Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Journal of Retailing and Consumer Services 56 (2020) 102186

Contents lists available at ScienceDirect

Journal of Retailing and Consumer Services

journal homepage: http://www.elsevier.com/locate/jretconser

Engaging and retaining customers with AI and employee service

Catherine Prentice, PhD [a,b,*], Mai Nguyen [a,b]

[a] Griffith Business School, Griffith University, Australia
[b] Department of Marketing, Griffith Business School, Griffith University, Nathan Campus, QLD 4111, Australia

ARTICLE INFO

Keywords:
Artificial intelligence
Emotional intelligence
Service experience
Customer engagement
Customer loyalty

ABSTRACT

Artificial intelligence (AI) permeates in service organisations as a tool to enhance operational efficiency and improve customer experience. Reports show that most consumers prefer human interactions with service employees. Drawing on this observation, the current study examines how customers' service experiences with employees and AI influence customer engagement and loyalty. Customers' emotional intelligence is proposed as a moderator between service experience and customer engagement. The study was conducted with hotel customers in Australia. The results show that whilst both service experience with employees and AI are significantly related to customer engagement and loyalty, only certain dimensions make significant unique variances in the outcome variables. The findings indicate that customers prefer employee service. These service experiences also have significant partial mediation effects on customer loyalty. Emotional intelligence has a significant moderation effect on customer engagement. Discussion of these findings and implications derived from this study concludes this paper.

1. Introduction

Customer engagement has emerged in the literature over the last decade, generally indicating customers' connection and participation with the brand and the organisation in the marketing literature (Hollebeek, 2011a; So et al., 2014). Despite various definitions and conceptualisations, the level of customer engagement has implications for organisational outcomes such as firm performance, customer purchase and loyalty, as well as shareholder value (Beckers et al., 2017; Pansari & Kumar, 2017; Prentice et al., 2018; So et al., 2016). These implications prompt the necessity of identifying the antecedents or drivers of customer engagement. van Doorn et al. (2010) provide a comprehensive conceptual customer engagement framework from perspectives of customers (e.g. satisfaction, trust, identity, consumer goals), firms (e.g. brand characteristics, firm reputation, firm information use and processes), and the external forces (e.g. political, economic, social, technological). Previous research has primarily focused on understanding the influence of each domain of these antecedents on customer engagement (e.g. Cambra-Fierro and Melero-Polo, 2017; Leckie et al., 2016; Prentice et al., 2018). No research has investigated if customers' service experience drives customer engagement and subsequent outcomes (e.g. loyalty).

Creating a positive service experience has become a key strategy to achieve competitive advantages for service organisations (Berry, 1995). Service experience involves multiple touchpoints along the customer journey (pre-, during and post-purchase/consumption). These touchpoints include customers' interactions with different service clues (Lemon and Verhoef, 2016). Berry et al. (2006) classify these services into humanic, functional, and mechanic clues. Each clue contributes to customers' service experience with the organisation; hence, is referred to as humanic, functional, and mechanic experience respectively. Humanic experience is the result of employee behaviours towards customers. Functional clues are pertinent to the technical quality of the service offering, indicating the reliability and competence of the service. Mechanic experience is the result of customer interaction with sensory components of the service, such as sights, smells, sounds, and other ambient elements. Berry et al. (2006) indicate that these experiences play different roles in customers' cognitive and emotional perceptions of the organisation's service quality. Such perceptions influence customers' relationship with the organisation (Cronin et al., 2000; Prentice, 2013b, 2016; Zeithaml et al., 1996).

In labour intensive industries, humanic experience accounts for a major portion of customer response (Liao, 2007; Loveman, 1998; Prentice, 2016; Prentice et al., 2020). Employee service plays a key role

* Corresponding author. Griffith Business School, Griffith University, Australia.
E-mail addresses: cathyjournalarticles@gmail.com (C. Prentice), mai.journalarticles@gmail.com, maidhtm@tmu.edu.vn, mai.nguyenthituyet@griffithuni.edu.au (M. Nguyen).

https://doi.org/10.1016/j.jretconser.2020.102186
Received 25 April 2020; Received in revised form 3 June 2020; Accepted 5 June 2020
Available online 22 June 2020

in differentiating customers' perceptions of the organisation's service quality (Prentice, 2016). Recent literature (Wirtz et al., 2018; Xiang et al., 2015) suggests that artificial intelligence (AI) plays an imperative role in influencing customers' service experience. AI-powered service permeates in business operations as a cost-effective means to enhance organisational efficiency and is used to improve service delivery (e.g. providing convenience to customers by using 24-h auto-messaging services). Based on Berry et al.'s (2006) service experience typology, AI-powered service can be referred to as functional experience. Numerous reports (e.g. Invoca, date; The Harris Pool, date; see Nanji, 2019) show that most consumers are unsatisfied or frustrated with AI-powered service and prefer personal interactions with employee service. Given the important role of employee service in customer response and the ubiquity of AI-powered service within businesses, this study provides a fresh look into how customer experience with the service provided by AI and employees influences their relationship with the service organisation. Customer relationship manifest with their engagement with the organisation and their loyalty behaviours (Lemon and Verhoef, 2016; Prentice et al., 2018). This examination would enrich customer engagement research and provide additional measures to encourage customer engagement with the organisation.

Service experience is an emotional journey (Casidy et al., 2018; Vada et al., 2019). Some experiences are pleasant and memorable; whilst others may be negative. For instance, auto-messaging services (a type of AI) used by service firms such as hotels and airlines provide convenience to customers who require assistance out of office hours. However, this AI tool offers very little scope for customised messages for individual customers which may result in frustration with the service. Customers with a high level of emotional skills may be more tolerant of the services provided by AI tools. On the other hand, experience with employee service may not always be pleasant. Although these employees are required to perform emotional labour (Ashforth and Humphrey, 1993; Grandey, 2000), such performance may have detrimental effects (job dissatisfaction, emotional dissonance, burnout) on the labourers (Brotheridge and Grandey, 2002; Prentice et al., 2013). Their negative emotions may affect customers' perception and experience with the employee. Some customers may complain, while others may be more empathetic with the employee. This reaction is reflected in their emotional skills, known as emotional intelligence. As a human intelligence, emotional intelligence in the organisational context has been extensively discussed as a significant factor of individual and organisational outcomes over last three decades (see Prentice, 2019). Research to date has not examined how customers' emotional intelligence may affect their service experience and their relationship with the service provider. In particular, how such human and machine intelligences (AI) can be combined to optimise organisational performance. Researchers (Chou et al., 2011; Guo et al., 1995) in information technology (IT) field have attempted to fuse human and machine intelligence from technological perspective to enhance operation systems. This study takes a different angle and investigates how the emotional intelligence possessed by customers affects their experience with AI and employees and their subsequent engagement. This investigation provides a first look into fusion of human and machine intelligences in the business domain and extends emotional intelligence research into the consumer research to understand its influence on customer behaviours.

Consistent with the foregoing discussion, the current study examines the relationship between AI, employee service, emotional intelligence, customer engagement, and loyalty. This study expands customer engagement and loyalty research by investigating how machine (AI) and human intelligences (emotional intelligence) influence customer experience and relationships with the organisation. In particular, unlike previous emotional intelligence research in the marketing domain, which is primarily focused on the influence of employees' emotional intelligence on the service encounter, this study explores the impact of customers' emotional intelligence on organisational outcomes. The following section provides the relevant literature on the proposed study constructs. From this discussion, hypotheses are offered, followed by an overview of the research methods for hypotheses testing. The results are presented to support or disconfirm the hypotheses. Discussion of the research findings and implications conclude the paper.

2. Literature review

2.1. Humanic service experience and customer engagement

Customer engagement is a form of co-creation between service providers and customers and regarded as a marketing strategy to attract customer purchase and loyalty (Brodie et al., 2011; Hoyer et al., 2010; Nambisan and Nambisan, 2008). This concept has been popularised in the marketing literature as the level of engagement with the service organisation and its associated businesses has financial implications for the organisation as well as for customers (van Doorn et al., 2010). As a relatively nascent concept, customer engagement has been conceptualised differently. As such, the literature shows inconsistency in its drivers and outcomes. The relevant literature shows that customer engagement generally captures customers' behavioural, cognitive, and emotional engagement with the business (Hollebeek, 2011b; Prentice et al., 2018, 2019b). So et al. (2016) assessed customer engagement from affective, cognitive, and psychological perspectives. This assessment included the dimensions of: identification, indicating customers' perceived oneness with, or belongingness to, the brand or organisation; attention, indicating customers' attentiveness, focus, and connection with the brand or organisation; enthusiasm, indicating customers' excitement and interest; absorption, indicating customers' pleasant state; and interaction, indicating customers' participation with the brand or organisation. Each dimension has different antecedents and outcomes.

van Doorn et al. (2010) provided a comprehensive conceptual framework to unearth its constituents, antecedents, and consequences from customer, firm, and context-based perspectives. The identified customer-based antecedents (e.g. satisfaction, trust, and commitment) can be the result of the firm's initiatives. The context-based factors (e.g. political, economic, social, technological) can be opportunistic and uncontrollable. This study argues that organisation-based drivers are more compelling to attract customer engagement by offering positive customer experience.

Whilst each touchpoint with the organisation constitutes customer experience, in people-intensive industries, the moment of truth is the service encounter with employee service, which is vital to customers' perception of a company's service quality and their willingness to engage with the firm (Prentice, 2016). Employee service is the first and primary contact point for the customer before, during, and after the service process. This contact plays an important role in affecting customers' perceptions of any service encounter and are pivotal in forming a customer's level of perceived service quality (Prentice, 2013a, 2013b, 2019). Customers often base their impression of the organisation largely on the service received from customer contact employees and the communication between employee and customer is a reciprocal interactive process (Prentice, 2019).

The service experience which distinguishes a service organisation is often a result of the unique interaction between customers and employees. Despite spotless facilities, and the service being delivered on time as ordered, a customer may leave with a negative impression based on the attitude of an employee or other efforts that may be overlooked. Employee behaviours and performance over the service encounter constitute the customer experience and form customers' perceptions of service quality, which further leads to their involvement and commitment with the firm and is manifested in their engagement with, and loyalty to, the firm (Delcourt et al., 2013). Consistent with this discussion, the following hypotheses are offered:

H1a. Service experience with employees is positively and significantly

related to customer engagement.

H1b. Service experience with employees is positively and significantly related to customer loyalty.

2.2. Functional service experience and customer engagement

With its roots in the last century, AI has become increasingly popular and has permeated the wider community. There is no standard definition of AI in the literature. In general, AI is operated through computer systems, and functions as machine learning, computer vision, and robotics (Rich et al., 2009). Consequently, AI constitutes customers' functional service experience. AI simulates human intelligence processes to automatically learn from experience and perform human-like tasks to improve task efficiency (Wang et al., 2015). AI has been applied in various industries, particularly in the service sector, such as the hotel industry to enhance decision making, reinvent business operations, and improve customer experience (Lu et al., 2019). The AI applications in service organisations are aimed to optimise the use of energy resources and facilitate customer service (Casteleiro-Roca et al., 2018).

Bowen and Morosan (2018) provide an overview of how AI and robotics are utilised in the service sector. Their study indicates that AI can extract the true value of the vast quantities of consumer information available, which can be used to improve customer experience through more customised services. For example, auto-cars (a type of AI) can do airport pickup, help customers to check in to a hotel, and set up a customers' smartphone to use a key. The AI-controlled cars can suggest restaurants near the hotels and make a reservation for the customer based on the customer's request. A greeting model in a robot can engage customers due to the maintenance of longer interactions (Rodriguez-Lizundia et al., 2015). Vivek et al. (2012) highlighted the importance of interactive experience as a means to enhance customer engagement in the service organisation. For example, Hayes and MacLeod (2007) demonstrated that if a hotel can offer a memorable, worthwhile, and interactive experience, the customer will be more engageable. By using AI service, a hotel can provide an outstanding experience to enhance customer engagement. When customers receive an engaging experience that has been provided by AI service, they tend to be more engaged with the hotel. A good experience with AI service motivates customers to have more physical, mental, social, and emotional engagement with the firm (Carù and Cova, 2003). A memorable experience created by AI service can also consolidate the link between the customer and the service firm, resulting in a stronger customer engagement loyalty (Hayes and MacLeod, 2007; Ullah et al., 2018). Consequently, the following hypotheses are offered:

H2a. Service experience with AI is positively and significantly related to customer engagement.

H2b. Service experience with AI is positively and significantly related to customer loyalty.

2.3. Customer engagement and loyalty

Customer engagement can be associated with customer loyalty (Dholakia et al., 2004; Shang et al., 2006; Zheng et al., 2015). As consumers interact with the firm, satisfied customers tend to develop favourable attitudes and subsequent loyalty behaviours; whereas dissatisfied customers may engage in behaviours that have a negative financial impact on the organisation. However, spontaneous engagement often has a positive influence on the brand or the firm. Such engagement may reinforce the relationship between the brand and customer loyalty (e.g. Algesheimer et al., 2010; van Doorn et al., 2010; Wirtz et al., 2013).

The literature has recognised the crucial role of customer engagement as a strategic imperative for attracting customer loyalty. An engaged customer tends to develop more favourable attitudes towards the brand or the organisation, and leads to cognitive complacency, resulting in customer loyalty (So et al., 2014; Vivek et al., 2012; Nguyen et al., 2013). Customer engagement affects customers' perception and attitudes, which also in turn impact customer loyalty (Sprott et al., 2009). So et al. (2016) provided more insights into the relationship between customer engagement and loyalty and indicated that customer engagement generated truly committed and loyal customers. This discussion leads to the following hypothesis:

H3. Customer engagement is positively and significantly related to customer loyalty.

The foregoing discussion indicates that customer engagement and loyalty may be related in a sequential manner. Engaged customers tend to stay loyal and connected with the organisation through the purchase or beyond the purchase (Prentice et al., 2020; Vivek et al., 2012). Consequently, the factors that influence customer engagement would have indirect effects on customer loyalty, indicating a mediated relationship. Indeed, customer engagement has been conceptualised and tested as a mediator in several studies (e.g. Pansari and Kumar, 2017a,b; Prentice et al., 2020; van Doorn et al., 2010). Given that customer experience with employee and AI service has been proposed as the antecedents of the current, consistently, the following hypotheses are offered:

H4a. Customer engagement has a significant mediating effect between service experience with employees and customer loyalty.

H4b. Customer engagement has a significant mediating effect between service experience with AI and customer loyalty.

2.4. The role of emotional intelligence

Whilst customer experience with the firm's employees and AI services can be important to attract their engagement with the organisation and subsequent loyalty, customers' individual abilities may also play a role in their relationship with the organisation. As van Doorn et al. (2010) indicate that customer engagement not only benefits the firm but also themselves. For instance, engaging with the firm's reward-based programs has social and financial benefits for customers. These potential benefits drive customers to actively engage with the firm. Interacting with the firm's service employees and AI services may not always be a positive experience, given employees may experience moods and emotions which may affect their attitudes and behaviours during interaction with customers (Prentice, 2016, 2019). Situated in the organisation's boundary positions, service employees interact with both internal co-workers/management and external customers. Role conflict and lack of management support can affect employee service performance, hence customer experience and perception (Neves and Eisenberger, 2012; Van Sell et al., 1981). However, from a customer's perspective, the possible switching costs and perceived benefits may compel them to find the means to enhance their experience and engagement with the organisation. Their emotional intelligence may help them expand customers' tolerance zone and empathise with employees to accept a certain level of less desired service.

Emotional intelligence refers to individuals' emotional abilities to recognise, understand, utilise, and manage the emotions of themselves and others (Salovey and Mayer, 1990). Emotional intelligence consists of four hierarchical branches: emotional perception, emotional assimilation, emotional understanding, and emotion management. Each brand represents different emotional abilities (see Prentice, 2019). These abilities enable an emotionally intelligent person to be understanding of, and empathetic with, others. In the case of the service encounter, customers' emotional intelligence may help them connect with employees on an emotional level to enhance their experience with the employee service. This level of connection with employees subsequently affects customers' involvement with the service organisation. Hence, the following hypothesis is offered:

H5. Customers' emotional intelligence moderates the relationship between service experience with employees and customer engagement.

On the other hand, although AI has evolved from performing basic tasks such as Siri to artificial super intelligence that is expected to be capable of scientific creativity and social skills like a human (Kaplan and Haenlein, 2019), AI operates through computers. Machines are manoeuvred to standardise tasks and are able to perform low-level jobs (Prentice et al., 2020). Each customer may demand different services that AI may fail to deliver. However, emotionally intelligent individuals are more empathetic and understanding. Customers with a high level of emotional intelligence may be more tolerant of AI services and appreciate the convenience it offers; whereas customers with a low level of emotional intelligence may prefer to deal with machine-operated AI rather than with employees. This discussion leads to the following hypothesis:

H6. Customers' emotional intelligence moderates the relationship between service experience with AI and customer engagement.

The proposed relationships are shown in Fig. 1.

3. Methodology

3.1. Sample

The survey was conducted with consumers who have experienced AI tools and services with a focus on hotels in Australia. The selected hotels use similar AI tools to provide services to customers, for example, chatbots, concierge robots, digital assistance, voice-activated services, and travel experience enhancers. These AI tools facilitate customer service with the intention to enhance customer experience. The target respondents were recruited online through Qualtrics as it offers user-friendly features for respondents. For the purpose of this research, the prospective respondents must be over 18, understand and have used these AI tools and services, and have stayed, within last three months, at one of the Australian hotels which utilise AI-powered services. The screen questions were developed to address these criteria. Virtual Snowball Sampling was utilised for this study. This method relies on virtual networks of participants, has the advantage of accessing hidden or hard-to-reach populations, and increase sample size and its representativeness (Baltar and Brunet, 2012). Prospective respondents were encouraged by providing incentives (e.g. gift vouchers) to distribute the online survey (the weblinks) through their social media networks (e.g. Facebook) to their friends or relatives who may be suitable for participating in this research.

3.2. Measures

All measures for the study variables were adapted from existing studies which reported high reliability and validity. This study adopted a 7-point Likert scale from 1 (Strongly disagree) to 7 (Strongly agree) for all measurement items to enable flexibility and to prevent the target audience from being too neutral (Colman et al., 1997).

To understand how humanic service experience affects customer engagement and loyalty, four aspects from Parasuraman et al.'s (1991) SERVQUAL (namely reliability, assurance, empathy, and responsiveness) that correspond to the service performed by employees were adapted for this study. These dimensions include service promptness, accuracy, consistency, and employee friendliness and caring. Similarly, a measure developed by Wixom and Todd (2005) also includes these aspects of service experience with AI. Four dimensions that are reflective of the reliability, assurance (accuracy and integrity), empathy (comprehensiveness and flexibility), and responsiveness (timeliness) of service experience with AI were selected for this study. The reliability of each dimension was above 0.70 and are reported in the next section.

Emotional intelligence was measured by Law et al.'s (2004) emotional intelligence scale (WEIS). WEIS was based on four ability dimensions described in the ability EI model (see Brackett and Mayer, 2003) and has been widely used and cited in the literature. The WEIS contains 16 items (statements), and four dimensions. These four dimensions are self-emotion appraisal (SEA), other-emotion appraisal (OEA), use of emotion (UOE), and regulation of emotion (ROE). Each dimension has four items. The reliabilities were 0.90 for SEA, 0.89 for OEA, 0.86 for UOE, and 0.90 for ROE.

Customer engagement was measured by adapting So et al.' s (2016) multidimensional scale, which was developed in the tourism context and

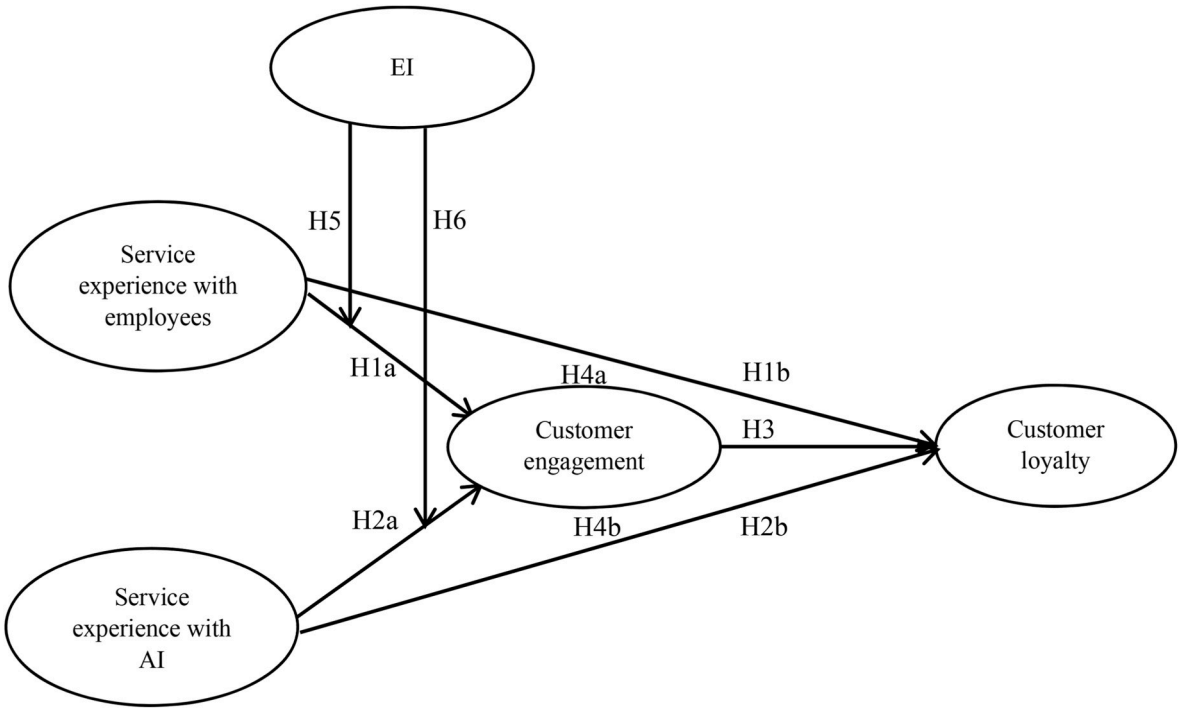

Fig. 1. Conceptual framework for this study.

reflects customers' affective, cognitive, and psychological involvement. The scale includes: identification, indicating customers' perceived oneness with or belongingness to the brand or organisation; attention, indicating customers' attentiveness, focus and connection with the brand or organisation; enthusiasm, indicating customers' excitement and interest; absorption, indicating customers' pleasant state; and interaction, indicating customers' participation with the brand or organisation. The reliabilities were 0.91 for identification, 0.96 for attention, 0.96 for enthusiasm, 0.96 for absorption, and 0.96 for interaction. Customer loyalty was measured by adapting Kandampully & Suhartanto's (2003) scale to focus on customers' willingness to provide referrals orpositive word-of-mouth communication, or their intention to return and pay a premium price. The reliability in this case was 0.96.

3.3. Procedure

An online survey was used in this study because of its advantages of flexibility, cost-efficiency, quick results, convenient administration, and storage (Aaker et al., 2005; Burns and Bush, 2003). Dynata, a leading market research company was opted for data collection. This company has a large network connection in Australia. The survey was designed to prevent skipping questions to minimise missing data (Baltar and Brunet, 2012).

Prior to data collection, the questionnaire was pilot tested with 15 PhD scholars who had used AI services in Australian hotels. This test was to ensure appropriate response time and clarity of wording. As a result, some wording of the items was revised to ensure face validity. Subsequently, the researchers consulted with Dynata on questionnaire structure and formatting with a view to enhancing response rates. The data was collected in June 2019. Respondents were made aware that participation in the survey was voluntary and could be withdrawn at their discretion. Respondents were informed that there were no right or wrong answers, so they could respond as truthfully and accurately as possible. Over 500 responses were received with two weeks. After filtering those which appeared invalid (having the same answers for all questions), 380 responses were kept for further analysis. This sample size was deemed adequate based on calculation of confidence level, population size and margin of error (Tabachnick et al., 2007).

Among the respondents, about half were female (50.8%). More than 28 percent of respondents fell in the age group between 18 to 25 (28.2%). About 37 percent of respondents had university degrees (37.1%) and 43.9 percent of respondents reported that they travelled for leisure, whereas the percentage of respondents travelled for business and visiting family and friends were 25.3 and 21.1, respectively. The majority of respondents were Australian (84.7%) and mainly lived in Queensland (16.1%), New South Wales (31.1%) and Victoria (26.1%). The demographic data are presented in Table 1.

3.4. Common method bias

To minimise common method bias (CMB), the questionnaire was designed to ensure the simplicity and conciseness of all measurement items and questions. Furthermore, the measurement items for different dimensions of a construct were spread throughout the questionnaire and negative items corresponding to the positive items were used to ensure consistency. Ex-post statistical remedies were also conducted to address CMB. Harman's single factor test, partial correlation procedure, and controlling for the effects of an unmeasured latent method factors were assessed (Podsakoff et al., 2003a). For Harman's single factor test, all measurement items of the study were loaded on one factor. The results of this test showed that the first factor accounts for 41.35% of the variance. The results of the partial correlation procedure revealed that the inclusion of the marker variable did not change the postulated relationships and their significance. In accordance with the recommendation of Podsakoff et al. (2003b), we controlled the effect of an unmeasured latent factor and compared the item loadings with and without this factor. The results showed no great difference between the two sets of loadings (all less than 0.01). Diagnosis of multicollinearity using the variance inflation factor (VIF) was well below the threshold of 3.0, indicating no violation of multicollinearity (Johnson and LeBreton, 2004).

Table 1
Demographic profile (N = 380).

Characteristics		Frequency	%
Gender	Male	187	49.2
	Female	193	50.8
Age	18–25	35	9.2
	26–35	107	28.2
	36–45	76	20.0
	46–55	65	17.1
	56 or more	97	25.5
Education	Elementary school	5	1.3
	High school	66	17.4
	Some college	76	20.0
	Bachelor's degree	141	37.1
	Post-graduate	86	22.6
	Others	6	1.6
Trip purposes	Business	96	25.3
	Leisure	167	43.9
	Visiting relatives	80	21.1
	Education	22	5.8
	Others	15	3.9

4. Analysis and results

4.1. Measurement model

Most variables (service experience with employees, service experience with AI, customer engagement, and emotional intelligence) used in this study were measured as second-order factor constructs. The first step was assessing their validity in accordance with the procedures described in Kumar and Pansari (2016). For service experience with employees and its four dimensions (responsiveness, reliability, assurance, and empathy), a confirmatory factor analysis (CFA) with a hierarchical model was conducted. The model fit indices for the second-order factor were acceptable: $\chi2 = 755.54$, df = 233, $\chi2/df = 3.26$, $p < .001$; CFI = 0.94; TLI = 0.92; RMSEA = 0.08. The second-order factor structure by performing a one-factor CFA on the average scores of four first-order constructs (such as Jayachandran et al., 2005) show that the model fit was $\chi2 = 6.68$, df = 2, $\chi2/df = 3.34$, $p < .001$; CFI = 0.98; TLI = 0.94; RMSEA = 0.08. The same procedures were undertaken with the other three constructs. The model fit indices of the second-order structure for service experience with AI were: $\chi^2 = 112.08$, $\chi2/df = 3.05$, $p < .001$; CFI = 0.98; TLI = 0.97; RMSEA = 0.07; for customer engagement were $\chi2 = 877.04$, df = 265, $\chi2/df = 3.31$, $p < .001$; CFI = 0.95; TLI = 0.94; RMSEA = 0.07; and for emotional intelligence were $\chi2 = 253.66$, df = 98, $\chi2/df = 2.59$, $p < .001$; CFI = 0.97; TLI = 0.96; RMSEA = 0.07. These model fit indices are presented in Table 2. All the path coefficients between the indicators and their respective first-order factors and between the second-order construct and its dimensions were significant at the 0.05 level for these constructs. Since both first and second-order factors have good model fit with the data, subsequent analyses use both to assess the proposed relationships. The second-order factors were used to understand the overall effects. In this testing, the aggregated scale consisting of the average scores of the subdimensions of all second-order factors were opted for analyses in this study (e.g. Jayachandran et al., 2005; Kumar and Pansari, 2016; Prentice et al., 2020). The first-order factors were assessed to understand the effects of the sub-dimensions of each factor on the outcome variables.

Prior to hypotheses testing, the CFA for the proposed model was assessed. The results revealed that the model had acceptable fit indices: $\chi2 = 932.52$, df = 254, $\chi2/df = 3.67$, $p < .001$; CFI = 0.95; TLI = 0.95; RMSEA = 0.07. All items have significant loadings on their

Table 2
Model fit indices for first and second-order factors.

		χ2	df	χ2/df	p	CFI	TLI	RMSEA
Employee experience	Second order	755.54	233	3.26	***	.94	.92	08
	One order	6.68	2	3.34	***	.98	.94	.08
AI experience	Second order	122.08	40	3.05	***	.97	.96	.07
	One order	5.92	2	2.96	***	.98	.97	.07
Customer engagement	Second order	877.04	265	3.31	***	.95	.94	.07
	One order	6.78	2	3.39	***	.99	.97	.07
Emotional intelligence	Second order	253.66	98	2.59	***	.97	.96	.07
	One order	3.42	2	1.71	***	.99	.99	.04

Note: ***p < .001.

corresponding constructs (see Appendix 1). The composite reliabilities for all factors were above the cut-off value of 0.70, and the average variance extracted (AVE) for each factor was over the threshold of 0.50, indicative of adequate convergence (Fornell and Larcker, 1981). The results of standardized residuals and modification indices show no significant changes to the model. Table 3 shows validities for all variables. A heterotrait-monotrait (HTMT) ratio test in AMOS was conducted to verify discriminant validity. The HTMT results show that all correlation ratio was lower than 0.80, demonstrating acceptable discriminant validity (Nguyen et al., 2019). Furthermore, the square root of average variance extracted for each construct exceeds the correlation between constructs, which also indicates discriminant validity.

4.2. Hypotheses testing

Structural equation modelling was undertaken to test the hypotheses. The proposed model had acceptable fit indices: $\chi^2 = 210.49$, df = 65, $\chi 2/df = 3.24$, $p < .001$; CFI = 0.99; TLI = 0.98; RMSEA = 0.08. The resultant R-squared for customer engagement and customer loyalty was more than 37 and 71 percent respectively, indicating sufficient explanatory power for all models. H1a and H1b postulate that service experience with employees is positively related to customer engagement and loyalty. As shown in Table 4, the results for H1a and H1b showed that service experience with employees significantly affected customer engagement ($\beta = 0.19$, $p < .05$) and customer loyalty ($\beta = 0.39$, $p < .001$); therefore, H1 was confirmed. H2a and H2b propose that service experience with AI positively affects customer engagement and customer loyalty. The results in Table 4 show that service experience with AI had a significant effect on customer engagement ($\beta = 0.71$, $p < .001$) and customer loyalty ($\beta = 0.28$, $p < .001$), supporting H2. The testing for H3 showed that customer engagement had a significant influence on customer loyalty ($\beta = 0.37$, $p < .001$); therefore, H3 was supported.

To understand how each dimension of service experience affects the outcome variables, further analyses by regressing all service experience dimensions with employees and AI were performed (see Table 4). This analysis shows that employees' reliability ($\beta = 0.65$, $p < .01$), empathy ($\beta = 0.47$, $p < .001$), and assurance ($\beta = 0.85$, $p < .001$) are significantly related to customer engagement. Responsiveness as manifested in AI experience has significant effects on both customer engagement ($\beta = 0.29$, $p < .01$) and customer loyalty ($\beta = 0.23$, $p < .01$).

When regressing service experience with employees and AI separately, the results show that employees' reliability, empathy, and assurance were significantly related to customer engagement, with $\beta = 0.73, 0.59; 0.88$ respectively at $p < .001$; whereas responsiveness ($\beta = 0.38$, $p < .05$) and reliability ($\beta = 0.51$, $p < .05$) had unique significant effects on customer loyalty. In the case of service experience with AI, responsiveness has a significant impact on customer engagement ($\beta = 0.15$, $p < .05$) and loyalty ($\beta = 0.33$, $p < .05$), assurance made a unique variance in customer engagement ($\beta = 0.33$, $p < .05$), and empathy in customer loyalty ($\beta = 0.21$, $p < .05$). The results are presented in Table 5.

The testing for mediation hypotheses in H4a and H4b with customer engagement mediating between service experience and customer loyalty was performed. A Sobel test was assessed using the plugin of Gaskin and Lim (2018) in AMOS. The results in Table 6 show the significant effects exerted by customer engagement on the relationships between service experience with employees and customer loyalty, and between service experience with AI and customer loyalty. Since service experience with employees and AI had significantly direct impacts on customer loyalty, thus, customer engagement partially mediated the influence of service experience with employees and AI on customer loyalty.

To confirm the mediation effects of customer engagement, this study also used the RPOCESS macro 3.4 (Hayes, 2017) in SPSS 25.0 with 10, 000 bootstrapping samples. The 95% bootstrapping confidence intervals (CI) for the indirect effects on customer loyalty of service experience with employees (CI = 0.24, 0.40) and service experience with AI (CI = 0.31, 0.46) do not include 0. Thus, this test confirms the mediation effects of customer engagement, therefore, supporting H4.

H5 proposes that emotional intelligence moderates the impact of service experience with employees on customer engagement. The results of the data analysis using AMOS are shown in Table 7. The interaction effect between emotional intelligence and service experience with

Table 3
Discriminant validities for the study variables.

	AVE	CR	EE	AI exp	CE	EI	CL	Marker
EE	.85	.96	**.96**					
AI exp	.92	.98	.57*	**.92**				
CE	.89	.98	.42*	.55*	**.94**			
EI	.85	.96	.68*	.39*	.27*	**.82**		
CL	.85	.96	.62*	.69*	.75*	.41*	**.82**	
Marker	.82	.93	.05	.09	.02	.04	.08	**.90**

Note: AVE: average variance extracted; CR: composite reliability; Diagonal elements are the square root values of AVEs; Off-diagonal elements are the correlations among constructs. The correlation values between variables with the inclusion of the marker variable are same as those without the marker variable; *p < .05.
EE = employee experience, AI exp = AI experience, CE = customer engagement, EI = emotional intelligence, CL = customer loyalty.

Table 4
Results of the proposed relationships.

Path	β	Sig
Overall model		
Service experience with employees → Customer engagement	.19	*
Service experience with employees → Customer loyalty	.39	**
Service experience with AI → Customer engagement	.71	**
Service experience with AI → Customer loyalty	.28	**
Customer engagement → Customer loyalty	.37	**
R^2		
Customer engagement	.37	
Customer loyalty	.71	
Model fit: $\chi^2 = 210.49$, df = 65, $\chi 2/df = 3.24$, $p < .001$; CFI = .99; TLI = .98; RMSEA = .08		

Note: *p < .05, **p < .001.

Table 5
Results for the relationships between service experience dimensions and the outcome variables.

Service experience with employees and AI	Customer engagement	Customer loyalty
Service experience with employees and AI		
Employee responsiveness	.04	.19
Employee reliability	.65**	.24
Employee empathy	.47***	.06
Employee assurance	.85***	.11
AI responsiveness	.29**	.23**
AI reliability	.09	.14
AI empathy	.08	.04
AI assurance	.21	.14
R^2	.49	.63
Service experience with employees		
Employee responsiveness	.28	.38*
Employee reliability	.73***	.51*
Employee empathy	.59***	.16
Employee assurance	.88***	.34
R^2		.48
Service experience with AI		
AI responsiveness	.15*	.33***
AI reliability	.02	.18
AI empathy	.17	.21*
AI assurance	.33*	.10
R^2	.38	.55

Note: *p < .05, **p < .01, ***p < .001.

employees on customer engagement was significant (β = 0.15, p < .001). Fig. 2 illustrates the moderation effect of emotional intelligence on service experience with employees and customer engagement. Similarly, the moderation effect of emotional intelligence (see Fig. 3) on service experience with AI and customer engagement proposed in H6 was also significant (β = 0.15, p < .001).

The moderation effect of emotional intelligence was confirmed again with the PROCESS macro (Hayes, 2017) in SPSS with 10,000 bootstrapping samples. The 95% bootstrapping confidence intervals (CI) for the interaction between service experience with employees and emotional intelligence (CI = 0.11, 0.40), and between service experience with AI and emotional intelligence (CI = 0.13, 0.39) do not include 0. Thus, this test confirms the moderation effects of emotional intelligence, supporting H5 and H6.

5. Discussion

AI-powered service permeates within service organisations and can enhance operational efficiency and customer experience. Additionally, in this service dominant logic era, employee service is equally important for customers' service experience. This study examines how service experience with employees and AI influence customer engagement and loyalty. Given the emotional nature of customer experience, emotional intelligence is proposed to be a moderator between service experience and engagement. The findings indicate that customer engagement and loyalty are driven by overall experience with both employees and AI, however, these relationships are complex when looking into the specific dimensions of service experience. Overall customers prefer interactions with employees and are more engaged with employees. Emotional intelligence was also found to enhance these relationships and a discussion of these findings are detailed below.

5.1. Service experience with customer engagement and loyalty

The findings show that overall experience with both employees and AI significantly influence customer engagement and loyalty. When regressing all sub-dimensions of employee and AI service, none of the AI dimensions are significantly related to customer engagement. Nevertheless, employee responsiveness, empathy, and assurance exert significant effects on the outcome variable. Responsiveness in the case of employees indicates promptness of service delivery, employees' willingness to help, and availability to respond to customers' requests. In the case of AI services, responsiveness indicates the AI tools' timely response. Although AI-powered tools can respond in a timely manner, the responses, operated through machines are standardised in most cases. In comparison, customers prefer to deal with employees and have better experience as a result of employee responses. This is reflected in the post-hoc analysis showing that customers' rating of employee responsiveness is higher (5.15 vs 4.84) (see Table 8 and Fig. 4). This finding is consistent with that in Prentice et al. (2013).

Assurance indicates error-free services by employees and AI tools. Machines can be manipulated and minimise errors, although human errors, at times, are inevitable. Based on the ratings of both AI and employee assurance, customers rate the later much higher (4.65 vs 5.26). Furthermore, only the employee's assurance service is significantly related to customer engagement. Assurance on the count of employees is not only reflected in error-free service, but also indicative of employee's proactivity in ensuring customers' safety and comfort. These can hardly be achieved by machine operated AI tools.

Empathy in the case of AI is manifested in a machines' flexibility and versatility in addressing customers' needs. However, employees' empathy is reflective of human's proactive care and empathy for customers. This explains why employees' empathy had a significant effect on customer engagement and was rated higher by customers (4.89 vs 5.16). The importance of empathy manifested in service employees has been widely acknowledged in prior studies (Prentice et al., 2013, 2014; Wieseke et al., 2012). Although AI tools can be flexible in meeting customers' demands, their applications are rather limited. For instance, auto-messaging is a 24-h service which indicates flexibility, but the responses can be limited and repetitive, and are unlikely to meet customers' diversified demands, whereas employees can customise responses based on customers' requests.

Interestingly, reliability manifested in both AI and employees is not

Table 7
Results for moderation testing.

Path	β	Sig	β	Sig
EE → CE	.12	*	.11	
EE → CL	.34	***	.34	***
AI experience → CE	.52	***	.55	***
AI experience → CL	.24	**	.41	***
CE → CL	.51	***	.17	
EI → CE	-.01		-.01	
EE x EI → CE			.14	***
AI experience x EI → CE	.15	***		
R^2				
CE	.39		.39	
CL	.79		.66	

Note: *p < .05; **p < .01; ***p < .001; EI = emotional intelligence, CE = customer engagement, EE = employee experience, CL = customer loyalty.

Table 6
Results for mediation testing.

Mediator	Between		Estimate	Lower	Upper	P value	Type of mediation
CE	EE	CL	.07	.02	.12	.017	Partial
CE	AI experience	CL	.27	.21	.33	.001	Partial

CE = customer engagement, EE = employee experience, CL = customer loyalty.

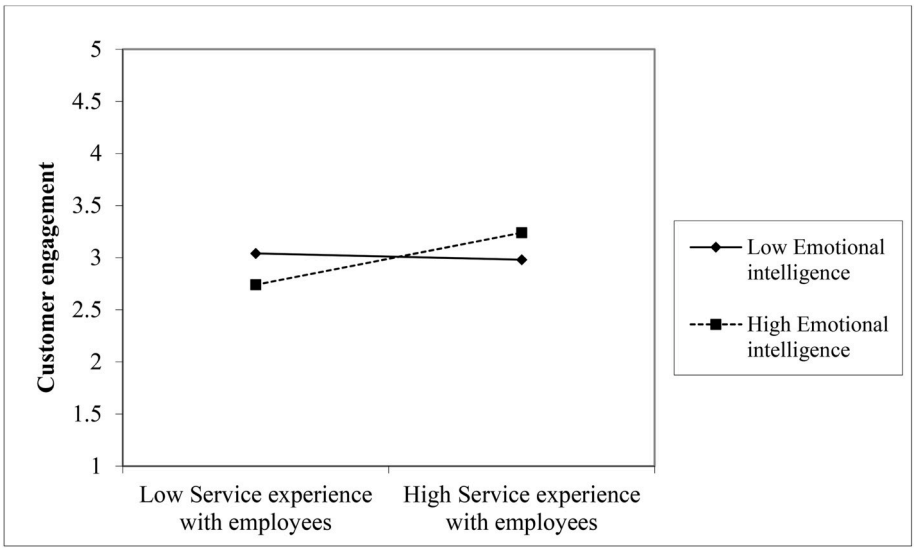

Fig. 2. Emotional intelligence and service experience with employees interaction on customer engagement.

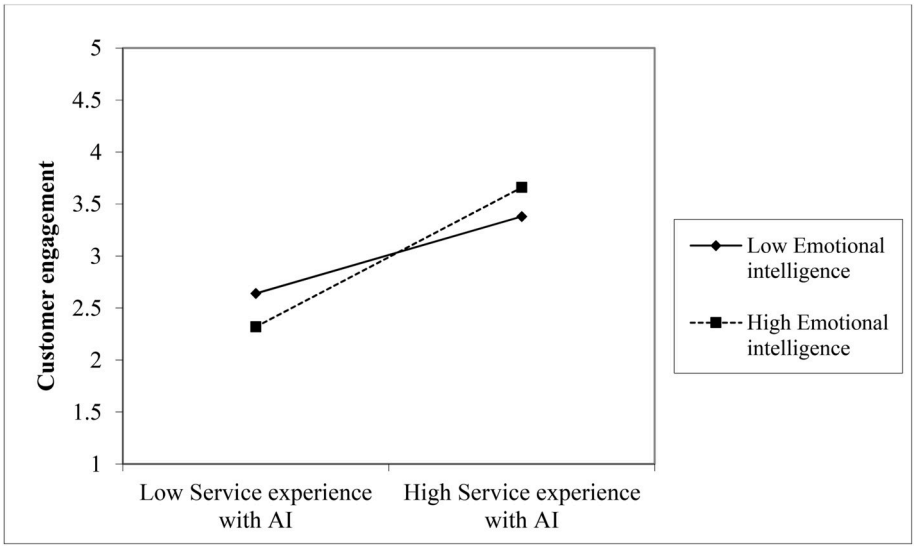

Fig. 3. Emotional intelligence and service experience with AI interaction on customer engagement.

Table 8
Comparison means of all dimensions of service experience with employees and AI.

Employee dimensions	Means	AI dimensions	Means
Employee responsiveness	5.15	AI responsiveness	4.84
Employee reliability	5.19	AI reliability	4.80
Employee empathy	5.13	AI empathy	4.89
Employee assurance	5.26	AI assurance	4.65

significantly related to customer engagement. This finding contrasts with prior service quality and frontline employee research (e.g. Prentice et al., 2013, 2014; Wu et al., 2015). Reliability of AI indicates the tools operates and performs reliability and dependably. Employees' reliability is reflected in employees' consistent and dependable service. The insignificant result shows these dimensions are expected by customers. This finding also indicates that reliability cannot be a factor differentiating customer experience with either AI or employees, or one hotel from the other. When regressing all service experience dimensions with employees and AI on customer loyalty, only responsiveness of AI service is significantly related to the outcome variable. This finding confirms the merits of the promptness and timeliness of AI tools.

However, when regressing AI and employee service separately, in the case of employee service when AI is not in the regression equation, it is employees' reliability, empathy, and assurance that engage customers with the hotel. These findings show that customers have different experiences with AI and employees and form different expectations which affect their engagement with the service organisation. Responsiveness and assurance in the case of AI were significantly related to customer engagement. This finding indicates that in the absence of employees, customers expect that AI tools respond to them in timely manner and provide error-free service. The promptness and defect free offerings drive customers to engage with the hotel. Similarly, responsiveness manifested in both service experience with employees and AI is important to attract customer loyalty.

5.2. Customer engagement and loyalty

Customer engagement is significantly related to customer loyalty. This finding is consistent with that in Prentice et al. (2018). However,

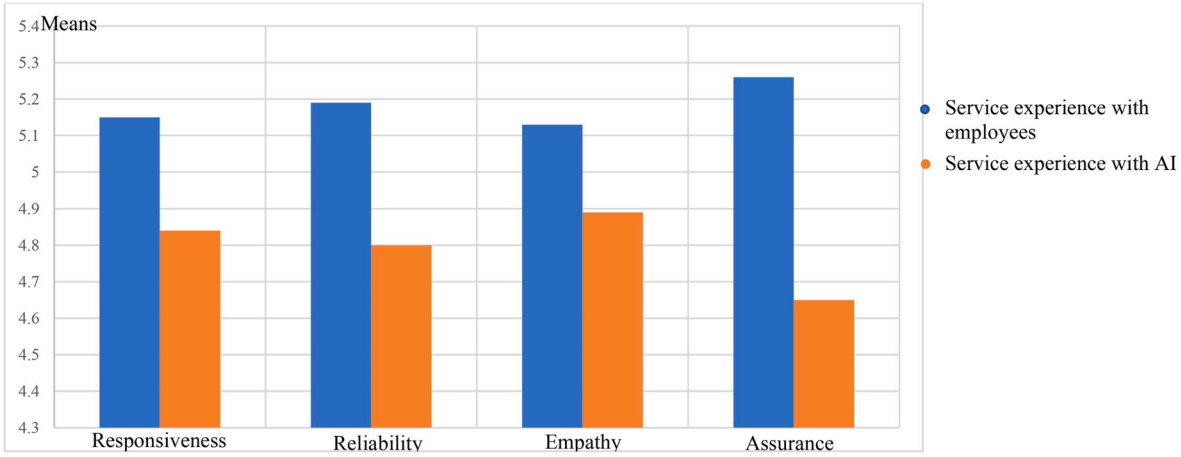

Fig. 4. Comparison means between all dimension of service experience with employees and AI.

only the sub-dimension of enthusiasm has a significant effect on loyalty indicators. Enthusiasm is manifested in customers' emotional connection and proactive involvement with the hotel. In other words, this dimension is reflective of customers' affective engagement. Although customer engagement represents affective, cognitive, and psychological involvement with the firm, the finding indicates the affective engagement is more predictive of customer loyalty. This result conforms to the theory of planned behaviour which postulates that attitude influences intentions and subsequent behaviours. The affective dimension is indicative of customers' attitude toward the hotel. When customers are emotionally involved with the hotel, they are more likely to return to and recommend the hotel and provide positive reviews.

The partially significant mediation effects indicate that AI and employee service have direct and indirect effects on customer loyalty. To increase customer loyalty, efforts should be dedicated towards engaging customers. However, positive experience with employees and AI also significantly influences customer loyalty. This result demonstrates multiple means to achieve customer loyalty.

5.3. The moderating role of emotional intelligence

Emotional intelligence has primarily been proposed as a predictor of individual success and organisational outcomes. In the service encounter that involves personal interactions, emotional intelligence exhibited by customers can be used to enhance their service experience. As shown in Fig. 2, when customers have more interactions with employees, emotionally intelligent customers tend to engage more with the hotel. Fig. 3 shows that the moderating effect exerted by emotional intelligence between AI and customer engagement and indicates that when customers have less interaction with AI services, high emotional intelligence did not improve customer engagement. When the level of interaction increased, customers with a high level of emotional intelligence are more engaged with the hotel.

Previous research has mostly discussed how employees' emotional intelligence improves their performance (Prentice and King, 2011) and customer satisfaction (Prentice, 2019). This study shows that customers' emotional intelligence can also help them to deal with the hotel's employee service and AI applications. Despite the convenience provided by AI tools, the applications can be limited and suffer from a lack of flexibility as AI is computer programmed by humans. For example, the chatbots can provide 24-h services; however, the AI-powered responses are based on algorithms that are not necessarily customised to meet all customers' needs. A report conducted by Invoca (2019) based on a survey on 2048 adults in the USA, shows more than 50 percent of respondents were frustrated with automated communications such as chatbots. However, customers with high emotional intelligence are more in control of their own emotions and are more likely to appreciate the positive aspects of AI services (e.g. convenience) and show an understanding of the limitations of AI-powered tools.

Service employees in the service organisation (e.g. hotels) perform emotional labour through acting strategies required by the organisation. Most research has shown that the acting can be emotionally draining hence affecting employees' performance during the service encounter. Their performance has a direct impact on customers' experience with the service organisation which affects customer attitudes and behaviours. However, customers with a high level of EI tend to be more empathetic and this is manifested in their understanding and through the managing of others' emotions. When customers show empathy towards employees, understanding that employees have emotions too, the interaction may be more conductive to their service experience.

6. Implications

6.1. Theoretical implications

Customer engagement research has increased in popularity within the literature over the last decade as one of the key marketing strategies to achieve customer retention and loyalty. Therefore, identifying effective antecedents or drivers of customer engagement is important to optimise organisational performance. Consequently, this study contributes to customer engagement and loyalty research by looking into two major touchpoints during the consumer purchase journey, namely, experience and interaction with AI and employees. Whilst most customer loyalty research is approached from two major marketing approaches: aggressive marketing by competitive marketing promotions and defensive marketing by offering various loyalty programs, this study is focused on customers' experience with employees and AI and provides a fresh perspective on how machines or robots likely contribute to customer experience and organisational performance.

Previous research on AI has primarily focused on the technicality of AI tools. This study extends its application into the domain of customer engagement and loyalty. Hence, AI-powered service are not only tools to facilitate business operational efficiency but can form part of a marketing approach to engage customers and attract customer loyalty. Although employee service has been closely associated with customers' behavioural intentions, this study approached the customer service experience and positioned it in the equation of AI service to understand their respective and unique variances in explaining customer engagement and loyalty. The findings of this study are consistent with those presented in various reports (i.e. Invoca, date; The Harris Poll, date) and show that customers still prefer interactions with employees rather than AI-powered tools.

Emotional intelligence has been extensively discussed in the relevant literature as an individual ability to enhance personal as well as organisational outcomes. In the service context, prior research has primarily approached this from an employee perspective to understand its influence on customers (see Prentice, 2019). This study approached this issue from a customer perspective and reveals how customers' emotional intelligence affects their responses and relationships with the firm. This research extends emotional intelligence research and proposes emotional intelligence as a self-serving means to enhance customer experience and engagement which subsequently affects customer loyalty.

6.2. Practical implications

Since this study was conducted in the hotel context, the findings have implications for hotel marketing and management. In particular, the pandemic (i.e. COVID 19) is affecting the hotel industry substantially. To survive and remain competitive, the management and marketers may utilise the findings from this research to develop appropriate and sustainable strategies. This research indicates that hotel management should focus on employee training with regards to their service encounter performance since the findings show that employee service has a significant impact on both customer engagement and loyalty. Although many hotels today incorporate and utilise AI tools to provide cost-effective service and to improve operational efficiency with the intention to provide convenience to customers and enhance their service experience, this study cautions management not to overuse these tools and minimise employee service for the sake of cost savings. Customers prefer human interactions which constitute their service experience, especially in the people-intensive industries such as hotels. The hotel industry is competing with offerings such as Airbnb accommodation, which have become increasingly popular and use less AI tools. Consumers who opt for Airbnb are interested in understanding local culture by interacting with local residents and hosts. Nevertheless, given human interaction restricted during the pandemic, the hotel management should look into the merits of AI tools. Since responsiveness and assurance manifested in these tools are significantly related to customer engagement and loyalty as shown in this study, attention should be attended to reinforce these merits to enhance customer-related outcomes.

Customers' emotional intelligence affects their service experience and engagement, it is important for employees to possess emotional intelligence skills to be able to identify customers with different levels of emotional abilities in order to manage the interactions and customer experience appropriately. Given emotional intelligence is trainable (Prentice, 2013), staff training programs should include emotional intelligence to enhance employees' emotional competence. Personnel selection should aim to recruit candidates with higher levels of emotional intelligence.

The results also show that not all customer engagement dimensions are related to customer loyalty, it is imperative for management to identify the right factors that influence the dimension that explains the organisational outcome. As this study finds that affective engagement is significantly related to customer loyalty, marketers should seek the means to address customers' emotions (e.g. passion, excitement).

7. Limitations and future research

The study made every endeavour to ensure rigorousness, however, some limitations must be acknowledged. This research examined Australian consumers who had used AI tools associated with the hotels in which they stayed. This limits the generalisability of the findings within a sectoral and geographical context. Extending research to other service sectors such as banks may provide more insights into customer engagement and loyalty. The dimensions that were selected to measure customer experience with AI and employee service were also restricted to four dimensions, we acknowledge that AI has multiple dimensions and reducing the scope to four dimensions may inhibit a wholistic understanding of AI-powered tools and their impact on customer experience. Customer loyalty was also measured based on an indication of the willingness to return and recommend the hotel. Utilising repeat visitation rates may better reflect genuine loyalty and may be addressed in future research to address these potential limitations.

Funding

This study was funded by Academy of the Social Sciences in Australia. The authors express gratitude to the funding organisation.

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.jretconser.2020.102186.

Appendix 1. The measurement items

Factor	Item	Mean	SD	Factor loading	Alpha
AI responsiveness (ARP)	ARP1: AI tools provide information in a timely fashion.	4.84	1.07	.93	.84
	ARP2: AI tools return answers to my requests quickly.	4.83	1.17	.93	
AI reliability (ARL)	ARL1: AI tools operate reliably.	4.87	1.21	.93	.92
	ARL2: AI tools perform reliably.	4.78	1.25	.94	
	ARL3: The operation of AI tools is dependable.	4.76	1.24	.90	
AI empathy (AEM)	AEM1: AI tools can flexibly adjust to new demands or conditions.	4.99	1.17	.89	.88
	AEM2: AI tools can flexibly adjust to new demands or conditions.	4.86	1.22	.92	
	AEM3: AI tools are versatile in addressing needs as they	4.82	1.23	.89	
AI assurance (AAS)	AAS1: AI services produce correct information.	4.64	1.33	.88	.80
	AAS2: There are few errors in the information I obtain from AI tools.	4.59	1.25	.76	
	AAS3: The information provided by AI tools is accurate.	4.72	1.21	.89	
Employee responsiveness (ERP)	ERP1: Employees in these hotels served me in a reasonable amount of time.	5.16	1.12	.83	.91
	ERP2: Employees in these hotels quickly corrected anything that was wrong.	5.16	1.14	.87	
	ERP3: Employees in these hotels seemed to handle busy times smoothly.	5.13	1.13	.88	
	ERP4: Employees in these hotels provided prompt and quick service.	5.18	1.10	.85	
	ERP5: Employees in these hotels were never too busy to respond to your requests.	5.14	1.17	.81	
	ERP6: Employees in these hotels let you know when things would get done.	5.13	1.11	.78	
Employee reliability (ERL)	ERL1: Employees in these hotels are dependable and consistent.	5.20	1.15	.83	.90

(continued on next page)

(*continued*)

Factor	Item	Mean	SD	Factor loading	Alpha
	ERL2: Employees in these hotels had the customers' best interests at heart.	5.16	1.13	.86	
	ERL3: Employees in these hotels followed through on their promises.	5.20	1.09	.85	
	ERL4: Employees in these hotels did things right the first time.	5.16	1.08	.86	
	ERL5: Employees in these hotels properly handled any problems that arise.	5.22	1.10	.86	
Employee empathy (EEM)	EEM1: Employees in these hotels gave extra effort to handle my special requests.	5.23	1.10	.83	.91
	EEM2: Employees in these hotels were sensitive to my individual needs and wants, rather than always relying on policies and procedures.	5.07	1.20	.84	
	EEM3: Employees in these hotels made me feel special.	5.07	1.16	.87	
	EEM4: Employees in these hotels anticipated my individual needs and wants.	5.10	1.15	.87	
	EEM5: Employees in these hotels understand your specific needs for hotel services.	5.18	1.12	.87	
Employee assurance (EAS)	EAS1: Employees in these hotels can answer my questions completely.	5.19	1.06	.82	.94
	EAS2: Employees in these hotels made me feel comfortable and confident in my dealings with them.	5.24	1.19	.82	
	EAS3: Employees in these hotels were both able and willing to give me information about the hotel services.	5.31	1.10	.78	
	EAS4: Employees in these hotels made me feel personally safe.	5.24	1.23	.83	
	EAS5: Employees in these hotels seemed well-trained, competent, and experienced.	5.28	1.10	.88	
	EAS6: Employees in these hotels were sympathetic and reassuring if something is wrong.	5.17	1.18	.84	
	EAS7: Employees in these hotels had knowledge of hotel products and services.	5.17	1.14	.84	
	EAS8: Employees in these hotels had ability to answer your questions.	5.33	1.08	.83	
Identification (CID)	CID1: When someone criticizes these hotels, it feels like a personal insult.	3.68	1.64	.86	.91
	CID2: When I talk about these hotels, I usually say we rather than they.	3.90	1.56	.88	
	CID3: These hotels' successes are my successes.	3.89	1.63	.92	
	CID4: When someone praises these hotels, it feels like a personal compliment.	4.01	1.68	.90	
Enthusiasm (CEN)	CEN1: I am heavily into these hotels.	3.96	1.62	.90	.96
	CEN2: I am passionate about these hotels.	4.08	1.66	.93	
	CEN3: I am enthusiastic about these hotels.	4.27	1.60	.94	
	CEN4: I feel excited about these hotels.	4.33	1.55	.93	
	CEN5: I love these hotels.	4.33	1.57	.91	
Attention (CAT)	CAT1: I like to learn more about these hotels.	4.52	1.50	.90	.96
	CAT2: I pay a lot of attention to anything about these hotels.	4.28	1.59	.93	
	CAT3: Anything related to these hotels grabs my attention.	4.24	1.57	.93	
	CAT4: I concentrate a lot on these hotels.	4.17	1.65	.93	
	CAT5: I like learning more about these hotels.	4.48	1.58	.91	
Absorption (CAB)	CAB1: When I am interacting with these hotels, I forget everything else around me.	3.69	1.69	.90	.96
	CAB2: Time flies when I am interacting with these hotels.	3.91	1.70	.92	
	CAB3: When I am interacting with these hotels, I get carried away.	3.87	1.65	.93	
	CAB4: When interacting with these hotels, it is difficult to detach myself.	3.78	1.73	.92	
	CAB5: In my interaction with these hotels, I am immersed.	3.96	1.66	.93	
	CAB6: When interacting with these hotels intensely, I feel happy.	4.18	1.62	.84	
Interaction (CIN)	CIN1: In general, I like to get involved in these hotel community discussions.	3.94	1.72	.91	.96
	CIN2: I am someone who enjoys interacting with like-minded others in these hotels' communities.	4.06	1.66	.93	
	CIN3: I am someone who likes actively participating in these hotels' community discussions.	3.89	1.65	.94	
	CIN4: In general, I thoroughly enjoy exchanging ideas with other people in these hotels' communities.	4.05	1.65	.94	
	CIN5: I often participate in activities of these hotels' communities.	4.00	1.72	.92	
Self-emotion appraisal (SEA)	SEA1: I have a good sense of why I have certain feelings most of the time.	5.39	1.14	.86	.90
	SEA2: I have good understanding of my own emotions.	5.51	1.15	.90	
	SEA3: I really understand what I feel.	5.52	1.08	.88	
	SEA4: I always know whether or not I am happy.	5.61	1.08	.88	
Others-emotion appraisal (OEA)	OEA1: I always know my friends' emotions from their behaviour.	5.20	1.19	.85	.89
	OEA2: I am a good observer of others' emotions.	5.29	1.20	.90	
	OEA3: I am sensitive to the feelings and emotions of others.	5.37	1.28	.86	
	OEA4: I have good understanding of the emotions of people around me.	5.31	1.24	.87	
Use of emotion (UOE)	UOE1: I always set goals for myself and then try my best to achieve them.	5.44	1.15	.84	.86
	UOE2: I always tell myself I am a competent person.	5.36	1.16	.85	
	UOE3: I am a self-motivated person.	5.53	1.10	.86	
	UOE4: I would always encourage myself to try my best.	5.53	1.09	.79	
Regulation of emotion (ROE)	ROE1: I am able to control my temper and handle difficulties rationally.	5.37	1.21	.90	.90
	ROE2: I am quite capable of controlling my own emotions.	5.44	1.12	.89	
	ROE3: I can always calm down quickly when I am very angry.	5.22	1.22	.84	
	ROE4: I have good control of my own emotions.	5.42	1.16	.89	
Customer loyalty (LOY)	LOY1: I would say positive things about these hotels to other people.	4.83	1.24	.86	.96
	LOY2: I would recommend this hotel to someone who seeks my advice.	4.85	1.21	.89	
	LOY3: I would refer these hotels to my friends and relatives.	4.75	1.31	.89	
	LOY4: I would provide positive reviews for these hotels.	4.81	1.27	.87	
	LOY5: I am most likely to return to these hotels.	4.94	1.25	.89	
	LOY6: High likelihood of return to these hotels.	4.95	1.23	.88	
	LOY7: I will come back to these hotels even if the price increases.	4.34	1.52	.79	
	LOY8: I pay a higher price than for other services for the benefits of these hotels.	4.20	1.62	.76	
	LOY9: They are the best hotels I have ever I've stayed in.	4.40	1.59	.85	
	LOY10: I'm pleased to have stayed in these hotels.	4.84	1.32	.94	
	LOY11: It was a good idea to have stayed in these hotels.	4.87	1.31	.94	
	LOY12: I do not regret choosing these hotels.	4.97	1.32	.88	

References

Aaker, D.A., Kumar, V., Day, G.S., Lawley, M., 2005. Marketing Research: the Pacific Rim, edition. John Wiley & Sons Australia, Ltd, Milton.

Algesheimer, R., Borle, S., Dholakia, U.M., Singh, S.S., 2010. The impact of customer community participation on customer behaviours: an empirical investigation. Market. Sci. 29 (4), 756–769. https://doi.org/10.1287/mksc.1090.0555.

Ashforth, B.E., Humphrey, R.H., 1993. Emotional labor in service roles: the influence of identity. Acad. Manag. Rev. 18 (1), 88–115. https://doi.org/10.2307/258824.

Baltar, F., Brunet, I., 2012. Social research 2.0: virtual snowball sampling method using Facebook. Internet Res. 22 (1), 57–74. https://doi.org/10.1108/10662241211199960.

Beckers, S.F.M., van Doorn, J., Verhoef, P.C., 2017. Good, better, engaged? The effect of company-initiated customer engagement behaviour on shareholder value. J. Acad. Market. Sci. 46 (3), 1–18. https://doi.org/10.1007/s11747-017-0539-4.

Berry, L.L., 1995. Relationship marketing of services—growing interest, emerging perspectives. J. Acad. Market. Sci.: Official Publication of the Academy of Marketing Science 23 (4), 236–245. https://doi.org/10.1177/009207039502300402.

Berry, L.L., Wall, E.A., Carbone, L.P., 2006. Service clues and customer assessment of the service experience: lessons from marketing. Acad. Manag. Perspect. 20 (2), 43–57.

Bowen, J., Morosan, C., 2018. Beware hospitality industry: the robots are coming. Worldwide Hospitality and Tourism Themes 10 (6), 726–733. https://doi.org/10.1108/WHATT-07-2018-0045.

Brackett, M.A., Mayer, J.D., 2003. Convergent, discriminant, and incremental validity of competing measures of emotional intelligence. Pers. Soc. Psychol. Bull. 29 (9), 1147–1158. https://doi.org/10.1177/0146167203254596.

Brodie, R.J., Hollebeek, L.D., Jurić, B., Ilić, A., 2011. Customer engagement: conceptual domain, fundamental propositions, and implications for research. J. Serv. Res. 14 (3), 252–271. https://doi.org/10.1177/1094670511411703.

Brotheridge, C.M., Grandey, A.A., 2002. Emotional labor and burnout: comparing two perspectives of "People Work. J. Vocat. Behav. 60 (1), 17–39. https://doi.org/10.1006/jvbe.2001.1815.

Burns, A.C., Bush, R.F., 2003. Marketing Research: Online Research Applications, fourth ed. Prentice Hall, New Jersey.

Cambra-Fierro, J., Melero-Polo, I., 2017. Complaint-handling as antecedent of customer engagement: do consumer characteristics matter? Market. Intell. Plann. 35 (2), 277–295. https://doi.org/10.1108/MIP-02-2016-0039.

Carù, A., Cova, B., 2003. Revisiting consumption experience: a more humble but complete view of the concept. Market. Theor. 3 (2), 267–286. https://doi.org/10.1177/14705931030032004.

Casidy, R., Prentice, C., Wymer, W., 2018. The effects of brand identity on brand performance in the service sector. J. Strat. Market. 1–15. https://doi.org/10.1080/0965254X.2018.1464050.

Casteleiro-Roca, J.-L., Gómez-González, J.F., Calvo-Rolle, J.L., Jove, E., Quintián, H., Martín, J.F.A., Perez, S.G., Diaz, B.G., Cakeri-Garcuam, F., Méndez-Perez, J.A., 2018. Prediction of the energy demand of a hotel using an artificial intelligence-based model. In: International Conference on Hybrid Artificial Intelligence Systems. Springer, Cham, pp. 586–596.

Chou, C.Y., Huang, B.H., Lin, C.J., 2011. Complementary machine intelligence and human intelligence in virtual teaching assistant for tutoring program tracing. Comput. Educ. 57 (4), 2303–2312.

Colman, A.M., Norris, C.E., Preston, C.C., 1997. Comparing rating scales of different lengths: equivalence of scores from 5-point and 7-point scales. Psychol. Rep. 80 (2), 355–362. https://doi.org/10.2466/pr0.1997.80.2.355.

Cronin, J.J., Brady, M.K., Hult, G.T.M., 2000. Assessing the effects of quality, value, and customer satisfaction on consumer behavioural intentions in service environments. J. Retailing 76 (2), 193–218. https://doi.org/10.1016/S0022-4359(00)00028-2.

Delcourt, C.C., Gremler, D.D., Riel, A.C. R.v., Birgelen, M.J. H.v., 2013. Effects of perceived employee emotional competence on customer satisfaction and loyalty: the mediating role of rapport. J. Service Manag. 24 (1), 5–24. https://doi.org/10.1108/09564231311304161.

Dholakia, U.M., Bagozzi, R.P., Pearo, L.K., 2004. A social influence model of consumer participation in network- and small-group-based virtual communities. Int. J. Res. Market. 21 (3), 241–263. https://doi.org/10.1016/j.ijresmar.2003.12.004.

Fornell, C., Larcker, D.F., 1981. Structural equation models with unobservable variables and measurement error: algebra and statistics. J. Market. Res. 18 (3), 382–388. https://doi.org/10.1177/002224378101800313.

Gaskin, J., Lim, J., 2018. Indirect effects [AMOS plugin. Gaskinatin's StatWiki]. Retrieved from. http://statwiki.kolobkreations.com/index.php?title=Main_Page.

Grandey, A.A., 2000. Emotional regulation in the workplace: a new way to conceptualize emotional labor. J. Occup. Health Psychol. 5 (1), 95–110. https://doi.org/10.1037/1076-8998.5.1.95.

Guo, C., Tarn, T.J., Xi, N., Bejczy, A.K., 1995. May). Fusion of human and machine intelligence for telerobotic systems. In: Proceedings of 1995 IEEE International Conference on Robotics and Automation, vol. 3. IEEE, pp. 3110–3115.

Hayes, A.F., 2017. Introduction to Mediation, Moderation, and Conditional Process Analysis: A Regression-Based Approach. Guilford publications.

Hayes, D., MacLeod, N., 2007. Packaging places: designing heritage trails using an experience economy perspective to maximize visitor engagement. J. Vacat. Mark. 13 (1), 45–58. https://doi.org/10.1177/1356766706071205.

Hollebeek, L., 2011b. Exploring customer brand engagement: definition and themes. J. Strat. Market. 19 (7), 555–573.

Hollebeek, L.D., 2011a. Demystifying customer brand engagement: exploring the loyalty nexus. J. Market. Manag. 27 (7–8), 785–807. https://doi.org/10.1080/0267257X.2010.500132.

Hoyer, W.D., Chandy, R., Dorotic, M., Krafft, M., Singh, S.S., 2010. Consumer cocreation in new product development. J. Serv. Res. 13 (3), 283–296. https://doi.org/10.1177/1094670510375604.

Invoca, 2019. New Invoca research conducted by the Harris Poll. Retrieved from. https://blog.invoca.com/new-research-from-invoca-and-the-harris-poll/.

Jayachandran, S., Sharma, S., Kaufman, P., Raman, P., 2005. The role of relational information processes and technology use in customer relationship management. J. Market. 69 (4), 177–192. https://doi.org/10.1509/jmkg.2005.69.4.177.

Johnson, J.W., LeBreton, J.M., 2004. History and use of relative importance indices in organisational research. Organisational Res. Method. 7 (3), 238–257.

Kandampully, J., Suhartanto, D., 2003. The role of customer satisfaction and image in gaining customer loyalty in the hotel industry. J. Hospit. Leisure Market. 10 (1–2), 3–25. https://doi.org/10.1300/J150v10n01_02.

Kaplan, A., Haenlein, M., 2019. Siri, Siri, in my hand: who's the fairest in the land? On the interpretations, illustrations, and implications of artificial intelligence. Bus. Horiz. 62 (1), 15–25. https://doi.org/10.1016/j.bushor.2018.08.004.

Kumar, V., Pansari, A., 2016. Competitive advantage through engagement. J. Market. Res. 53 (4), 497–514. https://doi.org/10.1509/jmr.15.0044.

Law, K.S., Wong, C.-S., Song, L.J., 2004. The construct and criterion validity of emotional intelligence and its potential utility for management studies. J. Appl. Psychol. 89 (3), 483–496. https://doi.org/10.1037/0021-9010.89.3.483.

Leckie, C., Nyadzayo, M.W., Johnson, L.W., 2016. Antecedents of consumer brand engagement and brand loyalty. J. Market. Manag. 32 (5–6), 558–578. https://doi.org/10.1080/0267257X.2015.1131735.

Lemon, K.N., Verhoef, P.C., 2016. Understanding customer experience throughout the customer Journey. J. Market. 80 (6), 69–96. https://doi.org/10.1509/jm.15.0420.

Liao, H., 2007. Do it right this time: the role of employee service recovery performance in customer-perceived justice and customer loyalty after service failures. J. Appl. Psychol. 92 (2), 475–489. https://doi.org/10.1037/0021-9010.92.2.475.

Loveman, G.W., 1998. Employee satisfaction, customer loyalty, and financial performance: an empirical examination of the service profit chain in retail banking. J. Serv. Res. 1 (1), 18–31. https://doi.org/10.1177/109467059800100103.

Lu, L., Cai, R., Gursoy, D., 2019. Developing and validating a service robot integration willingness scale. Int. J. Hospit. Manag. 80, 36–51. https://doi.org/10.1016/j.ijhm.2019.01.005.

Nambisan, S., Nambisan, P., 2008. How to profit from a better virtual customer environment. MIT Sloan Manag. Rev. 49 (3), 53–61.

Nanji, A., 2019. How consumers feel about brands' use of AI. Retrieved from. https://www.marketingprofs.com/charts/2019/41489/how-consumers-feel-about-brands-use-of-ai?adref=nlt073119 Posted. on 31 July 2019.

Neves, P., Eisenberger, R., 2012. Management communication and employee performance: the contribution of perceived organisational support. Hum. Perform. 25 (5), 452–464. https://doi.org/10.1080/08959285.2012.721834.

Nguyen, L.T.V., Lu, V.N., Hill, S.R., Conduit, J., 2019. The mediating role of brand knowledge on employees' brand citizenship behaviour: does organizational tenure matter? Australas. Mark. J.(AMJ) 27 (3), 169–178.

Nguyen, T.T.M., Yoshi, T., Nham, P.T., 2013. Technology acceptance model and the paths to online customer loyalty in an emerging market. Tržište 25 (2), 231–248.

Pansari, A., Kumar, V., 2017a. Customer engagement: the construct, antecedents, and consequences. J. Acad. Market. Sci. 45 (3), 294–311. https://doi.org/10.1007/s11747-016-0485-6.

Pansari, A., Kumar, V., 2017b. Customer engagement: the construct, antecedents, and consequences. J. Acad. Market. Sci. 45 (3), 294–311.

Parasuraman, A., Berry, L.L., Zeithaml, V.A., 1991. Refinement and reassessment of the SERVQUAL scale. J. Retailing 67 (4), 420–450.

Podsakoff, P.M., MacKenzie, S.B., Lee, J.Y., Podsakoff, N.P., 2003b. Common method biases in behavioural research: a critical review of the literature and recommended remedies. J. Appl. Psychol. 88 (5), 879–903. https://doi.org/10.1037/0021-9101.88.5.879.

Podsakoff, P.M., MacKenzie, S.B., Lee, J.-Y., Podsakoff, N.P., 2003a. Common method biases in behavioural research: a critical review of the literature and recommended remedies. J. Appl. Psychol. 88 (5), 879.

Prentice, C., 2013. Emotional labour and its consequences: the moderating effect of emotional intelligence. Individual Sources, Dynamics, and Expressions of Emotion (Research on Emotion in Organisations 9, 187–201.

Prentice, C., 2013b. Service quality perceptions and customer loyalty in casinos. Int. J. Contemp. Hospit. Manag. 25 (1), 49–64. https://doi.org/10.1108/09561113112902l9.

Prentice, C., 2016. Leveraging employee emotional intelligence in casino profitability. J. Retailing Consum. Serv. 33, 127–134. https://doi.org/10.1016/j.jretconser.2016.08.011.

Prentice, C., 2019. Emotional Intelligence and Marketing. World Scientific Publishing Co. Pte, Ltd. Singapore, 978-981-120-354-1.

Prentice, C., King, B., 2011. The influence of emotional intelligence on the service performance of casino frontline employees. Tourism Hospit. Res. 11 (1), 49–66. https://doi.org/10.1057/thr.2010.21.

Prentice, C., Chen, P.-J., King, B., 2013. Employee performance outcomes and burnout following the presentation-of-self in customer-service contexts. Int. J. Hospit. Manag. 35, 225–236.

Prentice, C., 2014. Who stays, who walks, and why in high-intensity service contexts. J. Bus. Res. 67 (4), 608–614.

Prentice, C., Dominique, S., Want, X.J., 2020. Emotional intelligence or artificial intelligence – an employee perspective. J. Hospit. Market. Manag. 29 (4), 377–403.

Prentice, C., Wang, X., Lin, X., 2018. An organic approach to customer engagement and loyalty. J. Comput. Inf. Syst. 1–10. https://doi.org/10.1080/08874417.2018.1485528.

Prentice, C., Wang, X., Loureiro, S.M.C., 2019b. The influence of brand experience and service quality on customer engagement. J. Retailing Consum. Serv. 50, 50–59. https://doi.org/10.1016/j.jretconser.2019.04.020.

Rich, E., Knight, K., Nair, S.B., 2009. Artificial Intelligence. Tata McGraw-Hill, New Delhi, India.

Rodriguez-Lizundia, E., Marcos, S., Zalama, E., Gómez-García-Bermejo, J., Gordaliza, A., 2015. A bellboy robot: study of the effects of robot behaviour on user engagement and comfort. Int. J. Hum. Comput. Stud. 82, 83–95. https://doi.org/10.1016/j.ijhcs.2015.06.001.

Salovey, P., Mayer, J.D., 1990. Emotional intelligence. Imagin., Cognit. Pers. 9 (3), 185–211.

Shang, R.-A., Chen, Y.-C., Liao, H.-J., 2006. The value of participation in virtual consumer communities on brand loyalty. Internet Res. 16 (4), 398–418. https://doi.org/10.1108/10662240610690025.

So, K.K.F., King, C., Sparks, B., 2014. Customer engagement with tourism brands: scale development and validation. J. Hospit. Tourism Res. 38 (3), 304–329. https://doi.org/10.1177/1096348012451456.

So, K.K.F., King, C., Sparks, B.A., Wang, Y., 2016. The role of customer engagement in building consumer loyalty to tourism brands. J. Trav. Res. 55 (1), 64–78. https://doi.org/10.1177/0047287514541008.

Sprott, D., Czellar, S., Spangenberg, E., 2009. The importance of a general measure of brand engagement on market behaviour: development and validation of a scale. J. Market. Res. 46 (1), 92–104. https://doi.org/10.1509/jmkr.46.1.92.

Tabachnick, B.G., Fidell, L.S., Ullman, J.B., 2007. Using Multivariate Statistics, vol. 5. Pearson, Boston, MA.

Ullah, A., Aimin, W., Ahmed, M., 2018. Smart automation, customer experience and customer engagement in electric vehicles. Sustainability (Switzerland) 10 (5), 1350. https://doi.org/10.3390/su10051350.

Vada, S., Prentice, C., Hsiao, A., 2019. The influence of tourism experience and well-being on place attachment. J. Retailing Consum. Serv. 47, 322–330. https://doi.org/10.1016/j.jretconser.2018.12.007.

van Doorn, J., Lemon, K.N., Mittal, V., Nass, S., Pick, D., Pirner, P., Verhoef, P.C., 2010. Customer engagement behaviour: theoretical foundations and research directions. J. Serv. Res. 13 (3), 253–266. https://doi.org/10.1177/1094670510375599.

Van Sell, M., Brief, A.P., Schuler, R.S., 1981. Role conflict and role ambiguity: integration of the literature and directions for future research. Hum. Relat. 34 (1), 43–71. https://doi.org/10.1177/001872678103400104.

Vivek, S.D., Beatty, S.E., Morgan, R.M., 2012. Customer engagement: exploring customer relationships beyond purchase. J. Market. Theor. Pract. 20 (2), 122–146. https://doi.org/10.2753/MTP1069-6679200201.

Wang, D., Han, H., Zhan, Z., Xu, J., Liu, Q., Ren, G., 2015. A problem solving oriented intelligent tutoring system to improve students' acquisition of basic computer skills. Comput. Educ. 81, 102–112. https://doi.org/10.1016/j.compedu.2014.10.003.

Wieseke, J., Geigenmüller, A., Kraus, F., 2012. On the role of empathy in customer-employee interactions. J. Serv. Res. 15 (3), 316–331.

Wirtz, J., den Ambtman, A., Bloemer, J., Horváth, C., Ramaseshan, B., van de Klundert, J., Gurhan Canli, Z., Kandampully, J., 2013. Managing brands and customer engagement in online brand communities. J. Service Manag. 24 (3), 223–244. https://doi.org/10.1108/09564231311326978.

Wirtz, J., Patterson, P.G., Kunz, W.H., Gruber, T., Lu, V.N., Paluch, S., Martins, A., 2018. Brave new world: service robots in the frontline. J. Service Manag. 29 (5), 907–931. https://doi.org/10.1108/JOSM-04-2018-0119.

Wixom, B.H., Todd, P.A., 2005. A theoretical integration of user satisfaction and technology acceptance. Inf. Syst. Res. 16 (1), 85–102. https://doi.org/10.1287/isre.1050.0042.

Wu, Y.C., Tsai, C.S., Hsiung, H.W., Chen, K.Y., 2015. Linkage between frontline employee service competence scale and customer perceptions of service quality. J. Serv. Market. 29 (3), 224–234.

Xiang, Z., Schwartz, Z., Gerdes, J.H., Uysal, M., 2015. What can big data and text analytics tell us about hotel guest experience and satisfaction? Int. J. Hospit. Manag. 44, 120–130. https://doi.org/10.1016/j.ijhm.2014.10.013.

Zeithaml, V.A., Berry, L.L., Parasuraman, A., 1996. The behavioural consequences of service quality. J. Market. 60 (2), 31–46. https://doi.org/10.1177/002224299606000203.

Zheng, X., Cheung, C.M.K., Lee, M.K.O., Liang, L., 2015. Building brand loyalty through user engagement in online brand communities in social networking sites. Inf. Technol. People 28 (1), 90–106. https://doi.org/10.1108/ITP-08-2013-0144.