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Solo Dining in Chinese Restaurants: A Mixed-Method Study in Macao

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Abstract

Given the emergence of solo dining resulting from the changing family structure and increasingly individualised lifestyle in contemporary Chinese society, this study investigates solo dining in the setting of Chinese restaurants in Macao, including the solo dining motivations, behavioural characteristics, and experiences, taking into considerations the underlying social and cultural factors. Adopting a sequential exploratory mixed methods design, 18 interviews were conducted, followed by a survey with 493 local diners. Findings show that freedom of choice and satisfying hunger are the main motivations for solo dining, and some solo-friendly attributes, food-related attributes, and restaurant characteristics are considered as important elements. Solo dining is perceived positively, partly because its perceptions and experiences are shaped by the diners' socio-cultural backgrounds and unique regional characteristics, in which solo dining is considered relatively common in Macao as opposed to extant literature that has suggested an essentialised assumption about Chinese group-oriented dining preference. Sociocultural insights and managerial implications are provided in catering to the growing solo diner market.

Keywords: Chinese culture, Chinese restaurant, Dining experience, Macao, Solo dining

1. Introduction

The prevalence of solo dwelling, which is attributed to the changing work and living environment in urban areas and household structures, triggers an individualised lifestyle, including traveling alone and dining alone (Bianchi, 2016; Her & Seo, 2018; Moon, Bonn, & Cho, 2020). Among the solo lifestyle trends, the increased visibility of solo diners in various countries has been highlighted (Moon et al., 2020). According to The Fork (previously Dimmi), an online restaurant reservation platform, reservations made by single diners increased by 27% in Australia between 2017 and 2018 (Cloros, 2018). In the United States, reservations for solo diners have grown by 62% (OpenTable, 2015). A similar trend is also observed in China, home to 240 million single consumers (Foodservice Consultants Society International, 2019). A recent report by a market research company found that 46% of Chinese consumers have eaten alone (China Daily, 2019).

Although solo dining has become prevalent in contemporary society, only a handful of studies have explored the phenomenon of solo dining (Her & Seo, 2018; Lahad & May, 2017; Moon et al., 2020). Little is known about solo diners' motivations, behavioural characteristics, and experiences. For instance, while the growing solo dining trend is observed, it remains unknown to what extent solo dining is an experiential consumption by choice or a utilitarian consumption by circumstances. Furthermore, prior research has suggested that the sociality assumption in a public dining space conducive to sharing and togetherness could render solo diners feeling lonely and conspicuous (Heimtun, 2010; Lahad & May, 2017). Recent studies have also underlined the issues with dining space, such as table proximity and restaurant layout in creating stressful and negative experiences for solo diners (Her & Seo, 2018; Hwang, Shin, & Mattila, 2018; Moon et al., 2020). Nonetheless, we have yet to fully understand the various dining environmental factors that shape the solo dining experience.

The stress and loneliness reported in solo dining literature could be explained by the enduring social stigma that associates a public display of aloneness with negative connotations (Goodwin & Lockshin, 1992). The social stigma was reported to amplify in collectivist cultures (Yang, Yang, & Khoo-Lattimore, 2019). However, prior research also has suggested that the shifting of living arrangements towards solo dwelling, even in collectivist cultures, may influence the acceptance of eating alone (Cho, Takeda, Oh, Aiba, &

Lee, 2015). This is especially relevant in Asia and, in particular, the Chinese context as the Chinese dining environment has traditionally catered to communal dining instead of solo dining. In recent years, Chinese consumers dine alone more frequently as a result of social changes (Hancock, 2017), including interregional immigration and delayed marriage, which has resulted in the rise of one-person households in China (Yeung & Cheung, 2015). Nevertheless, the social disapproval and embarrassment of solo dining have been repeatedly reported in the media (Fan, 2015; Geng, 2015). The restaurant industry in China has a great potential to convert the suppressed demand into an effective demand by providing a welcoming dining environment for Chinese solo diners. As such, an in-depth understanding of the social and cultural context of solo dining can shed light on the restaurant industry to better cater to the needs of the growing solo dining market.

This study aims to investigate solo dining in Chinese restaurants, including the motivations, behavioural characteristics, and experiences of Chinese solo diners in Macao, taken into consideration the underlying social and cultural factors. Specifically, the research questions for this study are as follow: (1) What motivates Macao diners to eat out alone in Chinese restaurants? (2) What are the Macao diners' solo dining behavioural characteristics? (3) What emotions arise during solo dining? (4) Which dining elements are perceived as important by solo diners? This study refers to solo dining as dining alone in a public, commercial space (e.g., restaurant), and it excludes takeaway and eating alone in a private space (Her & Seo, 2018). A mixed-methods study consisting of in-depth qualitative interviews and quantitative surveys was conducted. Propositions regarding solo dining are presented to guide future empirical studies and for further theoretical development. The outcomes of the study are expected to contribute sociocultural and managerial insights to the understanding of solo dining in a Chinese context.

2. Literature Review

2.1. Solo dining motivations

Eating alone in a private space has been widely investigated in sociology and nutrition literature (Lahad & May, 2017; Takeda & Melby, 2017; Tani et al., 2015), while solo dining in restaurants has only begun to gain attention in recent years (Heimtun, 2010; Her & Seo, 2018; Hwang et al., 2018; Shin, Hwang, & Mattila, 2018). Within this growing stream of

research, researchers have highlighted the needs to study solo dining motivation and how it impacts on experience (Hwang et al., 2018).

Prior researchers proposed a triadic framework, encompassing the utilitarian, hedonic, and social motives to food and eating (Khoo-Lattimore, Yang, & Lai, 2016). Eating alone is commonly associated with utilitarian motives as opposed to the social motives of communal eating (Takeda & Melby, 2017). Past studies have suggested that solo dining is induced by the circumstances, such as convenience, work schedule, and lack of a dining companion (Heimtun, 2010; Moon et al., 2020; Takeda & Melby, 2017). For instance, eating out alone is regarded an unavoidable experience for solo travellers (Brown, Buhalis, & Beer, 2020; Heimtun, 2010). On the contrary, YouGov, a global market research company, identified enjoying solo time as the key motive to dine alone in the United Kingdom (Grant, 2015). A similar sentiment has been reported in several studies, in which hedonic motives such as freedom and enjoyment also have been found to be the main drivers of solo dining (Lahad & May, 2017; Moon et al., 2020; Takeda & Melby, 2017). Moon et al. (2020) further revealed the impact of different solo dining motivations on the place attachment of a restaurant. Studies have shown that the motivations of dining alone could be explained by both utilitarian and hedonic factors, which are determined by the work/life circumstances and subsequently affect the solo dining experience. Nevertheless, gaps remain in terms of how social motive, an important component of eating (Brown et al., 2020), fits into the solo dining context, for example, if and how solo diners interact with fellow diners.

2.2. Solo dining experiences

Existing research investigating the solo dining experience has predominantly focused on emotions (Her & Seo, 2018; Hwang et al., 2018; Moon et al., 2020). Regardless of the motivations, negative emotions such as loneliness, discomfort, embarrassment, shame, and heightened self-consciousness have been consistently reported in the context of solo dining in restaurants (Brown et al., 2020; Her & Seo, 2018; Lahad & May, 2017). Using the concept of emotional geography, Heimtun (2010) identified the public dining space as the most uncomfortable and lonely holiday space for solo female travellers. Takeda and Melby (2017) suggested that the feeling of loneliness of eating alone is often caused by social gaze (i.e., being seen as lonely by other diners and restaurant staff). The nature of public space exposes solo consumers to social judgement and unwanted gaze, especially when they participate

alone in hedonic activities or activities that are traditionally deemed as communal (Hirschman & Holbrook, 1982; Ratner & Hamilton, 2015). A recent study by Brown et al. (2020) substantiated previous studies by demonstrating how the perceived stigmatisation and negative judgement of other diners cause discomfort on solo diners based on stigma theory. In particular, the study identified the evening meal as the most stressful with the most pronounced social stigma. To mediate the stress and discomfort, the interview participants in Brown et al. (2020) used various props, with smartphones being the most effective in creating virtual dining companions.

Drawing on social impact theory and social identity theory, Her and Seo (2018) studied the influence of other diners and found that the presence of in-group (i.e., solo) versus out-group (i.e., non-solo) diners in a restaurant is an important antecedent to predict the intention to dine alone. They further revealed that the feeling of exclusion, which originates from the anticipated negative judgment from out-group diners, is likely to weaken the solo dining intention. Using the same theories, Hwang et al. (2018) investigated the influence of spatial proximity and individuals' psychological sense of power on solo dining attitude. Their findings indicate proximity with in-group or solo diners will result in a more favourable attitude due to the perceived social connectedness, and such effect is felt more strongly among individuals with a lower power status. Advancing findings that have suggested the negative conspicuousness of solo consumption in public spaces (Heimtun, 2010; Ratner & Hamilton, 2015), Her and Seo (2018) and Hwang et al. (2018) have revealed that the solo dining experience is affected by the presence and proximity of in- versus out-group diners sharing the space. Nevertheless, both studies used a quasi-experimental design based on hypothetical solo dining scenarios instead of examining the actual behaviour and experience of solo diners. Focusing on actual solo diners at casual-dining restaurants, Moon et al. (2020) demonstrated the positive effects of perceived territoriality, examined through physical boundary (e.g., inter-table distance and exclusive use of condiments and cutlery box) and place attachment, on solo dining satisfaction and intention. Extending the work of Hwang et al. (2018), Moon et al. (2020) further highlighted the importance of the dining environment in shaping the solo dining experience and called for further research to investigate other types of restaurants in different cultural contexts.

2.3. Solo dining elements and environment

Existing research and industry publications have considered the social and physical dining elements and environment as important factors shaping solo dining experiences. The social environment or social servicescape refers to the social interaction between customers and employees (Jang, Ro, & Kim, 2015; Rosenbaum & Massiah, 2011). An unfavourable social servicescape, manifested through the anticipated negative judgement and unsolicited attention from other diners and restaurant employees, may negatively affect solo dining experiences (Goodwin & Lockshin, 1992; Her & Seo, 2018). Similarly, the physical environment or servicescape (Bitner, 1992), such as the lack of discretely positioned tables and restaurant layout, including the spatial distance between solo and group tables, may also contribute to negative experiences (Goodwin & Lockshin, 1992; Hwang et al., 2018).

Ryu and Jang (2008) proposed DINESCAPE, a concept derived from servicescape but with a focus on the restaurant environment. DINESCAPE considers characteristics unique to the food service sector, such as layout (e.g., seating arrangement) and table setting, and other more generic dimensions, including ambiance, facility aesthetics (e.g., paintings/pictures, wall décor, plants/flowers, colour used in the dining area, and quality of the furniture, etc.), lighting and service staff. The measurement of DINESCAPE was developed and tested in upscale restaurants, which are patronised for hedonic or emotional fulfilment (Ryu & Jang, 2008), instead of utilitarian or functional purposes as found in other dining settings such as quick-service restaurants (QSRs). The model has been tested in solo dining research. For instance, adopting the DINESCAPE model, Bae and Kim (2017) investigated the impact of the physical environmental quality on satisfaction and return patronage intentions of solo diners living in the United States. The study showed that food quality, service quality, and physical environment quality all positively affect satisfaction and revisit intentions. However, Bae and Kim (2017) did not consider cultural characteristics and demographic variations, which may crucially affect the solo dining experience and its outcomes. Furthermore, the original servicescape (Bitner, 1992) and DINESCAPE (Ryu & Jang, 2008) models do not consider the social interactions between customers and employees as well as customers with other customers. DINESCAPE incorporates “social aspects” (p. 16) and identifies “Service Staff” (p. 16) as one of its dimensions, but it addresses the physical appearance of the employees only. Considering the importance of social interaction as underlined in existing solo dining research, this study extends the DINESCAPE model to include the social

servicescape (Jang et al., 2015) and adapts the model to solo dining in the Chinese restaurant context.

2.4. Chinese dining pattern

In a Chinese community, the symbolic or social meaning of food and eating is especially salient; food sharing is a deep-seated characteristic that defines Chinese food culture (Chang, 1981; Ma, 2015). In a traditional Chinese dining setting, each diner is given an individual bowl of rice, and diners gather around the table and share the *cai* (菜) or dishes served in communal plates. The emphasis on sharing and communal eating is also found in Chinese communities outside of mainland China (Yang, Khoo-Lattimore, & Lai, 2014). Prior research has revealed the underlying meanings of group dining and food sharing in a collectivist Chinese culture, which include a way to maintain and develop interpersonal relationship and to represent social status (Khoo-Lattimore et al., 2016; Ma, 2015). Eating together also plays an important role in rituals, celebrations, and remembrances in Chinese culture (Yang et al., 2014).

Chinese communal eating practice extends beyond eating at home; group dining is commonly observed in the spatial layout of most traditional Chinese restaurants (So, 2008). As Ma (2015) aptly pointed out, “Separate dining is common in Western culture, while in China’s dining culture, whether dining at home or eating out, a group dining system is used in most situations. While sharing the food, culture and atmosphere are shared” (p. 198). Nevertheless, literature on Chinese food culture and Chinese diners has predominantly focused on the traditional values and practices. This stream of literature has not fully addressed the undergoing social changes in the contemporary fast-changing Chinese society such as the rise of solo dining, which contradicts the Chinese emphasis on communal eating.

It is also pertinent to recognise the regional variations within China in relation to the social acceptance of solo dining. Macao is located in the Pearl River Delta region, which shares Cantonese culture and, particularly, Cantonese cuisine with mainland Guangdong and Hong Kong (Leong, 2014). Despite this, because of different levels and types of foreign cultures to which each sub-region has been exposed, Hong Kong and Macao, the two special administrative regions of China, have also developed somewhat different dining cultures—the former having been a British colony while the latter, Portuguese. Macao has a relatively

strong Western influence due to its colonial history, high population density, and rapid globalisation after the liberalisation of the region's casino concessions (Augustin-Jean, 2002). The lack of space and time for cooking and dining at home has given rise to QSRs and small local Chinese restaurants in this region (Augustin-Jean, 2002). Research on the impact of Westernisation and social transitions on the regional Chinese dining culture is scant compared to research on mainstream Chinese dining culture, and the handful of available studies have mainly focused on Hong Kong; little is known about the dining culture in Macao. In the case of the dining culture of Hong Kong, which could hint to that of Macao, studies have reported that dining alone in restaurants is common (So, 2008).

In summary, traditional Chinese food and dining culture is characterised by meal sharing or communal eating. However, limited research has investigated the contemporary Chinese food and dining culture influenced by the increasingly independent and individualised lifestyle. Likewise, there is a dearth of research on how solo dining is perceived and practised in different regions in China, which are undergoing varying levels of Westernisation, urbanisation, and individualisation. This study addresses the gaps by investigating the solo dining patterns, motivations, and experiences in Macao and specifically in Chinese restaurants, ranging from quick service to upscale settings.

3. Research Methods

This study utilised a sequential exploratory mixed-method approach (Creswell & Clark, 2011). Due to the dearth of research on solo dining in Chinese culture, an initial stage of exploratory qualitative investigation was necessary to develop the measurement items for the survey. A total of 18 semi-structured interviews were conducted with participants across different gender and age groups. The participants were recruited using convenience sampling through the researchers' personal and social network, considering the Chinese culture where establishing a social relationship or *guanxi* (關係) is important for the willingness to share opinions and experience (Chen & Chen, 2004). The preliminary findings from 14 interviews with solo diners led us through theoretical sampling to interview four restaurant managers (Charmaz, 2014), where additional data were collected to supplement, triangulate or clarify the emerging findings. The data collection ceased at theoretical saturation (Charmaz, 2014) where no new information could be obtained from additional interviews.

Interviews with solo diners comprised questions related to solo dining motivations, behavioural characteristics, emotions, and experiences in Chinese restaurants, while the interviews with restaurant managers were to elicit their opinions towards solo dining, including the difficulties they encountered in catering to solo diners. The interviews lasted 30 minutes on average and were conducted in Cantonese, then transcribed and translated into English. The translation was validated by one of the authors who is fluent in both languages. Thematic analysis was utilised to analyse the interview data using a two-stage coding process (Braun & Clarke, 2006). The initial coding involved line-by-line reading of the transcript to identify concepts. In the second stage, concepts emerging from the initial step coding were reviewed, reorganised, clustered, and abstracted into meaningful themes. The main themes that emerged from the interviews indicated that solo dining motivations are associated with *freedom* and *flexibility*. Solo dining patterns were linked to *work* in terms of time of the day, days of the week, and the location. The main behaviours during solo dining were associated with *social interactions*, *enjoying my meal*, and *reading book or emails*. Diners' emotions were linked to *feeling of being rushed* for some and *feeling more relaxed* for others. Some of the important dining elements pointed out by solo diners were related to *portion size*, *table arrangement*, *value for money*, and *solo-friendly set menus*. Interviews with managers revealed their concerns towards solo diners were mainly around *not profitable* and *occupying a big table*.

Based on the qualitative findings and extant literature, a questionnaire was developed comprising five sections: solo dining motivations; behavioural characteristics, which include solo dining patterns and actual dining behaviours; emotions; perceived importance of solo dining elements; and demographic profiles. The survey began with items on solo dining motivations adapted from Grant (2015) and Takeda and Melby (2017), followed by frequency, timing, and dining preference of solo dining (Her & Seo, 2018; Hwang et al., 2018; Lahad & May, 2017). The survey continued with items on behavioural patterns from Grant (2015) and Takeda and Melby (2017) as well as the interview results. Items measuring emotions were adapted from Cho et al. (2015) and the interviews. This study used two sets of questions to measure emotions associated with solo dining, including “feelings associated with seeing a person eating alone” adapted from Cho et al. (2015) and how the respondents feel when they dine alone. The first set of questions elicited common images and emotions, while the second set examined the self-reported emotions. The perceived importance of solo

dining experiential elements, including the physical environment, table setting, ambiance, food, service staff, and restaurant characteristics were measured using 28 items adapted from Ryu and Jang (2008), Ryu, Lee, and Kim (2012), and the interviews. Questions were asked on a continuous metric scale ranging from 0 to 10 (0=not at all, 5=neutral, 10=extremely). The metric scale has been considered in consumer studies as the most justifiable scale for statistical legitimacy in conducting parametric statistical tests (Dolnicar & Grün, 2007). Preston and Colman (2000) suggested that a modest increase of response categories would increase the reliability and validity and that respondents preferred an 11-point scale, in general. Leung (2011) and Wu and Leung (2017) further supported that a 11-point scale in psychometric studies is recommended to realistically treat it as an interval scale, being able to decently approach to the distribution of an interval scale. Marty, Nicklaus, Miguët, Chambaron, and Monnery-Patris (2018) also used a 0-10 scale for the simplicity of choices and statistical legitimacy.

The questionnaire was developed in English and translated into Chinese. The translated questionnaire was validated by a bilingual author and further reviewed by ten Macao residents. The survey was pilot tested with 36 respondents, and the actual survey was conducted between June and August 2018. A convenience sampling was used. Those with solo dining experience were qualified to participate in the survey. A total of 1424 Macao residents were approached at restaurants, shopping malls, and on the street, and 496 completed the survey with a 34.83% response rate. After deleting three invalid responses, 493 responses were analysed. Tests were conducted at the significance level of .05 (two-tailed). Chi-square statistics were partly presented to identify significant categorical variables for solo dining. A series of paired-sample t-tests were conducted to test emotional differences in solo dining and observing solo diners, and independent samples t-tests and ANOVAs were conducted to test differences by demographic variables in solo dining behaviours and emotions associated with the solo dining experience. Normality assumptions of the tests for all variables subject to t-tests and ANOVAS were met based on the rule of thumb by Kline (2011). Survey results are presented in the following section, supplemented by interview findings to allow for deeper insights.

4. Results

4.1. Sample profile

Table 1 presents the profiles of the interviewees and Table 2 presents that of survey respondents. Most interviewees were below 35-years-old. Additionally, there was a balance in genders and a wide range of relationship status.

Table 1. Interviewees' profiles

ID number	Gender	Age	Occupation	Relationship status
Diner 1	Male	Over 65	Retired	Married
Diner 2	Male	18-25	Student	In a relationship
Diner 3	Male	46-55	Police	Married
Diner 4	Male	18-25	Student	Refused to answer
Diner 5	Female	18-25	Student	Single
Diner 6	Male	18-25	Student	Single
Diner 7	Female	26-35	Lecturer	Married
Diner 8	Male	26-35	Clerk	Single
Diner 9	Female	18-25	Saleswoman	Single
Diner 10	Female	18-25	Graphic designer	In a relationship
Diner 11	Male	26-35	Aviation industry	In a relationship
Diner 12	Female	56-65	Housewife	Divorced
Diner 13	Female	18-25	Nurse	Single
Diner 14	Female	26-35	Sales assistant	Single
ID number	Gender	Age	Type of restaurant	
Manager 1	Male	46-55	Full-service Cantonese restaurant	
Manager 2	Female	Over 65	Local casual restaurant	
Manager 3	Female	26-35	Local casual restaurant	
Manager 4	Female	36-45	Full-service Chinese seafood restaurant	

Among the survey participants, slightly less than half of the respondents were male (44.8%). Most of the respondents were between 18 and 34 years (60.0%). Of the respondents, 38.7% were single and 7.3% lived alone. More than a half of the respondents held bachelor's degrees or above (53.4%) and were either professional or service workers (59.7%).

Table 2. Survey sample profile

Gender	<i>N</i>	%
Male	221	44.8
Female	272	55.2
Age		
18-24	158	32.0
25-34	138	28.0
35-44	68	13.8
45-54	78	15.8
55-64	39	7.9
65 or above	12	2.4
Monthly individual income (in MOP, 1 MOP = about 8 USD)		
<10,000	169	34.3
10,000 to 19,999	185	37.5
20,000 to 29,999	96	19.5
30,000 to 39,999	23	4.7
40,000 or above	14	2.8
No answer	6	1.2
Occupation		
Professional	129	26.2
Trade worker or manual labourer	35	7.1
Service worker	165	33.5
Student	104	21.1
Retired	25	5.1
Self-employed	23	4.7
Unemployed	9	1.8
Other	3	.6
Relationship status		
Single	191	38.7
In a relationship (live together)	14	2.8
In a relationship (live separately)	100	20.3
Married	175	35.5
Divorced	11	2.2
No answer	2	.4
Living arrangement (multiple answer allowed)	<i>n</i>	%
With partner	188	38.1
With children	119	24.1
With parents	234	47.5
Alone	36	7.3
Share house with strangers	4	.8
With friends	12	2.4
Dormitory	9	1.8
Relatives	5	1.0
Education		
Primary school or below	39	7.9
Secondary school	191	38.7
Undergraduate degree	240	48.7
Graduate degree or above	23	4.7
Total	493	100.0

4.2. Solo dining motivations

For interview participants, the main motivations to dine alone included freedom and flexibility in choosing the dining time and place, not having to “wait for a friend to finish his/her meal” (Diner 6), convenience of choosing a “set menu” (Diner 6) for solo diners, and satisfying hunger. Diner 10 commented, “I can eat anytime and choose whatever food I want to, no need to consider others”. The results were reflected in the survey: The three strongest motivations for solo dining were the freedom of choice with the dining place (mean=6.71, $SD=2.96$) and food (mean=6.77, $SD=2.95$) (Table 3) as well as satisfying hunger (mean=6.57, $SD=2.98$). Interviews revealed work-related and occasion-oriented motivations, which compel the diners to eat alone regardless of their intentions or preferences. One motivation was the absence of a dining companion, as Diner 7 stated, “no colleagues to have lunch with me on weekends and my husband is busy”. Similarly, Diner 9, a single saleswoman explained, solo dining “can’t be said that it is a choice . . . it is impossible to find a friend to dine with every day”. Diner 1, a 73-year-old retiree identified the absence of family members during weekdays as the main motivation for dining alone, stating that “my wife goes to work every day, and that’s why I dine alone outside home”. Findings from the survey, however, show that this motivation was relatively weak compared to others (mean=4.85, $SD=3.21$). As a regular solo customer, Diner 1 was familiar with the staff at the restaurants he frequented and actively interacted with other diners, which reveals social interactions as a secondary motivation for the retiree segment. Survey results support such variations by different age groups. Respondents above 65 years old had the highest mean values in “I cannot find anybody else to eat with” (mean=5.92, $SD=3.99$), “to chat with employees” (mean=6.08, $SD=3.40$), and “to chat with other diners” (mean=5.75, $SD=3.52$; see Table 3).

Proposition 1. Freedom of choice and satisfying hunger are the strongest motivations for solo dining.

Table 3. Motivations for dining alone

	<i>M</i>	<i>SD</i>
Dining alone is my way of life	5.02	3.07
Dining alone enables me to do other activities at the same time	5.76	2.97
I cannot find anybody else to eat with	4.85	3.21
Because of the nature of my work, study and life schedule, I dine alone	5.90	3.17
I can freely choose the restaurant I want to go	6.71	2.96
I can freely choose the menu or food I want to eat	6.77	2.95
I can chat with employees	3.97	3.26
I can chat with other diners	3.52	3.22
I dine alone mainly to satisfy hunger	6.57	2.98
Dining alone enables me to escape from negative aspects of social interaction	4.26	3.16

4.3. Solo dining behavioural characteristics

4.3.1. Solo dining patterns: Frequency and preference of solo dining

The survey results indicate that 57.4% of the respondents dined alone at least once a week while 48.5% dined in Chinese restaurants alone at least once a week. About 45.0% of solo dining took place in Chinese QSRs and about 12.5% of solo dining occasions were found in upscale traditional Chinese restaurants. On the other hand, about 31.8% of solo dining took place in non-Chinese QSRs and about 10.8% took place in non-Chinese upscale restaurants. The interview findings reveal a similar pattern and sentiment, indicating that, while Chinese restaurants are generally more frequently visited than non-Chinese restaurants by diners, upscale traditional Chinese restaurants are less likely to be perceived as a place for solo dining than Chinese QSRs. Upscale traditional Chinese restaurants were perceived as a place for group dining because of the large portion size (as the dishes are meant for sharing) and, hence, a lack of dish variety for solo diners. For instance, Diner 3 commented, “when you go to a Chinese restaurant alone, you cannot order different dishes and the portion size is not suitable for one person”. Diner 1 opined that “traditional Chinese restaurants are mostly for family reunions because you won’t be able to finish the meal by yourself”. As shown in Table 4, solo dining is more common for lunch and breakfast. Interview findings suggest that many younger workers in Macao went “somewhere out of office” (Diner 5) and “close to work” for lunch in order to “rush back to office” (Diner 1) after the quick lunch.

Table 4. Preference and time of the day for solo dining in Chinese restaurants

Solo dining preference	<i>N</i>	%
Prefer to eat alone	49	9.9
Prefer to eat with others	241	48.9
No preference	203	41.2
Time of the day for solo dining	<i>N</i>	%
Breakfast	182	36.9
Lunch	266	54.0
Dinner	137	27.8
Other	21	4.3

Solo dining patterns differed by living arrangement, age, and occupation. Solo dwellers were more likely to dine alone ($X^2(4, n=493) = 14.856, p = .005$) and were more likely to have dinner alone ($X^2(1, n=493) = 7.309, p = .007$) in Chinese restaurants than those who lived with others. The older group, including retirees, has the temporal flexibility to adjust their lunch time to “avoid crowded places” (Diner 1) during peak hours in order to minimise waiting time to be seated as well as to help the restaurants.

Proposition 2-1. Upscale traditional Chinese restaurants are perceived more strongly as a place for group dining than Chinese QSRs and non-Chinese restaurants.

Proposition 2-2. Living arrangement, age, and occupation affect solo dining patterns.

4.3.2. Behaviours during solo dining

The survey results reveal a proclivity for solitary behaviour over social, and the tendency to be connected online was salient during solo dining. Across all age groups, online connection using mobile devices had the highest mean value (mean=7.15, $SD=2.89$). Two indicators about social interactions, “chat with other diners” (mean=3.00, $SD=2.97$) and “chat with restaurant employees” (mean=2.87, $SD=2.83$), had the lowest mean values. Offline individual activities, including reading books, magazines, and newspapers, were not salient. The respondents were neutral about focusing on the meal and observing the dining space. Indirect social interactions during solo dining, measured by observing other diners, appeared to be weak with the mean value being lower than the neutral value of 5. The results imply that solo diners, overall, may not desire or enjoy social interactions with others and may prefer to stay solitary when dining alone. Diner 13 mentioned, “I prefer to enjoy my personal time during eating” and Diners 7 and 9 reported using mobile phones while dining alone.

In line with the findings on solo dining motivations, significant differences were observed in solo dining behaviours across different age groups in terms of connecting online ($F=10.76$, $p<.001$), observing other diners ($F=3.725$, $p=.003$), chatting with other diners ($F=2.898$, $p=.014$), and chatting with restaurant employees ($F=5.333$, $p<.001$). The youngest group had the strongest tendency to be connected online (mean=7.96, $SD=2.37$) and the weakest tendency to read printed materials (mean=3.79, $SD=3.35$). The tendency to get connected online during solo dining gradually decreased with age. In contrast, the older age groups were more likely to chat with other diners and restaurant employers (Table 5).

Table 5. Solo dining behaviour by age group

	Age group												<i>F</i>	<i>p-value</i>
	18-24		25-34		35-44		45-54		55-64		65-			
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
Read a printed book/ magazine/ newspaper	3.79	3.35	4.51	3.23	5.03	3.31	4.67	3.46	4.51	3.30	4.83	3.04	1.731	.126
Get connected online with mobile devices	7.96	2.37	7.40	2.78	7.06	2.47	6.68	3.02	4.95	3.45	4.42	4.06	10.760	<.001
Observe other diners	4.86	3.15	4.22	3.05	3.49	3.34	4.12	2.71	2.85	2.87	4.25	3.65	3.725	.003
Observe the dining space	5.32	2.70	4.98	2.89	4.56	2.99	4.91	2.73	3.97	3.11	6.08	3.26	2.096	.065
Do nothing else and just enjoy the meal	4.98	2.82	4.67	2.99	4.91	2.89	5.08	2.98	5.62	3.13	4.92	3.20	.679	.639
Chat with other diners	2.58	2.95	2.86	3.04	3.03	2.70	3.54	2.91	3.41	2.91	5.33	3.17	2.898	.014
Chat with restaurant employees	2.23	2.65	2.58	2.79	3.32	2.94	3.42	2.79	4.10	2.86	4.50	2.75	5.333	<.001

Proposition 3. There are differences in terms of solo dining behaviour by age group.

Proposition 3-1. Young solo diners are more likely to stay online than older diners when dining out alone.

Proposition 3-2. Senior solo diners are more likely to interact with other customers and restaurant employees than younger diners when dining out alone.

4.4. Solo dining emotions

The interviewees generally associated solo dining with positive emotions. Diner 10 attributed the ease of solo dining to social changes, stating that “I think it is very normal to eat alone now in contemporary society and there is nothing bad about eating alone” and valued the

sense of freedom. Diner 8 suggested that feelings towards solo dining evolve with familiarity: “I felt a bit embarrassed at first, but after I got used to it, I don’t have any special feeling”. Diner 6 expressed that he felt “more relaxed” dining alone, seeing it as an opportunity for self-reflection. Nonetheless, several interviewees, in the case of dining at upscale traditional Chinese restaurants, reported stress related to the feeling of being rushed and occupying the entire table for a long time. For instance, Diner 6 reported that “the staff of the restaurant urge you to dine swiftly and leave the table for other guests”. Most interviewees did not report any special emotions when they observed other solo diners because table sharing among solo and group diners is common in Macao, especially in QSRs, which reduces the conspicuousness of solo diners. Diner 10 reflected, “I usually need to share the table with other guests. It is very likely that the whole table are guests who dine alone, so it is not embarrassing or awkward at all. It is very common to dine alone”. Most interviewees were happy with table sharing. Diner 2 commented, “so many people who do not know each other sit and eat at one table together”.

The survey results, however, show significant differences in emotions between two different situations: feelings associated with dining alone and feelings associated with seeing others dining alone (see Table 6). The respondents associated their own solo dining experience with relaxation (mean=5.62, $SD=2.76$), enjoyment (mean=5.62, $SD=2.82$), and independence (mean=5.22, $SD=2.92$). Negative emotions such as isolation (mean=3.25, $SD=2.94$), stress (mean=3.47, $SD=3.07$), and being gazed at by other diners (mean=3.52, $SD=3.05$) had the weakest association with their own solo dining experience. Interestingly, the respondents associated negative emotions, such as loneliness ($t=-2.807$, $p=.005$), rushing ($t=-3.895$, $p<.001$), and isolation ($t=-3.050$, $p=.002$) more strongly with other solo diners than themselves. Conversely, the respondents felt more positive about themselves dining alone compared with other solo diners as seen in emotion items such as liberation ($t=2.921$, $p=.004$), relaxation ($t=4.979$, $p<.001$), and enjoyment ($t=4.769$, $p<.001$).

Proposition 4-1. In a society where solo dining is perceived as common, solo dining in Chinese restaurants is associated with positive emotions.

Proposition 4-2. Solo diners associate more negative emotions with other solo diners compared to themselves.

Table 6. Solo dining emotions

	When eating alone		Seeing a person eating alone		t	p
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
1) Lonely	4.40	3.14	4.78	3.20	-2.81	.005
2) Liberated	4.80	2.92	4.41	2.81	2.92	.004
3) Independent	5.22	2.92	5.39	2.97	-1.23	.218
4) In a rush	4.38	2.81	4.91	2.94	-3.90	<.001
5) Relaxed	5.62	2.76	4.96	2.86	4.98	<.001
6) Enjoying	5.62	2.82	5.02	2.87	4.77	<.001
7) Confident	4.93	2.90	4.71	2.94	1.74	.083
8) Isolated	3.25	2.94	3.62	2.98	-3.05	.002
9) Stressful	3.47	3.07	3.62	2.97	-1.20	.230
10) Bored	4.30	3.11	4.42	3.08	-.87	.383
11) Pleased	4.43	2.91	4.23	2.89	1.77	.077
12) Being gazed by other diners	3.52	3.05	3.70	2.89	-1.48	.139

4.5. Perceived importance of dining elements and environment

The interviewees identified food and menu items as the most important solo dining elements. When asked about what could be done to improve their solo dining experience, many interviewees emphasised a food-related experience, such as adjusting the “portion size” (Diner 3), offering “solo-friendly set menus” (Diner 4, 5, and 14), and enhancing the value for the money by providing solo diners “10% off or free drinks” (Diner 1). Several interviewees also recommended adjustments to the physical settings, such as having “communal tables” (Diner 4) or “solo tables instead of round table” as seen in traditional Chinese restaurants (Diner 2). Others considered the interaction with the staff as important.

The survey results support the interview findings in which taste (mean=8.20, *SD*=2.15) and value (mean=8.18, *SD*=2.16) were identified as the two most important factors for the solo dining experience, followed by convenient location (mean=7.80, *SD*=2.39). Other food-related items, including healthy food options (mean=7.33, *SD*=2.73), solo-friendly menus (mean=6.65, *SD*=2.65), and portion size (mean=6.75, *SD*=2.74) were perceived as highly important for solo diners. Within the service dimension, the staff’s friendliness (mean=7.05, *SD*=2.61), professional behaviour (mean=7.03, *SD*=2.64), and their ability to make the diners feel comfortable (mean=6.98, *SD*=2.69) had the highest mean values. Conversely, items measuring physical environment, ambience, and the aesthetic aspect of the food had the lowest mean values.

Proposition 5. Solo-friendly attributes, food-related attributes, and restaurant characteristics are perceived as important for solo dining in Chinese restaurants.

5. Discussion

This study explored an under-researched area, which is solo dining in a Chinese restaurant context in Macao, and it contributes to a holistic understanding of the market by using mixed methods. Specifically, the study contributes to the growing stream of research on solo dining by investigating the topic in a Chinese restaurant setting and in a Chinese cultural context, both of which have a strong emphasis on communal eating and group dining. The findings expand on existing knowledge about solo dining and shed light on the influence of contemporary social forces (e.g., the increasing single and ageing population and the changing industry structure) on Chinese food culture. Figure 1 presents the five propositions of solo dining in Chinese restaurants. The framework summarises the key findings of the study, encompassing solo dining motivations, behavioural characteristics, emotions, and important dining elements in the context of Chinese restaurants in Macao. The framework serves as a theoretical reference point for future research on solo dining in other cultural contexts and other types of dining settings.

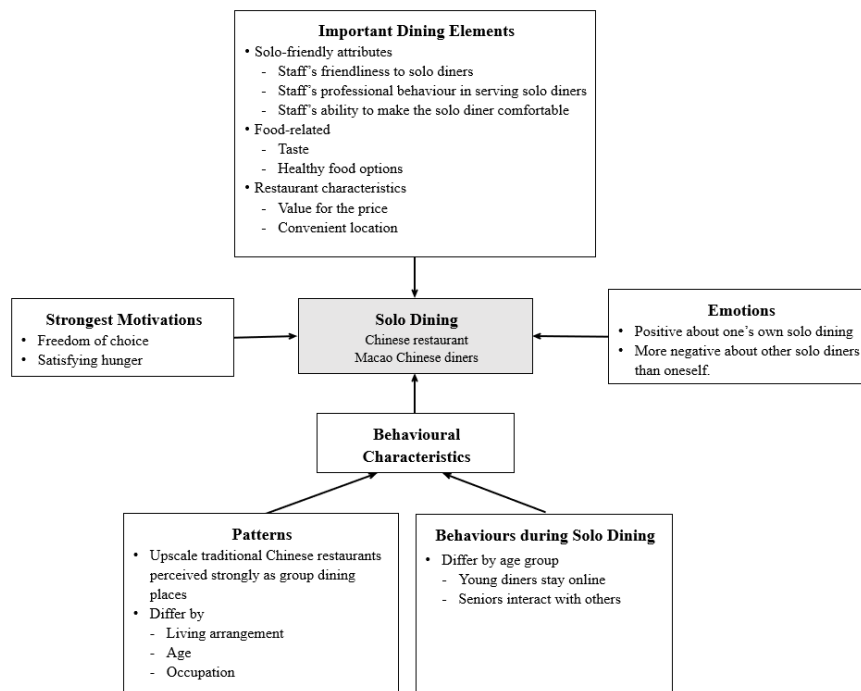


Figure 1. Propositions of Solo dining in Chinese restaurants

5.1. Theoretical Implications

In line with the literature, the findings show that upscale traditional Chinese restaurants were considered less solo-friendly because of the persistent notion that Chinese restaurants are meant for group dining (So, 2008). However, the results show that, as Chinese dishes are the most familiar type of foods for Macao Chinese (Augustin-Jean, 2002), eating in Chinese restaurants is dominant both for group dining and solo dining, and this caused a relatively high percentage of solo dining in Chinese restaurants in general. Furthermore, the unique historical and sociocultural characteristics of Macao, an urbanised region with a colonial history and a high population density (Augustin-Jean, 2002), has rendered solo dining in Chinese restaurants not only a prevalent eating arrangement in Macao but also a practice that is viewed favourably and has received positive social consensus.

High familiarity and positive attitudes towards solo dining in Macao could be further explained by Macao's regional uniqueness originating from its tourism-oriented industry structure and, hence, the dominance of shift-based working hours (Ma, 2015). This is reflected in the motivations, also in line with previous studies, in which solo dining is generally induced by work/life circumstances as well as the need for freedom (Heimtun, 2010; Moon et al., 2020; Takeda & Melby, 2017). Furthermore, the practice of sharing a table, a practice born out of space constraints in local QSRs, has made solo dining less conspicuous. This finding conforms to earlier research that suggests that familiarity with solo eating affects perceptions towards this solitary behaviour (Danesi, 2012b).

Furthermore, the study sheds light on the impact of social transitions on the perception of dining alone. In particular, the study reveals the social implications of solo dining to elderly diners, which is an under-researched but an increasingly important segment in ageing societies. This study reveals attitudinal and behavioural variations across different age groups and living arrangements. Specifically, solo dwellers and retirees are more likely to dine alone. The findings resonate with the literature (Cho et al., 2015), which suggests that solo living influences a greater acceptance of dining alone. Furthermore, the results of this study reveal significant difference in the motivation and behavioural characteristics between young and senior diners. As summarised in Proposition 3-1, young solo diners are more likely to stay online than older counterparts when dining alone. Contrastingly, social motives

and social interactions are found to be important among senior solo diners. This finding adds important insights to existing solo dining literature that has largely overlooked the social aspect, which is traditionally associated with communal eating. The extant solo dining studies have included a broad range of age groups (Brown et al., 2020; Her & Seo, 2018; Hwang et al., 2018; Moon et al., 2020), but age-related findings rarely have been discussed. In fact, age (and cultural difference) was proposed as an avenue for future research by Brown et al. (2020). From another angle, solo eating research not specific to dining in public space has conducted age-specific investigation but mostly focused on young people (Cho et al., 2015; Danesi, 2012a). In Macao, the percentage of elderly population aged 65 or above is expected to increase from 9.8% in 2016 to 19.9% in 2036 (Government of Macao Special Administrative Region Statistics and Census Service, 2020), and such an ageing society is expected to become prevalent worldwide. Therefore, the results related to senior diners provide significant implications to many societies with ageing populations. Solo dining is inevitable for seniors who have lost their partners and live alone. As was revealed in this study, interactions with other diners and restaurant employees are important social motives for retirees to dine out alone. These interactions may ease the isolation experienced by many senior solo dwellers and may positively contribute to their wellbeing. As such, this study adds to existing knowledge by unveiling the social role of solo dining in resolving isolation and loneliness experienced by elderly diners; solo dining could potentially contribute to the enhanced subjective well-being of this demographic group.

Prior research has suggested optimistic bias in which people tend to perceive themselves more favourably than they perceive others (Sproesser, Klusmann, Schupp, & Renner, 2015). In this study, two sets of questions were utilised to elicit emotions associated with dining alone and seeing others dining alone. The former set gives us an understanding of how the diners feel when they dine alone, while the latter set reveals the common images or stereotypes of solo dining (Cho et al., 2015). Negative emotions appeared to be weakly associated with the respondents' self-reported emotions. The results imply that region-specific sociocultural characteristics, which affect diners' familiarity with solo dining, may positively influence the feelings towards dining alone. Nevertheless, this study further reveals that solo diners associated more negative emotions with seeing others dining alone. The results show that solo dining is to some extent still subject to social stigma, including loneliness and isolation. This is consistent with existing literature that highlights the

stigmatisation and negative judgement of solo dining leading to loneliness, stress, and discomfort (Brown et al., 2020; Takeda & Melby, 2017). Nonetheless, this study contributes to the literature by revealing that even solo diners themselves may hold the social stigma and negative gaze against other solo diners, and the stigma is projected more strongly onto others than self. The differences in emotions with regards to self and seeing other solo diners suggest that emotions are involved differently in association with a person's gazing (Foucault, 1977) and surveillance (Lai, Lim, & Higgins, 2015) as opposed to self-reflection. The study further adds to the literature by demonstrating the optimistic bias and ambivalence in the feelings towards solo dining and the social stigma projected onto other solo diners, even by solo diners themselves, suggesting that stigma theory can be applied differently after considering self-serving bias.

This study applied and expanded the DINESCAPE model in the solo dining context and Chinese restaurant setting. In measuring the dining elements and environment in Chinese solo dining, this study identifies different aspects within the same dimensions of DINESCAPE. For instance, what solo diners considered important were the "solo-friendly" attitudes of the staff when interacting with solo diners instead of their physical appearance as proposed by Ryu and Jang (2008) in the original DINESCAPE framework. This study, therefore, contributes to the body of knowledge by suggesting the addition of social servicescape, focusing on guest interaction in the "service staff" dimension of DINESCAPE. New measurement items were developed to incorporate the social servicescape into the existing model. Furthermore, the physical environment, compared to food-related attributes, value, and convenient location, was found to be less important for solo diners in Macao.

5.2. Managerial Implications

The current study provides the following managerial implications. Above all, it encourages managers to utilise behavioural and demographic market segmentation efficiently in order to make solo diners profitable market segments. As indicated in the findings, managers appear to consider the solo dining segment as less profitable in terms of the money spent per table. This is especially the case in upscale traditional Chinese restaurants where table sharing is less feasible. This can be addressed by efficiently utilizing the dining space through off-peak time promotion, targeting retirees who dine alone frequently and have more flexibility in dining time than those who are restricted by work. For QSRs, younger diners working or

studying in proximity could be a viable market segment during lunch service. As for dinner service, targeting solo dwellers would be feasible.

In addition, managers in this region are advised to consider different solo dining behaviours across different age groups, such as the preference of the younger segment for solitary dining experiences and the tendency of the older and repeat customers to communicate with the employees and other diners. Such an understanding is pivotal in delivering service that facilitates diners' social needs. Furthermore, the study has implications for restaurant managers in terms of which dining elements and environment should be addressed to attract Chinese solo diners. Chinese restaurant managers are advised to pay attention to the food quality, accessibility to the restaurants, and the value for the price. The pricing strategy can be enhanced by adjusting the portion size and introducing more solo-friendly menu options. Finally, restaurant managers need to be ready for the rapid social changes in contemporary China. Although living alone does not necessarily mean that people will dine out alone or feel lonely, it is important for the restaurant managers to recognise that dining out alone is increasingly a deliberate choice and that solo diners could be a lucrative market segment.

5.3. Limitations and Future Research

Despite the contributions, this study was limited by its exploratory nature, and the scope of the study was confined to local solo diners. Simple demographic variables were considered when exploring the variations of solo dining perceptions and patterns. The results, therefore, warrant further clustering of the diners in Macao, which could provide further understanding of different dining segments with different attitudinal and behavioural solo dining patterns. Future research is encouraged to conduct detailed market segmentation analyses on solo diners in Macao based on a combination of demographic, psychographic, and behavioural characteristics to identify solo diners with common characteristics for effective marketing strategies and service designs. Further investigations of elderly populations in future studies are expected to benefit not only the restaurant industry but also the global ageing societies. It is especially timely and relevant in that the current emergence of pandemics, such as COVID-19, and the new normal after the pandemic to call for attention to an isolated elderly population who, as seen in this study, regards dining out alone as an opportunity for social interactions. An investigation into the impact of solo dining on the quality of life of older solo

dwellers and in particular, the role of third places such as dining places on the enhancement of social lives and loneliness of the elderly may be a fruitful research avenue.

Furthermore, cross-cultural investigations of solo dining patterns and emotions are warranted to provide deeper insights into the understanding of solo dining trends in relation to the sociocultural contexts. This study further suggests that cultural factors need to be considered in understanding solo dining perceptions and patterns. The results call for careful consideration of the sociocultural context in understanding why the solo dining pattern and general notion towards solo dining vary depending on the types of restaurants, across different regions within a country as well as across different countries. Future studies are encouraged to advance the theoretical development in this area. In particular, further research is encouraged to compare the DINESCAPE between upscale and casual Chinese restaurants and to go beyond DINESCAPE in better understanding and evaluating the importance of the physical environment and dining elements to solo diners. The propositions and relationships among the various dimensions presented in the conceptual framework require further empirical validation to provide further insights into understanding solo dining, which is an emerging social trend. Lastly, further academic examinations of the relationships among various domains of solo living and working, such as solitary leisure, solo travelling, and one-person businesses, among others, are warranted.

6. Conclusion

Because of the rapid changes of the Chinese society, solo diners are anticipated to be increasingly important to ensure sustained profitability in restaurant management. This mixed-methods study explored the solo dining pattern in Chinese restaurants in Macao, focusing on the motivations, behavioural characteristics, and experiences of solo dining, thus, providing insights into underlying sociocultural characteristics in the salience and social acceptance of solo dining, as well as the strategies to cater to Chinese solo diners.

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