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**Social well-being and transformative service research: evidence from
China**

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Abstract

Purpose - This empirical study aims to investigate the influence of socially supportive services provided by commercial senior living services on older customers' social well-being. This study seeks to test the moderating role of social connectedness on the above associations. It explores necessary conditions and causal recipes from the combination of interactions and social connectedness to predict customers' social well-being.

Design/methodology/approach - Data was collected from 190 older customers residing in commercial senior living services in Beijing, Shanghai and Shenyang in China. The proposed

structural and configurational models were tested using structural question modelling and fuzzy-set Qualitative Comparative Analysis (fsQCA).

Findings - The results of the model testing illustrate that peers have no influence on the social well-being of older customers. However, positive interactions with employees and outsiders are supportive resources which increase older customers' social well-being. Social connectedness moderates the relationship between interaction with peers and the social well-being of customers. fsQCA results revealed complex combinations of interactions and social connectedness predict social well-being. Interactions with employees, peers and outsiders appeared as necessary conditions to achieve social well-being.

Originality/value - This study provides evidence for how commercial senior living services can serve as a space to exchange socially supportive resources with employees and outsiders, which enhance older customers' social well-being.

Key words social well-being, older customers, transformative service research (TSR), social interactions, social connectedness, socially supportive resources

Paper type Research paper

1. Introduction

The world is on the verge of experiencing demographic changes, among which is the trend of the ageing population (Fisk et al., 2018). The ageing population comprises 12% of the total population in the world, which is continuously increasing at the rate of 3.26% globally every year (UN-Habitat, 2016). Meanwhile, global life expectancy, which has increased as a result of better nutrition, economic status, sanitation and healthcare, poses challenges across the world (Salomon et al., 2012). It is predicted that the growing world population will shift

strongly towards the oldest age groups between 2010 and 2050 (United Nations, 2017). An immediate effect of this ageing population is the increasing demand on service sectors involved in health care delivery (Bashir et al., 2012). However, owing to the limited ability of family members to provide care, the concept of commercial senior living services, which provide a combination of housing, hospitality and health care, has emerged as places where the elderly can be looked after and their well-being enhanced (Hollis and Verma, 2015).

Transformative service research (TSR) aims to achieve well-being outcomes for customer entities (Anderson et al., 2011). The core element of TSR is the transformative value created through the interactions between service entities and customer entities. Previous studies have been conducted on transformative service research related issues, such as health services in disadvantaged neighbourhoods (Ozanne and Anderson, 2010), vulnerable customers in financial services (De Vaney, 2008), and social support in minority communities (Pasupuleti et al., 2009), in healthcare, financial and social services. However, it is noted that many important questions about the link between services and well-being have still not been answered (Anderson and Ostrom, 2015). Numerous pieces of research on older adults' well-being illustrate that older customers are involved in commercial activities for their social needs (e.g., Rosenbaum, 2006). Research indicates that older customers may receive companionship, emotional support and instrumental support through verbal communication with employees in the retail and service industries (Rosenbaum, 2006, 2008). In particular, indirect service employees are viewed as a key source of social support for customers (Rosenbaum, 2009). Older adults are likely to experience social exclusion and lack of affection with the changes in their lives (Burns et al., 2012). As a result, relocation to commercial senior living services has been found to be destructive of older adults' social well-being (Lecovich, 2014). It is advocated that more support should be provided (Lecovich, 2014) to older adults in order to help them overcome the negative impact of this transition.

Older customers are reported to value service interactions in commercial settings more than any other age group (Cox et al., 2005; Rosenbaum, 2006). Thus, how social interactions can contribute to enhancing the social well-being of older adults in commercial senior living services needs to be investigated.

This study applies a TSR framework to commercial senior living services and highlights the influence of interactions between service entities and customer entities on older customers' social well-being. In particular, this study aims to investigate how social interactions with others, namely employees, peers and outsiders (i.e., people from wider communities), influence older customers' social well-being in commercial senior living settings. Furthermore, it examines the importance of social connectedness as a moderator in older customers' social well-being. By doing so, this study makes two distinct contributions to knowledge. Firstly, this study adopts the TSR framework in order to explain the relationship between positive interactions with employees and outsiders (i.e., people from wider communities) and the social well-being of older customers. In addition, social connectedness moderates the relationship between interactions with peers and the social well-being of customers. Secondly, this is the first empirical study that identifies causal recipes (i.e., sufficient combinations of predictors) and necessary conditions leading to the social well-being of older customers in commercial settings.

2. Theoretical background and research hypotheses

2.1 Transformative service research

Transformative service research (TSR), based on the social exchange theory introduced by Anderson et al. (2011), sheds light on resources exchange from a customer perspective. It emphasizes the interactions between service entities (e.g., service staff, service processes or offerings, service sectors or organizations) and customer entities (e.g., individuals, collectives,

social networks or communities) and highlights their impact on well-being outcomes (e.g., access, literacy, decreasing disparity, health or happiness) (Anderson et al., 2013). TSR is mostly studied using a customer-centric approach (Kuppelwieser and Finsterwalder, 2016). It anticipates that customer entities interacting with service entities generate positive or negative changes in well-being. According to Anderson et al. (2013, 2018), different levels of service entities have various impacts on different customers.

The impact of interactions on customers' well-being has been investigated among financial service, social service and health service users (Anderson et al., 2013) in TSR. It has been shown that misleading interactions between service employees and customers are found to affect customers' well-being due to the harmful decisions customers make in financial services (Braunstein and Welch, 2002). Other researchers point out that a feeling of "abandonment" appears when social services focus on interacting with certain ethnic or societal groups but not others, which causes unintentional negative impacts on individuals' well-being (Kuppelwieser and Finsterwalder, 2016). Similarly, it has been discovered in TSR that all sorts of interactions between customers and healthcare services have a strong influence on customers' well-being (Berry and Bendapudi, 2007; Danaher and Gallan, 2016). Hospitality and healthcare industries share many similar issues and common interests, such as the fast growth of hospitality-oriented senior living and care services and the increased focus on the measurement of staff and customer satisfaction (Hollis and Verma, 2015). Commercial senior living services provide hospitality oriented healthcare services. These provide various accommodation options to older customers according to their physical condition, such as single-family homes, apartments or condominiums, and assisted-living or nursing care services (Wen et al., 2015). Also available are different types of services, such as an onsite pharmacy, swimming pool, fitness areas, onsite nursing/physicians, activity classes, transportation etc.

Older adults become more dependent on others in relationships (Steptoe et al., 2010) due to the decline in their functions and health. They create opportunities through developing new relationships to maintain reciprocal exchanges (Wan and Antonucci, 2016). White et al. (2009) uncovered that older adults who contribute more to their social relationships are more positive in their health assessment. Carstensen et al. (2003) advocate that older adults maximise rewarding social interactions with others to obtain more emotional meanings. However, the literature also shows inconsistent findings related to interactions with different resources and the well-being of older adults. For example, social support has been found to have positive effects (Yeung and Fung, 2007), negative effects (Newsom et al., 2005), or no effect (Neville and Alpass, 2002) on the well-being of older adults. Furthermore, various research has focused on social exchanges in natural social settings, such as social interactions with families, friends or neighbours (e.g., Ashida et al., 2018). There is a dearth of studies determining whether certain kinds of interactions influence the social well-being of older adults in commercial service settings. Social activities provided by commercial senior living services offer older customers opportunities for social interactions with others. However, how these interactions influence customers' social well-being is still unknown. Thus, the present study applies a TSR approach to examine the impact of social interaction on customers' social well-being in a commercial setting.

2.2 Social Well-being

The World Health Organization offered a bold definition of well-being in 1997, defining it as '*a broad ranging concept affected in a complex way by the person's physical health, psychological state, personal beliefs, social relationships and their relationship to salient features of their environment*'. This definition reveals the importance of health, psychological well-being and social well-being. Extensive previous studies have been conducted on the

well-being of older adults from healthcare, psychological and sociological perspectives. Positive interactions in healthcare settings contribute to beneficial health outcomes. They can provide older patients with information about their health status and treatment process (Hafskjold et al., 2015), and guarantee patients' safety and privacy (Doyle et al., 2013). In addition, psychological well-being has been found strongly linked to the quality of interaction (Cacioppo et al., 2010) in psychological and sociological settings. It has been noted that negative interactions lead to psychological problems such as depression (Steunenberg et al., 2006), which increase the likelihood of societal issues such as loneliness and isolation among older adults, whereas, intimate and supportive relationships with families and friends is one of the most active indicators of older adults' psychological well-being (Diener and Suh, 2003). However, how hospitality services can contribute to tackling these societal issues is still unknown.

Transformative service researchers have examined well-being in financial, socioeconomic and health dimensions, whereas, relatively little attention has been paid to the social functioning of well-being (Kong et al., 2015). Coulthard et al. (2011) advocate that fulfilling an individual's social needs leads to the achievement of their total well-being. Therefore, measuring sub-dimensions provides more specific information on improving overall well-being (Gerritsen et al., 2010).

2.3 Social Connectedness

When people experience a feeling of being excluded, lonely or isolated, they often seek counselling or psychotherapy help. Zayer et al. (2015) propose that it is important to ensure customers' access to counselling or supportive services for health care service providers. They also point out that keeping customers socially connected through the Internet or local communities can help them maintain their social ties and well-being. Social connectedness is

defined as the relationship between an individual and the outside world (Willians and Galliher, 2006), which indicates a sense of belongingness (Cruwys et al., 2013).

Previous studies have illustrated that the support provided by financial counselling services can develop a sense of belonging among customers, which in turn affects their financial well-being (e.g. Mende and Van Doorn, 2015). Moreover, the social support provided by on line health care services can satisfy patients' needs to be socially connected with others (Yao et al., 2015), which improves patients' well-being (Na and Na, 2013). Thus, according to Blocker and Barrios (2015), service design can help integrate supportive resources to facilitate transformative values within service encounters. They discovered that supportive service programmes designed to develop an individual's skills, such as supportive accommodation and job training, generate social connectedness which may lead to psychological well-being (Martin and Hill, 2011) among individuals.

It has been found that older customers seek social connectedness in commercial settings (Gremler and Gwinner, 2000). Social scientists have explored the fact that customers visit commercial places to extend their social networks, receive social support and establish friendships with others through interaction (e.g. Fournier and Lee, 2009; Nicholls, 2010). It is argued that, in TSR, interaction has a broad meaning, which indicates any contact between service and customer entities. These interactions can be an interpersonal service encounter or even an exposure to any component of a service entity. As a result, interaction may not be directly connected to well-being (Kuppelwieser and Finsterwalder, 2016). Well-being can be developed through the use of proper resources and tools (Hepi et al., 2017). Therefore, this study perceives social connectedness as a resource to achieve social well-being which is reinforced by social interaction.

2.4 Social Interaction

An extensive number of scholars have identified different forms of social interaction (McMillan, 2002). Goffman (1961) identifies two types of social interaction: focused and unfocused. Subsequently, two broad forms of social interaction have been introduced by other groups of scholars: people-to-people interaction and people-to-machine interaction (Lee, 2000). People-to-people interaction does not always occur at an individual level, but it concerns groups or aggregated agents on some occasions (e.g., Page, 2013). Therefore, people-to-people interaction can be divided into individual-to-individual interaction (e.g., nurse-patient, staff-customer), individual-to-group interaction (e.g., lecturer-students, actor-audience) and group-to-group interaction (e.g., two teams in a game, two departments of employees in a meeting).

The importance of people-to-people interaction has been widely recognized by researchers in TSR. It is advocated that positive interactions between service entities and customer entities greatly contribute to well-being (Anderson et al., 2018). Numerous studies demonstrate the significant impact of different interactions on patients' well-being in healthcare services, such as interactions with medical staff (Njine and Soroka, 2016), with peer patients (Birkelund and Larson, 2013) and with volunteers (White, 2016). Hospitality and healthcare services are increasingly intertwined. It has been pointed out that 75% of healthcare services are hospitality-oriented services (Cetron et al., 2010). Patten (1994) identifies three types of hospitality which are applicable in healthcare services regarding the relationship between service providers and the patient experience, namely: public hospitality (e.g., daily interaction in the reception, café and shops); personal hospitality (e.g., contacts in nursing units); and therapeutic hospitality (e.g., services to help reduce isolation and loneliness). Therefore, this study examines the interactions of three sub-dimensions, namely, interactions with employees, with peer customers and with outsiders (people from wider communities).

2.4.1 Social interaction with employees

Social interaction with employees is reported to play an important role in customers' health. Interaction is used in psychiatry as a therapeutic means or intervention to generate better health outcomes (Williams et al., 2014). In a study of the supportive role of cancer resource centres, it was found that social support from employees through interactions, such as emotional support, instrumental support and companionship, contributes to respondents' health benefits (Rosenbaum and Smallwood, 2013). In psychological and sociological literature (e.g. Oldenburg, 2001; Swan et al., 2001), employees in retail are viewed as a complementary source of social support to customers (Rosenbaum et al., 2007).

Guenzi and Pelloni (2004) note that positive relationships and interactions are beneficial for the improvement of customer satisfaction. In a study of interaction and service evaluation, Paswan and Ganesh (2005) illustrate that customers with high levels of interaction comfort are more likely to revisit and promote the business through word of mouth. Moreover, some other research studies propose that high quality social interaction leads to increased positive effects on a customer (e.g., Srivastava et al., 2008). Intriguingly, older customers are more likely to seek suggestions in commercial settings in order to help them settle in new roles (Moschis et al., 2011), such as retirees or widow(er)s, so they may interact with salespeople for additional social benefits (Arnold and Reynolds, 2003), such as confidence and certainty (Moschis et al., 2011). As a result, social well-being could be a possible positive outcome for customers through their interactions with salespeople. Therefore, the following hypothesis is proposed:

Hypothesis1: Positive social interaction with employees has a positive effect on social well-being.

2.4.2 Social interaction with peers

Studies investigating the impact of social interaction with peers have shown inconsistent findings in various settings. In healthcare settings, social interaction among patients themselves are found to be beneficial to patients' physical and psychological health, such as quicker recovery times, reduced stress and enhanced pain relief (Devlin and Arneill, 2003). Birkelund and Larsen (2013) indicate that social interaction between patients has an impact on patients' satisfaction with hospitalization, which in turn affects their overall satisfaction. Moreover, patients can establish interpersonal relationships and receive social support from other patients from online communities (Wright, 2002). In a study of online social support, a strong relationship was found between online peer-to-peer support and patients' psychological well-being (Yao et al., 2015).

However, numerous researchers posit that particular interactions may cause customers to influence peer customers more (e.g., Altinay et al., 2018; Song et al., 2018), which may provoke either a positive or an adverse experience (Wu, 2007) in commercial settings. For example, interaction such as a conversation taking place between customers can facilitate anxiety and boredom for dissatisfied customers (e.g., Harris and Baron, 2004). Meanwhile, ideas exchange, social support delivery and experience sharing with other customers contribute to customers' satisfaction (Rosenbaum et al., 2007). On the contrary, certain types of interaction between customers are found to create anxiety (Fisher and Byrne, 1975) and develop feelings of being threatened (Aronoff et al., 1992), such as when others stand too close in line or jump the queue. According to Lau and Ng (2001), certain types of interaction among customers also affect customer satisfaction, such as the presence of customers exhibiting drunk or violent behaviours. Previous research has shown that the shopping orientations of older customers are different from any other age group (Peng et al., 2016). Older customers do not only consume tangible goods, but also seek enjoyable experiences to fulfil their social needs (Kim et al., 2005). A lack of social interactions causes older

customers to feel lonely and unhappy (Kim et al., 2005). Ishii-Kuntz (1990) suggests fellow customers may be a source of reciprocal support for older customers. Therefore, the following hypothesis is proposed:

Hypothesis2: Positive social interaction with peers has a positive effect on social well-being.

2.4.3 Social interaction with outsiders

Various studies have demonstrated that limited social networks are likely to be related to greater levels of morbidity and mortality (e.g., Nordentoft et al., 2013). Thus, obtaining sufficient and diverse social networks is viewed as an important indicator of positive health outcomes (Tew et al., 2012). Engaging in wider communities which are outside of formal services has been promoted as an effective intervention for better health (Murayama et al., 2012). Older adults are reported to have a preference for group activities which can develop greater adherence (Burke et al., 2006). Participation in community activities/groups can enable older adults to access social resources and establish strong bonding relationships through shared group identities (Zaitzu et al., 2018). According to Cable et al. (2013), older adults with more diverse social network have better levels of confidence. In a study of psychosocial group intervention among older adults, it is shown that interactions with the group leaders who are occupational therapist or physiotherapist help empower older adults by giving them opportunities to express themselves and make an impact on the progress of the group meeting (Routasalo et al. 2009). Furthermore, cognitive interventions such as preparations before the activity and interaction within the group afterwards to share thoughts and feeling are found beneficial to older adults' mental health (Bazooband et al., 2016). Hafford-Letchfield (2009) finds interactions with artists in the projects organized by communities foster the growth of self-confidence and esteem, art skill development, as well

as improved communication and social skills among older adults. Therefore, the following hypothesis is proposed:

Hypothesis3: Positive social interaction with outsiders has a positive effect on social well-being.

2.5 Social connectedness as a moderator

Increasing efforts have been directed at identifying the moderating role of social connectedness. Resnick et al. (1997) report that social connectedness derived from families and schools moderates adolescents' mental disorders. Subsequently, social connectedness has been found to moderate the relationship between daily negative emotions and blood pressure (Ong and Allaire, 2005). Yoon and Lee (2010) detected that social connectedness moderated the relationship between positive effects and subjective well-being in their study of Korean immigrants. Furthermore, social connectedness has been shown to moderate the development of depressive symptoms among elderly samples (Cruwys et al., 2013).

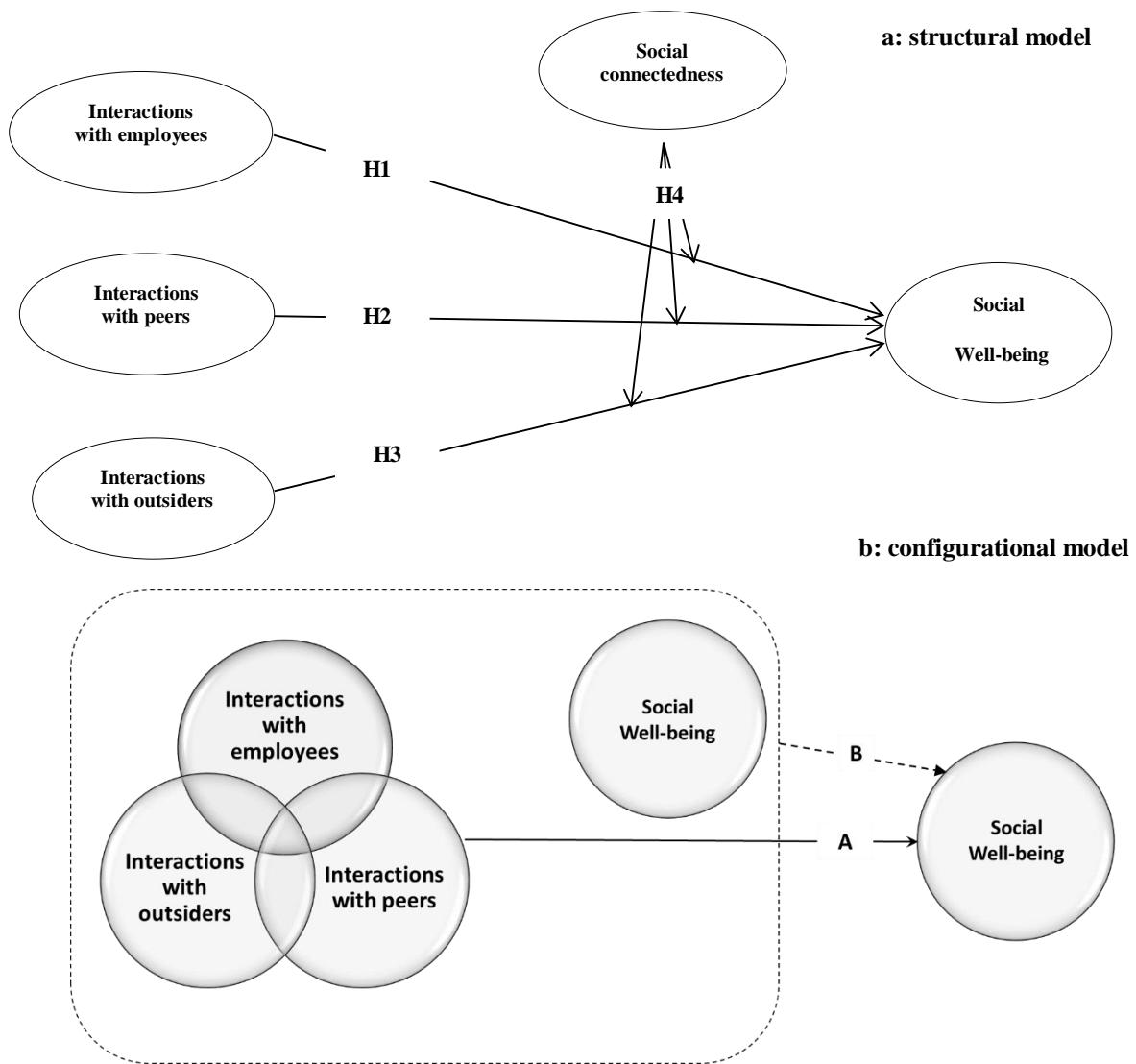
Numerous researchers perceive social connectedness as a crucial predictor of well-being (e.g., Butts, 2001). A low level of social connectedness may lead to declining psychological well-being (e.g., Brown, 2013; Gilbert, 2002). Adolescents with less social connectedness appear two to three times more likely to suffer distressing symptoms than those who have affectionate relationships in their lives (Moodie, 2000). A study carried out by Tomaka et al. (2006) suggests social connectedness has a positive impact on older adults' well-being. Specifically, according to Levasseur et al. (2004), the more satisfied older adults are with their social networks, the greater influence this has on the well-being of older adults with physical disabilities.

Meanwhile, various scholars propose that people with more social ties have a longer life expectancy in the context of face-to-face social interactions in the real world (e.g., Holt-Lunstad et al., 2010). Positive associations between interaction and social connectedness are also detected in healthcare (Sleath et al., 2000) and school settings (e.g., Sandstrom and Dunn, 2014). Intriguingly, in the marketplace, it has been discovered that people who interact with the barista in a coffee shop get a greater sense of connectedness (Sandstrom and Dunn, 2014). Furthermore, a high level of interaction with the wider community is connected with positive impacts on social connectedness among older customers (e.g., Jopling, 2015; Owen, 2006). Hence, the following hypothesis is proposed:

Hypothesis 4: Social connectedness moderates the relationship between social interaction and social well-being.

Figure 1 shows structural (a) and configurational (b) models. The structural model demonstrates the four research hypotheses. It illustrates interactions with employees, peers and outsiders as indicators of social well-being. Moreover, it also indicates that social connectedness moderates the relationship between social interaction and social well-being. In the configurational model, the configuration of interactions with employees, peers, and outsiders is indicated by arrow A and complex combinations of configuration of interactions with social connectedness is indicated by arrow B.

Figure 1 Proposed structural models (a: structural model, b: configurational model)



3. Research method

3.1 Research design

A field study was selected to examine the hypotheses in this study. A questionnaire was designed according to Figure 1 for the purpose of this study and permission was obtained through contacting managers of commercial senior living services to collect data from their older customers. A pilot study was conducted prior to the main field survey to assess the

feasibility of the approach and possible emerging issues (Fink, 2003) during the survey procedure. The researcher checked the validity and reliability of the data after the main survey was administered. Subsequently, path analysis was employed to assess the strength and information of the associations among variables (Lleras, 2005).

3.2 Construct measures

The five constructs in this study were measured by a seven-point Likert scale ranging from “strongly disagree” (1) to “strongly agree” (7), achieved by adapting and combining existing scales and items from the literature related to the topic. The questionnaire consisted of items to capture elderly customers’ perceptions of social connectedness and well-being through participating in social activities in commercial senior living services. In conceptualizing social interactions with employees, a multi-item construct combining two categories that Lloyd and Luk (2011) developed from research papers by Chandon et al., (1997), Brady and Cronin (2001) and Winsted (1997, 2000) was used. Social interaction with peers was measured by four items adapted from Walls (2013). Four items on social interaction with outsiders were adapted from Auter and Palmgreen (2000) and Novek et al. (2013). Social connectedness was measured using eight items adapted from the Social Connectedness Scale-Revised (Lee et al., 2001). Social well-being was measured by adapting items from studies conducted by Diener et al., (2002), Diener et al., (2015) and Zhang et al. (2011).

3.3 Data collection and analysis

The survey was conducted in commercial senior living services in Beijing (the capital of China), Shanghai and Shenyang (the capital of Liaoning Province) respectively from June to September, 2017. Beijing, Shanghai and Liaoning rank in the top 10 regions for having the highest proportion of older people in the latest population Census in China (2013). In addition, these three regions have the lowest birth rates, among which there is a negative birth

rate in Liaoning. One commercial senior living service was selected by convenience sampling from all the five-star senior living services. Five-star services as those where 80% of the rooms have at least three hours of sun during the day, they have no fewer than 200 beds, more than 100 square meters' activity space, no less than seventy-seven fully qualified employees, no fewer than 50 carers and the ratio of carers to older adults is 1:3 (China Social Welfare, 2010). The chosen senior living services all have more than 10 years operational experience and a capacity of more than 2000 older customers in each city. Only older customers aged 60+, independent in their daily living activities and experienced in social activities, were selected to participate in the study. A face-to-face questionnaire was conducted to avoid any possible misunderstanding and a total of 190 questionnaires were received. Path analysis was applied to test the hypothesized relationships.

Missing data and perfunctory responses were controlled by conducting data screening. Medians were used to replace missing values because the number of missing values was very low (0.486% of the total answers) (Hair et al., 2017). Standard deviation was employed to identify perfunctory responses where people answered all the questions in the same way. Cronbach's alpha (α) and composite reliability (CR) were applied to check the reliability of the measurements. Meanwhile, exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) were used to check the validity of the measurements due to the adaptations made to the items derived from the literature to suit this research context (Ramkissoon et al., 2013).

The proposed structural model was tested by using a configurational model through fsQCA. The four hypotheses were tested using the AMOS program. A combination of three interaction factors was used to model social connectedness as an outcome. In addition, a combination of interaction configuration with connectedness was used to calculate the causal model for a high level of social well-being of older customers residing in commercial senior

living services. Necessary factors to achieve social well-being were identified using analysis of necessary conditions. Furthermore, the fsQCA program was used to run configurational modelling and analysis of necessary conditions. Application of SEM, fsQCA and analysis of necessary conditions in modelling consumer behaviour has become a popular multi-analysis approach in service research (Han et al., 2019; Olya et al. 2018; Wu et al., 2014).

4. Results

The respondents were predominantly in the age group of 80-89 years (61.6%). A majority were female (61.6%) and 38.9% were male. Almost half of the respondents participate in social activities on a daily basis (48.9%) and for up to an hour each time (50.5%). Leisure/sports activities were major social activities for the majority of the respondents (43.7%). The table in Appendix A summarizes respondents' demographic information.

Exploratory factor analysis (EFA) was performed to test the constructs' internal consistency, since the items for each construct were selected and adapted from previous related studies (Ramkissoon et al., 2013). The results of the EFA confirmed five constructs; however, the pattern matrix was improved by deleting one item from social well-being ("In most ways my social life is close to my ideal"), two items from social connectedness ("I feel connected from the world around me" and "I feel that I participate with people or some group"), as well as seven items from interactions with employees. Next, reliability and validity were tested. It is proposed that the measurement used to measure a construct is fairly reliable when Cronbach's alpha is 0.70 or higher (Hair et al., 2017). As presented in Table 1, each construct was reliable with an alpha of 0.875 or greater. Latent constructs were evaluated by composite reliability (CR). The composite reliability (CR) of each construct exceeded the recommended minimum level of 0.60 (Bagozzi and Yi, 1988) and the lowest

CR was 0.876 (for interaction with employees). As a result, the reliability of the measurement items' internal consistency was confirmed.

Table 1 Results of reliability test and confirmatory factor analysis (CFA)

Scale item	loading	α	CR	AVE
<i>Social Connectedness</i>		0.976	0.976	0.871
I feel that I really belong to the people I know	0.937**			
I don't feel too distant from people	0.923**			
I have certain sense of togetherness with my peers	0.930**			
I feel related to people	0.951**			
I don't catch myself losing all sense of connectedness with society	0.906**			
There is certain sense of brother/sisterhood among my friends	0.950**			
<i>Interaction with employees</i>		0.875	0.876	0.640
The employees offered help	0.841**			
The employees understood my needs	0.877**			
The employees were knowledgeable	0.680**			
The employees anticipated my needs	0.787**			
<i>Interaction with outsiders</i>		0.903	0.903	0.700
Interactions with outsiders developed my self-confidence and social skills.	0.879**			
While interacting with outsiders, I felt included in the group.	0.764**			
Interacting with outsiders provides me with information.	0.800**			
I enjoy spending time with outsiders and my friends at the same time.	0.895**			
<i>Interaction with peers</i>		0.882	0.893	0.686
Fellow residents display proper behavior toward other peers	0.966**			
Fellow residents value the privacy of other peers	0.842**			
Fellow residents respect other peers by being peaceful	0.908**			
Fellow residents are of an appropriate socio-economic level mix	0.527**			
<i>Social Well-being</i>		0.933	0.933	0.824
The conditions of my social life are excellent.	0.936**			
I am satisfied with my social life.	0.902**			
So far, I have got the important things I want in my social life.	0.884**			

Note: α is Cronbach alpha, CR: composite reliability, AVE: average variance extracted.

Convergent validity was assessed subsequently. Convergent validity of the measures was confirmed as the average variance extracted (AVE) values for each construct were greater than a recommended minimum value of 0.50 each (Hair et al., 2017). The lowest AVE value was 0.640 for interaction with employees. Discriminant validity was used to assess the extent to which constructs were distinct and uncorrelated. It was examined by comparing the square

roots of AVE with its correlation values. As Table 2 illustrates, discriminant validity was confirmed as the square root of AVE for each construct was greater than the respective squared correlation coefficient (Anderson and Gerbing, 1988). The means and standard deviations of the study variables are provided in Table 2. The R^2 value for social well-being was 0.458, which illustrated competent explanatory capacity (Hair et al., 2017).

Table 2 Results of means, standard deviations, correlation coefficients, and average variance extracted (AVE)

Construct	AVE	1	2	3	4	5
1. Social Connectedness	0.933	<i>0.158</i>				
2. Interaction with employees	0.800	0.283	<i>0.313</i>			
3. Interaction with outsiders	0.837	0.388	0.514	<i>0.395</i>		
4. Interaction with peers	0.828	0.398	0.560	0.521	<i>0.313</i>	
5. Social Well-being	0.907	0.398	0.495	0.629	0.442	<i>0.395</i>
Mean	-	5.155	5.951	5.657	5.673	5.642
Standard deviation	-	1.785	1.043	1.068	1.076	1.560

Note: Highest squared correlation is represented in italics on diagonal.

A wide range of fit statistics was calculated to check the fit validity of the proposed model. The RMSEA value is 0.074 (below the cut-off of 0.080), the SRMR is 0.040 (below the cut-off of 0.050), the CFI is 0.947 (very close to the cut-off of 0.950), the NFI is 0.903 (above the cut-off of 0.900), the NNFI is 0.903 (above the cut-off of 0.900) the PCFI is 0.745 (above the cut-off of 0.500) and the PNFI is 0.710 (above the cut-off of 0.500) (Hair et al., 2017; Kline, 2015).

Table 3 Results of the fit statistics

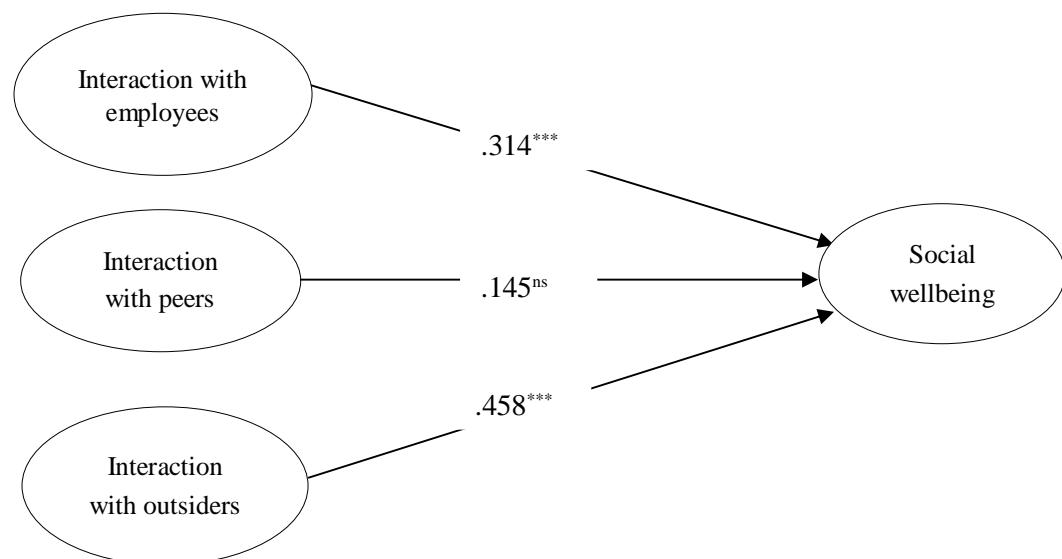
Fit measure	Value	Criteria	Status*
RMSEA (root mean square error of approximation)	0.074	<0.080	Acceptable fit
SRMR (standardized root mean square residual)**	0.040	<0.050	Acceptable fit

CFI (comparative fit index)	0.947	>0.950	Tolerable fit
NFI (normed fit index)	0.903	>0.900	Acceptable fit
NNFI (non-normal fit index)	0.903	>0.900	Acceptable fit
PCFI (parsimonious comparative fit index)	0.745	>0.500	Acceptable fit
PNFI (parsimonious normed fit index)	0.710	>0.500	Acceptable fit

Note: *source of the cut-off: Kline (2015) and Hair et al. (2017). ** The SRMR was calculated using SmartPLS 3. and other indices were estimated using AMOS 25.

The hypothesized relationships were examined through SEM (social interaction with employees, social interaction with peers, social interaction with outsiders, and social well-being). Figure 2 illustrates that positive social interaction with employees has a positive effect on social well-being ($\beta= 0.314$, $p<0.001$). Therefore, H1 was supported. Study results from the analysis showed that social interaction with peers does not have a significant impact on social well-being. Therefore, H2 was not supported. Results from the analysis further demonstrated that social interaction with outsiders has a significant impact on social well-being ($\beta= 0.458$, $p<0.001$). Therefore, H3 was supported.

Figure 2 Results of the direct effects of interaction with social wellbeing



Note: ***: $p<.001$, ns: non-significant

A multi-group SEM analysis was conducted in order to test the moderating effect of social connectedness (H4) on the proposed structural model (Byrne 2016; Hopwood, 2007). As shown in Table 4, social connectedness moderates the link between interaction with peers and social well-being ($Z = -1.717$, $p < 0.05$). According to the results, the link between interaction with peers and social well-being is significant and stronger for elderly people with a low level of social connectedness ($\beta = 0.321$, $p < 0.01$) rather than individuals with a high level of social connectedness ($\beta = -0.013$, non-significant). These results highlight the importance of social connectedness in attaining older adults' social well-being while they interact with peers. Associations between interaction with employees and outsiders with social well-being are not moderated by social connectedness.

Table 4 Results of moderation of social connectedness

Path	Low social connectedness		High social connectedness		z-score	Status
	Estimate	P	Estimate	P		
IE → SW	0.389	0.025	0.175	0.025	-1.124	Not-supported
IP → SW	0.321	0.047	-0.013	0.865	-1.717*	supported
IO → SW	0.490	0.006	0.389	0.000	-0.514	Not-supported

Notes: *** p-value < 0.01; ** p-value < 0.05; * p-value < 0.10. IE: Interactions with employees, IP: Interactions with peers, IO: Interactions with outsiders, SW: Social wellbeing.

The results from the configurational modelling for interaction configuration are presented in Table 5. Three models explain the conditions where commercial senior living services can achieve a high level of social well-being (coverage: 0.959, consistency: 0.906). Model 1 indicates that a combination of interaction with employees and peers results in a high level of social well-being. According to Model 2, interaction with employees and outsiders leads to a high level of social well-being. Model 3 shows that interaction with peers and outsiders improves the social well-being of commercial senior living services in Beijing.

Table 5 Results of fsQCA from interaction configuration

<i>Models of high social wellbeing</i>	<i>Raw coverage</i>	<i>Unique coverage</i>	<i>Consistency</i>
Model: $SW = f(IE, IP, IO)$			
M1: $IE*IP$	0.905	0.032	0.918
M2: $IE*IO$	0.909	0.036	0.926
M3: $IP*IO$	0.890	0.017	0.936
<i>Solution coverage:</i> 0.959			
<i>Solution consistency:</i> 0.906			

Note: IE: Interactions with employees, IP: Interactions with peers, IO: Interactions with outsiders, SW: Social wellbeing.

Table 6 presents the results of the configurational modelling extracted from the interaction configurations with social connectedness to predict social well-being. Three causal models were explored by the fsQCA (coverage: 0.944, consistency: 0.918). Model 1 is a combination of interaction with employees and peers which is similar to the first model for social well-being (c.f. Tables 4 and 5). Model 2 reveals that a high level of social well-being is achieved where older customers interact with employees, outsiders and also where they are socially connected. According to the Model 3, interaction with peers and outsiders and social connectedness lead to social well-being among older customers in commercial senior living services.

Table 6 Results of fsQCA from interaction configuration with social connectedness

<i>Models of high social wellbeing</i>	<i>Raw coverage</i>	<i>Unique coverage</i>	<i>Consistency</i>
Model: $SW = f(IE, IP, IO, SC)$			
M1: $IE*IP$	0.905	0.134	0.918
M2: $IE*IO*SC$	0.794	0.024	0.959
M3: $IP*IO*SC$	0.785	0.015	0.960
<i>Solution coverage:</i> 0.944			
<i>Solution consistency:</i> 0.918			

Note: IE: Interactions with employees, IP: Interactions with peers, IO: Interactions with outsiders, SC: Social connectedness, SW: Social wellbeing.

The results of the necessary condition analysis are provided in Table 7. The results of the SEM show sufficient effects of the predictors (e.g., interaction); the fsQCA reveals the effects of sufficient combinations of the predictors on the outcome (e.g., social well-being); still we need to identify the necessary predictors of the outcome using an analysis of necessary conditions. Three necessary conditions relevant to social well-being are interaction with employees (consistency: 0.957), interaction with peers (consistency: 0.929), and interaction with outsiders (consistency: 0.935). Social connectedness does not appear to be necessary to obtaining social well-being (consistency< 0.9).

Table 7 Results of analysis of necessary condition

Predictor condition	Outcome: Social wellbeing	
	Consistency	Coverage
Interactions with employees	0.957	0.890
Interactions with peers	0.929	0.905
Interactions with outsiders	0.935	0.913
Social connectedness	0.844	0.936

Note: Necessary factors highlighted in bold.

5. Discussion and conclusion

5.1 Theoretical significance

This study makes several timely and progressive contributions to the field of transformative service research by shedding light on how the social interactions of older customers with employees, other customers and outsiders influence the social well-being of older customers in commercial senior living services. It provides empirical evidence that resources exchanged between/ among customers and service providers, such as services, socially supportive resources and relational resources (Friman et al., 2018), can generate transformative outcomes in commercial settings. Concerning the ageing population, modelling the well-

being of older adults in the service context can help to instill a customer-oriented relationship leading to increased customer loyalty that may turn to better service performance as they are classified as a lucrative market. This empirical study responds to the call to expand the understanding of the role of consumption settings in customers' lives (Friman et al., 2018). It demonstrates the importance of commercial senior living services as spaces which contribute towards enhancing customer experience creation and fostering positive outcomes (Fisk et al., 2018) for older adults. Thus, it offers an alternative avenue for hospitality and healthcare research to further understanding of the societal benefits of customer engagement in commercial healthcare settings. By undertaking an interdisciplinary study and exploiting constructs from multiple disciplines, including customer-to-customer interaction, and social well-being (sociology, psychology and health care), this study highlights that hospitality services and encounters have an important role to play in addressing a societal problem: the social connectedness and social well-being of older adults. We have found that older customers' social well-being can be enhanced in a commercial senior living environment through the social interaction platforms provided by senior living services.

In addition, this study is one of the few studies which has investigated the multidimensional concept of 'social interaction' and its influence on older customers' social well-being. It highlights the supportive role of employees and outsiders in improving older customers' social well-being. The finding that employees, as a supportive resource, exert a positive impact on social well-being corroborates the findings in transformative service research (TSR), which has been previously examined in healthcare, finance and social services (e.g., Kuppelwieser and Finsterwalder, 2016; Sweeney et al., 2015). It also reinforces the importance of employees in promoting prosocial service behaviours (Butt et al., 2018; Cho, 2018) and the success of service businesses (e.g. Chan and Wan, 2012; Kirillova et al., 2018). What is distinctive in this study is that it extends the perspective of the

employees' role in providing customers with social support in commercial settings (Rosenbaum, 2009). It also demonstrates the supportive role of outsiders in relation to the social well-being of older customers. This indicates that older customers can benefit from obtaining social resources by establishing commercial friendships (Rosenbaum, 2009) with people from wider communities.

Furthermore, the innovativeness of this research lies in the study of the moderating role of social connectedness in the relationship between social interaction with peers and social well-being. Prior studies illustrate that people who lack social inclusion are more strongly motivated to seek out information (Kim et al., 2013), social support (Yao et al., 2015) and reconnection with others (Maner et al., 2007), which may contribute to improved well-being (Mo and Coulson, 2012; Yao et al, 2015). The moderating effect of social connectedness in this study supports the importance of strengthening social connectedness in efforts to improve social well-being among older customers. It enables older customers to interact with peers in order to have an indirect effect on their social well-being.

This is the first empirical study which has explored causal models obtained from considering combinations of employees, peers, outsiders, and social connectedness to stimulate social well-being. The fsQCA, which is a set-theoretical approach, calculated three solutions for combinations of interactions and three solutions for combinations of interactions with social connectedness which explain recipes for improving the social well-being of older customers. This study also extended the current knowledge of TSR by identifying the necessary conditions to achieve social well-being. Interaction with employees, peers, and outsiders emerged as necessary conditions, whereas, social connectedness is not a necessary condition to improve the social well-being of older customers.

5.2 Practical Implications

This study illustrates the fundamental role of hospitality services in providing relationships and interaction with older customers. The findings direct service providers to design inclusive service systems (Fisk et al., 2018) in order to contribute to customer well-being outcomes. First, service providers should identify, locate and partner with social and local communities as a source of inclusion for older customers within wider communities, such as musical bands or comedy groups to help older customers to access and participate in meaningful social interaction. This inclusion will enable older customers to expand their social network and co-create service values.

Second, service providers should make older customers aware of the availability and accessibility of different service offerings. Individual customers have choices and the freedom to participate in specific services. For example, managers can send invitations via social media platforms or on the notice board in public areas to older customers when an interactive event or activity is about to take place.

Third, the results of this study illustrate that positive service encounters have an effect on the social well-being of older customers. Therefore, the selection of potential service employees becomes crucial during the recruitment for service businesses, such as evaluating their character, conscientiousness (Selzer et al., 2018), work engagement (Gupta et al., 2018) and past service experience. Meanwhile, workplace support (Tian et al., 2019; Wang et al., 2018) and certain training programmes should be implemented in order to enhance employees' service performance. Moreover, managers should provide opportunities or media for customers to co-create experiences and value (Rosenbaum et al., 2011), where customers can share information, provide recommendations or even engage in product or service planning and design with service providers. As a result, service providers would gain a better understanding of their customers and would be able to reinforce a transformative quality of service to promote customers' well-being, which in turn would benefit service providers in

developing a sustainable business. Older customers with better well-being are more likely to circulate positive word of mouth, which will greatly strengthen the image of service firms and add to their competitiveness.

Fourth, the weak influence of social interaction with peers on older customers' well-being may result from social "noise" or social pressure. Older adults may face increasing demands from their friends to engage in activity routines or health related plans, such as morning exercise or medical diets. Service providers can design some small activities which are not time consuming and which do not require a long term commitment so as to avoid social pressure and attract more customers, such as meeting over a coffee. As interacting with employees increases the social well-being of customers, managers should invest in improving the interaction between customers and their peers through fun and engaging activities to generate social connectedness, which has been found to enhance the social well-being of older customers who have low levels of interaction with peers. For example, managers can organize team competitions among older customers to encourage collaborations within the team.

Additionally, service providers should use new approaches to target their older customers by focusing on segmentation methods driven by customer preferences, benefits, attitudes and experiences. Compatible customers will be put together to avoid negative interaction. The buffering effect of social connectedness should guide service providers to aim to foster social connectedness among older customers when they promote their products or services. The feeling older customers have of being connected to a service firm or brand will lead to better business outcomes.

This study used convenience sampling and cross-sectional data. Longitudinal data is needed to investigate the influence of social interaction on social well-being for future studies.

In addition, this study proposed and tested a model to predict social well-being. Further studies can model generalized well-being as the outcome variable, in line with the World Health Organization (WHO, 1997, p.6) definition that includes “physical health, psychological state, level of independence, social relationships, personal beliefs and their relationship to salient features of their environment”. Furthermore, it is necessary to expand the domain of studies in TSR to include additional variables in the proposed model for future research, such as loyalty, satisfaction and consumption experience.

Appendix A

The profile of respondents

Age	Frequency	Percent
60-69	12	6.3
70-79	46	24.2
80-89	117	61.6
90 and Over	15	7.9
Total	190	100.0
Gender		
male	74	38.9
female	116	61.1
Total	190	100.0
How long they spend each time on social activities		
up to an hour	96	50.5
1-1.5 hours	62	32.5
1.5-2 hours	10	5.3
2-2.5 hours	10	5.3
2.5-3 hours	6	3.2
more than 3 hours	6	3.2
Total	190	100.0
Social activity types		
leisure/sports	83	43.7
cultural events	42	22.1
social-friendship activities	32	16.8
social group	21	11.1
activities/associations		
all above	12	6.3
Total	190	100.0
Frequency of participation in social activities		
almost every day	93	48.9
about 2 or 3 times a week	56	29.4
about once a week	21	11.1
about 2 or 3 times a month	2	1.0
about once a month	13	6.8
less than 2-3 times a year	2	1.1
less than once a year	2	1.1
this is my first time	1	0.5
Total	190	100.0

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