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Moving beyond the direct impact of using CRM systems on frontline employees' service performance: The mediating role of adaptive behaviour

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Abstract
Despite substantial investments in customer-relationship-management (CRM) systems, companies continue to experience pain rather than profit. Meanwhile, the concept of "adaptive behaviour" of frontline employees has received little attention in the literature related to CRM systems in which the frontline employees are the primary users. In this study, we propose that with the aid of CRM systems, individual employees are able to immediately access information about customers and service offerings, thus enabling their adaptive behaviours to provide personalized service to individual customers. Based on coping theory, we develop a CRM system-driven adaptive behaviour model that explains how CRM systems facilitate individual employees' service performance by enabling adaptive behaviour during their service encounters. Multi-sourced data from a financial company in China largely support our proposed model, showing that employees' postadoption of CRM systems (routinization and infusion of use) enables interpersonal and offering adaptive behaviours, which in turn enhance employees' service performance. In addition, forming a postadoption behaviour of CRM systems relies on the frequent use. We
discuss the theoretical and practical implications of adaptive behaviour in service encounters with the aid of CRM systems.

**KEYWORDS**
adaptive behaviour, customer-relationship-management (CRM) systems, coping theory, postadoption, service performance

1 | INTRODUCTION

The promise of customer-relationship-management (CRM) systems is their effectiveness in documenting market-relevant information, managing customer contacts, as well as facilitating customer-oriented coordination of employees across the whole organization. According to a Gartner report\(^1\), the worldwide CRM systems market amounted to US$39.5 billion in 2017, which was the fastest growing software market and took the lead amongst all software markets. However, despite substantial investments in CRM systems, companies continue to experience pain (such as low utilization and no integration with business processes) rather than profit (Chang, Park, & Chaiy, 2010; Liang & Mao, 2012; Tarafdar, Pullins, & Ragu-Nathan, 2014).

In the service context, the responsibility for maintaining customer relationships falls on the shoulders of frontline employees (hereafter referred to as employees in this study), who are responsible for providing services and have direct control over the customer experience behind the counter or on the phone (Wu, Tsai, Hsiung, & Chen, 2015). By adopting CRM systems, companies expect that their employees could more effectively accommodate individual customers, engage in personalized dialogues with them, and personalize products or service offerings. However, the interaction between CRM systems and employees still appears to be weak (Selander & Henfridsson, 2012). According to a McKinsey survey in 2016, even though most companies recognized the importance of CRM systems in driving better sales performance and have invested in systems implementation, only 28% of employees reported the use of the CRM system in daily routines. About 60% of respondents indicated that they failed to achieve the best practice of using the system. As Beaujean, Davidson, and Madge (2006) note, “although companies are investing record amounts of money in CRM technology, most of these initiatives end in disappointment. What is regularly missing is the spark between customers and frontline staff members, the spark that helps transform wary or sceptical people into strong and committed brand followers”.

In order to address this problem, researchers have started to examine frontline employees’ interaction with CRM systems. This domain of research has provided rich insights on the role of service quality in mediating employees’ satisfaction with CRM systems and customer satisfaction (eg, Hsieh, Rai, Petter, & Zhang, 2012); and the influence of salespeople’s knowledge and adaptability on work performance with the aid of a CRM system (eg, Ahearne, Jones, Rapp, & Mathieu, 2008). However, noticeably missing from these studies is how employees’ use of CRM systems helps fire “the spark between customers and frontline staff members” (Beaujean et al., 2006) and subsequently improves employees’ service performance.

In response to this practically and theoretically challenging issue, we examine the stream of research on adaptive behaviour, which refers to the set of adjustable work behaviours of employees in response to customer needs (Weitz, Sujan, & Sujan, 1986). As there is no best way to satisfy all kinds of customers, the quality of customer interaction largely depends on how adaptive an employee is in selecting and implementing a work strategy contingent upon his/her knowledge about customers and contexts (Román & Iacobucci, 2010). Despite progress made on

\(^1\)https://www.gartner.com/newsroom/id/3871105
adaptive behaviour, there has been little focus on linking the use of CRM systems with the explanations of employees’ adaptive performance. It is clear that the impact of using CRM systems on adaptive behaviour, which we suggest is one of the most important drivers of successful CRM, has yet to receive sufficient research attention from the disciplines of information systems (IS), marketing, and management.

Although research has indicated that the use of technology can lead to positive work performance, it is clear that ineffective mandated-use behaviour may “frustrate employees and compromise their work” (Hsieh et al., 2012), leading to counterproductive performance instead. Therefore, it is necessary to separate different types of use behaviours when examining the role of CRM systems on adaptive behaviour. In this study, we differentiate two types of IT usage, viz.: frequent use and postadoption behaviours. Specifically, frequent use refers to the frequency with which individuals use a technology initially, although they may gradually fail to avail themselves of the full potential offered by the technology (Chin & Marcolin, 2001). The postadoption is defined as the extent to which individual employees proactively extend the productive contributions of a technology beyond the requirement of a managerial adopter (ibid.). The key difference between the frequent use and the postadoption is that the postadoption focuses on “exceeding the normal demands of tasks” (ibid.) and captures individuals’ positive attitude towards the system and a user constantly looks for new methods to use a technology and attempts to achieve system effectiveness. In the context of CRM systems, the postadoption stage captures employees’ adaptive behaviour in service encounters by facilitating information collection, analysis, and retrieval. As a result, employees are able to better understand customers as individuals and predict their heterogeneous demands.

In summary, this study attempts to address the following important but still unanswered questions: (a) how does employees’ different use of CRM systems influence their adaptive behaviour to meet customer needs; and (b) how can such adaptive behaviour improve employees’ work performance? In order to answer these research questions, we employ coping theory as our theoretical lens. Coping theory focuses on people’s adaptive behaviour as they cope with demands of situations and its relationship with performance (Lazarus, 1993). It argues that when individuals encounter an event that generates stress, the resources to which they have access can play an important role in affecting the way in which they cope, which in turn serves as a key mechanism contributing to performance outcomes. These resources refer to what people do, and what resources are available to them in terms of developing coping strategies (Guinea & Webster, 2013; Herath et al., 2014). Individuals who have more suitable resources to deal with the events would have a better understanding about the situation and would therefore better adapt to the same events. Resources can be obtained either internally (eg, from personality, existing knowledge and skills) or externally (eg, from remote sources via IS).

Based on coping theory, we propose a theoretical model about adaptive behaviour driven by CRM systems. We argue that the postadoption (viz., routinization and infusion) of CRM systems can lead to highly adaptive behaviour (viz., interpersonal and offering adaptive behaviour) and thus improve individual employees’ service performance. Following the literature on IT postadoption, we consider frequent use of CRM systems to be a foundation of routinization and infusion use.

This research is expected to make the following key contributions. First, we aim at conceptualizing and operationalizing different types of IS usage as distinct constructs, the same for adaptive behaviour. Second, our study offers a nomological network that integrates IT usage with individual performance by presenting adaptive behaviour as a key linking mechanism. Thus, we extend recent IS studies that have linked IS adoption to performance directly but do not focus on underlying mediating mechanisms (Bala & Venkatesh, 2016). Finally, the proposed model investigates the important role of IT in facilitating employees’ adaptive behaviour in service encounter, which has been largely underestimated in the literature.

The paper proceeds as follows. After this introduction, we review the literature before developing a theoretical model about the CRM system-driven adaptive behaviour. We then describe the survey methodology, followed by the data analysis and key findings. Finally, we discuss both theoretical and practical implications and conclude the paper.
2.1 | Adaptive behaviour in the service encounter

Grounded on the study by Weitz et al. (1986), *adaptive behaviour* has been commonly defined in the marketing and sales literature as the alteration of sales behaviours across buyer interactions based on the selling situation. Adaptive selling is conceptualized as a unidimensional construct (Román & Iacobucci, 2010) and is examined through the perspective of interpersonal interaction (Franke & Park, 2006; Hunter & Perreault, 2006a; Rapp, Agnihotri, & Forbes, 2008). In this stream of studies, the manner in which a salesperson’s behaviour varies during the interpersonal interaction, such as a small talk, using a buyer’s name and polite behaviour, is widely researched. Adaptive salespeople are more proactive in judging the suitability of presentations and modifying basic communication approaches in order to interact with buyers more effectively. However, as salespeople are usually unable to alter the physical characteristics of tangible goods that they sell in the traditional selling context, the alteration of delivered offerings to buyers has long been ignored in the marketing and sales literature.

The nature of adaptive behaviour in service encounters is different from the traditional selling context. Because a service is inherently intangible, service outcomes and the process of service delivery are inseparable, the quality of service is associated with service outcomes as well as the process of service delivery (Parasuraman, Zeithaml, & Berry, 1985). Consistently, Brady and Cronin (2001) contend that the success of a service is based on two primary dimensions of the service encounter: buyer-employee service interaction and service outcome. *Service interaction* focuses on the manner in which the service is delivered, e.g., the attitude and behaviour of a service employee (Bitner, 1990). *Service outcome* refers to the actual service products which employees provide to buyers. Consistently, Surprenant and Solomon (1987) have posited two types of personalization strategies, viz., personalizing both the process of service delivery and the outcome of a service. That means service providers should not only personalize the interaction process with individual buyers, e.g., courtesy and communication to improve the efficiency of service delivery, but also tailor actual service offerings in order to suit these buyers’ needs and tastes. Following the same logic, we argue that employees in service encounters can adapt both interactive process and service offerings to an individual customer. In order to persuade a potential customer to make a purchase decision, a frontline employee needs to select and implement a personalization strategy in both sales tactics and service offerings (Franke & Park, 2006; Román & Iacobucci, 2010; Shen & Ball, 2009).

Therefore, we propose that offering adaptation is just as important as interpersonal adaptation in persuading a customer to make a purchase decision. Accordingly, we identify *interpersonal adaptive behaviour* (personalizing the process of service delivery) and *offering adaptive behaviour* (personalizing the outcome of service) as two aspects of frontline employee adaptive behaviour in service encounters.

2.2 | Antecedents of adaptive behaviour

Many studies use constructs related to individual differences to predict interpersonal adaptive behaviour, considering that individual differences in characteristics and capability are relatively stable over time (Jundt, Shoss, & Huang, 2015). As summarized in Table 1, the antecedents of adaptive behaviour relating to individual differences are classified into two categories: (a) personal trait-based factors, such as gender, motivation, and goal orientation (e.g., Bettencourt & Gwinner, 1996; Franke & Park, 2006); and (b) knowledge-based factors, such as skills, sales experience, and customer knowledge (e.g., Franke & Park, 2006; Román & Iacobucci, 2010). In addition, task-related constructs, such as training, leadership, role ambiguity, and management style, have been examined in predicting adaptive behaviour.

As noted in Table 1, previous studies have yielded mixed results in terms of the impacts of individual difference-related antecedents on work-related performance. For example, employees’ work experience is considered as an important factor in developing adaptive selling behaviour (Bettencourt & Gwinner, 1996; Franke & Park, 2006; Rapp
et al., 2006). Yet other studies have established that, when provided with enough external support, even employees with less experience may generate high adaptive selling behaviour (Spiro & Weitz, 1990). One plausible argument to explain these inconsistent results in adaptive behaviour research is the tendency to overlook contextual factors in previous studies. Jundt et al. (2015) claimed that researchers have neglected the antecedents of adaptive behaviour in a given environment, which may dilute the effectiveness of individual-related antecedents such as personality and

<table>
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<td>Bettencourt and Gwinner (1996)</td>
<td>Customer knowledge; Predisposition to adapt; Motivation to adapt</td>
<td>Interpersonal adaptiveness; Offering adaptiveness</td>
<td>The levels of customer knowledge, certain personality predispositions, and intrinsic motivation positively influence an employee's propensity to adapt both his/her interpersonal style and actual service offerings.</td>
</tr>
<tr>
<td>Franke and Park (2006)</td>
<td>Gender; Sales experience;</td>
<td>Adaptive selling behaviour</td>
<td>Gender is found to be uncorrelated with adaptive selling sales behaviour. Experience is found to be correlated with adaptive selling behaviour.</td>
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<tr>
<td>Neal, Yeo, Koy, and Xiao (2012)</td>
<td>Openness; Conscientiousness; Extraversion</td>
<td>Adaptivity</td>
<td>Individual openness to experience and conscientiousness are positively related with their adaptivity. Extraversion has no significant impact on adaptivity.</td>
</tr>
<tr>
<td>Gerhard et al. (2011)</td>
<td>Extraversion</td>
<td>Adaptive behaviour</td>
<td>Extraversion is significantly related with adaptivity.</td>
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<td>Rapp, Ahearne, Mathieu, and Schillewaert (2006)</td>
<td>Knowledge; Empowering leader behaviour</td>
<td>Working smart, including sales planning processes and adaptive selling behaviour</td>
<td>Employees with more knowledge and empowering leader behaviour are more likely to work smart.</td>
</tr>
<tr>
<td>Román and Iacobucci (2010)</td>
<td>Salesperson's intrinsic motivation; Customer-qualification skills; Role ambiguity</td>
<td>Adaptive selling behaviour</td>
<td>A salesperson's perception of the firm's customer orientation has an effect on adaptive selling behaviour through the salesperson's adaptive selling confidence, role ambiguity, intrinsic motivation, and customer-qualification skills.</td>
</tr>
<tr>
<td>Huang, Ryan, Zabel, and Palmer (2014)</td>
<td>Emotional stability; Ambition; Openness</td>
<td>Adaptive selling behaviour</td>
<td>Emotional stability and ambition are both related to overall adaptive performance. Openness does not contribute to the prediction of adaptive performance.</td>
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<tr>
<td>Wong, Liu, and Tjosvold (2015)</td>
<td>Service leadership</td>
<td>Adaptive selling capacity (a team-level variable)</td>
<td>Service leaders promote quality customer service by encouraging teams to develop adaptive selling capabilities.</td>
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<tr>
<td>Spiro and Weitz (1990)</td>
<td>Experience; Intrinsic motivation; Management style</td>
<td>Adaptive selling</td>
<td>Both experience and management style have no significant impact on adaptive selling. Intrinsic motivation is positively related with adaptive selling.</td>
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knowledge. We argue that a technology-driven working environment can be considered as an important contextual factor and meanwhile an external stimulus for employees' adaptive behaviour.

Specifically, CRM systems adopted by organizations have been treated as an important external support that may contribute to adaptive behaviour (Ahearne, Jelinek, & Rapp, 2005; Rao, Bhatnagar, & Park, 2010; Rapp et al., 2006). Adaptive behaviour requires instant and accurate information collection of a situation. With the aid of CRM systems, employees can leverage the comprehensive information stored in databases, including consumer buying habits and retail store sales, instead of merely relying on personal knowledge. Effective use of CRM systems helps employees to convert stored information into accurate understanding and planning of a situation, which may elicit adaptive behaviour (Hunter & Perreault, 2006b). Thus, with effective use of CRM systems, individuals' personal characteristics and knowledge may become relatively less important. We believe that when external support, such as technology, is taken into consideration, the findings on adaptive behaviour would become more consistent.

2.3 | IT postadoption and adaptive behaviour

In the extant literature, IT use has been conceptualized differently and can be classified into two types: IT adoption and IT postadoption (eg, Nambisan, Agarwal, & Tanniru, 1999; Venkatesh, 2000; Venkatesh, Brown, Maruping, & Bala, 2008). IT adoption considers a technology as a whole and mainly focuses on the frequency or duration of IT use (Zhang, 2017). Postadoption is defined as "myriad feature adoption decisions, feature use behaviours, and feature extension behaviours made by an individual user after an IT application has been installed, made accessible to the user, and applied by the user in accomplishing his/her work activities" (Jasperson, Carter, & Zmud, 2005, p.531). This definition of IT postadoption highlights the importance of understanding how individuals use and interact with a technology rather than simply how long or how frequently they use it (Burton-Jones & Straub, 2006; Maruping & Magni, 2015; Saeed & Abdinnour, 2013). Previous studies suggest that different IT use behaviours could be conceptualized based on the stages of postadoption (eg, Agarwal, 2000; Cooper & Zmud, 1990). For example, Saga and Zmud (1994) propose a framework to explore the different levels of use behaviours at the postadoption stage. Specifically, they have posited two levels of deep use, viz., routinization and infusion. Accordingly, routinization refers to the extent to which the feature of a technology has been adapted and integrated as a standard and regular part of an individual's work routine, but does not necessarily mean that a person uses the full degree of potential offered by the system. Infusion is defined as the extent to which system features are used in a complete way. Based on Saga and Zmud (1994), Sundaram, Schwarz, Jones, and Chin (2007) have explored three different types of IT use simultaneously, viz., frequency, routinization, and infusion at the individual level, and discovered the interrelationships amongst these types of IT use.

Despite considerable attention paid to IT postadoption behaviours, previous studies found mixed effects of IT postadoption on employees' work performance (eg, Burton-Jones & Straub, 2006; Tong, Tan, & Teo, 2015). Scholars recently advocate context-theorizing approach in understanding the impact of IT postadoption behaviours (eg, Davison & Martinsons, 2015; Hong, Chan, Thong, Chasalow, & Dhillon, 2014). Some context-specific factors could be incorporated as mechanisms between the postadoption of IT and the downstream impacts (Agarwal & Prasad, 1998; Burton-Jones & Hubona, 2006). In service encounters, employees' adaptive behaviour to cope with diversified customer needs is a determinant of service performance. Due to the lack of internal coping resources, such as knowledge and skills, they may be dependent on external coping resources, such as IT to develop coping strategies (Major, Richards, Cooper, Cozzarelli, & Zubek, 1998; Stein, Newell, Wagner, & Galliers, 2015). Therefore, CRM systems could be the context-specific factor in a service encounter, which helps us to explore the impact of IT-driven adaptive behaviour on service performance. We further explain the importance of CRM systems as an external support in developing adaptive behaviour based on coping theory in the next section.
### THEORETICAL DEVELOPMENT

#### 3.1 Theoretical foundation

Adaptive behaviour as a key concept has long been discussed in the coping literature (Zeidner & Endler, 1995). As the definition of adaptive behaviour is similar to the definition of coping, individual adaptive behaviour can be understood in light of coping theory (Agnihotri, 2009; Jundt et al., 2015). Making use of the conceptual logic of coping theory at a high level, we do not intend to engage in a full-blown test of the theory. Instead, we attempt to build a new theory about adaptive behaviour driven by CRM systems in service encounters based on coping theory.

Beaudry and Pinsonneault (2005) define **coping** as the adaptive behaviours that an individual performs in response to disruptive events that occur in his/her environment. According to coping theory, coping begins when people appraise an **event** as stress. At this stage, individuals evaluate "whether this given stressful event is relevant to their well-being" (Strutton & Lumpkin, 1994), and if they have any potential loss or gain from it. At the second appraisal stage, individuals evaluate what they can do to overcome or improve the stressful events. **Coping options** including proactively seeking more information to alter the situation (engagement), and escaping or avoiding the events in a negative way (disengagement) are considered. These two exclusive options can be triggered under different conditions. Specifically, if individuals have enough control over the situation and perceive it as changeable, engagement coping will occur; on the other hand, if individuals lack control and perceive a situation as unchangeable, then disengagement coping will occur (Carver, Scheier, & Weintraub, 1989; Lazarus & Folkman, 1984). The secondary appraisal is critical for the whole coping process, as it determines the development of further coping **behaviours** towards an event (Beaudry & Pinsonneault, 2005; Folkman, Lazarus, Gruen, & DeLongis, 1986). In other words, the more individuals evaluate what actions they can take to overcome a situation, the more likely they will choose to continue the coping process, viz., adapting to the events. In contrast, they may choose to avoid events altogether and give up developing adaptive behaviours. Therefore, coping itself is a natural response to stress. Whether individuals choose an engagement coping option and adapt to the situation or not depends on their perceptions of control, which originate from **coping resources** that are available in a specific situation.

Strutton and Lumpkin (1994) point out that when coping with stress, people take both their internal and external resources into consideration. Resources that primarily properties and characteristics of a person, such as beliefs (Lazarus & Folkman, 1984), energy (Bulman & Wortman, 1977), and skills (Liang & Xue, 2009), are widely researched as typical **internal coping resources** as they shape individuals' understanding towards an event, and consequently their coping efforts. Resources that are more environmental and include social and material resources are considered as external (Lazarus & Folkman, 1984). In particular, when internal resources are lack, people are more likely to seek external support to acquire assistance to cope with the situations.

**External support**, including emotional support, instrumental support, and informational support (House, 1981), can be conceptualized as an **external coping resource** (Lewin & Sager, 2008) if it assists individuals to gain better control over the situation. **Emotional support** refers to the offering of psychological comfort to individuals, such as approval, empathy, and caring. **Instrumental support** is the provision of tangible aid by others to cope with stress, such as money and material goods, while **information support** is the provision of intangible aids, including advice, guidance, suggestions, and valuable information (Uchino, 2004). Each of these three kinds of support may provide individuals with important assistance in understanding the situation and choosing coping options. Effective external support is considered to significantly aid individuals to develop their coping behaviours and adapt to the stress (Thoits, 1986). Extending coping theory into customer service encounters, CRM systems are considered as a form of external information support. Coping of employees in service encounters starts with appraising a customer's needs. Effectively satisfying diversified customer needs is widely viewed as the most stressful work-related activity for frontline employees (Sand & Miyazaki, 2000; Strutton & Lumpkin, 1994). In order to ensure that customers receive benefits, such as rewards and promotions, employees are motivated to continue the secondary coping appraisal, viz., evaluate what they can do to cope with heterogeneous customer needs.
According to coping theory, individual characteristics, such as personal capability (Strutton & Lumpkin, 1994), knowledge (Strutton & Lumpkin, 1994), and personality (Lewin & Sager, 2010) are considered as internal coping resources in terms of facilitating coping behaviour during the secondary appraisal. Information technology, such as a CRM system, is considered as a type of external coping resource. Individual employees may vary in terms of skills, knowledge, experience, and personality when they provide customer service, resulting in different coping behaviours. For example, employees with better skills or more experience may better adapt to a specific customer demand (engagement coping), while those with less skills/experience may respond to all customer requests in the same way, and try to avoid providing personalized service (disengagement coping). CRM systems may ameliorate this situation. By using CRM systems, employees can know more about their customers. Thus, employees who are good at collecting valuable information through technology channels would be more likely to feel that they have greater control and capability in providing personalized service. They would feel more excited and be willing to adapt to customer needs. Although technology has not been specifically studied as a component of coping theory, we suggest that a CRM system, as a form of informational support, plays an important role when employees develop their adaptive behaviour to cope with customer needs in service encounters.

3.2 | Research model and hypothesis development

In order to establish compelling arguments to support the critical role of CRM systems in facilitating employees’ adaptive behaviour, and their downstream impacts on service performance, we develop theoretical arguments drawn from the IT postadoption literature (Hsieh, Rai, & Xu, 2011; Sundaram et al., 2007; Wang & Butler, 2006) and the literature on adaptive selling (Spiro & Weitz, 1990; Weitz et al., 1986). Specifically, we draw on the theory of IT postadoption to articulate the formation of routinized and infused use of CRM systems through a shallow level of use (only regular or frequent usage). Extending the literature on adaptive selling, we propose that the postadoption of CRM systems facilitates the development of two aspects of adaptive behaviour, viz., interpersonal and offering adaptive behaviour. Employees’ adaptive behaviour then contributes to service performance. Figure 1 summarizes the proposed research model with the definitions of constructs in Table 2. We justify each hypothesis in detail below.
Facilitating service performance with interpersonal adaptive behaviour

Service performance refers to the service behaviour that frontline employees achieve and that has been evaluated in terms of its contribution to organizations (Anderson & Oliver, 1987; Robinson, Marshall, & Stamps, 2005). The marketing literature has shown that the interpersonal adaptive selling of employees would enhance their service performance. Positive service performance requires clear understanding of customers and responding to customers' expectations effectively. Employees who engage in interpersonal adaptive behaviour may accurately predict an individual customer's expectation and speak "customer language" to promote communication efficacy. For example, an employee may introduce basic information of products or services to a new customer, and highlight the advanced and differentiated features to an experienced customer. Effective salespeople adapt their influence tactics to the characteristics of customers, involving "the alternative means of communication available to a firm's personnel" (Frazier & Rody, 1991, p.52), such as recommendations, requests and promises. According to the types of customers (eg, task-oriented and relationship-oriented), adaptive salespeople should choose different types of statements (eg, benevolence and expertise) (Arndt, Evans, Landry, Mady, & Pongpatipat, 2014). Customers with a clear understanding of product or service are more likely to develop a positive attitude and make purchase decisions. Therefore, employees who are able to adapt these interpersonal behaviours in a contingent manner are more likely to be successful in persuading customers to buy (Friedman & Churchill, 1987), increasing customer satisfaction (Román & Iacobucci, 2010) and thus achieving better service performance (McFarland, Challagalla, & Shervani, 2006). We thus propose:

H1: A frontline employee's interpersonal adaptive behaviour contributes to his/her service performance.

Facilitating service performance with offering adaptive behaviour

Offering adaptive behaviour is another perspective that views adaptive behaviour as the altering of final outcomes (ie, the purchased goods or delivered service). In service encounters, interactive interpersonal communication and a simultaneous production-consumption process enable employees to adapt service offerings at the point of consumption (Gwinner et al., 2005). Employees predict customers' expectations through recorded information in CRM systems and receive real-time information during interaction, before customizing service offerings to match these

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<td>Frequency</td>
<td>The frequency of a frontline employee's use of a CRM system.</td>
<td>Kankanhal, Tan, and Wei (2005)</td>
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<tr>
<td>Routinization</td>
<td>The extent to which the use of a CRM system has been integrated into a frontline employee's work routine.</td>
<td>Sundaram et al. (2007)</td>
</tr>
<tr>
<td>Infusion</td>
<td>The extent to which a frontline employee uses a CRM system to enhance his or her productivity in a complete way.</td>
<td>Sundaram et al. (2007)</td>
</tr>
<tr>
<td>Interpersonal Adaptive behaviour</td>
<td>The adjustable behaviour of a frontline employee to interpersonal demands (eg, small talk, calling a customer by name and other forms of polite behaviour).</td>
<td>Gwinner, Bitner, Brown, and Kumar (2005)</td>
</tr>
<tr>
<td>Offering adaptive behaviour</td>
<td>The adjustable behaviour of a frontline employee to provide personalized final outcomes related to the purchased goods or delivered service.</td>
<td>Gwinner et al. (2005)</td>
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expectations. For example, an employee who is responsible for handling customer complaints at a call centre may offer monetary compensation to a cost-sensitive customer and display concern and give an oral apology to an interaction-oriented customer. In this context, individual customers are heterogeneous in terms of expectations towards service recovery, and thus the success of complaint handling depends on employees’ adaptive behaviour, viz., the adjustable behaviour to match recovery solutions to customers’ expectations (McColl-Kennedy, Daus, & Sparks, 2003). Surprenant and Solomon (1987) highlight that the adaptation of offering has a positive effect on employees’ work performance and customer evaluations. By adapting the service offering to a customer’s unique desires or goals, an employee would be more effective in overcoming objections and building a long-term customer relationship. We thus propose:

H2: A frontline employee’s offering adaptive behaviour contributes to his/her service performance.

3.2.3 The impact of interpersonal adaptive behaviour on offering adaptive behaviour

As explained previously, frontline employees may gather real-time information during a service delivery process and then personalize courtesy and communication styles to suit customers’ needs and tastes. We argue that based on the real-time information, an employee can subsequently modify the service offering appropriately. Gwinner et al. (2005) used the term “creative discretion” to describe the process whereby an employee develops the appropriate service offering based on information he/she collects during the interaction. Highly interpersonal adaptable employees are good at recognizing customers’ needs and structuring the incoming data on customers to categorize or “qualify” them, e.g., customer A is price-sensitive, but customer B is pleasure-oriented. The categorizing process to which a customer belongs during the service delivery aids an employee in altering the service offering. For example, an employee may suggest cost-efficient service products to price-sensitive customers and provide hedonic offerings to pleasure-oriented customers. Employees with high levels of interpersonal adaptive behaviour are expected to be more effective in adapting the service offerings they provide than employees with lower levels of interpersonal adaptive behaviour. We thus propose:

H3: A frontline employee’s interpersonal adaptive behaviour contributes to his/her offering adaptive behaviour.

3.2.4 The impact of using CRM systems on adaptive behaviours

In this study, we extend Sundaram et al.’s (2007) concepts of frequency, routinization, and infusion into the context of CRM systems. Specifically, we categorize routinized and infused use of a CRM system as postadoption of IT use behaviours. Postadoption represents an individual’s initiative to integrate technology into work processes, thereby attempting to realize its fullest benefits, while the frequency of use may capture only passive coping to an organization’s mandate. We detail our arguments below.

3.2.5 Building adaptive behaviour via the postadoption of a CRM system

Frontline employees usually work in a complex and uncertain environment that requires the processing of real-time information when engaging in service encounters with customers. In order to be more effective in accomplishing service tasks, a service employee must subsequently adjust his/her responses appropriately to match the type of customers based on the information available (Román & Iacobucci, 2010). Previous studies have highlighted the importance of capability to collect and process information in facilitating adaptive behaviour (Park, Kim, Dubinsky, & Lee, 2010; Román & Iacobucci, 2010; Weitz et al., 1986), as it allows for deeper understanding of customers and
more accurate evaluation of customers’ needs. Technology, such as a CRM system, facilitates the gathering and processing of information, which facilitates the building of employees’ adaptive behaviour.

By using a CRM system, an employee can increase his/her understanding of a particular customer based on company records and documents even without prior direct interaction with this customer. The customer information (e.g., occupation, preferences, purchase histories, and requests), together with market-relevant information (e.g., demand trend and supply trend) stored in the system, constitute a pool of information available to the employee (Hsieh et al., 2011). Customers will be more satisfied because of the improved service efficiency and customized products, with the result that employees maintain accurate information in the system (Richards & Jones, 2008). For example, an employee can also use the recommendation software implemented in CRM systems to personalize the service process (Shen & Ball, 2009), and provide a better offering to satisfy a customer’s individual requirements.

During the routinization stage, an employee perceives the mandatory use of a CRM system as normal and develops a positive attitude towards the system. He/she starts to explore the functions of the system and creatively integrates the system into the work routine. The usage behaviour at this stage shows certain kinds of patterns and standardization (Saeed & Abdinnour, 2013; Wang & Butler, 2006). For example, after every contact with a customer, an employee may record the contact process and details in the CRM system and generate a monthly progress report. In addition, he/she may analyze a customer’s preferences and sales leads through the system. Therefore, the employee is able to accurately predict the customer’s demands and then adapt service processes and offerings accordingly. Employees who integrate the CRM systems into their work routine proactively are likely to be more familiar with the functionality of those systems and the information stored in them. Therefore, they may be more likely to access valuable information at the point of providing service. The routinization of using CRM systems fosters the process of information collection and utilization as a stimulus to adaptive behaviour. Therefore, we contend that routinization of using CRM systems enhances interpersonal and offering adaptive behaviour of frontline employees by facilitating information collection and utilization. We thus propose:

**H4: A frontline employee’s routinization of using a CRM system contributes to his/her interpersonal adaptive behaviour.**

**H5: A frontline employee’s routinization of using a CRM system contributes to his/her offering adaptive behaviour.**

The infusion of using a CRM system represents the active incorporation of the technology into work structures so as to realize its potential. Incorporation and integration are the activities in which an employee engages proactively during the exploration of new features of the technology (Maruping & Magni, 2015), and work routines may then be adjusted accordingly. When using the same technology, employees may differ in the use level, viz., frequent use, routinized use, and infused use. Even when the use of CRM systems in organizations is obligatory, infused use is a form of voluntary use behaviour, which is more likely to be motivated but not mandated (Hsieh et al., 2011; Ke, Tan, Sia, & Wei, 2013). Compared with routinized use, employees who are involved in “more dramatic learning” practice of infused use of a system can be more innovative in terms of implementing the system for work (Li, Hsieh, & Rai, 2013). Therefore, infused use captures employees’ mental acceptance towards the system and can be regarded as their positive evaluation of using the system.

According to cognitive dissonance theory, dissonance may occur when an individual’s prior attitude is not consistent with behaviour, resulting in psychological tension and distress (Harmon-Jones, 2002). At the frequent use stage, employees passively use the system to comply with managers’ requirements. The inconsistency between use behaviour and a negative attitude towards the system may lead to mental tension and counterproductive work behaviour, such as “submitting invalid data” (Alter, 2014). At the infusion stage, when employees proactively use a CRM system, their favourable perceptions of the technology are aligned with their actual behaviour. In such conditions, employees are more likely to reap the benefits of using technology. Infused use of CRM systems enables employees to be more effective in collecting valuable information and meeting customers’ heterogeneous demands, leading to better work
performance. In some firms (like our research setting), employees are required to record contact progress in the CRM system each time after they call a customer. In the CRM system, employees have to input details about the conversations, including date, customer profiles, customer response to a certain product, the planned next calling time, etc. Some data, such as date and the topic of conversations, can be entered by simply clicking an option within a few seconds, while some other data, such as customers’ response, may take employees 5 to 10 minutes or even longer to type. The firm checks employees’ use of the CRM system on a monthly basis. However, the way in which employees use the system and the quality of data which they input vary. Simply speaking, most employees input the basic data as required, ie, the date of calling; however, other more valuable customer information is omitted. In addition, employees are also required to provide product and service recommendations based on the data analysis report from CRM systems on customer demands or preferences. However, it is hard for firms to check whether the appropriate services are provided. Some employees learn and use the system as the firm requires, but have no intention to realize the full benefits of using the system in their work (ie, by infused use). On the other hand, some employees do consider the system to be beneficial and are willing to spend more time in typing the valuable data to describe a customer’s response and preferences to a product in detail (routinized use). Still other employees not only enter data after they call a customer, but proactively search for customer information in the records before or when they call the customer (infused use). Those employees who integrate the use of CRM systems are more likely to achieve the benefits of using the system and thus rapidly respond to diversified customers’ queries and provide personalized service. Therefore, the greater the extent to which an employee infuses the use of a CRM system into work routines and maximizes the potential of the system, the more adaptive he/she will be. Thus, we argue:

H6: A frontline employee’s infusion of using a CRM system contributes to his/her interpersonal adaptive behaviour.

H7: A frontline employee’s infusion of using a CRM system contributes to his/her offering adaptive behaviour.

3.2.6 | Facilitating the postadoption of CRM systems via frequent use

Extending Sundaram et al.’s (2007) concepts about the three types of IT use (frequency, routinization, and infusion) to the context of CRM systems, we contend that individual employees may adopt CRM systems at different usage levels. Specifically, we propose that the frequent use of CRM systems nourishes postadoption behaviours. During the postadoption stage, after employees adopt the CRM systems frequently, they may start to learn and experiment with more functions that are available in the system (Hsieh & Wang, 2007). Positive attitudes towards the system and the habit of incorporating the system into work patterns may be developed during the using and learning process, thereby creating an opportunity for the system to be routinized and infused. The more frequently an employee uses a system, the more likely he or she will routinize the use of this system and so realize its potential. Employees may use the system less frequently when they are familiar with it and so reduce the wasted time on making mistakes, eg, trying out unfamiliar functions and richer features, but frequent use is a necessary foundation of routinized and infused use. In order to achieve the postadoption (ie, routinization and infusion), an employee has to actually use the system frequently. Thus, we suggest that the frequent use of CRM systems predicts both two types of postadoption, viz., routinization and infusion. Routinization, in turn, facilitates an employee to use the system to its fullest potential, viz., the infused use.

H8: A frontline employee’s frequency of using a CRM system contributes to his/her routinization of using the CRM system.

H9: A frontline employee’s frequency of using a CRM system contributes to his/her infusion of using the CRM system.
H10: A frontline employee’s routinization of using a CRM system contributes to his/her infusion of using the CRM system.

4 | METHODOLOGY

In order to empirically test the research model and the corresponding hypotheses, multisourced data were collected from a leading security brokerage company in China, ABC Financial Co. Ltd (pseudonym in this study). By 2017, it had more than 200 security sales departments nationwide. The company developed a CRM system in house with strong analytical functions in order to provide secure, professional, and personalized customer service. The latest version of this system was launched in 2016, including four main modules, viz.: customer management, product information management, data analysis, and task management. Table 3 provides an overview and the descriptions of the focal CRM system in this study.

As shown in Table 3, customer management is one of the main modules of the CRM system. In this module, information of each customer is recorded, such as personal profiles, portfolios, and transaction history. A broker is also able to check the details of lost customers through the lost customer management, and the details of potential customers from the lead generation. In addition, ABC Financial has developed an instant messenger embedded in its website and the mobile app. Brokers can use the messenger to talk with customers and the messenger is linked with the customer management module. If a customer is recognized as a potential customer through online communication, he/she might be tagged by a broker in the CRM system. The customer will be finally confirmed as a potential customer by the data management department and the information of this customer will show up in the lead generation in a broker’s account. Compared with the customer management module, the data analysis module is more advanced in terms of data analysis and prediction. Brokers can make accurate and personalized recommendations for each customer based on the analysis reports generated from this module. The broker can also have a summarized analysis report for all of the customers he/she has. The product information management module works as a product knowledge management system to some extent. Brokers search for product information and the module also provides recommendations on appropriate products for a certain type of customers. The last module, task management, is a module designed to remind brokers to read updates on customer and product information and follow them up as appropriate. The company randomly checks each broker’s use frequency of the CRM system based on the times of login and whether the task alert has been checked.

As data security is a major concern in a financial company, a centralized data management department was set up to manage data entry, such as customer profiles, in the CRM system on a national wide basis. Brokers mainly use the CRM system to receive information and respond to customer demands. However, they still have limited autonomy in terms of inputting data in the system. For example, brokers are required to record their contact with customers in the customer management module. They may also note down their questions related to a certain task in the tasks management module.

### Table 3

<table>
<thead>
<tr>
<th>Main Modules</th>
<th>Descriptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer management</td>
<td>It includes submodules for customer information searching, customer distribution analysis, lead generation, and potential lost customer management, etc.</td>
</tr>
<tr>
<td>Product information management</td>
<td>It includes submodules for product information, product analysis, product fit, and hot product recommendation, etc.</td>
</tr>
<tr>
<td>Data analysis</td>
<td>It includes submodules for customer analysis, transaction analysis, and equity analysis, etc.</td>
</tr>
<tr>
<td>Task management</td>
<td>It includes to-do task alert and customer transaction alert.</td>
</tr>
</tbody>
</table>
The targeted respondents in this study are frontline brokers, group leaders, and customer managers from one of the security sales departments. In ABC Financial, every 6 to 15 frontline brokers are supervised by a group leader, and three to five group leaders are supervised by customer managers. All the frontline brokers, group leaders, and customer managers are responsible for lead generation, product recommendation and sales, consultation on investment, and asset management. Customer managers and group leaders are differentiated from frontline brokers based on the number and quality of customers they have. The employee hierarchical structure is also presented in the CRM system through the status of accounts; that is, high status accounts are able to look into information in low status accounts. By using the system, group leaders and customer managers could be aware of the customer service performance of their subordinates, eg, whether the product a broker recommends to a customer fits the customer needs. In addition, the firm checks employees' use of the CRM system, ie, the times of login on a monthly basis. Those employees who fail to achieve the required use frequency could be considered as unqualified, and their salary bonus will be deducted in consequence. However, the firm has no way to check whether all employees try to maximize the benefits of using the CRM system, ie, providing recommendations to customers based on the data analysis results from the system.

Previous research has demonstrated the distinct characteristics of flexibility and adaptation amongst Chinese. For example, Bond and Hwang (1986) point out that Chinese philosophy appreciates adaptation to the environment rather than the attempt to change it in order to maintain harmony of relationships and preserve face. Similarly, Martinsons and Westwood (1997) contend that unlike the focus on truth in western societies, the ideal of flexibility is paid much more attention amongst the Chinese. In addition, Fang, Robert, and Kenneth (2004) found that the effect of adaptive behaviour on work performance varies across cultures. Specifically, they found that adaptive selling behaviour was positively related to work performance in a Chinese sample, yet this relationship was not significant in a US sample. Therefore, in order to empirically test our research model focusing on the IT-driven adaptive behaviours of employees in organization, the data from China suit our needs. We describe the research site, measures, survey sample, and the procedure of data collection below.

All of our measures for the six latent variables in this study were adapted from well-established scales in the literature. Since the unit of analysis is frontline service employees, all measures of latent variables were designed to focus on individual employees who use the CRM system to provide customer service. Specifically, we adapted three original items on the frequency of IT use from Kankanhalli et al. (2005) into the context of CRM system usage. Following Sundaram et al. (2007), routinization was measured by three items, and infusion was measured by four items. To measure two aspects of adaptive behaviour, viz., interpersonal adaptive and offering adaptive, we adapted the original items from Gwinner et al. (2005). The dependent variable in our study is service performance. The measure of service performance is based on employees' work performance in the last three months, as assessed by each employee's corresponding supervisor (manager assessment). In addition, we collected employees' self-assessed service performance to test the robustness of our findings. Such a measure has been used in prior research by Ray et al. (2005). For control variables, we collected data on employees' empathy, including both empathy-perspective taking and empathetic tendency, and personal characteristics (big-five), including openness, neuroticism, agreeableness, conscientiousness, and extraversion. Specifically, the measures for empathy-perspective taking and empathetic tendency were adapted from Davis (1980), and the measures for big-five characteristics were adapted following Wang, Ngai, and Wei (2012) and Costa and McCrae (1992). The supervisors' demographics, including age, gender, education, and work experiences\(^2\), were also collected. In addition, we controlled for the number of subordinates and the position of supervisors. All measurement items are shown in Appendix A. A 7-point scale was used for all measures.

The data collection consists of the following three steps. First, questionnaire translation and back-translation between English and Chinese were conducted by two certificated translators, following Brislin, Thorndike, and Lonner (1973). Next, prior to the main survey, a pilot study of 30 employees in another company was conducted to examine the validity and reliability of latent variables. This sample shared similar characteristics to the final sample.

\(^2\)Working experience is a continuous variable in this study due to the continuous nature of time.
used to test the proposed model. Revisions for better clarity, content validity, and semantic consistency were made according to the respondents’ feedback. Then, we distributed the final version of the survey to the brokers, group leaders, and customer managers through emails. Specifically, every broker only received the self-assessed survey, including questions on all variables (viz., frequency, routinization, infusion, interpersonal adaptive behaviour, offering adaptive behaviour, and service performance). Each group leader and customer manager received both the self-assessed survey, including questions on all variables, and the manager-assessed survey, including questions on performance assessment of their subordinates. In the email, each respondent received a unique survey link which allowed us to match the data from individual employees and their supervisors. Only responses with complete data (ie, with the data from both employees and their corresponding supervisors) qualified as being complete in this study. Of the 307 surveyed frontline brokers and 67 supervisors, we collected 229 matched and valid responses and used them for the data analysis. We summarize the demographic characteristics of the sample in Table 4.

5 | DATA ANALYSIS AND RESULTS

5.1 | Measurement model

We used Statistical Software for Social Science (SPSS, version 2015) and Smart Partial Least Squares (SPLS, version 3.2.7) for the data analysis. Prior to the structural model, the measurement model was evaluated in terms of reliability, unidimensionality, convergent validity, and discriminant validity (Gefen & Straub, 2005). Table 5 shows the descriptive statistics, correlations, reliabilities, and average variance extracted (AVE) for the latent variables. As expected, all items loaded above 0.5 on their associated latent variables and the loading within the latent variables were higher than the loading across the variables (Appendix B), suggesting convergent and discriminant validity. For internal consistency, the values of Cronbach’s alpha and composite reliabilities for latent variables were all greater than the recommended threshold of 0.80 for confirmatory research (Nunnally & Bernstein, 1994). In addition, the AVE of each latent variable was all higher than 0.82, suggesting that the observed items explained more variance.
<table>
<thead>
<tr>
<th>Latent Variables (a)</th>
<th>Mean</th>
<th>S.D.</th>
<th>VIF</th>
<th>Cronbach's Alpha</th>
<th>Composite Reliability</th>
<th>1(b)</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. FRE(c)(3)</td>
<td>5.68</td>
<td>1.07</td>
<td>2.14</td>
<td>0.88</td>
<td>0.83</td>
<td>0.89</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. ROU(3)</td>
<td>6.03</td>
<td>1.06</td>
<td>2.88</td>
<td>0.96</td>
<td>0.97</td>
<td>0.78</td>
<td>0.96</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. INF(4)</td>
<td>5.67</td>
<td>1.02</td>
<td>3.01</td>
<td>0.89</td>
<td>0.92</td>
<td>0.72</td>
<td>0.72</td>
<td>0.87</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. IAB(4)</td>
<td>5.81</td>
<td>0.92</td>
<td>2.19</td>
<td>0.91</td>
<td>0.94</td>
<td>0.51</td>
<td>0.51</td>
<td>0.63</td>
<td>0.90</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. OAB(6)</td>
<td>5.76</td>
<td>0.83</td>
<td>3.06</td>
<td>0.92</td>
<td>0.94</td>
<td>0.54</td>
<td>0.56</td>
<td>0.63</td>
<td>0.61</td>
<td>0.85</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. SAP(7)</td>
<td>5.90</td>
<td>0.76</td>
<td>2.79</td>
<td>0.92</td>
<td>0.94</td>
<td>0.52</td>
<td>0.59</td>
<td>0.61</td>
<td>0.68</td>
<td>0.69</td>
<td>0.83</td>
<td></td>
</tr>
<tr>
<td>7. MAP(7)</td>
<td>5.75</td>
<td>0.83</td>
<td>2.07</td>
<td>0.94</td>
<td>0.95</td>
<td>0.01</td>
<td>0.17</td>
<td>0.12</td>
<td>0.20</td>
<td>0.29</td>
<td>0.30</td>
<td>0.86</td>
</tr>
</tbody>
</table>

(a) Number of measurement items.
(b) Diagonal values represent the square root of average variance extracted (AVE).
(c) FRE, Frequency; ROU, Routinization; INF, Infusion; IAB, Interpersonal adaptive behaviour; OAB, Offering adaptive behaviour; SAP, Self-assessed service performance; MAP, Manager-assessed service performance.
than the error items (Fornell & Larcker, 1981). Finally, the square root of the AVE of each latent variable was higher than its correlations with other variables, supporting discriminant validity (Fornell & Larcker, 1981).

Although common method bias is not a major concern in this study because of the multisourced data we collected for both independent and dependent variables in the model, we still took several steps to proactively minimize the extent of common method bias. Specifically, we followed the approaches suggested by Podsakoff, MacKenzie, Lee, and Podsakoff (2003a) and Hong and Pavlou (2014), as elaborated in Appendix C.

To test for multicollinearity, collinearity diagnostics for all latent variables were also conducted. The analysis shows that the VIFs were all less than the acceptable cut-off point of 3.33 (Cenfetelli & Bassellier, 2009). These findings imply no major multicollinearity problems.

5.2 | Structural model

After confirming the measurement model, we then employed a bootstrapping method (1000 iterations) to compute the significance levels for the structural model. Employees' self-assessed performance was found to be significantly correlated with manager-assessed performance (r = 0.30, P < .05 as shown in Table 5). In order to avoid potential common method bias, we decided to include manager-assessed service performance as the sole dependent variable in the SPLS analyses for the structural model. As indicated in Figure 2, employees' manager-assessed service performance was predicted by offering adaptive behaviour (H2: ß = 0.38, P < .01), with an explained variance of 16%. The infusion of using CRM systems significantly affected interpersonal adaptive behaviour with path coefficients of 0.41 (H6: P < .01), explaining 55% of its variance. Offering adaptive behaviour was significantly predicted by interpersonal adaptive behaviour (H3: ß = 0.49, P < .01) with a total variance explained of 75%. Furthermore, the frequency of using CRM systems significantly enhanced routinization with path coefficients of 0.78 (H8: P < .01), explaining 62% of its variance. Both routinization (H10: ß = 0.40, P < .01) and frequency (H9: ß = 0.41, P < .01) had a significant effect on infusion, respectively, yielding an explained variance of 58%. Although routinization indirectly affected offering adaptive behaviour and interpersonal adaptive behaviour, it did not directly influence these two types of adaptive behaviours, thus rejecting H4 and H5. Similarly, infusion has no direct impact on offering adaptive, and thus

**FIGURE 2** SPLS results of the structural model
H7 was rejected. In addition, interpersonal adaptive behaviour has no significant impact on manager-assessed service performance, thus rejecting H1.

5.3 | Robustness checks

In the theoretical model, we propose that two aspects of adaptive behaviour (i.e., interpersonal adaption and offering adaption) can mediate the impacts of postadoption of CRM systems (i.e., routinization and infusion) on employees’ service performance. In order to verify this idea, we examined the mediating effects by conducting additional analyses, following the three-step method suggested by Baron and Kenny (1986) with consideration of its compatibility with SPLS. As shown in Table 6, the results reveal that both interpersonal and offering adaptive behaviour fully mediated the effects of routinization and infusion on manager-assessed service performance respectively.

We also conducted additional analysis with employees’ self-assessed performance as the sole dependent variable in the model, as summarized in Appendix E. The analysis, together with results as shown in Figure 2, indicated that offering adaptive behaviour was related to both employees’ self-assessed ($\beta = 0.68$, $P < .0.1$) and manager-assessed performance, while interpersonal adaptive behaviour was related only to self-assessed performance ($\beta = 0.32$, $P < .01$). The unsupported correlation between interpersonal adaptive behaviour and manager-assessed performance may result from the involvement issue. As frontline employees are involved in interactions with customers, they can recognize their own adaptive behaviours during the interactions, and thus may consider interpersonal adaptation to be a cause of the high performance outcomes. Managers are a third-party beyond the employee-customer relationship and may primarily focus on the end results of selling and service. Thus, they may be unable to recognize the interpersonal adaptation employees have undertaken, leading to an insignificant relationship between the interpersonal adaptive behaviour and manager-assessed performance. In addition, compared with including manager-assessed performance as the dependent variable, the result with self-assessed performance was slightly better ($R^2 = 0.46$). Thus, in order to rule out the possibility of common method bias (Podsakoff et al., 2003a), we included multi-sourced data, viz., manager-assessed performance, in the model instead of employees’ self-assessment in the main analysis (Figure 2). An additional T-test showed that there was no significant difference between the means of SAP and MAP.

In order to further verify the validity of the theoretical model under various situations, we also conducted additional analyses, as shown in Appendices D, E, and F. The results of these additional analyses highlight the instrumental contribution of different types of CRM systems usage in facilitating employees’ adaptive behaviour, further verifying the validity of the theoretical model.

### Table 6 Results of mediation tests

<table>
<thead>
<tr>
<th>List of IV, Mediator, DV, and Coefficients in Regressions</th>
<th>IV + M → DV</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>IV</td>
<td>M</td>
<td>DV</td>
</tr>
<tr>
<td>ROU</td>
<td>IAB</td>
<td>MAP</td>
</tr>
<tr>
<td>ROU</td>
<td>OAB</td>
<td>MAP</td>
</tr>
<tr>
<td>INF</td>
<td>IAB</td>
<td>MAP</td>
</tr>
<tr>
<td>INF</td>
<td>OAB</td>
<td>MAP</td>
</tr>
</tbody>
</table>

a. **Significant at $P < .01$ level; *Significant at $0.01 < P < .05$ level; ns: not significant.
b. IV: independent variable; M: mediator; DV: dependent variable (Manager-assessed Service Performance).
c. The three-step mediation test suggested by Baron and Kenny (1986):
   Step 1: IV → DV is significant. Step 2: IV → M is significant.
   Step 3: IV + M → DV: (a) If M is significant and IV is not significant, then M fully mediates the impact of IV on DV. (b) If both M and IV are significant, then M partially mediates the impact of IV on DV.
6.1 | Key findings and contributions

This research has three major findings and accordingly makes the following key contributions. First, despite the traditional views in marketing and sales that the adaptive behaviour of employees results from their personal characteristics, our study provides evidence of IT-driven adaptive behaviour. Adaptive behaviour has two dimensions: interpersonal and offering adaptive behaviour. Extending the literature of adaptive behaviour from marketing to IS, this study contributes to the conceptualization and operationalization of IT-driven adaptive behaviour. Second, our research model shows how employees generate adaptive behaviour to cope with customer needs by leveraging the aid of CRM systems. Therefore, employees’ adaptive behaviour enabled by CRM systems can be an important step to take when converting a firm’s investment on IT into better service performance. Third, post-adoption of CRM systems is shown to lead employees to be involved in more adaptive behaviour. Taking all the above points together, this study not only conceptualizes the existence of IT-driven adaptive behaviour, which was largely overlooked in previous studies, but also empirically verifies that it can exert significant positive effects on enhancing employees’ service performance. We explain each of these implications in detail below.

6.2 | Theoretical implications

This study has implications for (a) conceptualizing two types of adaptive behaviour in service encounters; (b) highlighting the role of CRM systems in driving adaptive behaviour; and (c) differentiating the impact of different levels of IT use on adaptive behaviour. We discuss each implication below.

First, this study highlights the importance of considering employee adaptive behaviour as a multidimensional construct instead of a unidimensional concept. Prior studies that have measured adaptive behaviour with a unidimensional scale have found mixed results on the relationship between adaptive behaviour and work performance (e.g., Rapp et al., 2008; Robinson et al., 2005). One of the plausible explanations for such an inconsistency in previous research findings is the frequently used unidimensional scale of adaptive behaviour (Jundt et al., 2015; Román & Iacobucci, 2010). By distinguishing adaptive behaviour into interpersonal and offering aspects, our study contributes to the re-conceptualization of this construct. The results of the data analysis and the posthoc analysis indicate that both interpersonal and offering adaptive behaviours have distinct impacts on service performance. Specifically, interpersonal adaptive behaviour is positively related to employees’ self-assessed service performance, while it is ignored when managers assess the performance. Differently, offering adaptive behaviour is positively related both to employees’ self-assessed performance and to managers’ assessed performance. When managers assess employees’ service performance, the impact of interpersonal adaptive behaviour has to be realized by generating offering adaptive behaviour. To the best of our knowledge, the current study is the first to explore these two types of adaptive behaviour driven by IT. The proposed conceptualization of adaptive behaviour can offer guidance to future research on the concept of IT-driven adaptive behaviour.

Second, the primary contribution of this research is to highlight the role of CRM systems in driving adaptive behaviour. By focusing on the IT-driven adaptive behaviours of frontline employees, our work extends prior research that has primarily considered employees’ personal characteristics as determinants to facilitate adaptive behaviours, such as employees’ gender (Franke & Park, 2006), knowledge (Bettencourt & Gwinner, 1996), skills (Román & Iacobucci, 2010), and personality (Gerhard et al., 2011; Huang et al., 2014; Neal et al., 2012), or organizational characteristics, such as management policies (Rapp, Trainor, & Agnihotri, 2010) and leadership (Wong et al., 2015). Our study and the results of additional analyses emphasize the important substituting role of IT for these personal characteristics in driving adaptive behaviour, which has been largely overlooked in the marketing and sales literature. Perhaps, the reason why researchers have not previously examined IT in facilitating adaptive behaviour is due to the assumption that employees can only leverage their own resources, viz., personality, knowledge, experience, when they cope with diversified customer needs. Following the tenets of coping theory (Folkman et al., 1986; Stein et al.,
2015), we point out that CRM systems, conceptualized as external coping resources, may assist individuals to gain better control over the service encounter. Given the help of IT, employees are able to make up for their personal deficiencies in terms of coping with customer needs. That is, employees are able to know more about their customers without relying on personal experiences and knowledge. Employees who are good at collecting valuable information through technology channels would be likely to feel that they have greater control and capability in providing personalized service. Based on a comprehensive review of adaptive behaviour in the literature and following the logical argument from coping theory, we offer an initial theoretical attempt to extend the concept of adaptive behaviour to the IS domain, more specifically in the context of using CRM systems.

Related to the previous point, by providing a model that includes IT-driven adaptive behaviour as the fully mediating mechanism, this work extends and advances prior research on IS success. Our study demonstrates the importance of investigating frontline employees’ adaptive behaviour as the mechanisms by which converting individual efforts on CRM systems into service performance efficiency. We encourage interested researchers to examine individual employees’ IT-enabled adaptive behaviours, not just IT use behaviours to broaden IS success model.

Third, our work yields a nuanced understanding on the distinct impacts of different levels of IT use behaviours. Previous research on CRM systems (e.g., Ahearne et al., 2008; Hsieh et al., 2011; Hsieh et al., 2012; Shen & Ball, 2009) has generally suggested that IT use is effective in facilitating work performance, without comparing the different impacts of use frequency and postadoption behaviours. However, as IT use involves a continuous learning process, different stages of IT use lead to different downstream outcomes, especially in mandatory contexts. Specifically, at the early stage of using CRM systems, IT is typically considered as a burden and employees frequently use the system to cope with managers’ requirements and organization policies. They may input invalid data and try to “create appearance of compliance with management goals or regulations” (Alter, 2014). Therefore, IT usage behaviours at this stage will not directly facilitate work performance, but help to nurture using habits. However, at the postadoption stage, when employees start to explore customer information stored in the systems and integrate it into their work routine, they can more accurately predict customer type and adjust interpersonal manners during the interaction. In the infusion stage, they are familiar with all features of the CRM systems and thus are able to maximize the benefits of the system. They collect and analyse all the available information, which helps them to elicit interpersonal adaptation and to engage in offering adaptation at the moment of providing service. Even though the data analysis shows that there was no significant relationship between routinization and interpersonal adaptive behaviour, an additional analysis presented in Appendix E indicates that the direct relationship between routinization and interpersonal adaptive behaviour was fully mediated by infusion. Specifically, infusion fully mediated the relationship between routinization and interpersonal behaviour, and the relationship between routinization and offering adaptive behaviour. The results imply that use behaviours of CRM systems develop gradually in the postadoption stage, and infusion is a key developmental process to drive adaptive behaviour that cannot be ignored. We extend this stream of research into the comparison of impacts of different levels of CRM systems use.

6.3 | Practical implications

With the increasingly important role of the service economy, our research also has several empirical implications for improving a company’s CRM performance. Overall, our study suggests that senior executives in service organizations may need to consider (a) how to persuade their employees to deeply engage with these systems during the service process, as well as (b) how to deploy their technology resources to enhance employees’ service performance. First, implementing a CRM system is an important mean to improve service performance. Our results indicate that CRM systems, especially analytical CRM systems, constitute a useful resource providing external coping resources. They keep track of customer interactions and generate analytical reports, which help employees to adapt to diversified customer needs so as to acquire and to retain customers without relying on employees’ personal knowledge and skills.
In addition, as analytical CRM systems work as an information centre in organizations, good service performance would only be achieved when employees fully digest and leverage information from the systems when they cope with customer needs. Our findings reveal that when employees incorporate the use of CRM systems into their work routines and fully use the systems, the corresponding adaptive behaviour yields high service performance. In a mandatory-use context, the frequent use of CRM systems can be largely determined by regulations and rules. It does not completely reflect employees’ instinctive motivations for technology acceptance. For example, employees may simply log into the system without absorbing any information from the systems in their work. Thus, the frequent use may not directly predict the downstream impacts (eg, interpersonal and offering adaptive behaviour). Most importantly, as analytical CRM systems are mainly used by employees to output data rather than to input data, it is hard for organizations to supervise employees’ use level of the system. Therefore, CIOs may consider providing more IT support (Wong & Davison, 2018), to employees so that they can maximize the benefits of using CRM systems and fully use the systems in their daily work.

Our study also provides evidence for IT-driven adaptive behaviour, which in turn leads to positive service performance. If CIOs and CFOs in organizations understand how CRM systems can improve an organization’s performance through employees’ adaptive behaviours, the investment will be better spent.

Third, other than focusing on employees’ adaptation in making service offerings, customer relationship managers should pay more attention to the important role of interpersonal adaptive behaviour during service delivery, while individual employees should not neglect offering adaptive behaviour as both types of adaptive behaviour are deemed important in maintaining customer relationships in service delivery. By extending the functions of a CRM system and better stimulating employees’ desire for routinized and infused use of the technology, managers can foster both interpersonal and offering adaptive behaviour, and thereby enhance customer relationships.

6.4 | Limitations and suggestions for future research

This study has some limitations that open up opportunities for future research. First, employees’ work performance can be driven by both technology as well as personal characteristics (eg, knowledge, skills, and experience). Although our study has provided evidence for the critical contribution of CRM systems in developing employees’ adaptive behaviour and facilitating service performance, future research may compare the role of technology with employees’ personal characteristics on improving individual performance. Our research model does not eliminate alternative explanations of high levels of individual performance that may be associated with high levels of work experience and skills. Instead, we envision that exploring the complementary relationship between CRM systems and personal skills may offer a more comprehensive understanding of enhancing employees’ adaptive behaviour and subsequent performance.

Second, this study focuses on the perspective of employees to examine the effectiveness of CRM systems, considering that employees are best positioned to determine their work performance and the quality of relationships with customers. Although our approach is consistent with most CRM system research that takes work performance as the outcome, future studies can usefully explore the effects of CRM systems from the customers’ perspective. Variables, such as customer retention and customer loyalty, may be considered as the outcome of CRM systems use and employees’ adaptive behaviour. Also given that employee-customer interaction is a dyadic process, it is also important to examine the effect of CRM systems from a dyadic perspective. CRM systems may help to facilitate customer relationships at different stages. Future studies may consider framing a process model in this research area. In parallel, another research opportunity is to outline a simpler model to achieve more parsimony in conceptualizing the effects of using CRM systems on work performance.

Thirdly, the data were collected in a single organization located in China, which may influence the generalizability of the research findings to other contexts. Future studies may consider data collection in multiple organizations across different organizational and national cultures, and examine the impact of organizational and national cultures on IT-driven adaptive behaviours.
Our study has demonstrated how CRM systems enhance employees’ service performance by facilitating their interpersonal and offering adaptive behaviour. Although CRM systems are effective in managing customer relationships, the benefits of technology implementation are not automatic and direct. Instead, they largely depend on the formation of the postadoption of IT, an important means for facilitating employees’ adaptive behaviour. In the service encounter, the postadoption of CRM systems can help employees to adapt their interpersonal behaviour as well as service offerings so as to achieve high levels of work performance. By providing a theoretical model and empirical evidence for how interdisciplinary research can be conducted on IT success, our findings highlight the vast and untapped research potential at the intersection of IS and other research domains, such as marketing and management.

ACKNOWLEDGEMENT

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**APPENDIX A: Measurements**

<table>
<thead>
<tr>
<th>Latent variables</th>
<th>Measurements</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>scale: 1 (strongly disagree) to 7 (strongly agree); or otherwise specified in the questions</td>
</tr>
<tr>
<td>FRE: Frequency</td>
<td>What is your frequency of using the CRM system in your daily work?</td>
</tr>
<tr>
<td></td>
<td>(scale: 1 [very rare] to 7 [very frequent])</td>
</tr>
<tr>
<td></td>
<td>I often use the CRM system in my work.</td>
</tr>
<tr>
<td></td>
<td>I regularly use the CRM system in my work.</td>
</tr>
<tr>
<td>ROU: Routinization</td>
<td>My use of the CRM system is incorporated into my regular work schedule.</td>
</tr>
<tr>
<td></td>
<td>My use of the CRM system is pretty much integrated as part of my normal work routine.</td>
</tr>
<tr>
<td></td>
<td>My use of the CRM system is a normal part of my work.</td>
</tr>
<tr>
<td>INF: Infusion</td>
<td>I am using the CRM system to its fullest potential for supporting my own work.</td>
</tr>
<tr>
<td></td>
<td>I am using all the function of CRM system in the best fashion to help me on the job.</td>
</tr>
<tr>
<td></td>
<td>I doubt that there are any better ways for me to use the CRM system to support my work.</td>
</tr>
<tr>
<td></td>
<td>My use of the CRM system on the job has been integrated and incorporated at the highest level.</td>
</tr>
<tr>
<td>IAB: Interpersonal adaptive behaviour</td>
<td>I often adjust my personality from one customer to the next.</td>
</tr>
<tr>
<td></td>
<td>I typically adjust the tone of my voice to fit the type of customer I am dealing with.</td>
</tr>
<tr>
<td></td>
<td>I act differently at different times, depending on the situation.</td>
</tr>
<tr>
<td></td>
<td>I try to match the level of my vocabulary to that of the customer.</td>
</tr>
</tbody>
</table>

(Continues)
<table>
<thead>
<tr>
<th>Latent variables</th>
<th>Measurements scale: 1 (strongly disagree) to 7 (strongly agree); or otherwise specified in the questions</th>
</tr>
</thead>
</table>
| **OAB: Offering adaptive behaviour** | I usually adapt the type of service to meet the unique needs of each customer.  
I use a wide variety of strategies in attempting to satisfy the customer.  
I can easily suggest a wide variety of services to meet each customer's needs.  
I pride myself in customizing the service for the customer.  
I vary the actual service offering on a number of dimensions depending on the needs of the customer.  
I believe that each customer requires a unique approach. |

<table>
<thead>
<tr>
<th>Service performance</th>
<th>SAP: Self-assessed service performance</th>
<th>MAP: Manager-assessed service performance (based on employees' performance in recent three months)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I give customers prompt service.</td>
<td>I never too busy to respond to customers.</td>
<td>She/he gives customers prompt service.</td>
</tr>
<tr>
<td>I am empowered to solve customers' problems.</td>
<td>When I promise to do something for a customer by a certain time, I do so.</td>
<td>She/he is never too busy to respond to customers.</td>
</tr>
<tr>
<td>When a customer has a problem, I show sincere interest in solving it.</td>
<td>I perform the service accurately the first time.</td>
<td>She/he is empowered to solve customers' problems.</td>
</tr>
<tr>
<td>I understand customers' specific needs.</td>
<td></td>
<td>When She/he promises to do something for a customer by a certain time, she/he does so.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>When a customer has a problem, she/he shows sincere interest on solving it.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>She/he performs the service accurately the first time.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>She/he understands customers’ specific needs.</td>
</tr>
</tbody>
</table>

**Empathy-perspective taking**  
I believe that there are two sides to every question and I try to look at them both.  
I try to look at everybody's side of a disagreement before I make a decision.  
When I'm upset at someone, I usually try to "put myself in his or her shoes" for a while.  
If I'm sure I'm right about something, I don't waste much time listening to other people's arguments.  
I sometimes find it difficult to see things from the "other guy's" point of view.  
I sometimes try to understand my friends better by imagining how this looks from their perspective.  
Before criticizing somebody, I try to imagine how I would feel if I were in their place.  

**Empathetic tendency**  
When I see someone being taken advantage of, I feel kind of protective toward them.  

(Continues)
**APPENDIX B: Results of principal components factor analysis**

<table>
<thead>
<tr>
<th>Latent variables</th>
<th>Measurements</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>scale: 1 (strongly disagree) to 7 (strongly agree); or otherwise specified in the questions</td>
</tr>
<tr>
<td>FRE1</td>
<td>When I see someone being treated unfairly, I sometimes don't feel very much pity for them. (R)</td>
</tr>
<tr>
<td>FRE2</td>
<td>I often have tender, concerned feelings for people less fortunate than me.</td>
</tr>
<tr>
<td>FRE3</td>
<td>I would describe myself as a pretty soft-hearted person.</td>
</tr>
<tr>
<td>ROU1</td>
<td>Sometimes I don't feel sorry for other people when they are having problems. (R)</td>
</tr>
<tr>
<td>ROU2</td>
<td>Other people's misfortunes do not usually disturb me a great deal. (R)</td>
</tr>
<tr>
<td>ROU3</td>
<td>I am often quite touched by things that I see happen.</td>
</tr>
<tr>
<td>INF1</td>
<td>Openness</td>
</tr>
<tr>
<td>INF2</td>
<td>I am intrigued by the patterns I find in art and nature.</td>
</tr>
<tr>
<td>INF3</td>
<td>Once I find the right way to do something, I stick to it.</td>
</tr>
<tr>
<td>INF4</td>
<td>I have a lot of intellectual curiosity.</td>
</tr>
<tr>
<td>IAB1</td>
<td>Agreeableness</td>
</tr>
<tr>
<td>IAB2</td>
<td>I generally try to be thoughtful and considerate.</td>
</tr>
<tr>
<td></td>
<td>Most people I know like me.</td>
</tr>
<tr>
<td></td>
<td>I would rather cooperate with others than compete with them.</td>
</tr>
<tr>
<td>OAB</td>
<td>Neuroticism</td>
</tr>
<tr>
<td>SAP</td>
<td>Conscientiousness</td>
</tr>
<tr>
<td>MAP</td>
<td>Extraversion</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>FRE</th>
<th>ROU</th>
<th>INF</th>
<th>IAB</th>
<th>OAB</th>
<th>SAP</th>
<th>MAP</th>
</tr>
</thead>
<tbody>
<tr>
<td>FRE1</td>
<td>0.93</td>
<td>0.75</td>
<td>0.69</td>
<td>0.49</td>
<td>0.51</td>
<td>0.28</td>
<td>0.015</td>
</tr>
<tr>
<td>FRE2</td>
<td>0.92</td>
<td>0.76</td>
<td>0.71</td>
<td>0.50</td>
<td>0.49</td>
<td>0.34</td>
<td>−0.05</td>
</tr>
<tr>
<td>FRE3</td>
<td>0.74</td>
<td>0.50</td>
<td>0.71</td>
<td>0.51</td>
<td>0.19</td>
<td>0.21</td>
<td>0.29</td>
</tr>
<tr>
<td>ROU1</td>
<td>0.73</td>
<td>0.94</td>
<td>0.68</td>
<td>0.47</td>
<td>0.51</td>
<td>0.22</td>
<td>−0.07</td>
</tr>
<tr>
<td>ROU2</td>
<td>0.79</td>
<td>0.97</td>
<td>0.73</td>
<td>0.50</td>
<td>0.54</td>
<td>0.22</td>
<td>−0.01</td>
</tr>
<tr>
<td>ROU3</td>
<td>0.81</td>
<td>0.97</td>
<td>0.75</td>
<td>0.55</td>
<td>0.57</td>
<td>0.24</td>
<td>−0.03</td>
</tr>
<tr>
<td>INF1</td>
<td>0.70</td>
<td>0.76</td>
<td>0.94</td>
<td>0.62</td>
<td>0.56</td>
<td>0.28</td>
<td>0.01</td>
</tr>
<tr>
<td>INF2</td>
<td>0.70</td>
<td>0.73</td>
<td>0.94</td>
<td>0.64</td>
<td>0.58</td>
<td>0.29</td>
<td>−0.03</td>
</tr>
<tr>
<td>INF3</td>
<td>0.44</td>
<td>0.42</td>
<td>0.76</td>
<td>0.47</td>
<td>0.34</td>
<td>0.35</td>
<td>−0.10</td>
</tr>
<tr>
<td>INF4</td>
<td>0.43</td>
<td>0.44</td>
<td>0.90</td>
<td>0.58</td>
<td>0.55</td>
<td>0.36</td>
<td>0.05</td>
</tr>
<tr>
<td>IAB1</td>
<td>0.48</td>
<td>0.48</td>
<td>0.59</td>
<td>0.88</td>
<td>0.73</td>
<td>0.20</td>
<td>0.12</td>
</tr>
<tr>
<td>IAB2</td>
<td>0.36</td>
<td>0.39</td>
<td>0.49</td>
<td>0.87</td>
<td>0.65</td>
<td>0.09</td>
<td>0.03</td>
</tr>
</tbody>
</table>

(Continues)
In this study, we tried to minimize common method bias with both ex ante and ex post tests following Podsakoff et al. (2003a) and Hong and Pavlou (2014).

Firstly and most importantly, Podsakoff et al. (2003a) suggested obtaining measures of the predictor and criterion variables from different sources to eliminate the effect of common method bias. We collected multisourced data including self-reported data for predictors and manager-reported data for the dependent variable to mitigate the risk of common method bias.

Secondly, following Lindell and Whitney (2001), we adopted the "marker variable" approach to control common method bias. Specifically, we included three unrelated items randomly in the survey, including "how satisfied you are (1) with your family life; (2) with your shopping experiences online; (3) with the living environment in your city." A high correlation between the focal survey items and these three extra items would indicate common method bias. In this study, the correlations between these three items and other items were pretty low (r = 0.012 on average), which implies that common method bias is not a major concern.

Thirdly, common method bias can be a major concern if one principal factor counts for the majority of explained variance (Podsakoff and Organ 1986). In our study, the principal components factor analysis indicates that each principal factor roughly explains equal variance, which indicates that common method bias is not concern.

Fourthly, common method bias exists if there are extremely high correlation amongst variables (r > 0.90) (Hong & Pavlou, 2014). The correlation matrix (shown in Table 4) shows that all correlations amongst variables are below 0.78.

Overall, these tests indicate that common method bias doesn't threaten the validity of the results.
APPENDIX D: Additional analyses (The impact of personal characteristics on adaptive behaviour)

With the attempts to demonstrate the significant role of CRM systems usage in driving adaptive behaviour, we included a set of additional factors, including employees' demographics, empathy-perspective taking, empathy tendency, and big five characteristics (Agreeableness, Conscientiousness, Extraversion, Neuroticism, and Openness) as the control variables. We conducted following additional hierarchical regression analyses. First, in a simplified model, we took interpersonal adaptive behaviour as the only dependent variable. The SPLS results show that these control variables explain 48% of variance of interpersonal adaptive behaviour (Figure D1). When taking offering adaptive behaviour as the only independent variable, the variance explained was 57% (Figure D2). When including the CRM usage (the focal independent variables) into the regressions, the variance of interpersonal adaptive behaviour increased from 47% to 58%, and the variance of offering adaptive behaviour changed from 57% to 75% (Figures D3 and D4). These extra variances explained by the focal independent variables (routinization and infusion use) exactly highlight the contribution of using CRM system in the adaption behaviour, in addition to personal characteristics.

APPENDIX E: Additional analyses (Self-assessed service performance as dependent variable)

Compared with including manager-assessed service performance (MAP) as dependent variable, the results with self-assessed service performance (SAP) as dependent variable was slightly better (R² = 0.58). Considering the issue of common method bias, we decided to only include MAP as dependent variable instead of SAP in our study (as shown in Figure 2).
APPENDIX F: Additional analyses

The robustness tests below show that routinization had a significant impact on interpersonal adaptive behaviour (β = 0.66, P < .01) and offering adaptive behaviour (β = 0.57, P < .01) respectively. However, the significant relationship
between routinization and interpersonal adaptive behaviour became insignificant when we included infusion in the model. These results indicate that infusion is a full mediator between routinization and interpersonal adaptive behaviour, implying when the infused use behaviours of CRM systems is a key developmental process to achieve performance, which cannot be overlooked.

In addition, the significant relationships between routinization and offering adaptive behaviour, and infusion and offering adaptive behaviour are impaired when interpersonal adaptive behaviour is entered into model. We discuss these extra findings in the implication section.