather the data required to test the research hypotheses. Respondents were selected using a purposive sample to participate in the research. A market research firm's panel was used to help obtain the sample and a monetary reward was given to respondents. The sample frame consisted of consumers from the UK that had used an actual real-world live chat system on a travel provider's website within the five days prior to taking the survey. In the context of the study, a travel provider's website is defined as a website where individuals can book a vacation involving travel, accommodation or activities. Additionally, we define a real-world live chat system as simultaneous synchronous media and a human representative who provides answers to customers through such media.

In order to ensure respondents had interacted with a live chat representative on a travel provider's website we had a number of screening steps, firstly we provided respondents with the aforementioned description of a travel provider's website. Secondly, we provided a simplified description of a live chat facility, along with an image of a live chat discussion on a website and asked respondents to confirm if they had interacted ('chatted') with a live chat representative on a travel provider's website. Respondents were given the following description and question; 'live chat facilities like the image attached allows you to chat back and forth with a customer representative live on a website, please confirm if you have used a live chat facility like this on a travel provider's website.' Secondly, we asked participants to provide the URL to the travel provider's website where they used the live chat function and subsequently checked that each website was (1) a travel provider's website, (2) had a live chat facility and (3) was operated by a human chat representative. We confirmed the latter by interacting with the service and contacting the company to confirm if the service was provided by a human representative. Those responses that did not meet the criteria were removed from the sample. The sample was not restricted to specific travel provider websites in order to provide the study with more generalisable results. Accordingly, in total eight travel provider websites were used by the participants.

Overall, 816 responses were collected from consumers within the UK with 750 responses meeting the specified criteria of the sample and 631 usable questionnaires after discarding responses with three or more missing values (Hartline *et al.*, 2000).

The sample was split between males (46%) and females (54%). Out of this, all of the sample engage in online social media and use the Internet every day. 38% of the sample had previously used a live chat facility on another website. With regard to age-groups, the research obtained a varied demographic, 18-25 (25%), 26-35 (36%), 36-45 (18%), 46-54 (15%) & 55-65 (6%). With regard to education, 23% graduated from high-school, 51% graduated from College (further-education) and 26% had graduated from University (higher-education).

The questionnaire scales were adapted from established scales within the literature. 33 items on a 7 point Likert scale ranging from (1) Strongly Disagree to (7) Strongly Agree were used to measure: Usefulness of Live Chat Communication (Davis, 1989); Attitude towards the Website (Taylor and Todd, 1995); Trust towards the website (Gao and Wu, 2010); Purchase Intention (Lu *et al.*, 2016); Human Warmth, Human Assurance, Human Attentiveness (McLean and Osei-Frimpong, 2017); and Human Customised Content (Srinivasan *et al.*, 2002).

### **3.1 Preliminary Analysis**

Preliminary analysis was carried out using SPSS before undertaking structural equation modelling. First, the reliability of each scale was assessed (all Cronbach's alphas > .7). In addition, an exploratory factor analysis was carried out with Varimax rotation and principal component analysis. Such a test was conducted given that the original scale items were adapted to fit the context of the study. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was 0.806, exceeding the cut-off value of 0.6 with a  $p$ -value < .0001 for Bartlett's Test of Sphericity (Kaiser, 1970). All items loaded well on the corresponding constructs that they were intended to measure with no evidence of cross loading. Thus, it can be concluded that each scale was a reliable measure of the variable.

Additionally, tests for common method bias (CMB) were conducted (Podsakoff *et al.*, 2003). The scale items of corresponding constructs were mixed throughout the questionnaire to reduce the likelihood of CMB (Ranaweera and Jayawardhena, 2014). Additionally, a common latent factor (CLF) was presented with all indicators of the constructs included in the model. The CLF produced a value of .593. To calculate the common method variance .593 was squared, which equals .351 (35.1%), values that fall below 50% (Ranaweera and Jayawardhena, 2014) are considered to satisfy the unlikelihood of CMB.

Furthermore, MANOVA calculations were performed regarding age, Wilks Lambda = .72,  $f(8, 623) = 2.31$ ,  $p = .210$  and gender, Wilks Lambda = .61,  $f(8, 623) = 2.78$ ,  $p = .188$ . The results illustrate that there was no significant difference between any of the groups.

### **3.2 Structural Equation Modelling (SEM)**

Structural Equation Modelling (SEM) in AMOS Graphics 24 was used to test the hypothesised relationships. A confirmatory factor analysis was first conducted to assess the causal relationships. The output illustrates good fit of the measurement model ( $\chi^2/df = 2.937$ , RMSEA = .047, RMR = .024, SRMR = .031, CFI = .951, NFI = .954). Additionally, all loadings were ample and significant  $p < .05$ .

Following Fornell and Larcker's (1981) procedure, convergent and discriminant validity was satisfied as, firstly, each of the loadings showed significance ( $p < .001$ ), secondly, the composite reliability (CR) for each variable was beyond the recommended benchmark of .70 (Fornell and Larcker, 1981), and thirdly, 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). Further to this, the discriminant validity was assessed and supported by calculating the square root of the AVE for each construct, where it exceeded the inter-correlation for each construct (Hair *et al.*, 2010). In addition, further analysis was conducted 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), which excludes multi-collinearity issues.

Following the confirmatory factor analysis, the data from each website were tested for configural invariance. Configural invariance is important to establish in order for pooled data analysis to provide meaningful insights (Vandenberg and Lance, 2000). The configural invariance test is used to evaluate the assumption that the regression loadings are similar across different circumstances or situations, in the case of this study, across different websites. Thus, a confirmatory factor analysis was calculated for each website used in the study. The findings indicated that each model presented *goodness of fit*, thus the pooled data can provide meaningful results.

The next stage of the SEM process was to specify and estimate the hypothesised model. Through the use of AMOS Graphics, the fit statistics of the structural model show goodness of fit ( $\chi^2 = 3.16$ , RMSEA = .045, SRMR = .023, RMR = .019, CFI = .954, NFI = .959, GFI = .961) and provide support for the hypothesised model. The standardised path coefficients, along with statistical significance and  $R^2$  variance explained values can be seen in table 1.

**- INSERT HERE Table 1-**

The results shown in table 1 highlight significant relationships,  $p \leq .05$ , strong regression paths, and moderate to substantial variance explained (Cohen, 1977), supporting each of the research hypotheses. In support of H1a a significant relationship was found between the usefulness of live chat communication with an online travel representative and positive attitudes towards the website ( $\beta = .64$ ,  $p = **$ ,  $R^2 = 40\%$ ). Thus, the communication with a service assistant through a live chat system has a positive influence on customers' attitudes towards the website, believing that it is a good idea and a pleasant experience when using the website. Further to this, in support of H1b, a customer's attitudes towards a travel provider's website has an influence on their Purchase Intention ( $\beta = .70$ ,  $p = **$ ,  $R^2 = 63\%$ ) from the site. While attitudes' effect on purchase intentions has been previously examined, previous research has not studied the effect in travel/tourism websites and has not considered the mediating role of 'attitudes towards the

website' between live chat communication and purchase intentions. To further investigate this effect, the recommended steps for mediation analysis as proposed by Lu *et al.* (2016) were followed. The bootstrap test of the indirect effect was tested in AMOS Graphics. The results of the bootstrap test found that the indirect effects on the path (Live Chat Communication-Attitudes Towards the Website – Purchase Intention  $p = .032$ ) were statistically significant  $p = < .05$ , thus highlighting the importance of the mediating role of attitudes towards the website.

Moreover, a direct effect can be seen between the usefulness of live chat communication and trust towards the website ( $\beta = .69, p = **, R^2 = 47\%$ ), influencing customers' perception of feeling safe to perform a financial transaction on the website and trusting the information provided on the website, thus supporting H2a. In addition, trust plays a mediating role between live chat communication and purchase intentions. Following the steps outlined above, the results of the bootstrap test in AMOS Graphics found that the indirect effects on the path (Live Chat Communication-Trust towards the website– Purchase Intention  $p = .027$ ) are statistically significant  $p = < .05$ , thus highlighting the importance of the mediating role of trust towards the website, supporting H2b.

Furthermore, while attitudes and trust toward the website both play a mediating role between the usefulness of live chat communication and purchase intentions, the analysis outlines a strong direct relationship between the usefulness of live chat communication and Purchase Intention from the travel provider's website ( $\beta = .72, p = ***, R^2 = 51\%$ ), supporting H3. Therefore, the paths from the Usefulness of Live Chat Communication to Purchase intention is partially mediated by trust towards the website and attitudes towards the website as the direct effect is reduced in size with the presence of the mediating variables but still shows a significant direct relationship. Thus, the instantaneous communication with a travel representative via live chat technology positively influences customers to purchase from the website.

### ***3.3 Interaction Effect Analysis***

Following the structural model evaluation to test hypotheses H1-H3, moderating effects were examined hierarchically using moderated SEM with AMOS 24 (Xanthopoulou *et al.*, 2007) to test hypotheses H4-H7. Following Ranaweera and Jayawardhena (2014), additional variables were created in SPSS to test the interactive effects. In the first step to test H4a, an interactive term was created by multiplying the independent variable with the moderating variable. The dependent variable (Trust towards the Website) was regressed on the independent (Usefulness

of Live Chat Communication), the moderator (Human Warmth), and the interactive term (Usefulness of Live Chat Communication X Human Warmth).

A significant interactive effect was found, supporting H4a (Usefulness of Live Chat Communication → Trust, standardised  $\beta = .715^{***}$ ,  $R^2 = 51\%$ ; Human Warmth → Trust, standardised  $\beta = .293^{**}$ ; Usefulness of Live Chat Communication X Human Warmth → Trust, standardised  $\beta = .298^{**}$ ). The findings indicate that human warmth during live chat communication significantly moderates the effect of the usefulness of live synchronous communication on a customer's trust towards the website. Thus, the greater understanding and empathetic behaviour shown by the live chat assistant increases the effect of perceived usefulness of live chat services on consumers' trust towards the website.

Following the steps outlined above, the interaction effects of Human Warmth on Attitudes towards the Website (H4b) and Purchase Intention (H4c) were examined. A significant positive moderation effect of human warmth on the influence of perceived usefulness of live chat communication on attitudes towards the travel provider's website was found, supporting H4b, (Usefulness of Live Chat Communication → Attitude towards website, standardised  $\beta = .723^{***}$ ,  $R^2 = 52\%$ ; Human Warmth → Attitude towards website, standardised  $\beta = .228^{**}$ ; Usefulness of Live Chat Communication X Human Warmth → Attitudes towards website, standardised  $\beta = .289^{**}$ ). Thus, more individual attention provided by the live chat representative results in more positive attitudes towards the website. However, there was no moderating effect of human warmth on a customer's purchase intention, rejecting H4c, (Usefulness of Live Chat Communication → Purchase, standardised  $\beta = .716^{***}$ ,  $R^2 = 51\%$ ; Human Warmth → Purchase, standardised  $\beta = .121^{ns}$ ; Usefulness of Live Chat Communication X Human Warmth → Purchase, standardised  $\beta = .298^{**}$ ). Thus, whilst human warmth increases positive attitudes towards the website it does not directly increase purchase intention. This result confirms some previous research who found that human warmth only influences purchase intention through other variables such as satisfaction, trust and attitude (Chug *et al.*, 2015; Lu *et al.*, 2016).

Moreover, the results show a significant positive moderation effect of Human Assurance on the usefulness of live chat communication on trust towards the travel provider's website, attitudes towards the travel provider's website and Purchase Intention supporting H5a (Usefulness of Live Chat Communication → Trust, standardised  $\beta = .709^{***}$ ,  $R^2 = 50\%$ ; Human Assurance → Trust, standardised  $\beta = .439^{**}$ ; Usefulness of Live Chat Communication X Human

Assurance→Trust, standardised  $\beta = .533^{**}$ ); H5b (Usefulness of Live Chat Communication→Attitude towards website, standardised  $\beta = .686^{***}$ ,  $R^2 = 47\%$ ; Human Assurance→Attitude towards website, standardised  $\beta = .237^{**}$ ; Usefulness of Live Chat Communication X Human Assurance→Attitudes towards website, standardised  $\beta = .298^{**}$ ); and H5c (Usefulness of Live Chat Communication→Purchase, standardised  $\beta = .751^{***}$ ,  $R^2 = 56\%$ ; Human Assurance→Purchase, standardised  $\beta = .185^{**}$ ; Usefulness of Live Chat Communication X Human Assurance→Purchase, standardised  $\beta = .202^{**}$ ). Thus, the confidence instilled by the live chat representative, illustrating knowledge in their responses while being courteous has a positive effect in increasing the likelihood of purchase following the live chat discussion. The assurance offered by the live chat representative during the discussion increases the effect of the perceived usefulness of a live chat interaction on a customer's level of trust towards the website, whilst also increasing positive attitudes towards the website.

Further to this, the findings illustrate a significant positive moderation effect of Human Customised Content on the influence of live chat communication on trust towards the travel provider's website, attitudes towards the travel provider's website and purchase intentions, supporting H6a (Usefulness of Live Chat Communication→Trust, standardised  $\beta = .712^{***}$ ,  $R^2 = 51\%$ ; Human Customised-Content→Trust, standardised  $\beta = .343^{**}$ ; Usefulness of Live Chat Communication X Human Customised-Content→Trust, standardised  $\beta = .419^{**}$ ); H6b (Usefulness of Live Chat Communication→Attitude towards website, standardised  $\beta = .777^{***}$ ,  $R^2 = 60\%$ ; Human Customised-Content→Attitude towards website, standardised  $\beta = .411^{**}$ ; Usefulness of Live Chat Communication X Customised-Content→Attitudes towards website, standardised  $\beta = .445^{**}$ ); and H6c (Usefulness of Live Chat Communication→Purchase, standardised  $\beta = .736^{***}$ ,  $R^2 = 54\%$ ; Human Customised-Content→Purchase, standardised  $\beta = .231^{**}$ ; Usefulness of Live Chat Communication X Human Customised-Content→Purchase, standardised  $\beta = .299^{**}$ ). Accordingly, the live chat representative is able to provide customers with content that is unique to the individual's needs and has the ability to answer specific questions. The results assert that human customised content provided by the live chat assistant increases the positive influence of live chat on purchase intentions, trust and attitudes towards the website.

Finally, the findings show a significant positive moderation effect of Human Attentiveness on the usefulness of live chat communication on trust towards the travel provider's website, attitudes towards the travel provider's website and purchase intention, supporting H7a



(Usefulness of Live Chat Communication  $\rightarrow$  Trust, standardised  $\beta = .698^{***}$ ,  $R^2 = 48\%$ ; Human Attentiveness  $\rightarrow$  Trust, standardised  $\beta = .363^{**}$ ; Usefulness of Live Chat Communication X Human Attentiveness  $\rightarrow$  Trust, standardised  $\beta = .392^{**}$ ); H7b (Usefulness of Live Chat Communication  $\rightarrow$  Attitude towards website, standardised  $\beta = .684^{***}$ ,  $R^2 = 47\%$ ; Human Attentiveness  $\rightarrow$  Attitude towards website, standardised  $\beta = .420^{**}$ ; Usefulness of Live Chat Communication X Human Attentiveness  $\rightarrow$  Attitudes towards website, standardised  $\beta = .434^{**}$ ); and H7c (Usefulness of Live Chat Communication  $\rightarrow$  Purchase, standardised  $\beta = .752^{***}$ ,  $R^2 = 57\%$ ; Human Attentiveness  $\rightarrow$  Purchase, standardised  $\beta = .237^{**}$ ; Usefulness of Live Chat Communication X Human Attentiveness  $\rightarrow$  Purchase, standardised  $\beta = .302^{**}$ ). Thus, the attentiveness of the live chat representative, always being available to respond and provide a prompt service to the customer, increases the positive influence of live chat on purchase intention, trust and attitudes towards the website.

## **4. Conclusions and Implications**

### ***4.1 Conclusions***

This is one of the earliest studies to examine the impact of live chat communications on shaping travel consumers' attitudes, trust towards the travel provider's website and purchase intentions. It does so by comprehensively examining the moderation effects of the human elements including human warmth, human assurance, human customised contents, and human attentiveness from the perspective of social presence theory. While scholars have given recent attention to automated chat systems (*chatbots*) (Chung *et al.*, 2018; Tung and Law, 2017), this study fills a gap in knowledge in relation to human operated live chat communication. Hence, this work is relatively seminal and presents avenues for further development in the computer-mediated travel and hospitality industry.

### ***4.2 Theoretical implications***

This study offers several theoretical contributions. First, by building on previous research (e.g., Aslanzadeh and Keating, 2014; Kang *et al.*, 2015; Turel and Connelly, 2013), the study presents the consequences of online human live chat communication and the intervening effects of human elements through the lens of social presence theory. In this sense, it offers a unique contribution to the travel literature by providing empirical insights and conceptual clarity into

the usefulness of human operated live chat communication on travellers' attitudes, trust towards the website and purchase intentions.

Second, while limited research has assessed the key human attributes provided by a representative through online live chat facilities (Kang *et al.*, 2015; McLean and Osei-Frimpong, 2017), this study sheds light on the role played by each human attribute (warmth, assurance, customised contents and attentiveness) in strengthening the influence of live chat communication on travel consumers' responses.

Third, the study establishes the role played by live chat communication in the development of travel consumers' trust. In this sense, the study extends Amaro and Duarte's (2015) conceptualisation that website trustworthiness is influenced by other customers or experts and demonstrates how live chat interactions in online travel services foster travel consumers' trust.

Fourth, the study responds to Navío-Marco *et al.* (2018) and Xiang *et al.*'s (2015) call to advance our understanding on traveller segment in the online environment by establishing the role of live chat in influencing consumer behaviour, beliefs and attitudes toward travel providers' websites.

Finally, while existing literature within travel and tourism research has focused on the role of asynchronous consumer-to-consumer communication within the online environment in relation to consumer reviews (Tseng, 2017; Ayeh *et al.*, 2013), this study takes a different perspective and analyses the customer-to-service assistant communication within the travel provider's website.

### ***4.3 Practical Implications***

This research offers travel providers various practical implications. Firstly, by establishing the effects of live chat communication in positively influencing customer responses, the findings of this research outline the importance of providing synchronous communication with a human service assistant. Managers of travel and tourism websites can provide customers with customised content through deploying live chat communication, in turn resulting in favourable customer behavioural intentions. Additionally, it offers travel providers an element of control regarding the information that customers are consuming in comparison to the largely uncontrollable sentiment involved in consumer-to-consumer interactions.

The study also underlines the importance of the human attributes of warmth, assurance and attentiveness in the provision of live chat facilities. Therefore, travel providers ought to ensure live chat assistants have suitable training and access to materials to execute the service correctly, conveying human warmth, illustrating knowledge and imparting confidence in the customer. At the same time, managers should also promote live chat to customers given that this service influences consumer behaviour, attitudes and beliefs. Additionally, it can provide multichannel support to those customers who continue to use offline travel agents.

#### ***4.4 Future Research and Limitations***

While this research captured consumers' responses following a real-world service encounter with a travel provider's live chat function in cross-sectional exploratory research, the study may be limited in drawing conclusions of causality. For instance, human warmth had no interaction effect on the relationship between live chat communication and purchase intention. In essence, human warmth should be able to enhance travel customer's experience, which could drive their intention to purchase. As a result, an alternative conclusive experimental research design would enable future research to manipulate the level of human warmth, assurance, attentiveness and customised content to identify causal effects. Furthermore, future research could investigate the role of other human attributes such as personality, language used (i.e. linguistics and semantics), as well as the use of emoticons.

This research was conducted with consumers in the UK. It would be informative to replicate it in other regions and other service settings to ascertain the robustness of the proposed model.

Moreover, this study is limited to only human assistant live chat communication and how it influences travel customers perceptions. It may be interesting to compare such effects with similar attributes of artificial intelligence powered *chatbots*. Finally, this research focused only on consumers' responses of live chat interactions. Future research could compare customer attitudes and behavioural intentions between those that choose to use a live chat facility against those who do not.

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