Abstract: This study investigates the indirect effect of employee empathy (EE) on customer loyalty (CL) and loyalty outcomes through intervening variables, i.e. customer affective commitment, perceived service quality, and customer satisfaction (CS). Associations between the constructs of the proposed model are examined in the context of employee–customer interactions. Data were collected through the online survey from 360 useable responses collected from active users of telecommunication services from the province of Anhui, China. To test the model, structural equation modeling was applied by using AMOS 21. The findings confirm the positive and indirect effect of EE on CL and loyalty outcomes (i.e. positive word-of-mouth and repurchase intentions). Results of the present study provide insights for the service sector, specifically telecommunication sector in order to increase CS and loyalty toward the services.

Keywords: employee empathy; customer satisfaction; customer loyalty; positive word-of-mouth; repurchase intentions

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PUBLIC INTEREST STATEMENT
This study examines the indirect effect of employee empathy on customer loyalty during employee–customer interactions in the telecommunication service settings. This study examines the Chinese telecommunication sector and focuses on how the empathic behavior of service employees affects customer’s behavior toward the service brands. Employee’s empathic behavior during interactions with customers augments satisfaction and loyalty with the service brand resulting into positive word-of-mouth and repurchase intentions. Understanding service interactions and its effect on customer satisfaction and loyalty increases firm’s performance and improve employee–customer interactions.
1. Introduction

The service sector has experienced an extraordinary evolution over the past few decades which has fostered consumerism by making customers more active and demanding, which means that the concept of loyalty is even more central to marketing scholarship (Toufaily, Ricard, & Perrien, 2013; Van Lierop & El-Geneidy, 2016). Academic researchers and managers firmly believe that customer satisfaction (CS) is an essential predictor of lasting customer behavior (Vera & Trujillo, 2017; Wieseke, Geigenmüller, & Kraus, 2012). Due to this evolution of today’s competitive service sector, companies are striving hard to retain and hold their customers (Aksoy, 2013; Giovanis & Athanasopoulou, 2018; Tsoukatos & Rand, 2006).

Service settings such as bank, hotel, restaurant, or leasing services include frontline service employee and customer interactions. If concentration, politeness, and empathy are depicted in these interactions, then such interactions will probably lead toward pleasing service outcomes, and in case these interactions are unable to create expected association then such interactions result in customers’ dissatisfaction (Wieseke et al., 2012). These interactions between frontline service employees and customers are crucial in service settings because the nature of services requires a significant number of communications to complete the service procedures (Chakrabarty, Brown, & Widing, 2012; Lee, Comer, Dubinsky, & Scbafer, 2011). Service employees are mainly held liable for these communications because they have the ability to build and damage the brands (Huang, 2011).

Studies in frontline employee and customer interactions assert that customer-oriented behavior of service employees is important for the success of service encounters and to increase CS and loyalty (Drollinger & Comer, 2013; Guenzi, De Luca, & Trollo, 2011; Stock, 2016; Wieseke et al., 2012). Job Demand-Control Theory and JDR Theory propose that salespeople/frontline service employees may use empathic behavior toward customers during service interactions (Itani & Inyang, 2015) for successful service encounters. Researchers also suggest that empathy, care, and attentiveness shown by frontline service employee to customer lead to CS (e.g. Gorry & Westbrook, 2011; Lee et al., 2011). On the contrary, lack of empathy or an inability to understand the other’s perspective damages any service encounter and results in customer dissatisfaction (Abbasi and Alvi 2013; Agnihotri & Krush, 2015).

Moreover, studies have examined the role of first-line employees in mapping customers’ service assessments (e.g. satisfaction and loyalty) due to the employee–customer direct contact in service settings (e.g. Itani & Inyang, 2015; Wieseke et al., 2012). In the sales and marketing and promotional literature, a social emotion, namely empathy, has been found to be of crucial importance to understand the nature of employee–customer interactions within the business context (e.g. Daniels, Glover, & Mellor, 2014; Markovic, Iglesias, Singh, & Sierra, 2015; Meneses & Larkin, 2012). These studies provide practical support of a positive association between employee empathy (EE) and employee–customer interactional procedures and the effect of EE on CS. CS, as an essential parameter of organizational success, has an influential impact on service brand loyalty (Kasiri, Cheng, Sambasivan, & Sidin, 2017) that ultimately results in the customers’ positive word-of-mouth (PWOM) and repurchase intentions (RI) toward the service brands (Barnes, Collier, Howe, & Douglas Hoffman, 2016; Barnes, Leonidou, Siu, & Leonido, 2015; Nyadzayo & Khajehzadeh, 2016).

Since EE concerns customers, therefore in today’s service settings, empathy has gained the attention of both service and marketing researchers (Agnihotri & Krush, 2015; Bagozzi, 2006). In the service literature, notably missing are empirical investigations of the effect of EE on loyalty outcomes such as customer PWOM and RI (Itani & Inyang, 2015). Only limited studies have been conducted to identify the direct or indirect impact of empathy on satisfaction, loyalty, and loyalty outcomes (e.g. Markovic et al., 2015; Wieseke et al., 2012).

This study intends to contribute to the service literature by examining the indirect impact of EE on loyalty outcomes (i.e. PWOM and RI) in the telecommunication service settings (Van Doorn
et al., 2010; Verhoef, Reinartz, & Krafft, 2010). First, the empirical model probes the mechanism to determine how much EE influences customer loyalty (CL) by considering CS, customer affective commitment (CAC) and perceived service quality (PSQ) among EE and CL (Markovic et al., 2015; Wieseke et al., 2012). Then, this study extends the model by investigating the effect of CL on PWOM and RI separately (Harwood & Garry, 2015) and the interrelationship between PWOM and RI is studied, as empirical research in this domain is limited (Kassim & Abdullah, 2010).

The rest of the paper includes a literature review and hypothesis development, methodology, analysis, and discussion and conclusion sections.

2. Literature review and hypotheses development

2.1. EE

As a well-thought-out notion in the relationship marketing literature, empathy is considered as a significant variable for individual consideration among persons (Jones & Shandiz, 2015; Lee et al., 2011; Markovic et al., 2015). Particularly in the literature concerning service, empathy is regarded as an essential element for fruitful employee and customer communications that commonly lead to altruistic motivation and pro-social and altruistic behavior (Aksoy, 2013; Daniels et al., 2014; Itani & Inyang, 2015). Empathy is defined as “a person’s ability to sense another’s thoughts, feelings, and experiences, to share other’s emotional experience, and to react to the observed experiences of another person” (Wieseke et al., 2012, p. 317). Research confirms that empathy involves cognitive as well as emotional dimensions (Jones & Shandiz, 2015; Smith, 2006; Wieseke et al., 2012). From a cognitive perspective, empathy is the service employee's potential to take the customer's view through understanding their mind, thoughts, and intentions (Daniels et al., 2014). Regarding the emotional viewpoint, empathy relates to employees’ capability to involve in helpful actions toward customers, such as interpersonal concern and emotional contagion (Mayshak, Sharman, Zinkiewicz, & Hayley, 2017).

As a form of social or mutual perspective, empathy relates to the gaining of particular insight into the experience of others, while distinguishing it as another person's experience instead of one’s own (Itani & Inyang, 2015; Meneses & Larkin, 2012; Ratcliffe, 2012). For better service quality (SQ), it is crucial for employees to recognize and deal with customer needs (Puccinelli, Andrzejewski, Markos, Noga, & Motyka, 2013). Hence, this study considers EE as an independent variable and studies its indirect effect on CS, CL, and loyalty outcomes.

2.2. EE and CAC, PSQ and CS

Empathy is related to the employee’s aptitude in understanding customer perspective and feelings during service interactions (Hwang & kim, 2016; Markovic et al., 2015), resulting in positive customer emotions toward the service brand (Lee et al., 2011). Affective commitment is one of three types of organizational commitment (the others being continuance and normative) as suggested by Meyer and Allen (1991). CAC associates to the customers’ emotional connection to a particular brand established in their recognition of that brand (Iglesias, Singh, & Batista-Foguet, 2011). Committed customers attach less significance to price variations relative to competitors due to the relational aspect of the brand and attribute service failures to extrinsic reasons instead to brand deficiency (Drollinger & Comer, 2013; Story & Hess, 2010).

Additionally, EE toward customers acts crucially in linking the service experience of customers and the evaluation of SQ (Parasuraman, Zeithaml, & Berry, 1988; Rust, 1994). PSQ has been acknowledged as an essential variable affecting the customer’s adoption of services as it sways the customer’s perceptions and intentions about the service brand or company (Nyadzayo & Khajehzadeh, 2016; Zeithaml, Berry, & Parasuraman, 1996). Puccinelli et al. (2013) in their study reasoned that SQ depends on the employee’s capability to recognize and deal with customers’
needs. Wieseke et al. (2012) mentioned that EE toward customers is most probably positively evaluated by the customers, which radically influences the PSQ of the service brand.

Moreover, for the recognition and satisfaction of customer requirements, EE is vital during employee–customer communications (Markovic et al., 2015). Employee ability to understand customer emotions, sense their expectations, and react accordingly affect the improvement and coordination of appropriate interactive behaviors upon which customers value such developments and increase overall satisfaction (Jones & Shandiz, 2015). Empathic employees with general recognition of customer requirements adjust their behaviors toward specific customers, rendering to each customer personalized assistance (Wieseke et al., 2012) resulting in higher CS. Furthermore, the empathic behavior of employees increases satisfaction and develops a long-lasting relationship with the service brand (Agnihotri & Krush, 2015; Itani & Inyang, 2015). Hence, in view of the above literature review, it is asserted that

H1a. EE positively impacts CAC with the service brand.

H1b. EE positively impacts PSQ of the service brand.

H1c. EE positively impacts CS with the service brand.

2.3. CAC, PSQ, and CS

A focus on AC in a customer–employee relationship is indispensable because CS creates a fabrication of connection and belonging and achieves loyalty which is far greater than other kinds of commitment can achieve (Hur, Kim, & Park, 2013). Higher CAC is achieved by those service brands that provide their customers with superior service experiences (Iglesias et al., 2011). CAC plays a central role in service brand satisfaction, and loyalty since a relationship with the brand depends on the customer’s choice (Singh et al. 2012). A weak effect has been designated in marketing studies amid CS and CAC (Bansal, Irving, & Taylor, 2004; Chomvilailuk & Butcher, 2014; Choudhury, 2014).

Current study considered the path analysis conducted in a study by Johnson, Sivadas, and Garbarino (2008) where they measured the effect of CAC on CS. Herein, CS with the service brand is based on CAC developed during service interactions from employee’s empathic behavior. Following Oliver (1997, 1999), CS is a judgment of customer’s satisfied service experience regarding the enjoyable level of attainment to the desires, needs, and goals from the service brand (Hur et al., 2013). Numerous advantages for instance, social, psychological, economic, and individual treatment advantages are received by the relational customer from service experiences that have a positive effect on CS with the service provider (Gordon, Zainuddin, & Magee, 2016; Johnson et al., 2008; Kurniati, Suharyono, & Ariffin, 2015). Based on the above literature it is theorized that

H2a. CAC developed during service interactions positively affects CS.

In the marketing literature, the role of PSQ leading toward CS is well recognized (Bernardo, Llach, Marimon, & Alonso-Almeida, 2013). Quality of service delivered to customers affects satisfaction and positive behavior toward the service firm or brand (Meesala & Paul, 2018). SQ relates to the delivery of services while satisfaction is associated with the customers’ experiences of services (Malik, 2012). As a cognitive assessment of the customer, perceived quality has been proven to impact satisfaction (Kassim & Abdullah, 2010). Based on expectations disconfirmation theory in services settings, customer develops satisfaction as a response to his/her confidence that the expectations toward the service are met during interactions with the service (Iqbal, UI Hassan, & Habibah, 2018).

The existing literature offers conflicting evidence concerning the association of SQ and CS (He & Li, 2011). From one perspective, SQ is a precursor to CS (Anderson & Sullivan, 1993; De
Ruyter, Bloemer, & Peeters, 1997; see Cronin, Brady, & Hult, 2000; Hu, Kandampully, & Juwaheer, 2009; Rust, 1994), whereas, from another aspect, CS leads toward brand PSQ (Bolton & Drew, 1991; Parasuraman et al., 1988; see Bitner, 1990; Carman, 1990). Considering the former view in this disagreement, this study proposes that PSQ of a service brand leads to CS during employee–customer interactions (Bernardo et al., 2013). We reason that PSQ relates to cognitive knowledge acquired through direct contact with the service provider (i.e. employee–customer interactions), word-of-mouth (WOM), promotion, and company’s marketing activities (Chen & Hu, 2013).

Recently, perceived quality has been proven to positively impact CS (Kim & Kim, 2016; Srivastava & Rai, 2014; Su, Swanson, Chinchanchokchai, Hsu, & Chen, 2016). Thus, it is hypothesized that

H2b. The PSQ of a service brand positively impacts CS.

### 2.4. CS and CL

Oliver (1999, p. 34) described loyalty as “a deeply held commitment to repurchase or repatronize a preferred product/service consistently in the future, thereby causing repetitive same-brand or same brand-set purchasing, despite situational influences and marketing efforts having the potential to cause switching behavior.” A CS developed from an assessment of the customer’s experience with a service brand affects loyalty with the service brand (Baumann, Hoadley, Hamin, & Nugraha, 2017; Nyadzayo & Khajehzadeh, 2016).

Within relationship marketing and service studies, satisfaction is considered to be an essential construct for building and keeping lasting associations and strengthening CL toward service brands (Kim & Kim, 2016; Marakanon & Panjakajornsak, 2017; Srivastava, Dash, & Mookerjee, 2016). Studies have considered the relationship between CS and loyalty toward a service provider and have contended that CS commonly leads to CL (e.g. Casidy & Wymer, 2015; Srivastava & Kaul, 2016; Su et al., 2016). Based on literature review, it is hypothesized that

H3. CS developed during service interactions positively affects CL.

### 2.5. CL and loyalty outcomes

Recent literature provided the support where loyalty dimensions, i.e. attitudinal and behavioral loyalty were used to measure CL toward the service brand (Jiang & Zhang, 2016; Kim, Wong, Chang, & Park, 2016; Nyadzayo & Khajehzadeh, 2016). WOM referrals are viewed as a crucial attribute of the utterly loyal customer, a real antecedent, and an impartial source of information (Qu, Kim, & Im, 2011) and are considered essential for the assessment of a service brand (Srivastava & Kaul, 2016; Srivastava & Rai, 2014). Moreover, customers with attitudinal loyalty (i.e. PWOM) are less inclined toward accepting negative information about the service brand than disloyal customers (Donio et al., 2006).

Also, attitude toward positive information is considered as a critical predictor of RI (Donio’ et al., 2006) and is regarded as the behavioral component of loyalty (Kassim & Abdullah, 2010). From the marketing and psychological literature, an individual’s decision to repurchase the service and to engage in future activity with the service brand, as well as the shape that the action will take, is depicted as RI (Chitty, Ward, & Chua, 2007; Jones & Shandiz, 2015; Jones & Taylor, 2007). Customers return to the service brand upon fulfillment of their expectations during service interactions (Su, Swanson, & Chen, 2015). Subsequently, customers will adopt attitudinal and behavioral loyalty, explicitly giving PWOM to individuals and eventually sway RI toward the service provider (Kassim & Abdullah, 2010). Keeping existing customers and increasing their loyalty seems to be vital for telecommunication service providers to achieve a competitive advantage (Deng, Lu, Wei, & Zhang, 2010). Based on the above literature, it is hypothesized that (see Figure 1).
H4a. CL to the service brand positively affects customer PWOM.

H4b. CL to the service brand positively affects customer RI toward the brand.

3. Methodology

3.1. Sample and data collection

This study is purely quantitative, and data for this study were collected through a self-administered survey questionnaire. The survey questionnaire technique was chosen due to the advantages it offers, such as the respondents’ control of time, low cost, no geographical boundary, no bias of interviewer, and secrecy in responses (Shiu, Hair, Bush, & Ortinao, 2009). Online survey questionnaire responses were collected from the active users of three state-owned Chinese telecommunication services brands (China Mobile Ltd., China Unicom Ltd., and China Telecom Corporation Ltd.) in Anhui province of China. The Chinese telecommunication service sector was selected due to the following reasons.

First, it is one of the essential service sectors ignored by most studies (Wang, Lo, & Yang, 2004). Customers interact with service employees through a customer service helpline or service centers involving face-to-face interactions (for SQ concerns and information gathering about products and services). Further, with China’s population of over 1.3 billion, more than 1.5 billion mobile and fixed-line connections, and with over more than 2 trillion RMB business volumes annually, its telecom sector is one of the fastest growing service sectors in the country (China Statistical Yearbook, 2016). That growth has resulted in 92.5% popularization of telecommunication services among Chinese people (China Statistical Yearbook, 2016). Besides, with such a large customer base and competitive local market, it has become imperative for service brands to focus on SQ, CS, and loyalty for the acquisition and retention of customers (Deng et al., 2010).

Another aspect of this paper is the investigation of the indirect effect of EE on CL and loyalty outcomes (i.e. PWOM and RI). Moreover, the focus of the current research is on employee–customer interactions during which employee’s service level is crucial in the development of CAC, satisfaction, and loyalty (Agnihotri & Krush, 2015; Markovic et al., 2015; Wieseke et al., 2012). Concerning our knowledge, the effect of EE on satisfaction and loyalty outcomes has not been extensively researched in the context of telecommunication services and the Chinese market. Finally, young consumers were chosen as the target population due to their higher knowledge...
base, adoption of technology and various other telecom services, and previous experience with the service brands.

This study used systematic random sampling method (Walonick, 1997) that is often used instead of random sampling. It is also called an Nth name selection technique. After the required sample size has been calculated, every Nth record is selected from a list of population members. As long as the list does not contain any hidden order, this sampling method is as good as the random sampling method. Its only advantage over the random sampling technique is simplicity. Systematic sampling is frequently used to select a specified number of records from a computer file. Data collection was completed in two rounds. In the first round, an online survey questionnaire link was shared with \( n = 600 \) university students using Survey on WeChat (a social networking application in China). The data collection process lasted over 6 weeks. Two reminders were sent with an interval of 1 week. In the second round, within a range of 1 week, respondents were reminded to share the survey link with their friends. A total of 425 responses were obtained: 143 responses from China Mobile Ltd., 153 from China Unicom Ltd., and 129 from China Telecom Corporation Ltd. Out of these, 65 responses were unusable due to a high proportion of missing information. Data analysis was conducted on the 360 valid questionnaires, resulting in a response rate of 60%. Table 1 elaborates sample characteristics of the respondents.

### 3.2. Measures

#### 3.2.1. Central constructs

The measurement items scale came from previous literature, adapted to fit the service setting. All constructs incorporated in the model were quantified using multi-item scales devised to tap all related domains of the construct (see Appendix). Four items to measure EE were based on Markovic et al. (2015) and Parasuraman, Zeithaml, and Berry (1994). The three items for CL and four items for PWOM were adapted from Dagger, David, and Ng (2011). CS was conceptualized using five item adapted from Grace and O’Cass (2005). A relevant four-item scale for RI was adapted from Mandhachitara and Poolthong (2011). PSQ measurement was done with a five-item scale based on Hightower, Brady, and Baker (2002). The three-item scale used to measure CAC was adapted from Mende and Bolton (2011). A seven-point, Likert-type, multiple-item scale was used to measure the constructs as it results in stronger

<table>
<thead>
<tr>
<th>Table 1. Sample characteristics</th>
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<tr>
<td>Measures</td>
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<tr>
<td>Gender</td>
</tr>
<tr>
<td>Male</td>
</tr>
<tr>
<td>Female</td>
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<td>Age in years</td>
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<tr>
<td>25–29</td>
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<tr>
<td>30–34</td>
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<tr>
<td>35–39</td>
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<td>Above 40</td>
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correlations with t-test results as well as improving the reliability and validity of the results (Lewis, 1993). The scale ranged from (1) “strongly disagree”, to (7) “strongly agree.”

3.2.2. Covariates
In this study, we controlled three measures related to respondents in the proposed model to confirm that the findings of the study are free from covariance among the constructs. Past studies suggest that customer gender, age, and level of education potentially correlate with CL (Oh & Kim, 2017; Wieseke et al., 2012).

3.3. Survey design
All the construct items of the instrument were initially developed in English. Due to the Chinese sample population, the translation committee approach (Van de Vijver & Leung, 1997) was employed to translate the questionnaire from English to Chinese. Three native Chinese students, with fluent English, participated in the translation of the survey instrument. Then the questionnaire was translated back into English by three professionals who were not aware of the primary English questionnaire. No semantic inconsistencies were noticed among the original and translated English version (Brislin, 1980). An expert’s review and pilot study of the questionnaire was conducted among marketing and consumer behavior experts and students. Thirty useful responses were returned and analyzed before the final survey was distributed among the targeted sample.

4. Data analysis and results
In the study, the authors used AMOS 21 (software) to conduct the data analysis. Structural equation modeling (SEM) was used to evaluate the measurement model and structural model. Principle component analysis and regression tests were used simultaneously to assess the measurement model and structural model. The benefit of using SEM is that it allows us to conduct a simultaneous analysis of a complete arrangement of variables in a hypothesized model (Byrne, 1994), and this technique is a powerful tool to perform these tests (Anderson & Gerbing, 1988).

4.1. Assessment of bias
The data were collected through self-administered survey questionnaires; therefore, common method variance might have biased the results. Common method bias becomes a concern when respondents are asked to respond to items including both dependent and independent variables (Olander, Vanhala, Hurmelinna-Laukkanen, & Blomqvist, 2016). Harman’s single-factor test (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003) was used to look for common method bias concerns. The findings revealed that all items were classified into seven factors and the initial factor explained only 14.715% of the variance. Therefore, there was no severe concern regarding common method bias.

4.2. Measurement model
Confirmatory factor analysis (CFA) was used to measure the scale validity. As per CFA analysis, overall measurement model fitness indices were satisfactory (χ²/df = 1.734, RMSEA = .045, GFI = .901, AGFI = .876, CFI = .955, IFI = .955, and TLI = .947) as all values are above the benchmark index values (Arbuckle, 2003; Bearden, Sharma, & Teel, 1982; Hair, Black, Babin, Anderson, & Tatham, 1998; Marsh & Hocevar, 1988). Likewise, factor loadings, Cronbach’s alpha, composite reliability (CR), and AVE values were calculated to measure validity (see Table 2). Benchmark values for factor loadings, CR, and AVE are .7, .7, and .5, respectively (Hair et al., 1998). The values for standardized loadings ranged from .720 to .900. Cronbach’s alpha coefficient of the latent constructs varied in an acceptable range from .778 to .933 (Fornell & Larcker, 1981). All constructs attained an acceptable degree of reliability with CR scores greater than .70. The AVE values varied between .512 and .776. Two items each for CS and PSQ and one item for RI were not included due to lower factor loading values than the standard benchmarks. The convergent validity of all the constructs included in the proposed model is satisfied (Anderson & Gerbing, 1988).
As seen in Table 3, the discriminant validity test requirement was satisfied as the square root of AVE of all constructs was higher than the correlation between the constructs, which indicates good discriminate validity (Fornell & Larcker, 1981).

### 4.3. Structural model

Structural path model results regarding the fitting indices are as follows: $\chi^2 = 578.304$, df = 262 ($\chi^2$/df = 2.207), RMSEA = .058, GFI = .890, AGFI = .863, IFI = .927, TLI = .916, and CFI = .927. The overall fitness of the proposed model is acceptable in comparison to the benchmark values (Arbuckle, 2003; Bearden et al., 1982; Hair et al., 1998; Marsh & Hocevar, 1988) so it is suitable to evaluate the hypothesized paths. Results of structural equation model are shown in Figure 2.

The structural equation model was used to test the hypotheses. Table 4 presents the structured results for the full sample and each of the three subsamples concerning the three telecommunication services brands. The findings demonstrate that H1a is partially supported; EE is positively associated with CAC for China Mobile ($\beta = .368$, $p < .001$) and China Telecom ($\beta = .399$, $p < .001$), but
Table 3. Correlation matrix, reliability, and AVE square root

<table>
<thead>
<tr>
<th>Constructs</th>
<th>M (SD)</th>
<th>CR</th>
<th>AVE</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>PSQ</td>
<td>4.4 (1.01)</td>
<td>.796</td>
<td>.568</td>
<td>.754</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>2</td>
<td>PWOM</td>
<td>4.3 (1.22)</td>
<td>.933</td>
<td>.776</td>
<td>.201</td>
<td>.881</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>3</td>
<td>EE</td>
<td>4.6 (1.25)</td>
<td>.807</td>
<td>.512</td>
<td>.144</td>
<td>.089</td>
<td>.715</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>CS</td>
<td>4.4 (1.21)</td>
<td>.886</td>
<td>.722</td>
<td>.483</td>
<td>.338</td>
<td>.269</td>
<td>.850</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>CL</td>
<td>4.6 (1.29)</td>
<td>.825</td>
<td>.612</td>
<td>.424</td>
<td>.487</td>
<td>.002</td>
<td>.482</td>
<td>.782</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>RI</td>
<td>4.2 (1.45)</td>
<td>.784</td>
<td>.554</td>
<td>.378</td>
<td>.283</td>
<td>.105</td>
<td>.513</td>
<td>.489</td>
<td>.744</td>
</tr>
<tr>
<td>7</td>
<td>CAC</td>
<td>5.1 (1.49)</td>
<td>.795</td>
<td>.565</td>
<td>.402</td>
<td>.483</td>
<td>.137</td>
<td>.455</td>
<td>.459</td>
<td>.546</td>
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Note: M: Mean; SD: standard deviation; CR: composite reliability; AVE: square root of average variance extracted is on the diagonal of matrix; below the diagonal are inter-construct correlations.
Insignificant for China Unicom ($\beta = .219, p > .05$). The full sample analysis showed significant results ($\beta = .441, p < .001$).

H1b is fully supported in the full sample test ($\beta = .889, p < .001$) and for each brand, i.e. China Mobile ($\beta = .524, p < .001$), China Unicom ($\beta = .681, p < .001$), and China Telecom ($\beta = .439, p < .001$). H1c is supported in the full sample ($\beta = .239, p < .001$) and for each brand, i.e. China Mobile ($\beta = .417, p < .001$), China Unicom ($\beta = .403, p < .001$), and China Telecom ($\beta = .334, p < .001$).

However, it is notable that H2a is fully supported by overall sample results ($\beta = .256, p < .001$) and is partially supported by the service brand results, i.e. supported by data for China Mobile ($\beta = .325, p < .001$) and China Telecom ($\beta = .423, p < .001$), whereas the relationship is not supported in the case of China Unicom ($\beta = -.011, p > .05$). H2b is fully supported ($\beta = .200, p < .001$) in the full sample and partially supported in the case of China Unicom ($\beta = .31, p < .001$) and China Telecom ($\beta = .142, p < .001$), but the relationship is not supported in the case of China Mobile ($\beta = .184, p > .05$).

Relating to H3, CS positively affected CL for the three service brands, i.e. China Mobile ($\beta = .338, p < .001$), China Unicom ($\beta = .612, p < .001$), and China Telecom ($\beta = .319, p < .001$) and in full sample analysis ($\beta = .702, p < .001$). H4a is supported for the full sample ($\beta = .358, p < .001$) and all brands, i.e. China Mobile ($\beta = .757, p < .001$), China Unicom ($\beta = .620, p < .001$), and China Telecom ($\beta = .907, p < .001$). In H4b, CL positively affects RI in full sample analysis ($\beta = .281, p < .001$) and brand wise, namely China Mobile ($\beta = .480, p < .001$), China Unicom ($\beta = .513, p < .001$) and China Telecom and ($\beta = .554, p < .001$). An $R^2$ value (see Table 4) of each variable is above the adequate level of .10 (Falk & Miller, 1992). The $R^2$ illustrates the amount of variance explained by the exogenous variables. Moreover, control variables, age, and level of education were not significantly related to loyalty outcome (RI); however, gender significantly affected service loyalty outcome (RI).

### 4.4. Mediation analysis

In this research, a bootstrapping approach (bootstrap sample size = 5000) is used to test the mediation effect (Preacher & Hayes, 2008) to produce asymmetric confidence intervals (CIs) for indirect relationships. The bootstrap CI method generates a comparatively correct inference as it generates asymmetric CIs for indirect relationships by employing the respective distributions of two regression coefficients that include a product term (Mackinnon, Lockwood, & Williams, 2004).

Table 5 shows the indirect impact of EE on CS through CAC and PSQ, and indirect effect of EE on CL through CS revealing that the effect is significant with a 95% confidence level. The paths of EE to CAC and, in turn, to CS were significant (CI .95 = .036, .130) suggesting a mediating role of CAC.
Table 4. Structural results

<table>
<thead>
<tr>
<th>Paths</th>
<th>Full sample (n = 360)</th>
<th>China Mobile (n = 116)</th>
<th>China Unicom (n = 129)</th>
<th>China Telecom (n = 115)</th>
<th>Hypotheses</th>
</tr>
</thead>
<tbody>
<tr>
<td>EE → CAC</td>
<td>.441 (5.483)***</td>
<td>.368 (2.861)**</td>
<td>.219 (1.700)ns</td>
<td>.399 (3.299)***</td>
<td>H1a: Partially supported</td>
</tr>
<tr>
<td>EE → PSQ</td>
<td>.889 (15.538)***</td>
<td>.524 (4.481)***</td>
<td>.618 (4.008)***</td>
<td>.439 (3.999)***</td>
<td>H1b: Supported</td>
</tr>
<tr>
<td>EE → CS</td>
<td>.239 (4.173)***</td>
<td>.417 (3.928)***</td>
<td>.403 (3.293)***</td>
<td>.334 (3.002)**</td>
<td>H1c: Supported</td>
</tr>
<tr>
<td>CAC → CS</td>
<td>.256 (4.281)***</td>
<td>.325 (3.322)***</td>
<td>-.011 (.906)ns</td>
<td>.423 (3.877)***</td>
<td>H2a: Partially supported</td>
</tr>
<tr>
<td>PSQ → CS</td>
<td>.200 (5.310)***</td>
<td>.184 (.102) ns</td>
<td>.331 (3.781)***</td>
<td>.142 (1.128)***</td>
<td>H2b: Partially supported</td>
</tr>
<tr>
<td>CS → CL</td>
<td>.702 (12.369)***</td>
<td>.388 (5.493)***</td>
<td>.612 (6.629)***</td>
<td>.319 (4.447)***</td>
<td>H3: Supported</td>
</tr>
<tr>
<td>CL → PWOM</td>
<td>.358 (7.498)***</td>
<td>.757 (5.819)***</td>
<td>.620 (6.513)***</td>
<td>.907 (5.100)***</td>
<td>H4a: Supported</td>
</tr>
<tr>
<td>CL → RI</td>
<td>.281 (6.045)***</td>
<td>.480 (3.600)***</td>
<td>.513 (4.508)***</td>
<td>.554 (3.406)***</td>
<td>H4b: Supported</td>
</tr>
<tr>
<td>CAC R²</td>
<td>.334</td>
<td>.325</td>
<td>.255</td>
<td>.400</td>
<td></td>
</tr>
<tr>
<td>PSQ R²</td>
<td>.195</td>
<td>.225</td>
<td>.145</td>
<td>.220</td>
<td></td>
</tr>
<tr>
<td>CS R²</td>
<td>.307</td>
<td>.369</td>
<td>.259</td>
<td>.395</td>
<td></td>
</tr>
<tr>
<td>CL R²</td>
<td>.354</td>
<td>.374</td>
<td>.432</td>
<td>.298</td>
<td></td>
</tr>
<tr>
<td>PWOM R²</td>
<td>.358</td>
<td>.424</td>
<td>.358</td>
<td>.379</td>
<td></td>
</tr>
<tr>
<td>RI R²</td>
<td>.465</td>
<td>.436</td>
<td>.485</td>
<td>.435</td>
<td></td>
</tr>
</tbody>
</table>

Note: ns: Not significant; **p < .01; ***p < .001.
Likewise, the paths from EE to PSQ and, in turn, to CS were also significant (CI .95 = .342, .488), suggesting a mediating role of PSQ.

5. Discussion and conclusion

5.1. Theoretical contributions

In the marketing literature, in spite of an emphasis on the applicability of empathy during employee–customer interactions, methodological examinations concerning EE and its outcomes are inadequate (Meneses & Larkin, 2017; Ratcliffe, 2012; Wieseke et al., 2012). Due to the nature of services being intangible, diverse, and indivisible (Lee et al., 2011; Markovic et al., 2015; Stock, 2016), the telecommunication service sector is a vital service research setting where employee–customer interactions are influential for high SQ (Drollinger & Comer, 2013).

Our findings (see Table 4) give further insights into how EE can play an essential role in developing CAC, PSQ, and CS during service interactions within telecommunication services (Khan, Ferguson, & Pérez, 2015; Markovic et al., 2015; Mayshak et al., 2017). Moreover, Richard, Bupp, and Alzaidalsharief (2016) argued in their study that empathy plays a buffering role toward the satisfaction of customers during service interactions. Hence, the display of empathic behavior by service employees during interpersonal interactions between customers and service employees positively affects commitment, perceived quality of service, and satisfaction (Jones & Shandiz, 2015). Our overall sample results confirm the proposed hypotheses, and it can be concluded that EE is central for those service brands that want to leverage their investments in CS and loyalty outcomes (Aksoy, 2013; Meneses & Larkin, 2012; Wieseke et al., 2012). Brand-wise sample results also showed significant relationship and supported the proposed hypotheses and relevant literature. However, the relationship between EE and CAC in the brand analysis showed insignificant relationship for China Unicom. It can be assumed that China Unicom customers developed lower commitment toward the service brand during employee–customer interactions. Therefore, service employees can increase customer’s commitment during service interactions by using their knowledge and expertise concerning service brand along with adopting empathic behavior (Daniels et al., 2014; Wieseke et al., 2012).

Furthermore, because of the difficulty customers confront in assessing SQ, the development of CAC is more substantial in the service sector than in the area of goods/products (Bowden, 2011; Choudhury, 2014; Marinovik & Obradovic, 2015; Markovic et al., 2015). Our results showed a significant effect of PSQ on CAC and supported the literature and proposed hypotheses.

This study confirms that CAC significantly contributes toward CS (Markovic et al., 2015). The full sample results showed a significant effect of CAC on CS while analysis of individual brands showed a significant effect in the case of China Mobile and China Telecom but not in the case of China Unicom (see Table 4). A pleasurable service experience creates commitment due to the individualized treatment and empathic behavior of service employees that eventually creates satisfaction with the service brand (Agnihotri & Krush, 2015; Wieseke et al., 2012). In the current study, committed customers aspire to convey positive evaluations to support the service brand, and
this support may also extend to their expressions of satisfaction (Johnson et al., 2008). However, in the case of China Unicom, it can be assumed that interaction between service employees and customers did not have a positive effect on the commitment due to unsatisfactory interactions (Itani & Inyang, 2015; Marinkovic & Obradovic, 2015; Markovic et al., 2015). Some researchers also indicate that it is not always the case that empathic behavior by service employees has a positive effect on commitment and satisfaction (Bernardo et al., 2013; Lee et al., 2011).

Similarly, the quality of service delivered to customers by service employees affects CS and positive behavior (Kim & Kim, 2016; Meesala & Paul, 2018). Sufficient and constant delivery of quality service during employee–customer interactions is vital for CS (Bernardo et al., 2013; Iglesias et al., 2011; Marinkovic & Obradovic, 2015). Overall test results supported the literature as the PSQ of a service brand positively affected CS during employee–customer interactions (e.g. Markovic et al., 2015; Su et al., 2016). It can be interpreted that those service brands that want to create CS must make sure to provide an adequate and stable SQ across service interactions (Iglesias et al., 2011). However, the results for individual brands showed an insignificant effect of PSQ on CS in the case of China Mobile. Customer expectations from services and frontline employees during service interactions involve getting timely solutions to their problems or needs, quick and accurate delivery of services, and customer orientation of service employees (Bernardo et al., 2013; Chen & Hu, 2013; Xie, Batra, & Peng, 2015). Unsuccessful service encounter or unsatisfactory customer experience during service interactions may result in a lower satisfaction toward the service brand. Hence, in this study, it is interpreted that customers might not have acquired the SQ desired by them due to the above reasons and this resulted in lower satisfaction (Bernardo et al., 2013; Puccinelli et al., 2013). It is also important, based on above literature, that service employees adopt customer-oriented behavior, resolve customer’s queries, provide adequate service, and provide correct information to customers to produce successful service interactions and build long-term customer relationships.

Loureiro and Kaufmann (2017) argued that loyalty to a service brand includes the use of services on a regular basis and avoiding looking for alternatives. It is important to note that we found a positive and significant effect of CS on CL, a result that supports the previous literature (e.g. Bernardo et al., 2013; Lee et al., 2011; Su et al., 2016; Wieseke et al., 2012).

Though the verdict that CL has a direct effect on loyalty outcomes is not unexpected (Johnson et al., 2008; Su et al., 2015), we also found a positive and significant effect of CL on PWOM and RI in both the overall sample results and brand results (see Table 4). Results of this study provide support to the literature (e.g. Chen, Chen, & Wu, 2014; Kassim & Abdullah, 2010; Khan et al., 2015; Su et al., 2015) and the proposed hypotheses. The inclusion of PWOM and RI in the model augments our understanding of EE’s influence on loyalty outcomes (Chen et al., 2014; Kassim & Abdullah, 2010; Khan et al., 2015).

Keeping in view the above literature, this study demonstrates an indirect and significant effect of EE on CS through CAC and PSQ. The mediating effects resulted in positive relationships among the constructs and supported the proposed hypotheses and literature (e.g. Markovic et al., 2015). This verdict agrees with the services literature that proposes that employees are the primary stakeholders in service brands and can influence customers positively during service interactions (Balmer, 2010; Choudhury, 2014; Itani & Inyang, 2015). It is stated that employees can conversely make or damage the service brand, specifically during service interactions where service is mutually co-produced with the customers (Drollinger & Comer, 2013; Stock, 2016). Hence, during employee–customer interactions, employees should adopt an empathic behavior that will establish customers’ emotional connection and satisfaction with the service brand (Kassim & Abdullah, 2010; Lee et al., 2011; Wieseke et al., 2012).
5.2. Conclusion

Indirect effect of EE on CL and loyalty outcomes was studied in this study. Overall sample analysis showed significant results of the proposed hypotheses. Moreover, brand-wise analysis conducted in the study provided detailed results and gave additional insights. Also, the proposed model tested the intervening effect of CAC and PSQ on CS. Mediation analysis verified the intervening effect of SQ and AC as proposed in the study. Hence, research objectives of this study were verified and supported the literature. Based on this study it is affirmed that service employee plays an essential role toward CS and loyalty with the service brand (Wieseke et al., 2012). Also, satisfied and loyal customers adopt loyalty intentions and behaviors toward the service brand such as PWOM and RI (Khan et al., 2015).

Service brands, considering empathic behavior of employees, could increase CS and loyalty with the service brand as in the case of telecommunication service brands studied in the current study. The study contributes toward the service marketing, relationship marketing, and consumer behavior literature with insights from the results obtained in this study. Also, importance of EE during service interactions has been demonstrated that helps practitioners in developing their understanding and about the concept and to improve their service strategies by focusing on interactions between customer and service employees. Future studies could study empathic behavior of frontline service employees and its effect on relationship quality and may also consider to study the antecedents of EE.

5.3. Practical implications

This study has identified several important implications for service managers. First, employees have to adopt empathic behavior and express during employee–customer interactions. This is because employees are the primary stakeholders in service brands and directly interact with customers during service interactions. Empathy must also be reflected in daily service processes that portray a pro-customer image. This study illustrates that the empathic behavior of employees during service interactions increases service brand satisfaction and loyalty.

Second, service brand strategy should support human resource guidelines and principles (Iglesias & Saleem, 2015) and also align with service processes that focus on the empathic behavior of employees. Managers must avoid employing service employees with lower interpersonal skills (Hennig-Thurau, 2004). For better service encounters, managers should hire service employees who can sense customer expectations, personnel who have the aptitude to perceive and respond to customers’ thoughts, feelings, and intentions to develop a positive brand image during employee–customer interactions.

Third, the results of this study confirmed a positive impact of CAC and PSQ in developing CS, which is an absolute antecedent of CL. Indeed, service providers are more concerned about customer’s satisfaction and retention with the service brand as satisfaction possesses a substantial total effect on service loyalty. Therefore, it is important to integrate the antecedents of satisfaction to develop customer’s loyalty and build long-term relationship with the customers.

Additionally, managers should also note that results of this study signify that customers PSQ and AC with the service brand depend on employee’s empathic behavior. Managers must focus on employee characteristics along with SQ to retain customers.

5.4. Limitations and future research directions

Numerous limitations of this study might encourage prospective investigations. Primarily, the number of responses (360 respondents) is quite low compared to the number of Chinese consumers of telecom services. Therefore, care should be taken in generalizing the results. Future studies should use more efficient techniques to gather data and more objective measures to lessen the potential for self-reporting bias.
Moreover, this study focused on employee–customer interactions by only sampling active users of Chinese telecommunication services in the context of business-to-consumer services. Future studies can consider other service industries or business-to-business service markets across different cultures.

Further, this study examined the effect of EE as one of the three employee characteristics (the others being employee expertise and employee reliability) to study customer behavior toward the service brand. Future studies can incorporate all three employee characteristics (Khan et al., 2015; Wieseke et al., 2012) and examine their effect on CS and loyalty during service encounter.

Moreover, unsatisfactory service from service employee or brand may result into dissatisfying service experience. Customer empathy can negate the negative effect of unsatisfactory service experience and result into customers' further commitment and loyalty toward the service brand. Future work can incorporate customer empathy and study its affect on service interactions, customer relationship development, or co-creation of services.

Also, future study could focus on business outcomes such as market share and stock value. At last, age and gender are used as control variables in this study to measure CS and loyalty. Future studies can consider customer characteristics (e.g. product knowledge and prior experience) as moderators to measure their effect on customer–employee interaction.

**References**


### Appendix: Measures

#### Employee empathy

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The service employees give customers individual attention</td>
</tr>
<tr>
<td>2</td>
<td>The service employees deal with customers in a caring fashion</td>
</tr>
<tr>
<td>3</td>
<td>The service employees have the customer best interest at heart</td>
</tr>
<tr>
<td>4</td>
<td>The service employees understand the needs of their customers</td>
</tr>
</tbody>
</table>

#### Customer-affective commitment

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>I enjoy being a customer of the service brand</td>
</tr>
<tr>
<td>2</td>
<td>I have positive feelings about the service brand</td>
</tr>
<tr>
<td>3</td>
<td>I feel attached to the service brand</td>
</tr>
</tbody>
</table>

#### Perceived service quality

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Overall, I have received high-quality service from the service brand</td>
</tr>
<tr>
<td>2</td>
<td>Generally, the service provided by the service brand is excellent</td>
</tr>
<tr>
<td>3</td>
<td>I think the service provided by the service brand is superior in all aspects</td>
</tr>
</tbody>
</table>

#### Customer satisfaction

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>I am very satisfied with the service provided by this brand</td>
</tr>
<tr>
<td>2</td>
<td>The service provided by this brand is very satisfactory</td>
</tr>
<tr>
<td>3</td>
<td>I believe that using this brand is usually a very satisfying experience</td>
</tr>
</tbody>
</table>

#### Customer loyalty

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>I consider the service brand my first choice when I purchase the services they supply</td>
</tr>
<tr>
<td>2</td>
<td>I am willing to maintain my relationship with the service brand</td>
</tr>
<tr>
<td>3</td>
<td>I am loyal to the service brand</td>
</tr>
</tbody>
</table>

#### Positive word-of-mouth

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>I say positive things about the service provider to other people</td>
</tr>
<tr>
<td>2</td>
<td>I recommend the service provider to someone who seeks my advice</td>
</tr>
<tr>
<td>3</td>
<td>I encourage friends and relatives to do business with the current service provider</td>
</tr>
<tr>
<td>4</td>
<td>I advocate (support) the current service provider</td>
</tr>
</tbody>
</table>

#### Repurchase intentions

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>In the future, I intend to use the services from the service provider</td>
</tr>
<tr>
<td>2</td>
<td>If you were in the market for additional telecom services, how likely would you be to use those services from existing service provider?</td>
</tr>
<tr>
<td>3</td>
<td>In the future, I will continue using the service provider for telecom services</td>
</tr>
</tbody>
</table>