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Salesmanship: the influence of social networks on sales-service ambidexterity

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Abstract

Purpose – Although social networks play an important role in individual ambidexterity, few studies have examined the impact of salespeople's social networks on sales-service ambidexterity. The purpose of this paper is to explore how salespeople's internal and external social networks affect sales-service ambidexterity.

Design/methodology/approach – The unique data of 331 salespeople from 39 units in retail banking industry and insurance industry were collected, and the hierarchical linear model was adopted to test the hypotheses. Finally, the alternative measure of the dependent variable and the alternative estimation method were adopted for robustness test.

Findings – The results show that the strength of salespeople's internal social networks and the extensiveness of salespeople's external social networks could facilitate sales-service ambidexterity of salespeople separately and synergistically. Salespeople's role breadth self-efficacy partially mediates the influences of internal and external social networks on sales-service ambidexterity, while empowerment climate and transformational leadership positively moderate the aforementioned mediational process by strengthening the relationship between salespeople's role breadth self-efficacy and sales-service ambidexterity.

Practical implications – Practical guidelines are provided for managers to shape ambidextrous salespeople by facilitating salespeople's internal and external social networks, promoting transformational leadership and creating empowerment climate within the unit.

Originality/value – To the best of the author's knowledge, this paper is the first to systematically examine the impact of salespeople's social network on sales-service ambidexterity. Drawing from social cognitive theory and the ambidexterity literature, this research reveals the mechanism of how salespeople's internal and external social networks contribute to sales-service ambidexterity.

Keywords Social networks, Sales-service ambidexterity, Role breadth self-efficacy, Empowerment climate, Transformational leadership

Paper type Research paper

1. Introduction

In the past, sales and service are usually delivered separately (Sok *et al.*, 2021). However, there is an expectation of the intersection of them nowadays (Rapp *et al.*, 2021), and salespeople are expected to be ambidextrous in both sales and service. The research studies show ambidextrous salespeople cannot only improve quantitative performance such as sales performance (Gabler *et al.*, 2017; Faia and Vieira, 2017) and financial performance (Yu *et al.*, 2015), but also improve qualitative performance such as customer satisfaction (Agnihotri *et al.*, 2017; Faia and Vieira, 2017), service quality commitment (Gabler *et al.*, 2017) and customer willingness to pay price premiums (Mullins *et al.*, 2020). Because of customers' increased expectation of "single face" at the customer interface and firms' expectation to increase performance (Rapp *et al.*, 2017), salespeople's sales-service ambidexterity would become more and more important in the future. Therefore, both theorists and practitioners

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are highly interested in the factors that facilitate salespeople's ambidexterity of sales and service.

By reviewing literature, there are already some studies investigating the antecedents toward sales-service ambidexterity, which includes locomotion and assessment orientation (Jasmand *et al.*, 2012; Sok *et al.*, 2016); goal orientation, learning orientation and performance orientation (Yu *et al.*, 2015); drive to work and enjoyment of work (Sok *et al.*, 2016); self-efficacy, sales-service climate and leader–member exchange (Patterson *et al.*, 2014); salespersons' polychronicity (Mullins *et al.*, 2020) and charismatic leadership (Ahmad *et al.*, 2021). However, the research on sales-service ambidexterity, on the whole, is still in the embryonic stage. We still know little about what drive salespeople's sales-service ambidexterity and how they drive it. And thus, scholars called for more research to explore and examine the antecedents of sales-service ambidexterity (Rapp *et al.*, 2017).

Further literature review presents that the marketing scholars have identified the importance of salespeople's social networks in sales and service and investigated the effects of their intra-organizational social networks on sales performance (Bolander *et al.*, 2015; Gonzalez *et al.*, 2014) and service behaviors (Kalra *et al.*, 2017), but there is lack of investigating the role of salespeople's social networks in their ambidextrous behavior of sales and service. Little attention has been paid to examine how social networks drive salespeople's sales-service ambidexterity and how external social networks interact with internal social networks to drive it (Kalra *et al.*, 2020), while the ambidexterity scholars have been aware of the close relationship between individuals' social networks and ambidextrous behaviors. For example, Rogan and Mors (2014) proposed that managers' networks were very important levers for their ability to behave ambidextrously in exploring new business and exploiting existing business. And Heavey *et al.* (2015) argued as well that both managers' internal and external social networks had positive impact on ambidextrous behaviors. However, the existing studies mostly focused on managers' instead of salespeople's social networks and the ambidextrous behaviors discussed in ambidexterity literature mainly referred to ambidexterity of exploration and exploitation rather than service and sales. That is to say, although social networks play an important role in individual ambidexterity, little research has been done to examine the impact of salespeople's social networks on sales-service ambidexterity and how salespeople's social networks affect sales-service ambidexterity. As a result, the exact effect of salespeople's internal and external social networks on sales-service ambidexterity and how they affect sales-service ambidexterity are yet unexplored in the extant literature.

We realize the investigation of the relationship between salespeople's internal and external social networks and sales-service ambidexterity is unique and worth pursuing. First, the effect of social networks varies across network types. There are many types of social networks, for e.g. online community networks (Zhang and Liu, 2019), formal and informal networks (Rogan and Mors, 2014) and advice and friendship networks (Mitteness *et al.*, 2016). Each of them has its own unique influence on sales-service ambidexterity. Therefore, it would be insightful to focus on specific networks of salespeople (e.g. the internal and external social networks here) and identify their impacts on salespeople's sales-service ambidexterity. Second, social networks influence individual behaviors or outcomes, but the influence varies across network features. Social networks could be interpreted by many characteristics such as size, density and centrality (Hayati and Puri, 2020; Carnovale and Yeniyurt, 2014) and different characteristics of social networks are related to different behaviors or outcomes. For example, Zhang and Liu (2019) examined the influence of the number of ties and the network density on the volume and valence of individuals' online review. Sparrowe *et al.* (2001) revealed the relationship between the network centrality and personal performance. Wei *et al.* (2011) argued that individuals' network position affected their knowledge transfer behaviors. Herz (2015) found that the size and the density of personal networks in the community are less

relevant than the strength in explaining the how migrants get supports. However, we still know little about what and how network characteristics contribute to sales-service ambidexterity. Furtherly, it would be particularly insightful if the research investigates the relationship between salespeople's social networks and sales-service ambidexterity by making combination of network types and network features.

To fill in the abovementioned gap and answer the questions what influences that salespeople's internal and external social networks have on sales-service ambidexterity and how the former affects the latter, this research, grounded on social cognitive theory and ambidexterity literature, has been conducted as follows: first, salespeople's social networks were classified into internal and external networks based on the organizational boundary. And then, the direct effect of salespeople's internal and external social networks on sales-service ambidexterity was articulated separately (Figure 1). We focused on strength and extensiveness because of the following two aspects. First, strength and extensiveness were chosen because we focused on internal and external social networks separately. As we know, to do sales-service ambidexterity is very challenging. In this case, frequent interaction and joint problem solving are very helpful for the focal salespeople to deal well with both sales and service, while the degree of knowledge exchange, interaction and joint problem solving relies much on the strength of the salespeople's networks with the other intra-organizational members. Stronger internal networks usually imply higher trust, more frequent knowledge exchange and stronger joint problem solving (Uzzi, 1996), which makes the salespeople more likely to achieve ambidexterity of sales and service. As a result, the strength of salespeople's internal networks becomes a good predictor in our context. Therefore, we focused on the strength while examining the effect of internal social networks on sales-service ambidexterity. As for the external social networks, compared with the internal social networks, there is no frequent knowledge exchange and joint problem solving in terms of sales and service. It implies that the strength is not a good variable if we examine the effect of the salespeople's external social networks on sales-service ambidexterity, but diverse external members usually can offer fresh heterogeneous information and rich relational resources, which are also required by sales-service ambidexterity. Therefore, we realized the extensiveness is a better indicator than the strength for salespeople's external social networks. And then, we focused on the extensiveness rather than the strength while

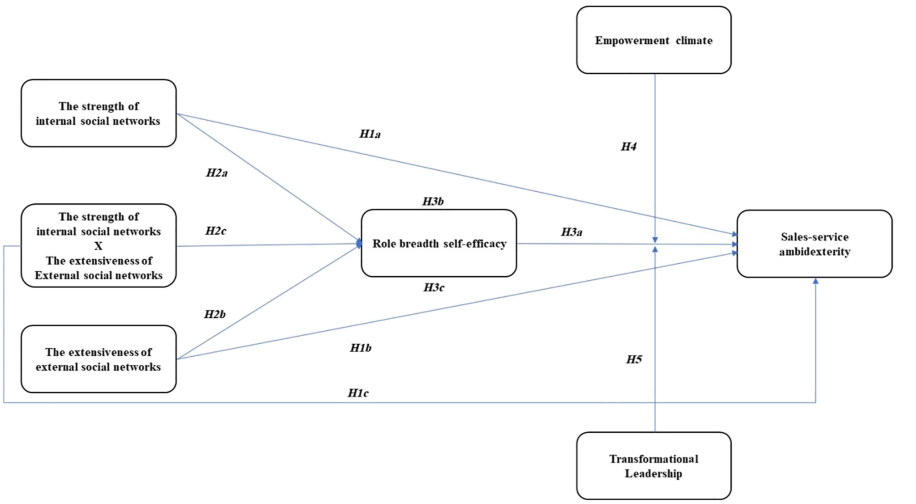

Figure 1.
Research model

explaining salespeople's external social networks on sales-service ambidexterity. Second, literature review shows that the strength of internal networks and the extensiveness of external networks can be adopted to explain individuals' ambidextrous behaviors (Heavey *et al.*, 2015). However, the relationship between the strength of internal networks and sales-service ambidexterity as well as the relationship between the extensiveness of external networks and sales-service ambidexterity has not yet been explored. This repeatedly convinces us of the significance to focus on the strength while examining the effect of internal social networks on sales-service ambidexterity and the extensiveness while examining the effect of external social networks on sales-service ambidexterity.

Second, the mediating effect of role breadth self-efficacy on the relationship between salespeople's social networks and sales-service ambidexterity was investigated by three steps. Step 1, the impact of salespeople's internal and external social networks on role breadth self-efficacy was demonstrated based on the extant literature. Step 2, the influence of salespeople's role breadth self-efficacy on sales-service ambidexterity was analyzed. Step 3, the mediating effect of salespeople's role breadth self-efficacy was inferred based on Step 1 and Step 2. Third, the contextual effects of empowerment climate and transformational leadership on the linkage between role breadth self-efficacy and sales-service ambidexterity were explored. As we know, to have the capability of doing something is one thing and to actually do something is another. If role breadth self-efficacy reflects salespeople's capability of doing, then there must be some enablers that motivate those who have high level of role breadth self-efficacy to actually pursue service and sales simultaneously. In view of that, two enablers, i.e. empowerment climate and transformational leadership, were identified from the related literature. And their moderating roles in the relationship between role breadth self-efficacy and sales-service ambidexterity were examined. Fourth, a mediated-moderation model was created and tested after the theoretical exploration of the direct, mediating and moderating effects (Figure 1). And a robustness test with alternative measures and estimation method was conducted as well. Lastly, theoretical and practical implications based on the major findings were discussed and promising directions for future research were developed in the end.

This paper could contribute to the literature in three ways. First, it contributes to the ambidexterity literature by identifying salespeople's social networks as the additional antecedents of sales-service ambidexterity, which is yet understudied in extant literature (Rapp *et al.*, 2017). This paper not only examines the effect of salespeople's internal and external social networks on sales-service ambidexterity separately and synergistically, but also unfolds the influencing mechanism of the former on the latter by demonstrating the mediating effect of role breadth self-efficacy. Second, it extends social cognitive theory by investigating the impact of the strength of internal social networks and the extensiveness of external social networks on role breadth self-efficacy. Individuals' social networks are related to self-efficacy (Siciliano, 2016). However, little research has explicitly examined how individuals' internal and external social networks shape role breadth self-efficacy. In that case, this paper could enrich social cognitive theory to some extent. Third, it contributes to social cognitive theory and ambidexterity literature by demonstrating moderating effects of empowerment climate and transformational leadership on the relationship between role breadth self-efficacy and sales-service ambidexterity. On one hand, it contributes to social cognitive theory because it responds to the research done by Ozyilmaz *et al.* (2018) and helps clarify that the internal environment of an organization could regulate not only the effect of self-efficacy and task performance, but also the effect of employees' role breadth self-efficacy and ambidextrous behaviors. On the other hand, it also contributes to ambidexterity literature because it determines an alternative function of capability and motivation for sales-service ambidexterity by defining the capability as "can do" (role breadth self-efficacy) and the motivation as "reason to do" (empowerment climate or transformational leadership) sales and service simultaneously.

2. Theoretical background and research hypotheses

2.1 Sales-service ambidexterity

Ambidexterity was initially introduced by Duncan (1976) into management by raising the concept of ambidextrous organization that had dual organizational structure to support innovative activities so as to achieve high performance. In the early stage, organizational ambidexterity literature primarily focuses on the innovation ambidexterity (exploratory innovation and exploitative innovation) (Tushman and O'Reilly, 1996), which restricts the application and development of the concept. That situation changes when March (1991) presents the insights on organizational learning and gives an inclusive definition of exploration and exploitation. After that, ambidexterity is then widely introduced into organizational design, organizational learning, technological innovation and so on. What's more, additional pairs of tension other than exploration and exploitation are discussed in the late coming studies, for e.g. the ambidexterity of internal and external knowledge sourcing in knowledge management (Rothaermel and Alexandre, 2009), the ambidexterity of evolution and revolution in strategic management (Gibson and Birkinshaw, 2004), the ambidexterity of flexibility and effectiveness in organizational design (Adler *et al.*, 1999) and the ambidexterity of service and sales in recent marketing (Jasmand *et al.*, 2012).

Following the traditional definition of ambidexterity, sales-service ambidexterity could be defined as the simultaneous pursuit of service and sales objective (Yu *et al.*, 2012; Jasmand *et al.*, 2012). Some scholars probably defined the above simultaneous pursuit of service and sales with the term of service-sales ambidexterity which is quite similar to sales-service ambidexterity (de Ruyter *et al.*, 2020). Technically, there is not too much difference between these two terms. First, in prior research studies on organizational innovation ambidexterity, scholars did not separate innovation ambidexterity into exploration-foci ambidextrous innovation and exploitation-foci ambidextrous innovation and differentiate one from the other by using different terms, exploratory-exploitative innovation ambidexterity or exploitative-exploratory ambidexterity. Similarly, the literature on organizational learning ambidexterity (Tian *et al.*, 2020) usually did not distinguish exploratory-exploitative learning from exploitative-exploratory learning by naming them differently. And the literature on knowledge management ambidexterity did not distinguish internal-external knowledge sourcing from external-internal knowledge sourcing (Rothaermel and Alexandre, 2009) or differentiate depth-breadth knowledge searching from breadth-depth knowledge searching (Wang *et al.*, 2020) by different terms as well. From the above, we may know that sales-service ambidexterity and service-sales ambidexterity could be treated similarly when investigating frontline employees' general ambidexterity of sales and service. Second, ambidexterity is usually operationalized and measured by the balance between the two dimensions (Cao *et al.*, 2009) and that is the same for both sales-service ambidexterity and service-sales ambidexterity. Currently, both of them were measured by the balance between sales and service in the extant literature (see Mullins *et al.*, 2020; Patterson *et al.*, 2014). High ambidexterity of sales and service reflects the balance between them, while low ambidexterity represents the imbalance between them. In this sense, sales-service ambidexterity and service-sales ambidexterity could technically be treated equally.

However, Mullins *et al.* (2020) argued that there was a little difference between them. Sales-service ambidexterity focuses primarily on satisfying customers' needs with current offerings and then achieves the cross-/up-selling while delivering services, whereas service-sales ambidexterity focuses primarily on excavating customers' unsatisfied needs of offerings and then provides services during the selling. Therefore, to depict frontline service staffs' ambidexterity of sales and service, the term of service-sales ambidexterity is more precise than sales-service ambidexterity, whereas, to define frontline salespeople's ambidexterity of sales and service, the term of sales-service ambidexterity is more

accurate. In this paper, we focus on salespeople's ambidextrous behaviors. So we use the term of sales-service ambidexterity consistently in the text.

What's more, the concept of sales-service ambidexterity could be applied at various levels, firm, unit and individual. At firm or unit level, such ambidexterity could be achieved by both structural and contextual approaches, whereas at individual level contextual approaches are the only choice. The salespeople's sales-service ambidexterity is an individual-level ambidexterity. That is to say, ambidextrous salespeople have to adopt contextual approaches to trade off and balance their service and sales objectives in terms of their time, attention and efforts so as to do both of them well. This is the basic premise throughout this paper.

2.2 The effect of internal and external social networks on sales-service ambidexterity

According to social cognitive theory, people's behavior is partially shaped and controlled by their social networks and cognitions (Bandura, 2001). Individuals will not put ample efforts into their work unless they believe that they can produce the desired outcome (Bandura, 1986, 2001; Liu *et al.*, 2016; Tierney and Farmer, 2004). Fruitful social networks help make salespeople believe that the desired sales-service ambidexterity is achievable, and thus, salespeople who have sound social networks are more willing than the others to invest their efforts on pursuing sales-service ambidexterity. As we know, a person's social networks are the relations or ties with others that he or she creates and maintains (Adler and Kwon, 2002), which simply have been regarded as approaches, means or channels to get to access to the resources such as skills, technologies, information and knowledge (Nahapiet and Ghoshal, 1998). And thus, a sales person who is good at social networking and has sound networking ties is usually well connected to a wide variety of social supports and desirable resources, which could facilitate sales-service ambidexterity by offering social supports and alleviating the pressure of the different resources required in simultaneous pursuit of service and sales. In that sense, salespeople's individual social networks may contribute to their sales-service ambidexterity.

However, social networks are classified into many types. For salespeople, they are typical boundary spanners. It is reasonable to classify their social networks into internal networks and external networks based on the organizational boundary (Heavey *et al.*, 2015; Chen and Wang, 2008). Internal social networks refer to the salespeople's relations or ties with team members and other colleagues within the company, while external social networks refer to the salespeople's relations or ties with individuals, groups or organizations outside the company. And it's also meaningful to discuss salespeople's internal and external social networks separately because the resources flow in the internal social networks are quite different from those in the external social networks, and thus, the internal and external social networks may probably contribute to salespeople's boundary spanning service and sales activities differently.

As far as salespeople's internal social networks are concerned, they connect the salespeople to the members who know much about the products, services, productions or business administrations, which make the internal social networks more like professional work-related networks. The members in the internal social networks can assist the focal salespeople to solve problems jointly and help the focal salespeople do their jobs successfully. However, salespeople actually benefit differently from their internal social networks because the strength of their relationships with the other intra-organizational members varies. Those salespeople who have stronger internal social networks can benefit more from the internal networking because stronger internal social networks represent higher degree of contact and accessibility to other internal members that, in turn, result in more frequent knowledge exchange and stronger attitude toward joint problem solving (Uzzi, 1996). Therefore, the

strength of internal social networks is particularly important for doing challenging jobs such as sales-service ambidexterity. In view of that, we mainly focused on the strength of salespeople's internal social networks while investigating relationship between salespeople's internal social networks and sales-service ambidexterity. And we propose that the salespeople with strong internal social networks are more likely to achieve sales-service ambidexterity. First, salespeople may benefit more from the strong internal social networks for professional offerings-specific information and knowledge. To do service and sales well, one needs to be quite familiar with the corresponding products and services, as well as the procedures and processes of doing sales and service. The internal social networks can provide various professional information and knowledge that salespeople need while doing sales or delivering service. For example, in the stage of presale, salespeople are expected to present the attractiveness about the product and service to call customers' attentions and interests on the offerings. There are usually lots of questions coming from customers and salespeople with strong internal social networks that would be more confident to offer consultant service to customers since they are sure to have extra product specific information and knowledge support from their colleagues, which is conducive to dispel customers' doubts and hesitation. In the selling stage, strong internal social networks make salespeople more confident to garner product-related technical supports from the engineering department and service-related administrative support from the office, which would accelerate the ongoing sales and service. In the after-sale stage, salespeople could also benefit from internal social networks for the after-sale service-related knowledge and assistance so as to serve customers as what they expect, which usually will result in high customer satisfaction. In this vein, the strength of salespeople's internal social networks is positively related to their achievement of sales-service ambidexterity. Second, the strength of internal social networks determines customer knowledge sharing and professional skills coaching so that salespeople with strong internal social networks are more capable of dealing with different customers in complex situations. To achieve sales-service ambidexterity, one needs to have a good command of customer knowledge, service skills and sales techniques. Particularly, the service work skills such as social skills and technical skills (Korczynski, 2006), the sales skills such as adaptive selling techniques (Johlke, 2006) and the techniques about how to integrate and coordinate service and sales involve plenty of tacit knowledge. The salespeople who have strong internal social networks usually have more opportunities to learn from the others' experience, knowledge and skills because of the strong and frequent interaction (Chen and Wang, 2008). What's more, strong and frequent interaction can also provide salespeople with deep understanding of tacit knowledge (Granovetter, 1973). As a result, a strong social networking with the senior experienced marketers usually helps salespeople make the impossible business into the possible and make the possible into the actual. And a strong internal social networking with other technical and service personnel helps salespeople make the difficult into the easy and then makes the easy into the immediate. In this sense, the strength of internal social networks facilitates salespeople to achieve serve-sales ambidexterity. Hence, we hypothesize H1a as follows:

H1a. The strength of salespeople's internal social networks can facilitate sales-service ambidexterity.

As far as external social networks are concerned, they are related to the social ties with external social groups or organizations such as sports, hobby or cultural groups, alumni associations, political organizations and citizen groups (Ito *et al.*, 2019). In contrast to internal social networks, salespeople's external social networks are relatively diverse and not directly work related. The members in the external networks do not interact so frequently with the focal salespeople or assist the focal salespeople to solve sales-service problems. However, those members in external social networks are usually with diverse working experiences and

educational backgrounds. And thus, they can provide diverse heterogeneous knowledge and information about customers, service and sales, which offer multiple heterogeneous perspectives, ideas and techniques to serve customers and sell products. In this sense, the extensiveness of external social networks matters. What's more, extensive external social networks usually contain rich relational resources, which provide the salespeople with "first kick" to approach target customers. In view of this, we believe that the extensiveness matters for external social networks. And we mainly focused on the extensiveness of external social networks while examining the relationship between salespeople's external social networks and sales-service ambidexterity. Based on social cognitive theory, diverse social networks can generate the favorable environment cue that provides chances for employees to tap into alternatives for developing new ideas and creating extra opportunities (Amabile, 1996), which make employees believe they have potential resources to generate creative solutions when needed (Gist and Mitchell, 1992). In this sense, the extensiveness of salespeople's external social networks can facilitate sales-service ambidexterity by offering diverse resources for and creative solutions to doing both sales and service well. And we argue that the salespeople who have extensive external social networks are more likely to achieve sales-service ambidexterity. First, extensive external social networks connect the salespeople to many groups and organizations in different areas and business. Those participants are usually with different working experiences and educational backgrounds, and thus, they provide diverse heterogeneous knowledge about customers, service and sales, which offers multiple heterogeneous perspectives, ideas and techniques to serve customers and sell products. Second, extensive external social networks could provide the salespeople with a wide variety of novel information, which alleviates salespeople's information asymmetry and brings about extra opportunities to serve or sell. Third, the relational resources flow in salespeople's external social networks is conducive to customer contact and interaction and plays a critical role in the success of sales and service. That is particularly true in Confucian countries such as China where Guanxi prevails and underpins business (Shen *et al.*, 2020; Hwang *et al.*, 2009). Through the bridge of relational resources, customers will be kind to communicate and easy to reach an agreement. In another words, with the "first kick" and potential impact of relational resources, the objectives of service and sales would be more likely to be achieved by the focal salespeople. Based on the above, the extensiveness of salespeople's external social networks may promote the salespeople's sales-service ambidexterity. Hence, we hypothesize H1b as follows:

H1b. The extensiveness of salespeople's external social networks can facilitate sales-service ambidexterity.

From the above, we know that social networks are found to facilitate ambidexterity by balancing various tensions (Raisch *et al.*, 2009). Internal and external social networks usually function differently but correlatively. Jansen *et al.* (2009) found that internal and external social networks are mutually complementary and ambidexterity requires their synergy. Therefore, we argue that salespeople's internal social network strength and external social network extensiveness will have an interaction effect on sales-service ambidexterity. First, in the context of sales-service ambidexterity, salespeople are expected to help customers identify problems with products and offer solutions to customers' problems, complaints and concerns (Sok *et al.*, 2016). Extensive external social networks help the salespeople get access to wealthy heterogeneous knowledge and information, which can inspire salespeople to generate creative solutions. While strong internal social networks help the salespeople integrate and exploit the knowledge and information and develop the solutions eventually. Second, extensive external social networks contain rich relational resources, which provide the salespeople with "first kick" to approach target customers. However, whether the salespeople can successfully sell products and serve customers well depends much on the

salespeople's capabilities as well as the supports and assistance from the salespeople's internal social networks. In other words, salespeople's extensive external social networks create opportunities for sales and service, while strong internal social networks help avail of the opportunities by offering additional supports and assistance (e.g. professional advice and extra coordination). Based on the above, salespeople's internal and external social networks are complementary to achieving sales and service objectives. Consequently, there probably is a positive interaction effect of salespeople's internal network strength and external network extensiveness on sales-service ambidexterity. Those who have extensive external social networks and strong internal social networks would be more likely to do both of sales and service well and achieve ambidexterity of sales and service. Hence, we hypothesize H1c as follows:

H1c. The extensiveness of external social networks and the strength of internal social networks play a positive interaction effect on salespeople's sales-service ambidexterity.

2.3 The mediating effect of role breadth self-efficacy

2.3.1 The effect of social networks on role breadth self-efficacy. Role breadth self-efficacy is defined as employees' perceived capability of carrying out a broader and more proactive set of work tasks that extend beyond prescribed technical requirements (Parker, 1998). Employees' role breadth self-efficacy is found to be affected by various levels of factors. At firm level, the work design factors such as job enrichment and membership of improvement groups are the critical organizational predictors of role breadth self-efficacy (Parker, 1998). And the work environment factors such as job control and time pressure (Sonnentag and Spychala, 2012) and firm-level transformational leadership (Strauss *et al.*, 2009) are positively related to employees' role breadth self-efficacy as well. At team level, team leaders' transformational leadership, due to its inspirational communication and intellectual stimulation, is verified to improve employee's role breadth self-efficacy and confidence in doing integrative and proactive jobs. At individual level, some personal factors can affect role breadth self-efficacy as well. For example, Huo *et al.* (2019) revealed that employees' customer-oriented perspective taking could increase their role breadth self-efficacy. However, our research suggests that employees' personal social networks are also positively related to their role breadth self-efficacy.

First, role breadth self-efficacy is developed based on the construct of self-efficacy. Social cognitive theory argues that social networks can create the environmental cue that is favorable for employees' self-efficacy estimation (Bandura, 1997; Gist and Mitchell, 1992). It claims that the formation of self-efficacy involves three evaluations (Hartog and Belschak, 2012). One of them is the evaluation of the availability of resources including knowledge and skills. Usually, the more availability of resources one feels, the higher self-efficacy he perceives (Siciliano, 2016). We can analyze the impact of salespeople's internal and external social networks on role breadth self-efficacy with the same logic. On one hand, internal social networks connect the salespeople to those experienced salesmen, service staffs and engineers inside the company, which offer opportunities for the employees to learn to be experienced as well by modeling the others' behaviors. Those vicarious experiences may also be at work to enhance individuals' role bread self-efficacy (Axtell and Parker, 2003). The salespeople who have strong internal social networks would be highly exposed to such internal resources. In this sense, strong internal social networks are conducive to the increase of salespeople's role breadth self-efficacy. On the other hand, external social networks connect the salespeople to individuals, groups, associations and communities outside the company, which could bring about a wide variety of heterogeneous information and knowledge. Those who have extensive external social networks would be extensively exposed to such external resources.

In this sense, the extensiveness of external social networks can contribute to salespeople's role breadth self-efficacy as well.

Second, according to the research of Parker (1998) and Parker *et al.* (1997), interpersonal skills are the critical requirements of role breadth self-efficacy. Parker (1998) argued that interpersonal interactions were very crucial to individuals' role breadth self-efficacy and employees must have the interpersonal capability to carry out multiple tasks. Particularly, for salespeople, interpersonal capability is even more important than it for the others because salespeople are boundary spanning workers who have high interdependence with internal coworkers and external customers. In that case, having outstanding interpersonal skills and capabilities could increase salespeople's perceived capability to carry out broader tasks, and their role breadth self-efficacy would be increased eventually. In this vein, those salespeople with strong internal social networks and extensive external social networks usually can shape high role breadth self-efficacy because social networks represent a set of interpersonal social ties, which reflect individuals' interpersonal skills and capabilities (Balkundi and Harrison, 2006). In another words, briefly, strong internal social networks and extensive external social networks usually imply salespeople's high level of interpersonal skills and capabilities that are very critical to the shape of role bread self-efficacy. And thus, both internal network strength and external network extensiveness could predict salespeople's role breadth self-efficacy. Based on the above two aspects, we hypothesize H2a and H2b as follows:

H2a. The strength of salespeople's internal social networks can increase their role breadth self-efficacy.

H2b. The extensiveness of salespeople's external social networks can increase their role breadth self-efficacy.

Social networks shape one's self-efficacy by information and support (Daly *et al.*, 2010). Different information and support could contribute differently to the shape of self-efficacy. Following this logic, we argue that the strength of internal social networks and the extensiveness of external social works would form an interactive effect on salespeople's role breadth self-efficacy because the nature of the two networks and the resources (information, knowledge and other supports) flow within them are a little different. On one hand, in salespeople's internal social networks, the information and knowledge from coworkers are professional but usually product foci, service foci or technique foci. When salespeople believe that their coworkers will give them corresponding professional assistance and support, their role breadth self-efficacy would be enhanced and they would be encouraged to take extra roles beyond the prescribed jobs (Parker *et al.*, 2006). While in salespeople's external social networks, most of the information and support is non-professional but extensive and heterogeneous, which is also required for salespeople to take on extra roles. In this vein, the information and knowledge from external social networks are complementary to that from internal social networks in terms of role breadth self-efficacy. On the other hand, the extensiveness of external social networks represents salespeople's multiple social roles, which cultivates one's capability and skills of role coordinating, integrating and switching (Balkundi and Harrison, 2006) so that they can take extra roles. While the strength of internal social networks represents strong backups, which increase one's confidence to take on extra roles, the perception of both multi-role capability and backup availability help salespeople's self-efficacy estimation (Bandura, 1997). From this perspective, internal and external social networks can function differently but complementarily while contributing to salespeople's extra role taking. Therefore, salespeople's internal and external social networks can form a positive interaction effect on role breadth self-efficacy. Those who have extensive external social networks and strong internal social networks would perceive high role breadth self-efficacy. Based on the above, this paper hypothesizes H2c as follows:

H2c. The extensiveness of external social networks and the strength of internal social networks play a positive interaction effect on salespeople's role breadth self-efficacy.

2.3.2 The effect of role breadth self-efficacy on sales-service ambidexterity. Drawing upon social cognitive theory, prior research studies reveal that salespeople's self-efficacy has a positive impact on individuals' behaviors and outcomes (Ahearne *et al.*, 2010; Schmitz and Ganesan, 2014). When people perceive high capability of carrying out the task, they would be likely to take actual actions to conduct that task (Mcgee *et al.*, 2009). Based on the above theory, we propose that salespeople with high role breadth self-efficacy are more likely to pursue sales-service ambidexterity.

First, role breadth self-efficacy concerns individuals' judgment about the capability across a set of tasks (Parker, 1998). High level of role breadth self-efficacy implies high-perceived capability of carrying out multiple tasks, and thus, it increases the likelihood of taking on a variety of tasks beyond a particular or specific task (Parker *et al.*, 2006). Therefore, the salespeople with high role breath self-efficacy possess optimistic judgment about their capabilities across service and sales. And they would be more likely to pursue both service and sales simultaneously. While the salespeople with low role breadth self-efficacy would be hesitant to take on the tasks of both service and sales at the same time because they don't think they have the capability to deal well with both of them, they usually would like to choose either service or sales.

Second, sales-service ambidexterity involves proactive behaviors. To be ambidextrous in service and sales, salespeople need to take many proactive actions while interacting with customers. For example, attempting to identify potential opportunities of cross selling or up selling in service provision usually involves proactive search for customers' needs and wants. Similarly, in the process of selling or after the selling, ambidextrous salespeople are expected to identify the possible problems for customers and offer them solutions proactively even though there is not such a request from them. Many research studies justified that role breadth self-efficacy was a predictor of individuals' proactive behaviors such as opportunity identifying and problem solving (Crant, 2000; Axtell and Parker, 2003). Therefore, the salespeople with high role breadth self-efficacy are more likely to take on the roles of both service and sales and try efforts to do them well by taking proactive actions. Based on the above evidences, this paper hypothesizes H3a as follows:

H3a. Salespeople's role breadth self-efficacy can predict their sales-service ambidexterity.

2.3.3 The underlying mediating effect of role breadth self-efficacy. Drawing from social cognitive theory, role breadth self-efficacy is affected by social networks. On one hand, self-efficacy depends much on people's evaluation of resource availability (Siciliano, 2016), for e.g. the availability of knowledge, skills and experiences. The prior research shows that high resource availability can enhance one's role bread self-efficacy (Axtell and Parker, 2003). Strong internal social networks provide professional product-specific information and knowledge, experiences and skill coaching, while extensive external social networks offer non-professional but diverse heterogeneous information and relational resources. That is to say, the salespeople who have strong internal social networks and extensive external social networks usually perceive high availability of resources. And their role breadth self-efficacy will be increased as the result. On the other hand, interpersonal interactions are very crucial to role breadth self-efficacy (Parker, 1998). And people's social networks represent a set of interpersonal social ties, which reflect individuals' interpersonal skills and capabilities (Balkundi and Harrison, 2006). In this vein, salespeople's role breadth self-efficacy is also affected by their internal social network strength and external social network extensiveness.

Based on social cognitive theory, role breadth self-efficacy can predict sales-service ambidexterity. According to Parker (1998), role breadth self-efficacy is one's perception of his capability across a set of tasks. When people perceive they have high capability of carrying out the tasks, they usually take actual actions to do them and do them well (Mcgee *et al.*, 2009). In this vein, salespeople's role breadth self-efficacy can predict sales-service ambidexterity. Those salespeople with high level of role breadth self-efficacy are more likely to take on both sales and service and achieve sales-service ambidexterity.

In view of the above arguments, we propose that role breadth self-efficacy plays a mediating role in the relationship between salespeople's internal social network strength and sales-service ambidexterity and the relationship between salespeople's external social network extensiveness and sales-service ambidexterity as well. And thus, we hypothesize H3b and H3c as follows:

H3b. Salespeople's role breadth self-efficacy mediates the relationship between the strength of internal social networks and sales-service ambidexterity.

H3c. Salespeople's role breadth self-efficacy mediates the relationship between the extensiveness of external social networks and sales-service ambidexterity.

2.4 The moderating effect of empowerment climate

Rapp *et al.* (2017) suggested that more boundary conditions were expected while studying on sales-service ambidexterity. And many research studies have adopted multiple-level design to investigate ambidexterity of selling and service (de Ruyter *et al.*, 2020). Inspired by the suggestion and the extant studies, two contextual factors, i.e. empowerment climate and transformational leadership, were identified based on social cognitive theory.

Social cognitive theory argued that environments were contingency factors regulating the effect of self-efficacy on task performance (Bandura, 2001, 2012). Ozyilmaz *et al.* (2018) extended the theory by demonstrating that the effect of self-efficacy on task performance was contingent upon the internal environment of an organization. Empowerment climate is one of such intra-organizational environments because it refers to the members' shared perception of information sharing, autonomy and accountability within the organization (Seibert *et al.*, 2004). Empowerment climate creates a favorable intra-organizational environment in which employees feel better about their job and would respond to customers' need more quickly and enthusiastically (Bowen and Lawler, 1992). Therefore, empowerment climate can be viewed as such a favorable intra-organizational environment that motivates salespeople with high role breadth self-efficacy to take extra roles in sales and service. Drawing upon the above theory and propositions, we argue that empowerment climate is proposed to be the contingency factor regulating the effect of salespeople's role breadth self-efficacy and sales-service ambidexterity. Specially, we base our argument on the flowing two clues.

First, in the context of empowerment climate, salespeople could have autonomy to manage service and sales activities, which reduces the difficulty of coordinating and enables them to undertake both. Empowerment climate is viewed as a contextual variable that enhances employees' perception of autonomy (Seibert *et al.*, 2004). With such autonomy, employees have substantial freedom, independence and discretion in scheduling their work (Hackman and Oldham, 1975). In this sense, empowerment climate facilitates salespeople to pursue both service and sales by reducing the difficulty of coordinating them in two ways. On one hand, it enables them pursue service and sales in a flexible way. As we know, service delivery and selling activities compete for salespeople's limited time and efforts. If they have autonomy to manage the tasks, they may do them at the same time or they may use flexible temporal strategies to do them by turns with less role ambiguity (Singh, 1993). In other words, with empowerment climate, they can perform service role or sales role flexibly and shift between

the service activities and selling activities autonomously so that they can coordinate their time and efforts to pursue dual objective. On the other hand, empowerment climate enables salespeople to pursue personalized style of service and sales by giving them the authority to deal with customer-related activities (Conger and Kanungo, 1988). With the authority, salespeople may adjust their service programs or adapt their selling strategies based on the situations so that they could pursue personalized and customized service and sales. That would be very helpful to achieve both service and sales. Therefore, empowerment climate can promote salespeople with high role breadth self-efficacy to be more likely to pursue sales-service ambidexterity.

Second, empowerment climate creates tolerant atmosphere for mistakes. To be ambidextrous in service and sales, salespeople need to take proactive actions that are defined as employees' proactive anticipatory behaviors to improve themselves and environments (Grant *et al.*, 2011). Specifically, the proactive actions include identifying opportunities to improve the procedures, developing new initiatives and offering creative solutions instead of simply conforming to routines. Therefore, there inevitably would be some failures or mistakes. And how the organization responds to mistakes or failures will strongly affect employees' attitude towards their proactive actions. Empowerment climate creates a tolerant culture in which employees are likely to have an open attitude towards mistakes and failures (Caniëls *et al.*, 2017) and feel free to undertake risks (Bass, 1985). So under the circumstance of high empowerment climate, salespeople with high role breadth self-efficacy feel more relaxed to fulfill proactive behaviors in their service delivery and selling process, which makes them more likely to pursue sales-service ambidexterity. Based on the above, we hypothesize H4 as follows:

H4. Empowerment climate positively moderates the relationship between salespeople's role breadth self-efficacy and sales-service ambidexterity.

2.5 The moderating effects of transformational leadership

Transformational leadership was also included a moderator because of the similar logic. On one hand, it's reasonable to include transformational leadership as a moderator based on social cognitive theory. Transformational leadership is characterized by idealized influence, inspirational motivation, intellectual stimulation and individualized consideration (Bass *et al.*, 2016; Sheehan *et al.*, 2020). It is an important contextual element of employees' working environment (Oldham and Cummings, 1996) that emphasizes the extent to which leaders increase followers' awareness of the tasks and motivate them to perform beyond expectations (Yukl, 1998). Therefore, drawing from social cognitive theory (Bandura, 2001, 2012), transformational leadership can act as another contingent intra-organizational factor regulating the effect of self-efficacy on task performance as well. On the other hand, it is feasible to include transformational leadership as a contingency factor based on existing literature on ambidexterity. Prior research studies show that transformational leadership can influence employees to take on extra roles, invest extra efforts and go extra miles (Carter *et al.*, 2013). Besides, transformational leadership relates to inspirational motivation, intellectual stimulation and individualized consideration (Sheehan *et al.*, 2020), which makes transformational leadership, to some extent, a complementary factor to role breadth self-efficacy. As a result, transformational leadership would interact with role breadth self-efficacy and form a synergic influence on salespeople's ambidextrous behavior. In view of the above, we argue that transformational leadership can be viewed as another intra-organizational environmental factor that is proposed to be the second contingency factor enhancing the effect of role breadth self-efficacy and sales-service ambidexterity. We base our proposition on the following three specific aspects.

First, salespeople are encouraged by transformational leadership to serve customers and sell products simultaneously while encountering customers. On one hand, transformational leadership usually emphasizes the value mining of tasks, from which subordinates will realize the importance of sales-service ambidexterity and try efforts to achieve the goals advocated by their leaders. On the other hand, owing to the characteristics of transformational leadership such as idealized influence, inspiration and personal charisma (Bass and Riggio, 2006), salespeople are actually encouraged by their supervisors by means of any necessary guidance, inspiration and expectations. With the encouragement, salespeople believe that the conflicts and challenges of simultaneous pursuit of service and sales could be reconciled and the sales-service ambidexterity is achievable. Under such circumstances, those salespeople with high role breadth self-efficacy are more willing to perform beyond the expectations to do both service and sales well simultaneously.

Second, transformational leadership fosters supportive working environments in which salespeople are embedded in intellectual and affective supports. The extant literature shows that transformational leadership provides contextual support to employees across organization or unit when they pursue multiple goals (Berson *et al.*, 2006), which implies that it can work as a supportive mechanism to influence subordinates' ambidextrous behaviors (Chang, 2016). Transformational leadership not only provides subordinates with personalized intellectual supports by means of guidance, coaching and mentoring (Bass *et al.*, 2003), but also shapes harmonious relationships among team members (Vera and Crossan, 2004). Members in such a unit could benefit from that harmonious atmosphere for positive emotional supports. As a result, it creates supportive working environments that facilitate subordinates with high role breath self-efficacy to pursue the challenging sales-service ambidexterity.

Third, transformational leadership offers more autonomy to their subordinates (Benjamin and Flynn, 2006). Rogan and Mors (2014) revealed that managers who took on multiple roles were more likely to behave ambidextrously when they had greater autonomy. Task autonomy is considered to help individuals handle multiple tasks that are difficult to combine (Van der Borgh and Schepers, 2014), and thus, it becomes one of the critical factors for individual ambidexterity. Transformational leadership has been found to resonate with empowerment climate (Chang, 2016) by creating a climate of autonomy (Benjamin and Flynn, 2006; Dvir *et al.*, 2002). Under such autonomous working condition, employees will be more possible to use flexible strategies to coordinate their time and efforts while pursuing service and sales simultaneously. In view of that, transformational leadership can work as a facilitator that enhances the relationship between salespeople's role breadth self-efficacy and sales-service ambidexterity. And thus, we hypothesize H5 as follows:

H5. Transformational leadership positively moderates the relationship between salespeople's role breadth self-efficacy and sales-service ambidexterity.

Based on the hypothesis development, the general research model could be depicted by Figure 1.

3. Method

3.1 Data collection

Data were collected from the retail banking industry and the insurance industry in China. There are two reasons for choosing these two industries. First, retail banking industry and insurance industry were found to be ideal industrial scenarios to examine frontline employees' sales-service ambidexterity in the prior studies such as Patterson *et al.* (2014) and Sok *et al.* (2016), which justified the appropriateness of choosing these two industries as the context to test the model. Second, these two industries provide very competitive settings in

which customers have many choices. Lots of banks and insurance companies can offer similar products and service, which requires salespersons to take proactive actions to convince customers of their products. Under such a circumstance, the service that related to the products becomes extremely important for exploring the opportunities of cross-/up-selling. Sales hide in service and contain service as well. Salespeople are expected to take extra role of service while selling. Therefore, these two industries can serve as good settings and context to explore salespeople's simultaneous pursuit of service and sales.

Following the procedure of standard back translation, two certified professional translators helped forward-translate and back-translate the questionnaire. A pre-test was conducted with 17 salespersons to rule out potential issues of the questionnaire in terms of its formats, sequence of questions, words and expressions. The final questionnaire included measures of demographics, internal social networks, external social networks, role breadth self-efficacy, empowerment climate and transformational leadership.

Through our efforts, 39 units agreed to participate in this research and granted access to salespeople and their leader for data collection. With the help of friends, MBA candidates and graduated students, the questionnaires were distributed to the cooperative companies. Owing to the management support, the response rates were high as expected. 630 questionnaires were distributed and 357 of them were collected (response rate = 56.67%). In total, 331 of the collected questionnaires were valid. The final sample profile consisted of 103 males (31.12%) and 228 females (68.88%), with 16 aged 18–25 years (4.83%), 119 aged 26–35 years (35.95%), 125 aged from 36–45 (37.76%) and 71 aged more than 46 years (21.45%). The average tenure was 4.89 years (SD = 3.0254) in the current company. In total, 109 (32.93%) samples are from retail banking and the rest 222 (67.07%) are from insurance industry. The potential of non-response bias was examined by following the research done by Armstrong and Overton (1977). The results showed that non-response bias was not a concern.

3.2 Measures

Sales-service ambidexterity. Following the researches done by Sok *et al.* (2016), this paper adopted their measure of sales-service ambidexterity, which was adapted from items developed by Jasmand *et al.* (2012). Salespeople's service behavior was measured by six items pertaining to the service provision during the conversations with customers, while salespeople's sales behavior was measured by six items that captured the degree to which salespeople engaged in cross-selling or up-selling during the conversations with customers (see Appendix). An exploratory factor analysis (EFA) of the 12 items yielded a 2-factor result with loadings above 0.936 and cross-loading below 0.112. Six items are for service ($\alpha = 0.980$, composite reliability [CR] = 0.982 and average variance extracted [AVE] = 0.902) and the other six items are for sales ($\alpha = 0.981$, CR = 0.983 and AVE = 0.906). Following the previous studies (Mom *et al.*, 2019; Gibson and Birkinshaw, 2004), the averages of the scales of service and sales were calculated separately, and then, the multiplication of service and sales was calculated to create a variable for salespeople's sales-service ambidexterity.

The strength of internal social networks. The strength of internal social networks here refers to the strength of salespeople's relations with other members within the same organization. According to the prior studies, the strength of social networks can be measured in different ways (Granovetter, 1973; Hansen, 1999). And the measure from Hau *et al.* (2013) and Chow and Chan (2008) was finally adopted by our study for the following two considerations (see Appendix). First, this measure is very consistent with the definition of internal network strength in our study. The strength of salespeople's internal social network here was defined as the strength of salespeople's relations with other members within the same organization. And the scale adopted captures the degree of contact and accessibility of an employee with his or her organizational members (Hau *et al.*, 2013). There is a good fit

between the scale and the definition of the strength of internal social networks. Second, this measure is very consistent with our arguments and hypotheses. We argued that the strength of internal social networks varied across salespeople. The salespeople who have high degree of contact and interaction with other organizational members can benefit more from the strong internal social networks for professional offerings-specific information and knowledge, customer knowledge sharing and professional skills coaching. And thus, the salespeople with strong internal social networks were hypothesized to be more likely to achieve sales-service ambidexterity. By scrutinizing the description of the measure from Hau *et al.* (2013) and Chow and Chan (2008), we found that this measure could help capture how strong the salespeople's ties with other intra-organizational members were. Based on the above, we believe the measure we adopt can serve our study well. An EFA of the scale yielded one factor with loadings above 0.997 ($\alpha = 0.997$, CR = 0.998 and AVE = 0.995).

The extensiveness of external social networks. Literature review shows that the measures adopted are usually determined by the research focus. Yoon *et al.* (2015) measured networks by size because the research focus was about the relationship between network size and knowledge creation. Jo *et al.* (2014) measured social networks by degree centrality because their research focus was about the influence of degree centralities of social networks on learning outcomes in a collaborative learning situation. Similarly, Potter and Wilhelm (2020) adopted degree centrality to measure networks as well because their research focus was to investigate how supplier degree centrality influences the generation of supplier–supplier innovations. One of our research focuses is to investigate the impact of extensiveness of external social networks on sales-service ambidexterity. Accordingly, the related hypothesis is also about the relationship between extensiveness of external social networks and sales-service ambidexterity. So we measured external social networks by extensiveness. The extensiveness of external social networks here refers to the extensiveness of salespeople's relations with social groups or other organizations outside company. As a matter of fact, some prior research studies have already noticed and measured networks by extensiveness. Cao *et al.* (2009) envisioned that the network extensiveness of chief executive officer positively influenced ambidexterity. Heavey *et al.* (2015) argued that the extensiveness of top managers' social networks could offer dual knowledge benefits conducive to ambidexterity. The prior studies measured the extensiveness by the extent to which they participated in or connected to some groups, which greatly inspired us. Consequently, we followed Heavey *et al.* (2015) to measure of the extensiveness of salespeople's external social networks by the extent to which salespeople participate in external social groups. And the specific items were from Han (2016). The respondents were asked to indicate whether had participated in any of the ten social groups or organizations (see Appendix). A dummy variable was created for each item. The dummy was given a score of 0 when the respondent marks "do not participate", otherwise it was given a score of 1. Following the research done by Heavey *et al.* (2015), the average of the scores is used for statistical analysis.

Role breadth self-efficacy. The scale composed of seven highest loading items from Parker (1998) was adopted to measure the extent to which employees feel confident that they could carry out a range of proactive and integrative tasks (see Appendix). That seven-item scale was also used by Mom *et al.* (2019) and Parker *et al.* (2006) in their research studies. An EFA of the scale yielded one factor with loadings above 0.880 ($\alpha = 0.967$, CR = 0.973 and AVE = 0.836).

Empowerment climate. Following the research done by Alexiev *et al.* (2020), the three-item scale (see Appendix) that reflected the organizational aspect of empowerment (Seibert *et al.*, 2004) was adopted. The EFA output one factor with loadings above 0.951 ($\alpha = 0.949$, CR = 0.966, AVE = 0.904). The data showed that there was a strong agreement among the salespeople within the same unit ($r_{wg(j)} = 0.879$, intraclass correlation coefficient (ICC)(1) = 0.339 and ICC(2) = 0.803). As a result, the scores of them were averaged to generate the aggregated measure of unit-level empowerment climate.

Transformational leadership. As had previous research studies done (Kirkman *et al.*, 2009; MacKenzie *et al.*, 2001), the shortened measurement of transformational leadership developed by Podsakoff *et al.* (1990) was used in this study. That scale captured the core transformational leadership behaviors (α = 0.966), performance expectations (α = 0.969), individualized considerations (α = 0.951) and intellectual stimulation (α = 0.974) (see Appendix). The EFA showed all loadings were above 0.836 and the CFA showed the loading were all above 0.894. The minimum correlation between dimensions was 0.524. And the average correlation among the dimensions was 0.572, which supported aggregation (α = 0.951, CR = 0.957 and AVE = 0.612). There was a strong agreement among the salespeople within the same unit (mean $r_{wg(j)}$ = 0.909, ICC(1) = 0.378 and ICC(2) = 0.828), which supported aggregating the assessment of transformational leadership.

Control variables. In accordance with the previous studies in this field, the demographics such as age and gender (Patterson *et al.*, 2014; Sok *et al.*, 2016), as well as organizational tenure (Sok *et al.*, 2016) and industry type (Patterson *et al.*, 2014), were proposed to influence salespeople's sales-service ambidexterity, and thus, they need to be controlled. Accordingly, two dummies were created as follows: one dummy is for gender (1 = male, 0 = female) and the other is for industry type (1 = retail banking; 0 = insurance industry).

3.3 Reliability and validity

First, to test the reliability, the value of Cronbach's Alpha was calculated to reflect the internal consistency reliability of each scale, which showed the minimum value was 0.949. The CR was calculated as well and the minimum value was 0.957. The results showed that both the internal consistency reliability and CR of all measures were guaranteed. Second, to test the validity, convergent validity and discriminant validity were calculated by CFA. The minimum loadings of the strength of internal social networks (0.995), role breadth self-efficacy (0.852), empowerment climate (0.921), transformational leadership (0.892) and sales-service ambidexterity (0.927) are all above 0.7, which implied every measure had strong convergent validity. The correlations between each pair of latent variables reported in Table 1 were lower than the square root of AVE values (Table 1), which reflected significant discriminant validity (Fornell and Larcker, 1981). The above tests suggest that validity and reliability are not a concern.

3.4 Common method variance

Following the recommendations offered by Podsakoff *et al.* (2012), three ways were adopted to mitigate common method variance. (1) The measure of sales-service ambidexterity (customer service provision and cross-/up-selling) was separated from that of independent variables in the questionnaire, which made them look unrelated (Podsakoff *et al.*, 2003). (2) The questionnaire was filled in anonymously. The surveyors ensured that all the information participants provided would be kept a secret and would not be used for any other purpose except this academic research. Thus, participants could be conscientious to answer the questions. (3) The participants have basic expertise and experience in the corresponding questions listed in the questionnaire, which can ensure the appropriate ratings.

Besides the precautions, two additional tests were conducted to determine whether common method variance was still an issue. First, Harman's one-factor test was adopted. If the factor analysis outputs only one factor or there is one factor that accounts for the most covariance of the variables, then there would probably be a serious common method variance (Podsakoff *et al.*, 2003). The factor analysis with varimax rotation yielded more than one factor, while the first factor accounted for 37.332% of total variance only. Second, following the approach of Doty and Glick (1998), a new CFA including a latent method factor with paths to all items was done and compared with the original CFA. The results showed

Table 1.
Means, standard deviations and correlations

No.	Variables	Mean	S.D	1	2	3	4	5	6	7	8	9
1	Gender	0.3112	0.4637									
2	Industry	0.3293	0.4707	0.015								
3	Organizational tenure	4.8912	3.0299	−0.149**	−0.025							
4	Age	38.2870	7.8809	−0.169**	0.030	0.282**						
5	The strength of internal social networks	4.5670	1.7517	0.092	0.139*	0.042	0.062					
6	The extensiveness of external social networks	0.5251	0.1725	0.067	0.238**	0.029	0.089	0.327**				
7	Role breadth self-efficacy	4.3064	1.5736	−0.001	0.126*	0.025	0.132*	0.348**	0.398**			
8	Empowerment climate	4.3454	1.6040	−0.039	0.240**	0.038	0.108*	0.350**	0.273**	0.339**		
9	Transformational leadership	4.4266	1.4289	0.029	0.183**	0.080	0.128*	0.525**	0.375**	0.565**	0.311**	
10	Sales-service ambidexterity	19.9747	12.5709	0.024	0.104	0.145**	0.237**	0.572**	0.484**	0.484**	0.473**	0.467**

Note(s): The correlations with * are significant at $p < 0.05$, and those with ** are significant at $p < 0.01$ (Two-tailed)

that the new model fitted the index: $\chi^2(932) = 1252.199$, root-mean-square error of approximation (RMSEA) = 0.032, incremental fit index (IFI) = 0.987, Tucker-Lewis index (TLI) = 0.985 and comparative fit index (CFI) = 0.987, while the original multiple factor model fitted the index: $\chi^2(979) = 1310.214$, RMSEA = 0.032, IFI = 0.987, TLI = 0.985 and CFI = 0.987. Based on the above, the degree of freedom decreased 47 ($\Delta df = 47$), but χ^2 decreased 58.015 only ($\Delta\chi^2 = 58.015$) which is less than $\chi^2(47) = 59.774$ ($p < 0.1$). All results showed it wouldn't suffer from serious common method bias. As a matter of fact, common method bias would reduce the probability to get interaction effects supported (Siemsen *et al.*, 2010). In another words, models with two-way or three-way interaction effects are less likely to suffer from potential common method bias. Half of our hypotheses are related to two-way interaction effects and they are found to be supported by the empirical results, which suggest common method bias was not a concern.

4. Results

4.1 Correlation analysis

Table 1 shows the means, standard deviations and correlations of the variables in this research. Both the strength of internal social networks and the extensiveness of external social networks are positively related to salespeople's sales-service ambidexterity ($r = 0.572$, $p < 0.01$; $r = 0.484$ and $p < 0.01$, respectively) and role breadth self-efficacy ($r = 0.348$, $p < 0.01$; $r = 0.398$ and $p < 0.01$, respectively). Role breadth self-efficacy is positively related to sales-service ambidexterity ($r = 0.484$, $p < 0.01$). And empowerment climate and transformational leadership are positively related to sales-service ambidexterity as well ($r = 0.473$, $p < 0.01$; $r = 0.467$, $p < 0.01$, respectively). The coefficients of all variables are less than 0.65 (Table 1), and thus, there would be no multi-collinearity (Cao *et al.*, 2009).

4.2 Hypothesis testing

Considering the theoretical framework of this research was based on multi-level analyses, it is appropriate to employ hierarchical linear modeling (HLM) to test the hypotheses (Bryk and Raudenbush, 1992). The null-model with dependent variable only was built and tested. The results showed the residual variation of intercept term was significant ($p < 0.001$). ICC(1) was 0.444 and ICC(2) was 0.863, which suggested to adopt the model of cross level analysis.

Table 2 presents the results of HLM analysis. Model 1 to model 3 took role breath self-efficacy as dependent variable, while Model 4 to Model 10 took sales-service ambidexterity as dependent variable (Table 2). Model 4 presented the results of control variables on sales-service ambidexterity. Model 5 was created to test the main effects by adding the independent variables, the strength of internal social networks ($\gamma = 0.412$, $p < 0.001$) and the extensiveness of external social networks ($\gamma = 0.336$, $p < 0.001$), simultaneously based on Model 4. The results showed both of them had positive effect on sales-service ambidexterity, which supported H1a and H1b. Model 7 was added the interaction item of internal social network strength and external social network extensiveness based on Model 5. The interaction item was positive and significant ($\gamma = 0.135$, $p < 0.01$). It supported H1c that the strength of internal social networks and the extensiveness of external social networks had a positive interaction effect on sales-service ambidexterity. A simple slope analysis of this interaction indicated that the relationship between external social network extensiveness and sales-service ambidexterity would be stronger for high level (+1SD) of internal social network strength ($b = 0.667$, $p < 0.001$) than for low level (−1SD) of internal social network strength ($b = 0.442$, $p < 0.001$) (see Figure 2a).

The mediating effects were examined (Table 2) by following the three steps proposed by Kenny *et al.* (1998). First, Model 5 showed the positive effects of internal social network

Table 2.
Results of hierarchical linear modeling analysis

Variables	DV: Role breadth self-efficacy				DV: Sales-service ambidexterity					
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9	Model 10
Intercept	−0.079	−0.056	−0.050	0.128	0.160†	0.178†	0.167†	0.169	0.160	−0.033
Gender[a]	0.099	0.023	−0.002	0.229*	0.085	0.087	0.062	0.180	0.187†	0.120
Industry[a]	0.008	−0.161	−0.238	0.062	−0.193	−0.169	−0.307	0.071	−0.102	−0.137
Organizational tenure[a]	0.011	0.008	0.008	0.011	0.012	0.008	0.010	0.005	0.006	−0.010
Age[a]	0.006	0.005	0.005	0.023**	0.022**	0.019**	0.020**	0.019**	0.018**	0.016**
The strength of internal social networks[a]		0.203***	0.222***		0.412**	0.331***	0.424***			
The extensiveness of external social networks[a]		0.226***	0.229***		0.336***	0.261***	0.336**			
Role breadth self-efficacy[a]						0.321***		0.493***	0.461***	0.325***
The strength of internal social networks×the extensiveness of external social networks			0.111*				0.135**			
Empowerment climate[b]									0.258	0.492†
Transformational leadership[b]									0.058	−0.148
Role breadth self-efficacy × Empowerment climate										0.298***
Role breadth self-efficacy × Transformational leadership										0.144†
Deviance[c]	861.754	827.314	824.079	941.210	843.409	812.859	838.042	874.296	872.141	825.893
Decrease in deviance		34.440***	3.235***		97.801***	30.55***	5.367***	66.914***	2.155**	46.248***

Note(s): [a] represents variables at individual level (level 1), and [b] represents variables at unit level (level 2). $n = 331$ at Level 1, $n = 39$ at level 2, $^{\dagger}p < 0.10$, $^{*}p < 0.05$, $^{**}p < 0.01$, $^{***}p < 0.001$. [c] Deviance can be used as a measure of model fit; the smaller the deviance, the better the model fits (Liao and Chuang, 2007)

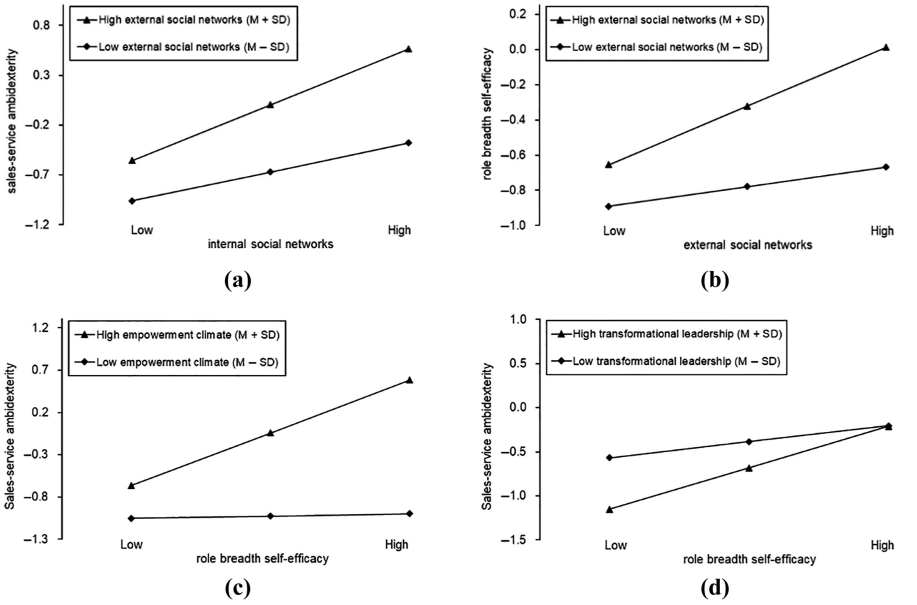

Figure 2.
Plots of interaction effects

strength and external social network extensiveness on sales-service ambidexterity. Second, Model 2 reflected that the strength of internal social networks ($\gamma = 0.203$, $p < 0.001$) and the extensiveness of external social networks ($\gamma = 0.226$, $p < 0.001$) had positive relationships with salespeople's role breadth self-efficacy separately, which supported H2a and H2b. Besides, the interaction item of internal social network strength and external social network extensiveness were added to Model 3, and it was significant ($\gamma = 0.111$, $p < 0.05$). The results supported H2c that both the strength of internal social networks and the extensiveness of external social networks had a positive interaction effect on role breadth self-efficacy. A simple slope analysis of this interaction indicated that the relationship between external social network extensiveness and role breadth self-efficacy would be stronger for high level (+1SD) of internal social network strength ($b = 0.440$, $p < 0.001$) than for low level (−1SD) of internal social network strength ($b = 0.081$, $p > 0.1$) (see Figure 2b). Third, Model 8 was created to examine the effect of role breadth self-efficacy on sales-service ambidexterity. The results showed that role breadth self-efficacy had a significant impact on sales-service ambidexterity ($\gamma = 0.493$, $p < 0.001$), which supported H3a. And Model 6 showed that the coefficients of the strength of internal social networks and the extensiveness of external social networks were still statistically significant but they were reduced by 24.29 and 33.16% separately while adding role breadth self-efficacy to the model. Therefore, role breadth self-efficacy partially mediated the effects of internal and external social networks on sales-service ambidexterity. The route analysis by structural equation modeling (SEM) showed that the route from the strength of internal social networks ($\beta = 0.260$, $p < 0.001$) and the extensiveness of external social networks ($\beta = 0.335$, $p < 0.001$) to role breadth self-efficacy, and the route from role breadth self-efficacy to sales-service ambidexterity ($\beta = 0.464$, $p < 0.001$) were all significant ($\chi^2/df = 3.023$, RMSEA = 0.078, IFI = 0.965, TLI = 0.959 and CFI = 0.965). As a result, H3b and H3c were supported.

To examine the moderating effects of empowerment climate and transformational leadership, Model 9 (intercept model) and Model 10 (slope model) were created based on model

8 (Table 2). The results showed that the coefficients of role breadth self-efficacy ($\gamma = 0.325$, $p < 0.001$), empowerment climate (for role breadth self-efficacy slope; $\gamma = 0.298, p < 0.001$) and transformational leadership (for role breadth self-efficacy slope; $\gamma = 0.144$, $p < 0.1$) were all significant at the same time, which indicated positive moderating effects of empowerment climate and transformational leadership on the relationship between role breadth self-efficacy and sales-service ambidexterity. As a result, H4 and H5 were supported. A simple slope analysis indicated that the relationship between role breadth self-efficacy and sales-service ambidexterity would be stronger for high level (+1SD) of empowerment climate ($b = 0.531, p < 0.001$) than for low level (−1SD) of empowerment climate ($b = 0.231, p < 0.01$) (see Figure 2c). And the relationship between role breadth self-efficacy and sales-service ambidexterity would be stronger as well for high level (+1SD) of transformational leadership ($b = 0.488$, $p < 0.001$) than for low level (−1SD) of transformational leadership ($b = 0.255$, $p < 0.01$) (see Figure 2d).

4.3 Robustness test

Robustness test is usually done by adopting alternative measures and estimation methods to confirm the results (Choi *et al.*, 2014). First, we adopted the sum of service and sales as the alternative measure of sales-service ambidexterity. There are two reasons for doing this. On one hand, it is acceptable and feasible to take alternative calculation of sales-service ambidexterity. Sales-service ambidexterity is the dependent variable in this study, and changing the calculation method of ambidexterity has been found to be an acceptable and feasible way for robustness check in the relevant literature on organizational ambidexterity such as the research done by Chang (2016). On the other hand, it is reasonable to calculate sales-service ambidexterity with the sum of service provision and cross-/up-selling by following the tradition of researches on organizational ambidexterity although sales-service ambidexterity is an individual-level ambidexterity. Organizational ambidexterity could be calculated in many ways such as the sum of, the product of and the difference between exploration and exploitation (Jansen *et al.*, 2005; Patel *et al.*, 2013) and so is individual ambidexterity (Caniëls *et al.*, 2017). Second, we adopted SEM as the alternative estimation method to test the main effects and mediating effect. SEM is applicable for doing this because the independent variables, the mediating variable and the dependent variable are all individual-level variables, whereas empowerment climate and transformational leadership are unit-level variables. So the robustness test of their moderating effects on the relationship between role breadth self-efficacy and sales-service ambidexterity was still estimated by HLM, which was particularly suitable for multi-level data.

In order to determine the best model for robustness test, we created and tested a series of models. First, we created full mediation model (Table 3) and then created partial mediation

Model	χ^2	df	$\Delta\chi^2$	Δdf	GFI	IFI	TLI	CFI	RMSEA
Model 1	224.618	103	—		0.917	0.979	0.976	0.979	0.060
Model 2	196.226	101	$\Delta\chi^2$ ($m1$, $m2$) = 28.392***	2	0.928	0.984	0.981	0.984	0.053
Model 3	273.529	103	$\Delta\chi^2$ ($m2$, $m3$) = 77.303***	2	0.897	0.971	0.966	0.971	0.071
Model 4	265.183	102	$\Delta\chi^2$ ($m2$, $m4$) = 68.957***	1	0.909	0.972	0.967	0.972	0.070

Note(s): Model 1: Baseline model, full mediation (no direct paths from predictors to outcome)
Model 2: Partial mediation model (baseline model plus direct paths from predictors to outcome)
Model 3: Direct effects model (the paths from the strength of internal social networks and the extensiveness of external social networks to role breadth self-efficacy were constrained to zero)
Model 4: Non-mediation model: the paths from role breadth self-efficacy to sales-service ambidexterity was constrained to zero

Table 3.
The model fit for alternative models

model (Model 2) by adding direct paths from internal and external social networks to sales-service ambidexterity. As shown in Table 3, the chi-square difference between Model 1 and Model 2 was significant ($\Delta\chi^2 = 28.392$, $\Delta df = 2$, $p < 0.001$), which suggested adding the direct paths to the model could significantly improve the model fit. This finding justified the hypotheses of the direct effects of internal and external social networks on sales-service ambidexterity (H1a and H1b). As a result, the partial mediation model was would be accepted for further consideration because it was superior to the full mediation model. Second, to rule out the alternative explanation that there was no causal relationship between social networks and sales-service ambidexterity, we tested the direct effect of model (Model 3) in which the three constructs (the strength of internal social networks, the extensiveness of external social networks and role breadth self-efficacy) were set to directly influence sales-service ambidexterity. The chi-square difference test suggested that the partial mediation model fit the data better than the direct effect model ($\Delta\chi^2 = 77.303$, $\Delta df = 2$ and $p < 0.001$). This finding also justified the hypotheses of the effects of internal and external social networks on role breadth self-efficacy (H2a and H2b). Third, to rule out the alternative explanation that there was no causal relationship between role breadth self-efficacy and sales-service ambidexterity, we tested the non-mediation model (Model 4) in which the path from role breadth self-efficacy to sales-service ambidexterity was constrained to zero. The chi-square test suggested that the partial mediation model fit the data better than the non-mediation model did ($\Delta\chi^2 = 68.957$, $\Delta df = 1$, $p < 0.001$). This justified the hypothesis of the effect of role breadth self-efficacy on sales-service ambidexterity (H3a).

Table 4 was created to show the details of robustness test. Model 1 is the extended full mediation model that includes the interaction effect of internal and external social networks on role breadth self-efficacy only, while Model 2 is the extended partial mediation model that includes the interaction effect of internal and external social networks on both role breadth self-efficacy and sales-service ambidexterity (Table 4). The model fit of the extended partial mediation model ($\chi^2/df = 1.951$, RMSEA = 0.054, goodness of fit index (GFI) = 0.923, IFI = 0.982, TLI = 0.978 and CFI = 0.982) was also much better than that of the extended full mediation model ($\chi^2/df = 2.562$, RMSEA = 0.069, GFI = 0.902, IFI = 0.969, TLI = 0.964 and CFI = 0.969) as well. Consequently, the partial mediation model (model 2 in Table 4) was adopted for the robustness tests of the main effects and interaction effects at individual level. First, the route analysis of Model 2 showed that the coefficients of the route from the strength of internal social networks to sales-service ambidexterity ($\beta = 0.224$, $p < 0.001$), the route from the extensiveness of external social networks to sales-service ambidexterity ($\beta = 0.170$, $p < 0.001$) and the route from interaction item of internal and external social networks to sales-service ambidexterity ($\beta = 0.321$, $p < 0.001$) were significant, which supported H1a, H1b and H1c, respectively. Second, the coefficients of the route from the strength of internal social networks ($\beta = 0.271$ and $p < 0.1$), the extensiveness of external social networks ($\beta = 0.303$ and $p < 0.001$) and the interaction item of internal and external social networks ($\beta = 0.206$ and $p < 0.001$) to role breadth self-efficacy reached statistical significance as well, which supported H2a, H2b and H2c, respectively. Third, the route from role breadth self-efficacy to sales-service ambidexterity was statistically significant ($\beta = 0.360$ and $p < 0.001$), which supported H3a. By calculating the mediating effect, role breadth self-efficacy could mediate 43.55% of the effect of internal social network strength on sales-service ambidexterity and 64.16% of the effect of external social network extensiveness on sales-service ambidexterity. Therefore, H3b and H3c were repeatedly supported. Lastly, in terms of the moderating effects of empowerment climate and transformational leadership, Models 3, 4 and 5 were created for robustness test. The results showed that the coefficients of role breadth self-efficacy ($\gamma = 0.336$ and $p < 0.001$), empowerment climate (for role breadth self-efficacy slope; $\gamma = 0.160$ and $p < 0.1$) and transformational leadership (for role breadth self-efficacy slope; $\gamma = 0.307$

Table 4. Results of robustness test

Estimation method	Route	Structural equation modeling Model 1	Model 2	Hierarchical linear modeling Model 3	Model 4	Model 5
Intercept				−0.083	−0.096	−0.315**
Gender[a]		−0.008	−0.058	0.143	0.137	0.090
Industry[a]		0.135**	0.020	0.379	0.161	0.062
Organizational tenure[a]		0.013	0.009	0.012	0.011	0.003
Age[a]		−0.046	−0.065	−0.009	−0.011	−0.011
The strength of internal social networks[a]	→ Sales-service ambidexterity		0.224***			
	→ Role breadth self-efficacy	0.275***	0.271***			
The extensiveness of external social networks[a]	→ Sales-service ambidexterity		0.170***			
	→ Role breadth self-efficacy	0.305***	0.303***			
Role breadth self-efficacy[a]	→ Sales-service ambidexterity	0.553***	0.360***	0.538***	0.468***	0.336***
The strength of internal social networks × The extensiveness of external social networks	→ Sales-service ambidexterity		0.321***			
	→ Role breadth self-efficacy	0.213***	0.206***			
Empowerment climate[b]		Model fit: χ^2/df = 2.526, GFI = 0.902, IFI = 0.969, TLI = 0.964, CFI = 0.969, RMSEA = 0.069	Model fit: χ^2/df = 1.951, GFI = 0.923, IFI = 0.982, TLI = 0.978, CFI = 0.982, RMSEA = 0.054		0.007	0.191
Transformational leadership[b]					0.640**	0.407*
Role breadth self-efficacy × Empowerment climate						0.160†
Role breadth self-efficacy × Transformational leadership						0.307**
Deviance[a]				1028.720	1012.933	965.818
Decrease in deviance				48.652***	15.787***	47.115***

Note(s): [a] represents variables at level 1, and [b] represents variables at level 2. †$p < 0.10$, *$p < 0.05$, **$p < 0.01$ and ***$p < 0.001$. Sales-service ambidexterity is dependent variable and measured with the sum of service provision and cross-/up-selling. Model 1 represents the extended full mediation model which includes the interaction effect of internal and external social networks on the mediator only, and Model 2 represents the extended partial mediation model which includes the interaction effect of internal and external social networks on both the mediator and the dependent variable

and $p < 0.01$) were statistically significant, which implied thatH4 and H5 were supported. From the above, the empirical results are robust.

4.4 Endogeneity test

Missing variables, self-selection bias and bidirectional causality may result in endogenous problems. In order to eliminate endogenous interference, the following three endogenous tests have been done (Table 5). First, we added salespeople's interest in politics, employee volunteering and organization-based self-esteem as additional control variables to test for missing variables. The results (from Model 1 to Model 5 in Table 5) showed that after adding extra control variables to the model, the strength of internal social networks, the extensiveness of external social networks, role breadth self-efficacy, the interaction of internal and external social networks still significantly influenced sales-service ambidexterity ($p < 0.001$). And the strength of internal social network, the extensiveness of external social networks and the interaction of internal and external social networks still significantly influenced role breadth self-efficacy ($p < 0.001$) as well. Second, Heckman Second-Stage test was used to examine self-selection bias. The results showed that the coefficients of Inverse Mills Ratio were not statistically significant in all the second-stage regressions, which reflected the absence of self-selection bias (from Model 6 to Model 9 in Table 5). Third, we used salespeople's interest in politics and employee volunteering as instrumental variables while testing the impacts of internal and external social networks on sales-service ambidexterity and role breadth self-efficacy separately. As for salespeople's interest in politics, it can be used as an instrumental variable because it makes people more engaged in social activities and connected them to others. People's interest in politics was found to be related to their social networks (Halpern, 2005). However, there is no evidence that it is related to the disturbance term. Hence, following the example of Growiec and Growiec (2016), a single item scale was adopted to measure salespeople's interest in politics. As for employee volunteering, it can be used as the instrumental variable because it stimulates people's social networks (Muthuri *et al.*, 2010). However, it is not related to any other disturbance terms. As a result, the five-item scale of employee volunteering from Rodell (2013) was adopted for measurement. Model 10 and Model 11 showed that both interest in politics and employee volunteering positively influenced salespeople's internal social network strength and external social network extensiveness. And the minimum eigenvalue statistic was 23.758, which was far more than two-stage least square of nominal 5% Wald test (7.030). Based on the above, interest in politics and employee volunteering were not weak instruments. Model 12 and Model 13 showed that after controlling the endogeneity, the strength of internal social networks and the extensiveness of external social networks still positively influenced sales-service ambidexterity (separately, $\beta = 0.370$, $p < 0.01$; $\beta = 0.409$, $p < 0.01$) and role breadth self-efficacy (separately, $\beta = 0.247$, $p < 0.05$; $\beta = 0.333$, $p < 0.05$). And then, we used organization-based self-esteem as the instrumental variable while testing the impact of role breadth self-efficacy on sales-service ambidexterity. Employees' organization-based self-esteem could predict their role breadth self-efficacy (Parker, 1998). Meanwhile, there is no evidence that it was related to the disturbance terms. Therefore, the three-item scale developed by Gordon and Hood (2020) was adopted for measurement. Model 14 showed that organization-based self-esteem had positive impact on role breadth self-efficacy. Minimum eigenvalue statistic was 117.405, which was far more than 16.38. Therefore, the instrument was reasonable and not weak. Model 15 showed that after controlling endogeneity, role breadth self-efficacy still had a significant impact on sales-service ambidexterity ($\beta = 0.280$, $p < 0.05$). In conclusion, the impact of internal and external social networks on role breadth self-efficacy and sales-service ambidexterity, and the impact of role breadth self-efficacy on sales-service ambidexterity was reliable and robust.

Table 5.
Endogeneity test

Items	Missing variable test					Heckman second-stage test				Instrumental variable test					
Dependent variable	DV1	DV1	DV1	DV4	DV4	DV1				DV2	DV3	DV1	DV4	DV4	DV1
Model	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
Gender	−0.003	−0.011	0.003	−0.019	−0.029	0.163	0.225	0.242	0.212	0.087†	0.055	0.014	−0.035	0.025	0.082
Industry	−0.039	−0.066	−0.040	0.003	−0.029	0.097	−0.106	−0.112	−0.134†	0.067	0.175***	−0.031	0.010	0.088†	0.081
Organizational tenure	0.076†	0.082†	0.083*	−0.027	−0.020	0.134	0.144†	0.153*	0.147*	0.002	0.005	0.089†	−0.025	−0.015	0.116*
Age	0.152***	0.145**	0.137**	0.053	0.045	0.282**	0.262**	0.241**	0.253**	0.074	0.086†	0.197***	0.088†	0.087†	0.220***
Inverse Mills Ratio						−0.884	−2.657	−2.748	−2.592						
The strength of internal social networks	0.498***	0.522***	0.436***	0.221***	0.250***		0.540***	0.476***	0.554***			0.370**	0.247*		
The extensiveness of external social networks	0.338***	0.331***	0.264***	0.267***	0.260***		0.385***	0.303**	0.373***			0.409**	0.333*		
The strength of internal social networks × The extensiveness of external social networks		0.130**			0.155***				0.124**						
Role breadth self-efficacy			0.277***					0.265***							0.280*
Interest in politics	−0.028	−0.036	−0.023	−0.019	−0.027					0.158**	0.435***				
Employee volunteering organization-based self-esteem	−0.87†	−0.107*	−0.079†	−0.030	−0.053					0.465***	0.144**				
Wald χ^2	0.037	0.023	−0.090†	0.457***	0.440***									0.510***	
F	31.85***	30.36***	34.16***	25.91***	25.40***	5.52***	40.42***	41.36***	37.10***	20.43***	20.98***	94.41***	39.85***	26.49***	40.04***
R-squared	0.472	0.487	0.516	0.421	0.442	0.078	0.467	0.507	0.479	0.275	0.280	0.446	0.221	0.290	0.233

Note(s): $^{\dagger}p < 0.10$, $^{*}p < 0.05$, $^{**}p < 0.01$ and $^{***}p < 0.001$. DV = dependent variable, DV1 = sales-service ambidexterity, DV2 = the strength of internal social networks, DV3 = the extensiveness of external social networks and DV4 = role breadth self-efficacy

5. Conclusion and discussion

5.1 Conclusion

There are four main findings. First, the strength of internal social networks and the extensiveness of external social networks can separately facilitate salespeople to be ambidextrous in service and sales. What's more, salespeople's internal network strength and external network extensiveness have an interaction effect on their sales-service ambidexterity, which implies that the salespeople who have strong internal social networks and extensive external social networks would be more capable of being sales-service ambidexterity. Second, the strength of salespeople's internal social networks and the extensiveness of external social networks can separately enhance their role breadth self-efficacy. And the internal network strength and external network extensiveness have an interaction effect on salespeople's role breadth self-efficacy as well. Therefore, the salespeople who have strong internal social networks and extensive external social networks usually would have high level of role breadth self-efficacy. Third, salespeople's role breadth self-efficacy partially mediates the relationship between the strength of internal social network and sales-service ambidexterity, as well as the relationship between the extensiveness of external social networks and sales-service ambidexterity. Fourth, empowerment climate and transformational leadership are two contextual moderators that strengthen the linkage between role breadth self-efficacy and sales-service ambidexterity. Generally, the salespeople with high level of role breadth self-efficacy are more likely to fulfill sales-service ambidexterity, and the linkage between them would be stronger when there are empowerment climate and transformational leadership.

5.2 Theoretical implications

First, our research can enrich ambidexterity theory by examining the effect of salespeople's internal and external social networks on sales-service ambidexterity separately and synergistically. Prior research studies proposed that empowerment, team support, transformational leadership, performance management, social support, goal orientation and self-efficacy could determine frontline employees' ambidexterity of sales and service (Yu *et al.*, 2012, 2015). Despite of the trials, the research on the antecedents to sales-service ambidexterity is still rare (Rapp *et al.*, 2017), and individuals' social networks are important yet understudied factors to ambidextrous capability (Rogan and Mors, 2014). Under that circumstance, we have done this research and identified two additional antecedents, i.e. the strength of salespeople's internal social networks and the extensiveness of salespeople's external social networks. We not only examined the direct impact of salespeople's internal network strength and external network extensiveness on sales-service ambidexterity separately and synergistically, but also unfolded the mediational effect of role breadth self-efficacy on the aforementioned relationships. By doing so, our research could obviously make contributions to ambidexterity theory by enriching the research on the antecedents to frontline employees' ambidexterity of sales and service.

Second, our research may extend social cognitive theory by classifying salespeople's social networks into internal and external social networks and examining their predictions toward role breadth self-efficacy. Prior research studies had already explored some predictors of role breadth self-efficacy, for e.g., work design, relevant training and workplace communication (Axtell and Parker, 2003) and employees' customer-oriented perspective taking (Huo *et al.*, 2019). Although individuals' social networks were found to be related to self-efficacy (Siciliano, 2016), little study has explicitly examined the relationship between salespeople's social networks and role breadth self-efficacy. In another words, the impact of salespeople's internal and external social networks on role breadth self-efficacy is yet an unexplored issue in the extant literature. In such a situation, our research actually fills in the above gap and extends social cognitive theory by investigating how the strength of internal social networks and the

extensiveness of external social networks separately affect salespeople role breadth self-efficacy and how the strength of internal social networks interacts with the extensiveness of external social networks to drive salespeople's role breadth self-efficacy.

Third, this research can make contribution to social cognitive theory and ambidexterity literature by demonstrating moderating effects of empowerment climate and transformational leadership on the relationship between role breadth self-efficacy and sales-service ambidexterity. Social cognitive theory proposed that environment was a contingency factor regulating the effect of self-efficacy on task performance (Bandura, 2001, 2012). The recent research argued that the effect of self-efficacy on task performance was also contingent upon the internal environment of an organization such as trust in an organization (Ozyilmaz *et al.*, 2018). And many other internal environments of an organization were expected to be explored (Ozyilmaz *et al.*, 2018). Based on the above, we reckoned empowerment climate and transformational leadership as two intra-organizational environmental factors and examined their moderating roles in the relationship between salespeople's role breadth self-efficacy and sales-service ambidexterity. There are two specific theoretical implications for doing so. On one hand, our study responds to the expectation raised by Ozyilmaz *et al.* (2018) by identifying two additional work environment-related factors besides the trust in an organization. On the other hand, our research helps clarify that the internal environment of an organization could regulate not only the effect of self-efficacy and task performance, but also the effect of employees' role breadth self-efficacy and ambidextrous behaviors. From the perspective of ambidexterity literature, this paper can also make theoretical contribution to the insights on individual ambidexterity by defining salespeople's sales-service ambidexterity as a new function of capability and motivation. Generally, any individual performance is a function of motivation and capabilities (Rapp *et al.*, 2017; Zoltners *et al.*, 2012; Hughes and Ahearne, 2010), and so is salespeople's sales-service ambidexterity which is usually viewed as salespeople's objective to pursue service and sales simultaneously. Following that idea, Sok *et al.* (2016) determined that sales-service ambidexterity was a function of capability and motivation by defining the capability as "can do" (locomotion orientation or assessment orientation) and the motivation as "reason to do" (enjoyment of work or driven to work), while our research explored and specified an alternative function by defining the capability as "can do" (role breadth self-efficacy) and the motivation as "reason to do" (empowerment climate or transformational leadership) sales and service simultaneously, which obviously enriches and extends the ambidexterity literature.

5.3 Managerial implications

First, human resource managers should seriously consider and assess the competence of social networking while recruiting prospective salespeople. In many industries such as insurance industry and banking industry, salespeople are increasingly expected to be ambidextrous in sales and service. Good social networkers are more likely to be nice multiplayers in sales and service. They are more capable of achieving sales-service ambidexterity, which in turn contribute to firms' sales performance and financial performance eventually. So human resource practitioners in firms may learn from our research about the importance of salespeople's social networking in their jobs and develop some strategies and tools to examine the potential capability of social networking while recruiting salespeople.

Second, firms could elaborately develop some formal and informal programs facilitating salespeople to establish and maintain sound internal social networks and design flexible policies facilitating salespeople to do necessary external social networking. For internal social networking, for example, to elaborately design and promote job rotation of prospective salespeople would be very helpful because it offers formal chances for salespeople to build internal social networks and connect themselves to related departments and colleagues in advance. Besides, some casual programs which create a climate for social networking within

the firm would also help. For external social networking, salespeople should increase their awareness of external social networking and participate in some social groups, social activities and events actively. That is particularly important in Confucian cultures where Guanxi has been recognized as one of the major factors to the success of business (Hwang *et al.*, 2009; Lovett *et al.*, 1999). And the management may learn from our research to design flexible policies offering necessary supports or convenience for salespeople to do external social networking.

Third, it will be effective and fruitful to assign transformational leaders to manage and coordinate firms' service and sales. Frontlines employees with high level of role breadth self-efficacy are capable of doing service-dales ambidexterity, but it does not mean they will surely pursue satisfied service and sales simultaneously unless there are other motivations or stimuli driving them to do so. Transformational leadership actually serves as such an external supplementary stimulus that encourages and motivate them to achieve dual objective of service and sales. Consequently, firms should systematically develop leadership training programs including courses, workshop, mentors and so on (Collins and Holton, 2004) so as to coach leaders how to fulfill transformational leadership in practices and assign qualified transformational leaders to manage firms' service and sales and salespeople.

Fourth, managers should emphasize empowerment and create an empowerment climate for salespeople. Our research reveals that empowerment climate strengths the relationship between role breadth self-efficacy and sales-service ambidexterity. In other words, empowerment climate is contextual factor promoting salespeople with high role breadth self-efficacy to pursue both sales and service simultaneously. Therefore, managers should give salespeople appropriate authorities and empower them to work autonomously. Under empowerment climate, salespeople would perceive that they are empowered to handle complex issues, which is very helpful for frontline employees who work in dynamic environments. As a result, creating empowerment climate could facilitate salespeople with role breadth self-efficacy achieving sales-service ambidexterity.

5.4 Limitations and future research

First, it is lack of exploring organizational contextual factors that influence the relationship between salespeople's social networks and role breadth self-efficacy. Drawing upon social cognitive theory, ambidexterity literature and transformational leadership research, the moderating effects of empowerment climate and transformational leadership on the relationship between role breadth self-efficiency and sales-service ambidexterity were investigated in this study. Our study responds to the expectation raised by Ozyilmaz *et al.* (2018) by identifying two additional work environment related factors besides the trust in an organization. Furtherly, this study also helps clarify that the internal environment of an organization could regulate not only the effect of self-efficacy and task performance, but also the effect of employees' role breadth self-efficacy and ambidextrous behaviors. However, the moderators regulating the relationship between social networks and role breadth self-efficacy are not discussed. As we know, salespeople's role breadth self-efficacy has multiple level predictors such as individual-level, group-level and organization-level predictors. Salespeople's internal and external social networks examined by this study are individual-level predictors. When individual-level predictors shape role breadth self-efficacy, some group-level or organization-level factors probably function as contextual variables that moderate the aforementioned relationship. For example, work design and other organizational interventions have extensive impact on the employees' role breadth self-efficacy (Parker, 1998). And they may probably shape the relationship between salespeople's social networks and role breadth self-efficacy. Therefore, it would be very insightful and innovative if future research takes into consideration of the moderators regulating the relationship between social networks and role breadth self-efficacy.

Second, the generalizability of our research needs more examinations. The extant literature shows that banking industry and life insurance industry are ideal industrial scenario for examining sales-service ambidexterity (Patterson *et al.*, 2014; Sok *et al.*, 2016). And our research model has been tested by the unique data from retail banking industry and life insurance industry. By doing so, we could borrow legitimacy from the existing research studies in terms of the industry context. However, that is likely to constrain the findings to the specific industries, which influences the generalizability of our research. So for future research studies, it is expected to include additional industry contexts such as manufacturing industry and other service industries besides retail banking and life insurance and examine whether the causal relationships specified in this study vary across industries. Furthermore, future research could also examine our model in the other industry specific contexts, for example, tangible versus intangible products and knowledge intensive versus labor intensive products. That would help determine the boundary of external validity of our research.

Third, future research could focus on additional classifications and alternative measures of social networks and investigate the effect of the other types and attributes of social networks on sales-service ambidexterity. Our research focuses on salespeople's internal and external social networks only. Besides the above dichotomy, social networks could be classified into formal and informal networks (Kalra *et al.*, 2017; Rogan and Mors, 2014) and advice and friendship networks (Mitteness *et al.*, 2016; Hayati and Puri, 2020) as well. And in addition to our measures, size, density, range and centrality are also commonly adopted to depict the characteristics of social networks (Bolander *et al.*, 2015; Hayati and Puri, 2020). Although network density, rang or centrality were found to be related to individual behaviors or performance in prior studies, their impacts varied across network types, research objectives and contexts. So it is still worth exploring their effects on sales-service ambidexterity. However, we are unable to include all of them in this single research but focus on the strength of internal social network and the extensiveness of external social networks only. It is very insightful to include the alternative measures in future research since we still know little about how size, density and centrality of formal and informal networks affect frontline employees' sales-service ambidexterity and how size, density and centrality of advice and friendship networks affect sales-service ambidexterity either.

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Appendix

Table A1.
Measures, items and sources

Variables	Dimensions	Items	Loadings	Sources
The strength of internal social networks	NULL	1. I have a very good relationship with my organizational members	0.863	Chow and Chan (2008), Hau *et al.* (2013)
		2. I am very close to my organizational members	0.860	
		3. I always hold lengthy discussions with my organizational members	0.862	
The extensiveness of external social networks	NULL	I have participated in the activities of the following related organizations		
		1. Alumni associations	Yes/No	Han (2016)
		2. Hobby groups	Yes/No	
		3. Associations of people from the same province	Yes/No	
		4. Groups composed of people with same family name and origin on the paternal side	Yes/No	
		5. Religious groups	Yes/No	
		6. Civic/community groups	Yes/No	
		7. Education/academic organizations	Yes/No	
		8. Tenant groups	Yes/No	
		9. Political parties	Yes/No	
		10. Professional organizations	Yes/No	
Role breadth self-efficacy	NULL	1. I have confidence in presenting information to a group of colleagues	0.817	Parker (1998), Mom *et al.* (2019), Parker *et al.* (2006)
		2. I have confidence in helping to set targets in my area	0.807	
		3. I have confidence in designing new procedures for my work area	0.770	
		4. I have confidence in contacting people outside the company (e.g. customers) to discuss problems	0.833	
		5. I have confidence in analyzing a long-term problem to find a solution	0.850	
		6. I have confidence in representing my work area in meetings with senior management	0.820	
		7. I have confidence in visiting people from other departments to suggest doing things differently	0.848	

(*continued*)

Table A1.

Variables	Dimensions	Items	Loadings	Sources
Empowerment climate	NULL	1. Our organization regularly invests in developing the organizational structure so as to make the most of our staff	0.901	Alexiev *et al.* (2020), Seibert *et al.* (2004)
		2. Employees are allowed to define their own role and to pursue different roles	0.883	
		3. Groups of employees are encouraged to set their own structure and functioning	0.872	
Transformational leadership	Core transformational leader behavior	1. My supervisor articulates a vision	0.812	Kirkman *et al.* (2009), Podsakoff *et al.* (1990)
		2. My supervisor provides an appropriate model	0.807	
		3. My supervisor facilitates the acceptance of group goals	0.819	
	High performance expectations	4. My supervisor makes it clear that he/she expects a lot from us all of the time	0.842	
		5. My supervisor insists on only the best performance	0.854	
		6. My supervisor will not settle for second best	0.846	
	Supportive leader behavior	7. My supervisor acts without considering my feelings (*R*)	0.835	
		8. My supervisor shows respect for my personal feelings	0.802	
		9. My supervisor treats me without considering my personal feelings (*R*)	0.795	
		10. My supervisor considers my personal feelings before acting	0.802	
	Intellectual stimulation	11. My supervisor challenges me to think about old problems in new ways	0.843	
		12. My supervisor asks questions that prompt me to think about the way I do things	0.837	
		13. My supervisor has stimulated me to rethink the way I do things	0.839	
		14. My supervisor has ideas that have challenged me to reexamine some of my basic assumptions about my work	0.851	

(*continued*)

Table A1.

Variables	Dimensions	Items	Loadings	Sources
Sales-service ambidexterity	Customer service provision	During conversation with customers		Sok *et al.* (2016), Jasmand *et al.* (2012)
		1. I usually try to calm complaining customers, so that we can jointly handle their complaints about their products	0.903	
		2. I usually provide solutions to customers' concerns related to the products they currently own	0.915	
		3. Having identified the customers' exact problem with their products, I solve it in a reliable way	0.926	
		4. I usually listen attentively to customers in order to take appropriate action to handle their concerns regarding their products	0.922	
		5. I usually pay attention to the customers' questions about their products to answer them correctly	0.923	
		6. Making sure that I fully understand the reason why the customers contact me allows me to better help them with their questions and concerns regarding their products	0.909	
	Cross-/up-selling	During conversation with customers		
		1. I usually explore potential matches between the customers' needs and the features of a product which they do not currently own	0.925	
		2. I usually gather as much customer information as possible to offer a suitable product to customers	0.898	
		3. I usually try to identify good ways of familiarizing customers with another product that can satisfy their needs	0.898	
		4. I usually ask questions to assess whether the customers would be willing to buy an additional product	0.878	
		5. I hardly neglect a good opportunity to advise customers of a product which they could benefit from	0.894	
		6. I usually offer an additional product which meets the customers' needs best	0.887	
Interest in politics	NULL	I am very interested in current affairs and politics		Growiec and Growiec (2016)

(*continued*)

Variables	Dimensions	Items	Loadings	Sources
Employee volunteering	NULL	1. I give my time to help a volunteer group	0.962	Rodell (2013)
		2. I apply my skills in ways that benefit a volunteer group	0.954	
		3. I devote my energy toward a volunteer group	0.954	
		4. I engage in activities to support a volunteer group	0.956	
		5. I employ my talent to aid a volunteer group	0.962	
Organization-based self-esteem		1. I count around here	0.897	Gordon and Hood (2020)
		2. I am trusted around here	0.894	
		3. There is faith in me around here	0.891	

Table A1.

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