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To use or not use:

Understanding Chinese consumers' intention towards “serving chopsticks”

Abstract

Serving chopsticks (or “community-use chopsticks”) refers to chopsticks that are used to serve food from a shared dish to an individual’s plate, they are used because of concerns about hygiene. This study aims to examine consumers’ perceived values towards serving chopsticks, and to provide an insight into the formation of consumers’ intentions to use serving chopsticks. A mixed-method approach was utilized to collect data; interviews were conducted with 62 consumers, followed by a web-based survey with 630 consumers. Qualitative analysis and structural equation modelling analysis were used in the data analysis. Qualitative analysis highlighted four dimensions that contribute to consumers’ perceived value of serving chopsticks: functional, altruistic, symbolic, and emotional values. Structural equation modelling analysis illustrated that the more positive values consumers endorse towards serving chopsticks, the stronger they believe not using serving chopsticks has negative consequences. Also, the more they feel responsible for problems caused by not using serving chopsticks, the more they feel personally obliged to use serving chopsticks. Moreover, subjective norm was confirmed as having positive impacts upon consumers’ intention to use serving chopsticks. This study contributes to the development of the value-belief-norm theory through exploring the dimensions of the value construct. In addition, the results can assist governments and industry in developing more effective strategies that promote the use of serving chopsticks.

Key words: Serving chopsticks; Consumers’ intention; Chinese consumers; perceived value; VBN theory

1. Introduction

Chopsticks have been used in China for 5,000 years and have been utilized by Chinese people to share food since the 12th century (Wang, 2016). Chopsticks play a significant role in Chinese history and culture. According to Kuo (2020), communal eating is a long-held tradition in China, and people usually use their own chopsticks to pick up food from the shared dishes and then eat with the same chopsticks. Sharing food is indispensable to Chinese culture because the act expresses friendliness and fondness (Fifield, 2020).

Coronavirus disease (COVID-19) is a Public Health Emergency of International Concern (PHEIC) that has affected countries worldwide (WHO, 2020). COVID-19 is a potential threat to global public health (Peng, 2020). According to World Health Organization (2022), there have been more than 350 million confirmed cases of COVID-19 worldwide, including more than 5 million deaths by 25 January, 2022. Since the outbreak of COVID-19 in December 2019, there are increasing concerns that the tradition of sharing food using one's own chopsticks could accelerate the transmission of the virus (Health Times, 2020; The New York Times, 2020). Chinese people now have increasing awareness of the risk of contracting COVID-19, and other infectious diseases such as helicobacter pylori and hepatitis A virus, through using own chopsticks during communal eating (CGTN, 2020; Li et al., 2021). Li et al. (2021) revealed that consumers' food and health related concerns might increase their intentions to use serving chopsticks.

Serving chopsticks (known as “gong kuai” in Chinese) are chopsticks utilized to serve food from a shared dish to a person's plate, and are used because of concerns about hygiene (China Daily, 2018). The color, length, logo of serving chopsticks often differ from one's own set of chopsticks, and the serving chopsticks need to be placed back to the dishes after one has served themselves. To deal with the potential health risks of an individual's chopsticks being used to

eat with, and then placed into communal dishes during meals, the Chinese authorities have launched a “dining etiquette campaign” to convince Chinese people to utilize serving chopsticks to move food from dishes to bowls after the outbreak of COVID-19 (Kuo, 2020). A similar campaign was launched to promote the use of serving chopsticks after the 2002 SARS epidemic. However, public reactions were not good at that time and the campaign finished when the epidemic ended. This might be due to the Chinese traditional notion that people enjoy the lack of distance when drinking and eating together (Wang, 2006). Among Chinese families or friends, the act of asking for serving chopsticks to be provided could be embarrassing, or perceived as rude, because it seems the person making the request might dislike sharing with others. Therefore, given the big contrast with traditional Chinese customs, it might be difficult for many Chinese consumers to immediately adopt the new behavior of using serving chopsticks (Zhang et al., 2020). Getting Chinese people to change their long-time habit of sharing meals together and using serving chopsticks is not an easy task. Nevertheless, the practice of a person using their own chopsticks to pick up food from shared dishes could facilitate the spread of germs through saliva (WHO, 2020). How consumers perceive serving chopsticks, and how their perceptions might affect their intentions to use serving chopsticks remain unexplored. Thus, it is important to understand consumers’ intentions with respect to the promotion and utilization of serving chopsticks.

In addition to be viewed as a health-related behavior, the use of serving chopsticks is socially recognized as implying an individual’s support and responsibility for social health and safety. According to Baumeister and Bushman (2008), complying with socially recognized behavior is a form of prosocial behavior. Prosocial behaviors refer to all behaviors aimed at bringing benefits or well-being to others (Eisenberg et al., 2015). Altruistic behaviors have costs that individuals are required to pay, these costs can be financial, practical or emotional (Bartlett &

Desteno, 2006). The use of serving chopsticks assists in creating a civilized and hygienic social dining environment, thus it is perceived as prosocial behavior. Consequently, taking the use of serving chopsticks as a form of prosocial behavior, this study draws on the value-belief-norm (VBN) theory to examine Chinese consumers' perceptions and behavioural intentions towards serving chopsticks. The VBN theory is used to explain consumers' environmental behaviors (Stern et al., 1999). The VBN theory was perceived as advantageous in explaining consumers' environmental behaviors because it takes essential elements, such as values and ecological worldviews, into account (Choi et al., 2015). It has been effective in examining consumers' prosocial motives through considering rational choice models (Choi et al., 2015; Han, 2015).

In addition, this study was to explore the dimensions of the "value" construct of the VBN model in the prosocial contexts. Consumers' perceived value is defined as a high order of cognitive structure, which usually consists of multiple dimensions (Ahn and Thomas, 2020). However, the specific value dimensions of the VBN theory in the prosocial context remain unexplored. Therefore, to better understand consumers' perceived values towards using serving chopsticks, this study utilizes the qualitative method to examine the value dimensions prior to testing the VBN theory through quantitative method.

This research contributes, both theoretically and practically, to the body of knowledge. Firstly, it adds to the evolving literature by examining how Chinese consumers decide to use serving chopsticks. Secondly, this study offers a nuanced understanding of consumers' perceived values towards using serving chopsticks, which has not been previously examined. Thirdly, this study can assist governments and the catering industry in developing effective marketing strategies advocating the use of serving chopsticks.

2. Theoretical background and hypotheses development

2.2.1 Serving Chopsticks

Family-style eating is an authentic expression of Chinese culture, where people get many dishes to share together instead of ordering and eating food individually. Whether at home or in a restaurant, people will usually sit around a table and pick food, using their own chopsticks and spoons, from different dishes served in the center of the table (Wang, 2006). The tradition of communal meals can be dated back to as early as the Song Dynasty (960-1279). Chinese culture highlights completeness and family union, and Chinese cuisine emphasizes color, shape, and taste. Therefore, many dishes that are usually cooked whole would be affected if they were divided into smaller portions.

Dish-sharing using one's own chopsticks is a way for Chinese people to convey affection and intimacy (New York Times, 2020). Parents use their own chopsticks to get food for their children as a sign of care; the younger generation use chopsticks to pick up food for their grandparents out of respect; couples place food to each other's bowl using their own chopsticks as an expression of love; and hosts do the same for their guests to extend welcome. The culture of the Chinese dining table is thus often perceived as very emotional and brings people closer in an equal manner.

However, the outbreak of COVID-19 has raised the public's attention towards using serving chopsticks. Many consumers noted that the COVID-19 pandemic made them realize viruses and bacteria were everywhere. People perceived that the act of sharing food using their own chopsticks meant that it was unavoidable that saliva was exchanged, and bacteria spread, when eating together. Although there is no direct scientific evidence proving the risk of spreading COVID-19 through chopsticks, Chinese health officials claim that sharing food with own

chopsticks could increase the possibility of spreading germs through saliva (Brehaut, 2020). Diners are thus encouraged to use designated serving chopsticks for dividing and serving shared food. A ‘dining table revolution’ started across China. Chinese authorities conducted advertising campaigns with slogans such as: “The distance between you and civilized dining is just one pair of serving chopsticks.” Nevertheless, promoting the use of serving chopsticks is not easy. Some Chinese consumers are concerned that the use of serving chopsticks would stretch the distance between themselves and their families and friends. Some complain that suggesting the use of serving chopsticks could be embarrassing as it looks like they assume their company are infected with the virus. Thus, the development of relevant and effective promotional strategies is necessary.

Despite the highlighted significance of promoting the use of serving chopsticks, very few studies have examined consumer perceptions and behaviors towards serving chopsticks. Previous studies concerning consumer behaviors in the hospitality literature usually follow utility logic, emphasizing the influence of perceived costs and benefits (Chen and Hu, 2010; Cho et al., 2020). However, as noted, using serving chopsticks is recognized as pro-social behavior thus indicating an individual’s support and responsibility for wider social health and safety. Therefore, given consumers’ pro-social motives underlying the behaviors of using serving chopsticks, this study examines consumers’ perceptions and behaviors towards serving chopsticks using the VBN theory.

2.2 Value-belief-norm (VBN) theory

Stern et al. (1999) first introduced the VBN theory to examine individuals’ pro-environmental behavior. The VBN theory determines the correlation between four constructs including values, personal beliefs, personal norms, and behaviors (Stern, 2000; Choi et al., 2015). In particular,

the VBN theory indicates that individuals' pro-environmental intention and behavior is influenced by personal norms. Personal norms are stimulated by personal beliefs, which include individuals' awareness of consequence and ascribed responsibility of taking corrective actions (Stern, 2000; De Groo et al., 2007). Additionally, personal beliefs are activated by values (Hiratsuka et al., 2018; Kiatkawsin and Han, 2017). The VBN theory has been widely employed in an environmentalism context. However, individuals' pro-social intentions and behaviors can also be examined using the VBN theory.

Specifically, the VBN theory was employed by a number of studies across different countries and cultures examining individuals' self-reported behaviors and behavioural intentions. Li et al. (2018) employed the extended VBN theory to examine the intentions of residents regarding the municipal solid waste separation in China. Hiratsuka et al. (2018) utilized the VBN theory to test individuals' acceptability of the car pricing policy in Japan. Ünal et al. (2019) tested the VBN theory to predict whether the Russian public supported policies to reduce car use. Youn et al. (2020) utilized the VBN theory to explore diners' intentions to visit traditional restaurants in China. Therefore, the VBN theory can be utilized to understand individuals' environmental protection behaviors, as well as their prosocial behaviors. The personal values, beliefs or norms in the VBN theory motivate individuals to perform specific actions to achieve a social goal (Schwartz and Howard, 1981; Youn et al., 2020). Consequently, the current research could employ the VBN theory to examine consumers' intentions to act pro-socially by using serving chopsticks.

In addition, this study explores the extended VBN model by including another significant construct: subjective norm. Subjective norm is noted as an "individuals' perceptions of social pressure to perform or not to perform the behavior" (Ajzen, 1991, p.188). According to Hsu

and Huang (2016), in a collectivistic society like China, Chinese people are less individualistic, usually place group goals above individual goals, and highly value the cohesiveness of the group. Moreover, prior studies (Chen, 2020; Youn et al., 2020) reveal that the inclusion of both personal norms and subjective norm in the model would increase the explanatory power of individuals' behavioural intentions. Consequently, consumers' intentions to use serving chopsticks might be affected by both personal and subjective norms.

2.2.1 Values and beliefs

According to Schwartz (1992, p.21), value refers to “a desirable trans-situational goal varying in importance, which serves as a guiding principle in the life of a person or other social entity”. Personal values have been widely examined in prior research (Arsil et al., 2018; Chen et al., 2020; Wiedmann et al., 2014). According to Fall (2000), complex ‘values’ are often composed of different variables. Stern (2000) advocated three different kinds of value components in the environmental protection studies including biospheric, altruistic, and egoistic. As no previous research ever investigated the value orientations concerning the use of serving chopsticks, qualitative research is planned prior to the quantitative research to examine consumers' perceived values of using serving chopsticks.

The direct relationship between values and behaviors are widely acknowledged in literature, and it is suggested that the relationship might be enhanced to include mediating variables like beliefs or personal norms (Stern, 2000; Youn et al., 2020). In particular, there are two kinds of beliefs: awareness of consequences (AC) and ascribed responsibility (AR). AC refers to individual's level of consciousness of adverse consequences for valued objects (Han, 2015). AR is defined as a belief that individuals could avert potential negative consequences (Kiatkawsin and Han, 2017).

The VBN model suggests the sequential process from values → adverse consequence → ascribed responsibility (Stern et al., 1999). Previous research (Kiatkawsin and Han, 2017; Li et al., 2018; Ünal et al., 2019) noted that consumers' values were in positive correlation with their consciousness of adverse consequences, and consumers who realize the adverse consequences tend to feel more ascribed responsibility. Hence, the following hypotheses are presented:

H1. Perceived value has a positive influence on consumers' awareness of consequence.

H2. Awareness of consequences has a positive influence on consumers' ascribed responsibility.

2.2.2 Beliefs, personal norms and behavioural intentions

A personal norm is defined as the “moral obligation to perform or refrain from specific actions” (Schwartz and Howard, 1981, p.191). Personal norm suggests how individuals should behave and comply with their beliefs (Schwartz and Howard, 1981). Many studies (Kiatkawsin and Han, 2017; Ünal et al., 2019; Youn et al., 2020) have supported the influence of beliefs on personal norms. In particular, those studies examining consumers' environmental protection behaviors reveal that consumers' beliefs of being able to prevent or escalate the potential consequences influences their pro-environmental personal norms. Therefore, with regards to the current research context, it is proposed that consumers' ascribed responsibility of the negative consequences activate individuals' personal norms to support the use of serving chopsticks.

In addition, the final construct of the VBN model assesses consumers' intention to use serving chopsticks in the current study. According to Kiatkawin and Han (2017), intentions are

important indications of behaviors. The VBN model proposes the positive influence of personal norms on consumers' behavioural intentions (Stern et al., 1999). It was further supported by a number of studies (Choi et al., 2015; Ünal et al., 2019; Youn et al., 2020) indicating the significant influences of personal norms on individuals' pro-environmental intentions. Consequently, this work proposes the following hypotheses:

H3. Ascription of responsibility has a positive influence on consumers' personal norms.

H4. Personal norm has a positive influence on consumers' intentions to use serving chopsticks.

2.2.3 Subjective norms and behavioural intentions

Although subjective norm was not included in the original model, many studies (Domina and Koch, 2002; Jansson et al., 2010) support the direct impacts of social consciousness on consumers' behavioural intentions. Subjective norm is a significant predictor of consumers' intentions (Małecka et al., 2022). In particular, Han (2015) noted the significant influences of individuals' subjective norm on their behavioural intentions to choose a 'green' hotel. According to a study by Youn et al. (2020), consumers' subjective norm increases their behavioural intention to choose a traditional restaurant. Therefore, we posit the following hypothesis:

H5. Subjective norm has a positive influence on consumers' intentions to use serving chopsticks.

The proposed theoretical framework is depicted in Figure 1. There are six constructs involving five relationships. The specific hypothesized relationships are revealed in Figure 1. Prior to

testing the conceptual model, a qualitative study was planned in order to examine the unexplored “value dimensions”.

Please Insert Figure 1

3. Methodology

This research applied a pragmatic paradigm, and adopted a sequential mixed-method approach involving a qualitative and a quantitative component (Creswell et al., 2003; Tashakkori & Teddlie, 2003). Specifically, a qualitative phase was designed followed by a quantitative phase of data collection and analysis to expand on the initial findings. The qualitative stage was initially designed to explore consumers’ perceived values towards serving chopsticks. This exploratory stage of research gave rise to the identification of the value dimensions of a theoretical model to be examined in the quantitative stage. A quantitative survey was conducted to empirically test the proposed model.

3.1 Study 1: Qualitative study

3.1.1 Data collection and sample population

With the purpose of examining the attributes of serving chopsticks that contribute to consumers’ perceived value, qualitative research was conducted prior to assessing the proposed theoretical model. In particular, interviews were carried out with domestic Chinese consumers following the qualitative approach advocated in previous research (Sirieix et al., 2011; Yang et al., 2018). Participants were recruited covering different genders, age groups, and educational backgrounds using a combination of snowball and purposive sampling methods (Chen & Chen, 2015; Shankar et al., 2001). In particular, the interview invitation was initially

sent out to researcher's personal connections via WeChat messages and emails, and then further disseminated via recommendation. According to Patton (1990), the sample size could terminate at the point of redundancy when there was no new forthcoming information. In total, 62 interviews were conducted in January 2021.

Purposive sampling was adopted to select interviewees from different subgroups. The age distribution of the interviewees was as follows, 14 interviewees (22%) were between 18-29 years old; 12 interviewees (19%) were aged between 30-39; 12 interviewees (19%) were between 40-49 years old; 12 interviewees (19%) were aged between 50-59, and 12 interviewees (19%) were above the age of 59. The gender groups are evenly distributed with 31 male and 31 female participants.

Potential interviewees were noted of the research purpose and participated in the interview after giving their consent. A semi-structured interview method was utilized to give flexibility. Interviews were conducted to collect interviewees' opinions about their perceived value and behavior intentions towards serving chopsticks. Two main questions were asked: (1) "How do you perceive serving chopsticks?", (2) "Do you use or intend to use serving chopsticks when sharing food with others?" In addition to these two main questions, interviewees are also invited to comment freely on issues of serving chopsticks. The interviews were audio recorded in Mandarin, which were transcribed into Chinese, and then back-translated into English. In order to ensure the validity of the interview data, the interviewer instantly listened to the audio and transcribed verbatim once the interview was finished (Rutakumwa et al., 2020). The interview transcript was then sent to the interviewee for approval to ensure it accurately reflected interviewee's opinions. This member-checking process assisted in further ensuring the validity of the data (Moroko & Uncles, 2008).

3.1.2 Data analysis

To analyze the qualitative data, QSR NVivo 12 software was adopted. Transcripts were imported into NVivo 12 for data coding and thematic analysis. Three researchers analyzed the 62 transcripts; firstly, breaking down the data into meaningful units (e.g phrases, sentences or paragraph), each unit is given a label, and then these unites were grouped into specific codes (Table 1) (Creswell, 2007). The use of three researchers provides consistency, clarity and objectivity of the coding process (Strauss and Corbin, 1998). Next, the data codes were checked for patterns and organized into different themes during the axial coding process (Table 2) (Creswell, 2007). In order to protect the information of interviewees, pseudonyms was employed in the analysis process (Autio et al., 2013).

Please Insert Table 1

Please Insert Table 2

The main aim of the data analysis is to answer the research question concerning consumers' perceived values of serving chopsticks. In particular, it is intended to examine the dimensions of the "value" construct of the VBN model. The findings, presented in Table 2 and Table 3, answered the research question through the four themes (functional value, altruistic value, symbolic value, and emotional value) that revealed consumers' perceived values of serving chopsticks. In particular, Table 3 also revealed the level of importance perceived by the consumers towards each theme. As such, a better understanding is gained with regard to consumers' perceptions, and the dimensions of the "value" of serving chopsticks. More details are further presented below.

Please Insert Table 3

3.1.2.1 Consumers' perceived values towards serving chopsticks

Functional Value

“Functional value” is the most significant value of using serving chopsticks as perceived by the Chinese consumers. This finding seems to support previous research (Ghali, 2020; Watanabe et al., 2020) highlighting the consistent significance of a product's perceived functional value on consumer evaluations of the product. Many consumers think that serving chopsticks can effectively prevent infections with germs and assist in ensuring good food hygiene. For example, it is evidenced in two interviewees' statements:

“Viruses and bacteria are hidden everywhere. We are facing their threat everywhere. During communal eating, if we don't use serving chopsticks, the number of bacteria could be much higher. Using serving chopsticks can effectively prevent the spread of the virus and bacteria.”

“I was not used to use serving chopsticks at all. However, the outbreak of the COVID-19 pandemic has made me realize that it is necessary to use serving chopsticks to ensure the hygiene of meals and prevent the spread of infectious diseases during our communal eating.”

Symbolic value

“Symbolic value” is highlighted as a fairly important aspect of consumers' perceived value. Symbolic value refers to an overall representation of experiential value, satisfying the self-enhancement and sensory pleasure needs of consumers (Wu et al., 2021; Workman et al., 2011). In this study, Chinese consumers perceive the use of serving chopsticks as a symbol of dining

etiquette, reflecting the concept of civilized dining. It is evidenced in two interviewees' statements below:

“Using serving chopsticks highlights the significance of dining etiquette. The use of serving chopsticks can promote healthy dining. It also shows the combination of Chinese dining culture and modern civilized etiquette.”

“Using serving chopsticks is a big step forward in our dining culture. The use of serving chopsticks not only reflects the concept of civilized dining, but also reflects my personal qualities.”

Emotional value

“Emotional value” is identified as an important dimension of consumers' perceived value of using serving chopsticks. Emotional value is defined as the affective states generated from a product or service (Mingione et al., 2020). It is corroborated by many researchers (Chi and Kilduff, 2011; Mingione et al., 2015) that emotional value is a significant dimension of consumer perceived value. Some consumers explain that they enjoy using serving chopsticks, and they feel more comfortable and secure by using serving chopsticks when eating with others. The following statements from the interviewees are presented as evidences.

“I was not used to use serving chopsticks as I thought it would make the others, I was eating with think I disliked them. However, I now enjoy using the serving chopsticks as I realize using serving chopsticks is a sign of respect for other people's health.”

“My job often involves going out to dinner with different people. Therefore, I pay a lot of attention to use serving chopsticks when I go out as it makes me feel more comfortable and secure.”

Altruistic Value

“Altruistic value” contributes to the perceived value towards serving chopsticks. This finding is supported by Ahn and Thomas (2020)’s study that altruistic value is one category related to consumers’ perceived value. Many consumers note that using serving chopsticks is coherent with their ethical values, and it is beneficial for the health and safety of other diners. The following quote is shown as evidence:

“I think using serving chopsticks has an ethical value, especially when dining with many people in social occasions. Using serving chopsticks is not only responsible for our own health, but also responsible for the health of others”.

3.1.2.2 Consumers’ intentions to use serving chopsticks

The analysis revealed that the 62 interviewees recognized the values of serving chopsticks to differing extents, and indicated their positive intentions to use serving chopsticks. In particular, most interviewees mentioned that they were not paying attention to the use of serving chopsticks, however, the outbreak of COVID-19 pandemic has greatly changed their risk perceptions about sharing food using their own chopsticks, and improved their intentions to use serving chopsticks. It is evidenced in the following statements:

“Because of the COVID-19 pandemic, I realized that it is not safe to use our own chopsticks to share food during communal eating. I now insist on using serving chopsticks when dining out, especially dining with unfamiliar people.”

“Sharing food using own chopsticks are not able to avoid the saliva exchange and spread of viruses and bacteria brought by people with chopsticks during communal eating. I am willing to use serving chopsticks when dining out.”

However, some interviewees noted that they often forgot to use serving chopsticks if not provided by the restaurant, and they felt awkward to ask for serving chopsticks in front of their dining companion. They expressed their appeal for restaurant to take the initiative to provide serving chopsticks. It is evidenced in two interviewees' statements below:

“Although I am very aware of the importance of serving chopsticks when dining out, I often forgot about them if the restaurant does not provide. I guess we get used to use our own chopsticks to share food, and habit are very hard to change. I think restaurant has the responsibility to take the initiative to provide serving chopsticks.”

“If the restaurant does not provide serving chopsticks, I usually forget about asking for them. Even if I remember about serving chopsticks, if my dining companions do not need them, I will definitely not ask for them as it will make my companions and myself awkward.”

In addition, the interview further revealed that interviewees' willingness to use serving chopstick might vary in intensity on different situations. Specifically, most interviewees expressed highly positive intentions to use serving chopsticks when dining with unfamiliar people as they were not sure about their health conditions. However, some interviewees mentioned that their willingness to use serving chopsticks when dining with families were not as strong as when dining with unfamiliar people because families were perceived as close. However, for families with children, they noted that families insisted on using serving chopsticks, even when dining at home, as they were concerned that using their own chopsticks to share food might harm the children.

3.1.3 Trustworthiness of qualitative study

To ensure the trustworthiness of qualitative study, Lincoln and Guba (1985) proposed four criteria including credibility, dependability, transferability, and confirmability. Following Lincoln and Guba's (1985) criteria, this study has established credibility, dependability, transferability, and confirmability through the use of following methods. In particular, this study established the data credibility through clear evidence of the transcribed text and careful selection of the interviewees. Dependability was ensured through the involvement of multiple researchers. Researchers were asked to conduct separate analysis for the same data and discuss the differences. In order to warrant transferability, the identities of the interviewees were protected through employing pseudonyms as to encourage interviewees to express their views freely. Thick description could assist in the findings to be transferable to other times or settings. In terms of data confirmability, an audit trail was utilized and direct quotes were used to report the results. When reporting the results, interviewees' pseudonym and the page number are cited.

3.2 Study 2: Quantitative study

3.2.1 Development of research instruments

A quantitative approach was utilized to examine the hypothesized relationships of the theoretical model. The questionnaire consists of six sections. Section 1 measures the consumers' values towards serving chopsticks. In particular, functional, symbolic, emotional, and altruistic values were measured using items derived from the interviews. Section 2 assesses consumers' consciousness of adverse consequences. Three items were drawn from Kiatkawsin and Han (2017). In section 3, ascribed responsibility was also examined using three items adapted from the studies by Li et al. (2018). Section 4 assesses consumers' personal norm using items adapted from published studies (Choi et al., 2015; Han, 2015). In section 5 and 6, consumers' subjective norm and intention to use serving chopsticks were assessed with items drawn from Han (2015) and Youn et al. (2020).

The items for the questionnaire were initially derived from previous literature (Ahn and Thomas, 2020; Choi et al., 2015; Han, 2015; Kiatkawsin & Han, 2017; Li et al., 2015; Youn et al., 2020) with sufficient reliability and validity. In consideration of the interview result, the wording of the items was updated and amended accordingly. For example, Youn et al. (2020) proposed a measurement item “Most people who are important to me think that I should eat at a traditional restaurant” for the construct of “subjective norm”. The item was adapted into “Most people who are important to me think I should use serving chopsticks when dining” for the current research. More details regarding the development of questionnaire items are shown in Table 4. Respondents were asked to evaluate each item using a 5-point Likert scale.

Please Insert Table 4

3.2.2 Data collection

The questionnaire was conducted using a Chinese online survey platform named “Wenjuanxing” spanning four weeks in March, 2021. The respondents were from diverse geographical areas in China. A screening question was provided at the beginning of the survey to ensure the respondents knew what serving chopsticks are. Prior to conducting the online survey, a pretest was conducted with 50 individuals, including professionals from the researcher’s institution, to examine the reliability and validity of the questionnaire, and to improve its wording and clarity. The questionnaire was slightly modified for the formal data collection. Specifically, a number of 668 Chinese respondents participated in the formal survey, and 38 responses were discarded due to incomplete data and low quality. Therefore, 630 valid responses were obtained.

3.2.3 Data analysis

This study first utilizes SPSS to analyze the profiles of samples, and then employs partial least square based structural equation modeling (PLS-SEM) to examine the scale accuracy and structural model (Hair et al., 2016). PLS-SEM is a well-established technique, which is becoming increasingly significant in explaining consumer behavior in research studies (Fakih et al., 2016). It is a component-based approach effective for both predictive applications and theory building (Gotz et al., 2010). Therefore, PLS-SEM was employed for the current research. For data analysis, the data was firstly examined through SPSS to ensure its quality prior to the analysis with SmartPLS. Common method bias was then checked. Because PLS is also effective in processing a dataset that is not normalized distributed (Hair et al., 2016), the normal distribution assumption of the data was not examined. Then, the analysis starts with evaluating the reliability and validity of the measurement model through SmartPLS. Next, the structural model is estimated through assessing the hypothesized relationships among the constructs. Last, bootstrapping analysis was conducted to evaluate the significance of the hypothesized relationships.

4 Results

4.1 Profile of samples

The descriptive analysis presents that among the 56.5% are females, and 43.5% are males. Female respondents marginally outnumbered male respondents. In terms of age, the two most dominant age groups are the age group 26-30 (29.8%), and the age group 18-25 (26.7%). The sample appears to be characterized as being well educated with approximately 53.5% have college education or beyond. This result might be explained by the expansion of China's higher education system (Li et al., 2014).

4.2 Non-response bias

In order to check the potential problem of non-response bias, early responses (first 20%) were compared with late responses (last 10%) (Armstrong and Overton, 1977). The results revealed that there is no statistical difference between early and late responses for perceived value, awareness of consequences, ascribed responsibility, personal norm, subjective norm, and intention to use serving chopsticks as indicated by p-values of more than 0.1. Therefore, the current research has no concern for non-response bias.

4.3 Common method bias

Common method bias is a significant concern for social researchers. In order to confirm that the current research is not affected, both procedural and statistical measures were utilized. In terms of procedural measures, the measures of the variables were obtained from different sources, and respondent anonymity were protected during the data collection. As for statistical measures, a post hoc Harman single-factor analysis was conducted after data collection, as suggested by Podsakoff et al. (2003). In particular, the analysis was to ensure the variance of the data was not explained by one single factor. The results revealed the variance explained by one single factor was 35.074%, within the acceptable threshold (40%). Consequently, the current research is free of common method bias.

4.4 Goodness of model fit

According to Henseler et al. (2016), the goodness of model fit should be assessed prior to the examination of the measurement and the structural model. Hair et al. (2017) suggested a conservative approach could be adopted to examine the goodness of model fit in PLS-SEM context. In particular, a standardized root mean square residual (SRMR) value of less than 0.09 or a root mean square residual covariance (RMSteta) value below X indicates good model fit.

In this research, the analysis through SmartPLS software indicates an SRMR value of 0.068, which is below the threshold value of 0.09. Therefore, the model indicates good fit.

4.5 Assessment of measurement model

To assess the measurement model, reliability and validity measures were employed. Specifically, the measurement model reliability was assessed using composite reliability, Cronbach Alpha, and factor loading. Table 5 (below) presents the Cronbach's Alpha values of constructs ranged from 0.827 to 0.918, and composite reliability values ranged from 0.897 to 0.948. These values both exceeded the suggested threshold of 0.70. Therefore, the data indicates internal consistency reliability (Hair et al., 2012). In addition, Table 5 reveals that all factor loadings are above the threshold of 0.70, suggesting the indicator reliability.

Please Insert Table 5

In terms of the model validity, with all constructs' average variance extracted (AVE) values (as shown in Table 6) above 0.5, the measurement model is indicated of satisfactory convergent validity (Henseler et al., 2009). To assess the discriminant validity, Fornell and Larcker (1981)'s criterion was utilized. As the AVE for each construct exceeded the variance explained between variables, the discriminant validity of the measurement model is established. Therefore, the measurement model was perceived to be sufficiently reliable and valid to continue the assessment of the structural model.

Please Insert Table 6

4.6 Assessment of structural model

In terms of the evaluation of structural model, the potential collinearity issue was checked (Sarstedt et al., 2014). With all constructs' variance inflation factor (VIF) values less than the threshold of 5 (Diamantopoulos and Winklhofer, 2001), there are no collinearity issues with the latent variables. Second, the quality of the structural model was examined through the coefficient of determination (R^2 value) and predictive relevance (Q^2 value). Table 7 shows the R^2 value of the constructs in this study ranged from 0.579 to 0.903, which are above the minimum suggested value of 0.10 (Chin, 1998). Consequently, the structural model has sufficient predictive validity. Next, the Stone-Geisser's Q^2 value was calculated using the blindfolding technique to examine the model's predictive relevance (Stone, 1974). With Q^2 values of the constructs greater than 0, the model's predictive relevance was confirmed. Last, the bootstrapping approach was applied based on 5000 resamples to examine the significance level of the analysis. The significance testing results of the model relationships are presented in Table 8.

Please Insert Table 7

Please Insert Table 8

Specifically, perceived value was confirmed positively influence awareness of consequences, supporting Hypothesis 1 ($\beta = 0.761$, $p < 0.01$). Hypothesis 2 assumed the significant influences of awareness of consequences on ascribed responsibility. The results provided support for Hypothesis 2 ($\beta = 0.812$, $p < 0.01$). Next, ascribed responsibility was shown in positive correlation with personal norm ($\beta = 0.901$, $p < 0.01$), supporting Hypothesis 3. Hypotheses 4 and 5 predicted the significant impacts of personal norm and subjective norm on consumers' intentions to use serving chopsticks. The results supported Hypothesis 4 at $\beta = 0.865$, $p < 0.01$, as well as Hypothesis 5 at $\beta = 0.105$, $p < 0.01$.

In addition to the hypothesized relationships, the analysis results also showed the contribution of different value dimensions to consumers' perceived value of serving chopsticks. As revealed in Figure 2, with a coefficient of 0.787, functional value contributes the most to consumers' perceived value of the serving chopsticks, followed by altruistic value (0.742), symbolic value (0.715), and emotional value (0.707).

Please Insert Figure 2

5. Discussion

This paper aims to evaluate the decision-making process of consumers' intentions to use serving chopsticks through the extended VBN model. First, in term of value construct within the VBN model, little is revealed about Chinese consumers' perceptions towards the value of serving chopsticks, therefore in-depth interviews were initially undertaken. According to the interview results, consumers' perceived values of serving chopsticks consists of functional, altruistic, symbolic, and emotional values. In particular, the functional value of serving chopsticks was identified as the most significant aspect, followed by altruistic value, symbolic value, and emotional value. Nevertheless, this finding appears to differ from the study by Stern (2000) suggesting the values components of the VBN theory include altruistic value, biospheric value, and egoistic value. The difference might be due to the different research contexts. Specifically, Stern (2000)'s research was set in an environmentalism context, therefore biospheric, altruistic, and egoistic values are in direct relation with the ecological worldview. The current study focused on consumers' values of serving chopsticks. The use of serving

chopsticks not only assists in preventing the cross infection of germs during communal eating, but also making people feel more secure and comfortable. In addition, using serving chopsticks also highlights the significance of civilized dining etiquette, as well as individual's ethical values in undertaking responsibility for social health. Consequently, functional value, emotional value, as well as symbolic and altruistic value are confirmed.

Second, this study tested the relationships among values, awareness of consequence, ascribed responsibility, personal norm, subjective norm, and consumers' intentions to use serving chopsticks. In terms of the relationships among the constructs, the correlations were all significant. Specifically, the results highlighted the positive influences of consumers' perceived values on awareness of consequences. This result showed consistency with previous research (Choi et al., 2015; Ünal et al., 2019; Youn et al., 2020). It is explained that people who perceive more positive values of serving chopsticks are likely to be more aware of the adverse consequences resulting from not using serving chopsticks.

Next, consumers' awareness of consequences was shown having positive impacts on ascribed responsibility, which in turn positively affects personal norms. This finding appears to support previous studies (Ünal et al., 2019; Youn et al., 2020). The more consumers realize the adverse consequences of not using serving chopsticks, the stronger they felt their ascribed responsibility. In addition, when consumers have a strong sense of personal responsibility to reduce such adverse consequences, they tend to have strong personal norms to use serving chopsticks.

Last, this study confirmed that personal norms and also subjective norms were significant antecedents to consumers' intentions to use serving chopsticks. When consumers felt a strong sense of personal obligation and social pressure, they tended to have higher intentions to use serving chopsticks.

5.1 Theoretical contributions and implications

The current study contributes theoretically to hospitality literature in three ways. Firstly, this study contributes to understanding Chinese consumers' perceived values of serving chopsticks. Despite the importance of promoting the use of serving chopsticks, no academic research has ever investigated Chinese consumers' perceived values of serving chopsticks. Based on the analysis of the empirical interview data, this study illustrated the varying influence of perceived value dimensions towards serving chopsticks. In particular, functional, altruistic, symbolic, and emotional values are derived in descending order. In addition, it also contributes to the development of the VBN theory through exploring the dimensions of the value construct. No previous research has ever investigated the value construct of the VBN model.

Secondly, this study further enhanced the extended VBN conceptual framework that incorporates subjective norm. The analysis revealed that the relationships among the VBN model were all accepted. However, this research does not confirm the causality from the path model. In addition, this study noted subjective norm was an additional important antecedent to consumers' behavioural intentions, which showed consistency with previous studies (Choi et al., 2015; Jansson et al., 2010; Youn et al., 2020). Consequently, this study makes a theoretical contribution to expanding knowledge through confirming an extended VBN theoretical model to understand consumers' decision-making process of using serving chopsticks.

Thirdly, this study contributes to the development of the VBN theory through expanding its application to wider research context. Many studies (Han, 2015; Jansson et al., 2011; Ünal et al., 2019) witnessed the wide application of the VBN theory to examine individuals' environmental protection behaviors in various contexts. However, there are still limited studies

applying the VBN theory to investigate individuals' prosocial behaviors (Youn et al., 2020). No relevant research has ever employed the VBN theory to investigate consumers' behaviors with respect to using serving chopsticks. Therefore, the current study supported the application of the VBN theory in examining consumers' prosocial behaviors.

5.2 Implications for practice

This study also reveals several practical contributions for promoting the use of serving chopsticks. This study confirmed a sequential process of consumers' values, beliefs, personal norms, and subjective norms for determining their intentions to use serving chopsticks. The findings noted that the relationships among the variables could be translated into actions. Governments should develop strategies based on consumers' values, beliefs, and norms when seeking to enhance consumers' behavioural intentions to use serving chopsticks.

Firstly, the government and the catering industry need to highlight the multi-dimensional value of serving chopsticks and remind consumers to use serving chopsticks. The interview analysis revealed although many Chinese consumers are aware of values of serving chopsticks, they often forget to use serving chopsticks and forget to ask for serving chopsticks when not provided. The results revealed that enhancing consumers' perceived values of serving chopstick (i.e functional, altruistic, emotional, and symbolic values) is effective in creating consumers' behavior intentions to use serving chopsticks. Therefore, government and restaurants are encouraged to actively undertake the responsibility of promoting the use of serving chopsticks. In particular, restaurants are encouraged to provide serving chopsticks as one of the core services when serving meals. Moreover, restaurants should design promotion posters, set up a reminder at each dining table, actively reminding consumers of the values of serving chopsticks.

Secondly, governments should use their marketing initiatives to communicate to the public the adverse consequences and responsibilities, explaining the threats and harms posed by not using serving chopsticks. For instance, sharing food during social gatherings without the use of serving chopsticks increases the possibility of the cross infections of germs. When consumers are educated of the responsibility for the adverse consequences of not using serving chopsticks, they tend to have a moral obligation, and the feelings of obligation induce their intentions to use serving chopsticks. Therefore, the government should focus on stimulating consumers' personal norms to use serving chopsticks.

Thirdly, in addition to the influences of personal norms, the subjective norms were also shown as having positive influences on consumers' intentions to use serving chopsticks. Hence, the government could activate subjective norms through comparing one's behavior with other consumers' behaviors. For example, the government could deliver a more effective message "most people are using serving chopsticks" instead of "please use serving chopsticks" (Chang et al., 2015; Kiatkawsin and Han, 2017). Additionally, Kiatkawsin and Han (2017) suggested public shaming was another useful method. Sign such as "Is the table next to you using serving chopsticks?" could be employed to promote the use of serving chopsticks at restaurants.

Finally, in addition to the marketing initiatives the government need to take, it is suggested that the government should also consider formulating policies and regulations to promote the use of serving chopsticks. In particular, from the national level, the government should strengthen formulating regulations related to public health. From the local level, the government should assist in promoting the regulations related to public health, and help people form the habit of using serving chopsticks. Moreover, the local government could also consider adding the

implementation of “serving chopsticks” into the star rating of local catering enterprises to promote the use serving chopsticks.

5.3 Limitations and Future Research Directions

Although this study offers valuable contributions, the limitations and future research are stated. Firstly, snowball and purposive sampling methods were used to recruit interview participants from the researcher’s personal connections, this may lead to sampling bias that fails reaching the target population. To improve the future research, more consideration is necessary for sampling methods. Secondly, the sample of this study only consists of consumers within China. The findings may apply to other Asian countries that share similar dining habits. However, it might limit the generalizability of the findings to other countries with different dining habits. Thus, future cross-cultural research could be carried out with samples from different countries to improve the validity of the theoretical model, and to establish the generalizability of the findings.

Thirdly, this study focuses on examining consumers’ behavior intentions of using serving chopsticks. In line with other pro-social or pro-environmental studies, it is possible that the participants might feel moral and ethical pressure to show their willingness to use serving chopsticks during interviews and surveys. Thus, future studies dealing with pro-social or pro-environmental topics are suggested to interpret data and results with more caution. Lastly, the final theoretical model proposed in this study is open to extension. This study employed an extended VBN theoretical framework. However, additional constructs may enhance the explanation ability of the conceptual framework. Therefore, future research could attempt to identify and incorporate additional constructs into the proposed model to achieve a meaningful extension.

6. Conclusions

There are increasing concerns about the potential cross infection of germs during communal dining and also the call for civilized dining during COVID-19; therefore, understanding the decision-making processes of consumers to use serving chopsticks is significant. However, no academic literature has investigated how consumers' intentions to use serving chopsticks can be developed. In addition, given the previous unsuccessful campaign in promoting the use of serving chopsticks, government officials need to carry out more effective strategies. Therefore, this study employed a mixed method approach to investigate consumers' decision-making processes to use serving chopsticks. This study not only confirmed the dimensions that consist of consumers' perceived values of serving chopsticks, but also supported the extended VBN model by incorporating subjective norm.

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Table 1. The results of opening coding (Process of conceptualization and categorization)

Original representative statements from interview	Conceptualization	Categorization
Using serving chopsticks can assist in ensuring food hygiene.	assist in ensuring food hygiene	Ensure food hygiene
Using serving chopsticks is beneficial for everyone's health.	beneficial for everyone's health	Good for health
Using serving chopsticks can effectively prevent the spread of the virus.	prevent the spread of the virus	Prevent the spread of virus, infectious diseases, and bacteria.
Using serving chopsticks can prevent the spread of infectious diseases during our communal eating.	prevent the spread of infectious diseases	
Using serving chopsticks can avoid the saliva exchange and the spread of bacteria.	avoid the saliva exchange and the spread of bacteria	
Using serving chopsticks has an ethical value. Using serving chopsticks is not only responsible for our own health, but also responsible for the health of others.	has an ethical value	Has an ethical value
Using serving chopsticks is coherent with my ethical value.	coherent with my ethical value	Coherent with personal ethical value
The COVID-19 pandemic has reminded us of the importance of public health. Using serving chopsticks is beneficial for people's health. It is moral to eat with serving chopsticks in public places.	moral to eat with serving chopsticks in public places	Personal morality
Using serving chopsticks highlights the significance of dining etiquette.	highlights the significance of dining etiquette	Highlights dining etiquette
Using serving chopsticks reflects the concept of civilized dining.	reflects the concept of civilized dining	Express civilized dining
Using serving chopsticks represents my civilized and hygienic behavior.	represents my civilized and hygienic behavior/my personal qualities	Communicate hygienic behavior
I enjoy using the serving chopsticks.	enjoy using the serving chopsticks	Enjoyment
I feel more comfortable and secure by using serving chopsticks when eating with others.	Feel more comfortable and secure by using serving chopsticks	Comfort and sense of security
Using serving chopsticks makes me feel good.	feel good when using serving chopsticks.	Happiness

Table 2. Primary category formed by axial coding

Main category	Corresponding category	Connotation
Functional value	Ensure food hygiene	The functional value of using serving chopsticks lies in preventing the spread of virus, infectious diseases, and bacteria, and ensuring food hygiene and doing good to everyone's health.
	Good for health	
	Prevent the spread of virus, infectious diseases, and bacteria.	
Altruistic value	Has an ethical value	The altruistic value of using serving chopsticks refers to individuals' ethical value and morality, which conveys individuals' concern for the health of others.
	Coherent with personal ethical value	
	Personal morality	
Symbolic value	Highlights dining etiquette	The symbolic value of using serving chopsticks is defined as expressing dining etiquette, civilized dining, and hygienic behavior.
	Express civilized dining	
	Communicate hygienic behavior	
Emotional value	Enjoyment	The emotional value of using serving chopsticks includes enjoyment, comfort, sense of security, and happiness.
	Comfort and Sense of security	
	Happiness	

Table 3. Level of importance perceived by the consumers

Main category	Corresponding category	Frequency	Importance level
Functional value	Ensure food hygiene	54	Very important
	Good for health	51	
	Prevent the spread of virus, infectious diseases, and bacteria.	42	
Symbolic value	Highlights dining etiquette	43	Fairly Important
	Express civilized dining	38	
	Communicate hygienic behavior	32	
Emotional value	Enjoyment	28	Important
	Comfort and Sense of security	41	
	Happiness	16	
Altruistic value	Has an ethical value	21	Slightly important
	Coherent with personal ethical value	15	
	Personal morality	23	

Table 4. Development of questionnaire items

Construct	Original development based on literature review	Refined items after the qualitative analysis	Explanation
Awareness of consequences	The hotel industry causes pollution, climate change, and exhaustion of natural resources (Han, 2015; Kiatkawsin & Han, 2017).	Not using serving chopsticks can cause hygiene problems during group dining.	In the interview, interviewees mentioned that they were concerned of the cross infections of germs, and hygiene problems without using serving chopsticks during group dining. They highlighted that using serving chopsticks promotes the civilized and healthy dining culture. In consideration of the interview result, the wording of the items was updated and amended accordingly.
	The exhaustion of energy sources is a problem (Choi et al., 2015).	The cross infections of germs are a problem for not using serving chopsticks during group dining.	
	Hotels cause environmental deteriorations (e.g., waste from rooms, restaurants, and other facilities, excessive use of energy/water) (Han, 2015; Kiatkawsin & Han, 2017).	Not using serving chopsticks can cause social deteriorations to the civilized and healthy dining culture.	
Ascription of responsibility	I believe that every hotel guest is partly responsible for the environmental problems caused by the hotel industry (Han, 2015; Kiatkawsin & Han, 2017)	I believe that every person is partly responsible for the hygiene problems caused by not using serving chopsticks.	In the interview, interviewees claimed that every person can cause the hygiene problems by not using serving chopsticks during group dining. Every person must be aware of the potential threat and take the responsibility. In consideration of the interview result, the wording of the items was updated and amended accordingly.
	I feel that every hotel guest is jointly responsible for the environmental deteriorations caused by the hotel industry (Han, 2015; Kiatkawsin & Han, 2017).	I feel that every person is jointly responsible for the hygiene problems caused by not using serving chopsticks.	
	Every hotel guest must take responsibility for the environmental	Every person must take responsibility for the hygiene problems caused by	

	problems caused by hotels (Han, 2015).	not using serving chopsticks.	
Personal norm	I feel morally obliged to dine in a traditional restaurant. (Youn et al., 2020).	I feel morally obliged to use serving chopsticks during dining.	In the interview, interviewees highlighted their obligation to use serving chopsticks to reduce the cross infection of germs, and protect the health and safety of other diners. In consideration of the interview result, the wording of the items was updated and amended accordingly.
	It is important for me to consider tradition when choosing a restaurant (Youn et al., 2020).	I feel it is important to use serving chopsticks, reducing the cross infection of germs during dining.	
	I feel an obligation to choose a restaurant that serves traditional food (Youn et al., 2020).	I feel an obligation to protect the health and safety of other diners by using serving chopsticks while dining together.	
Subjective norm	Most people who are important to me think that I should eat at a traditional restaurant (Youn et al., 2020).	Most people who are important to me think I should use serving chopsticks when dining.	In the interview, interviewees mentioned that their families or friends would like them to use serving chopsticks. In consideration of the interview result, the wording of the items was updated and amended accordingly.
	Most people who are important to me would want me to dine at a traditional restaurant (Youn et al., 2020).	Most people who are important to me would want me to use serving chopsticks when dining.	
	People whose opinions I value would prefer that I dine at a traditional restaurant (Youn et al., 2020).	People whose opinions I value would prefer that I use serving chopsticks when dining.	
Intention to use serving chopsticks	I am willing to stay at a green hotel when traveling (Choi et al., 2015).	I am willing to use serving chopsticks when dining.	The wording of the items was borrowed from the literature and amended to suit the context of current study.
	I plan to stay at a green hotel when traveling (Choi et al., 2015).	I plan to use serving chopsticks when dining.	
	I will make an effort to stay at a green hotel when traveling (Choi et al., 2015).	I will make an effort to use serving chopsticks when dining.	

Table 5. Confirmatory factor analysis for measurement model

Construct and scale items	Loading	Alpha	CR	AVE
Functional value (FV)				
Using serving chopsticks can effectively prevent the infections of germs.	0.910	0.918	0.948	0.859
Using serving chopsticks can assist in ensuring food hygiene	0.939			
Using serving chopsticks is beneficial for everyone's health.	0.932			
Altruistic value (AV)				
Using serving chopsticks has an ethical value.	0.929	0.881	0.927	0.809
Using serving chopsticks is coherent with my ethical value.	0.920			
Using serving chopsticks has an ethical interest for me.	0.846			
Symbolic value (SV)		0.902	0.939	0.837
Using serving chopsticks highlights the significance of dining etiquette.	0.932			
Using serving chopsticks reflects the concept of civilized dining.	0.918			
Using serving chopsticks helps me communicate my self-identity.	0.893			
Emotional value (EV)				
I enjoy using the serving chopsticks.	0.920	0.909	0.943	0.846
I feel more comfortable and secure by using serving chopsticks when eating with others.	0.911			
Using serving chopsticks would make me feel good.	0.929			
Awareness of consequences (AC)				
Not using serving chopsticks can cause hygiene problems during group dining.	0.855	0.835	0.901	0.751
The cross infections of germs are a problem for not using serving chopsticks during group dining.	0.891			
Not using serving chopsticks can cause social deteriorations to the civilized and healthy dining culture.	0.853			
Ascription of responsibility (AR)				
I believe that every person is partly responsible for the hygiene problems caused by not using serving chopsticks.	0.845	0.827	0.897	0.743
I feel that every person is jointly responsible for the hygiene problems caused by not using serving chopsticks.	0.833			

Every person must take responsibility for the hygiene problems caused by not using serving chopsticks.	0.906			
Personal norm (PN)				
I feel morally obliged to use serving chopsticks during dining.	0.905	0.864	0.917	0.787
I feel it is important to use serving chopsticks, reducing the cross infection of germs during dining.	0.933			
I feel an obligation to protect the health and safety of other diners by using serving chopsticks while dining together.	0.819			
Subjective norm (SN)				
Most people who are important to me think I should use serving chopsticks when dining.	0.842	0.859	0.914	0.780
Most people who are important to me would want me to use serving chopsticks when dining.	0.899			
People whose opinions I value would prefer that I use serving chopsticks when dining.	0.907			
Intention to use serving chopsticks (BI)				
I am willing to use serving chopsticks when dining.	0.941	0.918	0.948	0.859
I plan to use serving chopsticks when dining.	0.934			
I will make an effort to use serving chopsticks when dining.	0.906			

Note: CR, Composite Reliability; AVE, average Variance Extracted.

Table 6. Discriminant validity

	AV	AR	AC	EV	FV	PN	BI	SN	SV
AV	0.915								
AR	0.830	0.862							
AC	0.767	0.812	0.867						
EV	0.822	0.826	0.853	0.899					
FV	0.763	0.780	0.637	0.665	0.920				
PN	0.791	0.801	0.846	0.830	0.680	0.887			
BI	0.803	0.810	0.829	0.799	0.721	0.848	0.927		
SN	0.832	0.807	0.760	0.829	0.724	0.797	0.794	0.883	
SV	0.805	0.831	0.750	0.773	0.814	0.792	0.832	0.798	0.927

Note: AV, Altruistic value; AR, Ascription of Responsibility; AC, Awareness of Consequences; EV, Emotional value; FV, Functional value; PN, Personal norm; BI, Intention to use serving chopsticks; SN, Social Norm; SV, Symbolic Value.

Table 7. Coefficients of determination (R^2) and prediction variance (Q^2) of the construct.

Endogenous latent construct	Coefficients of determination (R^2)	Predictive Relevance (Q^2)
Awareness of consequences	0.579	0.425
Ascription of responsibility	0.659	0.477
Personal Norm	0.812	0.619
Intention to use serving chopsticks	0.903	0.756

Table 8. Results of structural model and hypotheses testing

Hypothesized Relationships	Path coefficient	Results
H1: Perceived value → Awareness of consequences	0.761***	Accepted
H2: Awareness of consequences → Ascription of responsibility	0.812***	Accepted
H3: Ascription of responsibility → Personal Norm	0.901***	Accepted
H4: Personal Norm → Intention to use serving chopsticks	0.865***	Accepted
H5: Subjective Norm → Intention to use serving chopsticks	0.105**	Accepted

Note: model fit criteria: SRMR<0.09 suggests good fit, this model indicates an SRMR value of 0.068< 0.09.

Figure 1. Theoretical Model.

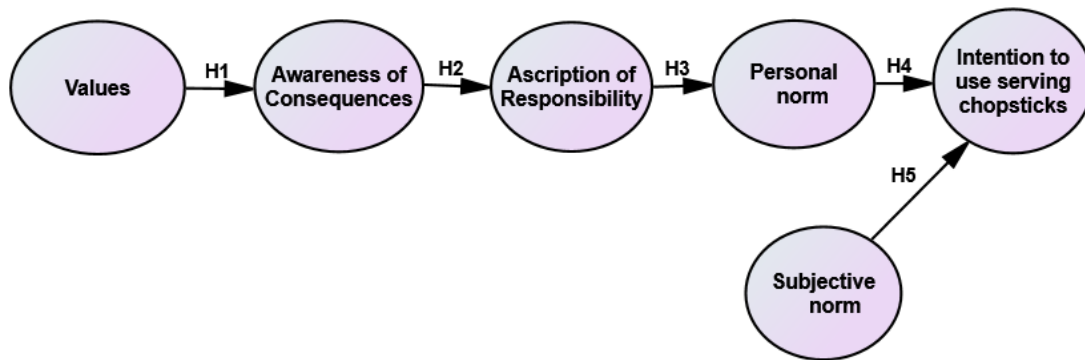
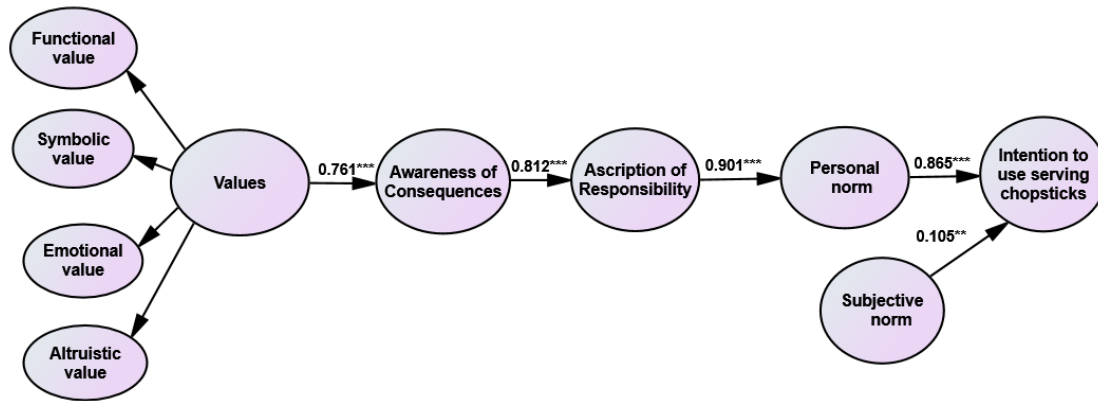


Figure 2. Results of the Structural Model



Note: —> Indicates significant path.

*Significant at $p < 0.10$. **Significant at $p < 0.05$. *** Significant at $p < 0.01$.