

Hospitality Co-Creation with Mobility-Impaired People

Abstract

This study aims to analyze and construct the hospitality value co-creation system of dining services for mobility-impaired persons (MIPs) by using a specific technological platform in small and medium restaurants (SMRs). The hospitality industry should take action to provide improved services to MIPs. The service-dominant logic, the methodology of service experience engineering, and research approaches in ethnography, content analysis, action research, and service design were applied to implement a hospitality co-creation service system. The result is shown in quality function deployment (QFD). The Friendly Restaurant app was developed by a social enterprise working with MIPs and SMR operators to improve the dining experience of MIPs in SMRs guided by QFD. This app comes from the hospitality co-creation system to offer a list of barrier-free restaurants, menu design, information on accessible facilities, and taxi services for various types of MIPs.

Keywords: Value co-creation; small and medium restaurants; mobility-impaired persons; social entrepreneur; application (app)

1. Introduction

In the past, the hospitality industry has devoted considerable attention to customers with disabilities (i.e., mobility-impaired persons (MIPs)) and accommodate their needs (Grady & Ohlin, 2009; Lin, 2016; Wan, 2015). Eventually, the hospitality industry began to provide accessibility opportunities for MIPs (Sanmargaraja & Wee, 2015). However, facilities in hospitality destinations, tourist sites, restaurants, and transportation still have a long way to go before they become completely barrier-free for MIPs. Furthermore, service staff members often lack the relevant training regarding offering MIP-friendly service in the hospitality industry (Grady & Ohlin, 2009; ESCAP, 2016). Consequently, the advocacy has failed to achieve the provision of services in a manner equivalent to the services provided to able-bodied guests (Grady & Ohlin, 2009). MIPs remain discouraged from participating in certain service operations in the hospitality industry. Evidently, the service gap between restaurants and MIPs remains a significant issue.

Approximately 10% of the world's population comprises MIPs (Sanmargaraja and Wee, 2015). The United Nations estimates that 650 million people in the Asia-Pacific region have mobility impairment (i.e., 1 in every 6 persons) (ESCAP, 2016). In Hong Kong, approximately 600,000 MIPs comprise 8.1% of this territory's total population (Hong Kong Census and Statistics Department, 2013). In Taiwan, 1,157,731 MIPs account for approximately 4.9% of this state's total population (Taiwan Directorate General of Budget, Accounting and Statistics, 2014). However, accessibility for MIPs in Hong Kong and Taiwan may not be as developed as in North America and Europe, where advanced infrastructure for MIP accessibility is integral to public areas and restaurants because the equal access awareness was aroused considerably early in the West (Grady & Ohlin, 2009; Lin, 2016; Wan, 2015). Thus, MIP dining in restaurants are required to conduct research before making reservations, thereby likely discouraging them from dining out. Furthermore, the lack of experience of restaurant operators in hosting MIPs may aggravate the challenge of providing the appropriate services. Therefore, the current study proposes a value co-creation model between small and medium restaurants (SMRs) and MIPs to bridge the gap between the availability and expectation of dining services for MIPs.

Prahalad and Ramaswamy (2004) noted that the traditional format for a market is company-centric, in which consumers are informed and empowered to extract value at the point of exchange with the company without having considerable awareness of other options in the broad market. The development of the Internet and mobile technology has provided extensive information to consumers, thereby shifting power from the company to the better-informed consumers (Zhang, Lu, & Kizildag,

2017; Faulds, Mangold, Raju, & Valsalan, 2018). This shift has also enabled value co-creation between consumers and suppliers which has become an essential strategy for how organizations involve customers in the production process (Yang et al., 2016), particularly to retain them. In the past, restaurant reviews relied on food journalists and critics to publish articles in magazines and newspapers. At present, all diners post their reviews on social media to detail their dining experiences and assist other diners in making decisions. User-generated comments (UGCs) are considered a powerful tool in influencing consumer buying behavior (Cantalops & Salvi, 2014). Diner reviews have become essential to all restaurant operators because diners tend to check restaurant reviews before making a restaurant reservation (Parikh, 2013). Hence, the consumers' voice has become central to the core values of restaurant operators. Consumer-to-consumer (C2C) communication serves as a key source of information to an organization that attempts to understand consumer needs (Prahalad & Ramaswamy, 2004). This type of platform creates an opportunity for consumers to interact and socialize, thereby making restaurant operations more competitive than ever. Thereafter, technology and social networks enable the creation of service innovation for MIPs to dine in restaurants with an accommodating environment.

Despite the trend of raising awareness of restaurants through online reviews, in practice, MIPs do not receive substantial attention in restaurant services and operations. Evidently, fulfilling the dining needs and expectations of MIPs is important for diversity, equity, and corporate social responsibility (CSR). Consequently, a technology platform that implements a universal design, which includes impairments as a dimension of human plurality (Lin, 2016), was developed by a social enterprise to improve the dining experiences of MIPs in SMRs. We argue that the disadvantaged MIPs in the social theory of disability (Abberley, 1987) can be involved in the co-creation process as active customers based on the service-dominant (S-D) logic. MIPs are not provided charity but contribute value with the SMR operators in the value co-creation system. Figure 1 illustrates the structure of the current study. The research objective of this study is to narrow the service gap between SMRs and MIPs through a social enterprise, particularly by answering the following questions:

- (1) What is the existing service gap between MIPs and SMRs?
- (2) How could the service gap between MIPs and SMRs be bridged through value co-creation?
- (3) How does a technology platform enhance value co-creation among stakeholders to improve MIPs' dining experiences in SMRs?

2. Literature Review

2.1 Service gap between MIPs and SMRs

In the hospitality industry, the tasting and dining experiences are major factors that affect consumption in restaurants (Okumus, Okumus, & McKercher, 2007). In the tourism sector, spending in restaurants is among the top five travel spending in Hong Kong (Tobin, 2012). However, dining services have not considerably focused on serving MIPs in practice. The possible reasons include profit considerations, lack of training, and constraints in facilities. In Taiwan, a restaurant that is over 300 square meters in size is required to provide accessible space for MIPs (Hua, 2016). However, SMRs are not required to offer MIP accessible facilities, thereby removing pressure on these regulations to satisfy the MIPs market. To rectify the situation, Taiwan announced in 2016 the revised regulations for publicly accessed buildings and facilities. However, the existing facilities under 300 square meters are only “encouraged” to set up and improve accessibility for MIPs without penalty because of the need to balance operational costs and public welfare concerns (Lin, 2016; CPAMI, 2016). Thereby, the policy gap that exists between large and small restaurants and the practice gap that exists between the advocacy and incentive has caused the service gap between SMRs and MIPs. The present study also addresses the humanitarian concerns toward MIP dining in SMRs and the issues of equity, diversity, human rights, and universal values in the hospitality industry.

Hong Kong and Taiwan have an excellent reputation for gourmet food and impressive restaurants, which are attractions to tourists. However, finding a friendly restaurant in the city on the part of MIPs is a constant problem (Lin, 2016). SMRs in the traditional catering industry (Huang, 2014) may lack the proper facilities to accommodate MIP diners. People orientation and humanized design have become major considerations for restaurant design, which includes factors that are “functional, economical, comfortable, and beautiful,” (Wang & Zhang, 2013, p. 579) to achieve social and economic benefits for restaurant operations. However, a few unavoidable constraints, such as limited space, high rent, and type of restaurant operation, are evident. Nevertheless, only a few studies have addressed the needs of MIPs when discussing restaurant design (Dias de Faria, Ferreira da Silva & Brantes Ferreira, 2012). SMR operators may be more concerned with revenue and turnover rate than accessibility. That is, economic concerns are prioritized over humanitarian concerns for MIPs without SMR support of CSR (Kaushal & Sharma, 2016).

A higher proportion of the Asia-Pacific population comprises MIPs compared with the population of the rest of the world. This region hosts nearly 60% of the current world population (Biswas, 2013) and is characterized by considerably old population and inferior healthcare. Evidently, studies should address improving accessibility to MIPs. Although large restaurants in many countries

are required by law to have accessible facilities (Hua, 2016), SMRs are excluded in such requirement (Lin, 2016; CPAMI, 2016). Therefore, a service gap exists between MIPs and SMRs (see Figure 1(a)). The current study proposes that a value co-creation system could narrow the service gap based on the S-D logic (see Figure 1(b)) (Frow & Payne, 2011).

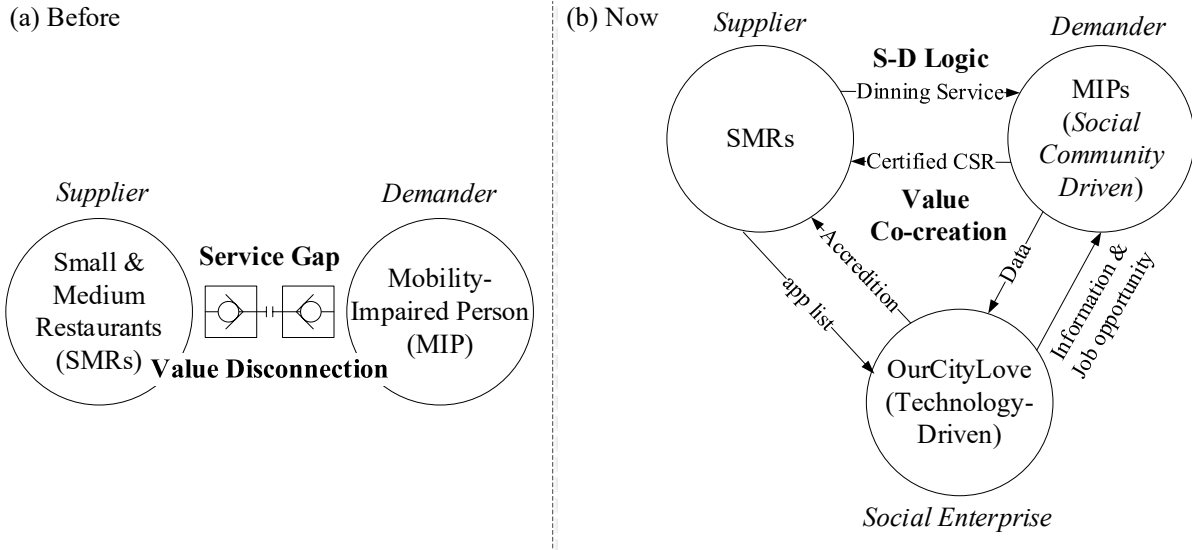


Figure 1: Structure of the Study

Figure 1(a) shows the traditional service gap and value disconnected on self-interest between the MIP dining rights and SMR profit concerns. Figure 1(b) illustrates a value co-creation system to narrow such gap through collaboration among three stakeholders (i.e., MIPs, SMRs, and a social enterprise) (Jaakkola & Alexander, 2014). This structure demonstrates a transitioning process from value disconnection between MIPs and SMRs to value co-creation among the three stakeholders based on technology- and social community-driven factors and the S-D logic. The practical case is constructed to narrow the service gap through the mutual engagement of four elements, namely, people, organization, technology, and service design (Zhang, Lu, Torres & Chen, 2018). Knowledge articulation is then formed from value disconnection on the perspective of economic self-interest to value co-creation on the practice of social constructivism.

2.2 Defining value co-creation

The value in use is the cognitive evaluation of a service experience, which is co-created through the interactions of suppliers and consumers (Sandström, Edvardsson, Kristensson, & Magnusson, 2008; Zhang, Jahromi & Kizildag, 2018). Traditionally, stakeholders have different value propositions that may conflict with one another during the service process. The new paradigm of value co-creation seeks the development of reciprocal value propositions among stakeholders (Ballantyne & Varey, 2006). “Value co-creation designs not only promotes innovative development

during the interactive process, lead enterprises, and reveals and meets customers' needs, but it also increases markets and profits" (Yang et al., 2016, p. 2). Co-creation is the joint, collaborative, concurrent, and peer-like process of materially and symbolically producing a new value (Gummesson, Mele, Polese, Galvagno, & Dalli, 2014). Gebauer, Füller, and Pezzeri (2013) discussed how online co-creation and innovative development contribute to modern society. The new product development perspective should be used as a basis to consider that understanding and delivering on customer needs are essential factors to success (Thomke & Von Hippel, 2002; Von Hippel & Katz, 2002; O'Hern & Rindfleisch, 2010).

However, an information gap often exists between users and providers because of their varying expectations regarding intervening in the value co-creation process (O'Hern & Rindfleisch, 2010). The S-D logic, which is a theoretical framework, has been developed for value co-creation between the producer and customer. This framework addresses the value co-creation that occurs in networks, in which multiple stakeholders exchange resources (Prahalad & Ramaswamy, 2000; Prahalad & Ramaswamy, 2004; Vargo & Lusch, 2008). The S-D logic has developed into a theory on moving service systems toward dynamic service orientation, in which value co-creation is coordinated through shared stakeholders' norms, symbols, and other heuristics, as well as resource integration and service exchange processes (Lusch & Vargo, 2014; Vargo & Lusch, 2016). O'Hern and Rindfleisch (2010, p. 88) noted that co-creation had received substantial attention across a wide range of fields, including information systems, economics, management, and marketing. Consumers contribute their thoughts collectively to develop and improve a product and service. The belief in the significance of consumer input to the production process has resulted in the majority of collaborators appearing to be intrinsically motivated to contribute substantially, thereby resulting in considerably high satisfaction (O'Hern & Rindfleisch, 2010). The contribution of traveler reviews, such as those in TripAdvisor (an online travel platform), completely demonstrates the value of co-creation between travelers and traveler organizations. Consumers conceive their value shaped by online reviews created by other users together with the interactions of social networking sites. Meanwhile, gathering more users creates more value for an IT platform (Shaw, Bailey & Williams, 2011). This example illustrates the approach of applying technology to foster a value co-creation service system between online travel agent (OTA) and their customers (Ferraz, 2015).

2.3 Technology-driven co-creation

Technology influences the hospitality experience, while the complex relationships among value, service quality and satisfaction (Knutson, Beck, Kim, & Cha, 2010) shapes the network format of the industry. "Technological platforms often play a mediating and innovative role while

leading the interaction between customers and companies” (Gummesson et al., 2014, p. 643). “With competitive on-line booking facilities and virtual tourism experiences, the current hospitality industry is doing its best to enhance consumer experience” (Binkhorst & Den, 2009, p. 323). Prahalad and Ramaswamy (2004) argued that the notion of delivering value from producers to customers has shifted to creating value among consumers, consumer communities, and organizations. O'Hern and Rindfleisch (2010) considered the advancement of information technology (IT) and identified how the Internet empowers customers in three aspects. First, the Internet provides access to knowledge that can enrich the creative pursuits of customers. Second, the Internet facilitates various online design tools for customers to express their experiences (Thomke & Von Hippel, 2002; Prahalad & Ramaswamy, 2004b; O'Hern & Rindfleisch, 2010). Third, the Internet can effectively connect consumers and manufacturers to participate in a value co-creation community (Prahalad & Ramaswamy, 2000; Sawhney, Verona, & Prandelli, 2005). Consequently, the empowerment of customers to participate in value co-creation becomes a key role in the new product development process. Thus, service providers and consumers are no longer on opposite sides from the value co-creation perspective. Furthermore, they interact with each other to develop new business opportunities (Gummesson et al., 2014). Service providers have a substantial understanding of customer needs, while customers can assume a considerable proactive role in contributing to product development. This emerging trend demonstrates the new opportunity for industry practitioners to engage in value co-creation as a component of product development (O'Hern & Rindfleisch, 2010). The co-creation experience of consumers becomes the basis of value (Prahalad & Ramaswamy, 2004a). Vargo and Lusch (2004) considered the progressively dynamic markets and technology development and noted that in the consumer experience context, the service provider is encouraged to collaborate with customers and explore the value propositions of the latter for value co-creation.

The online community platform offers the benefits of interaction and mutual assistance from community members and creates a sense of belonging to the community (Brodie, Ilic, Juric & Hollebeek, 2013; Hammedi, Kandampully, Zhang & Bouquiaux, 2015). “Establishing a valuable relationship with both existing and potential customers can increase their loyalty” (Gebauer et al., 2013, p. 1516). Positive online service experience boosts the customer base of the online community, that is, the impact is the key driver for the success of an online community organization (Kim, Mattila, & Baloglu, 2011). Ayeh, Au, and Law (2013) explained that UGC positively affects behavioral intention to use comments for travel planning. UGC is considered a powerful tool in influencing consumer buying behavior (Cantalops & Salvi, 2014). Meanwhile, technology development has resulted in the transformation of social media into a powerful platform for the

hospitality industry, particularly in focusing on their online marketing strategies. In the past, consumers were passive receivers of business marketing advertisements (Wang, Zhang, Choi & D'Eredita, 2002). By contrast, current consumers are actively involved in providing feedback or voice to influence business-marketing directions. Consumer buying behaviors interact with business marketing through technology platforms that boost value co-creation between producers and customers. Social communities have considerable bargaining power in the value co-creation of service eco-systems, which is a service network that may substantially determine adaptive and evolutionary changes (Lusch, Vargo & Tanniru, 2010).

2.4 Social community driven co-creation

Within the social community, the C2C co-creation systems contribute to value co-creation through multi-layered developments. A co-creation system involves sharing, interacting, and socializing the customer experiences of services with one another (Heinonen, Rihova, Buhalis, Moital, & Beth Gouthro, 2013). Dwivedi, Yadav, and Venkatesh (2011) emphasized that social media sites, such as Facebook, YouTube, or Twitter, enable destination marketing organizations and tourists to build a platform to interact, comment, and share their experiences, as well as to build a sense of community experience (Neuhofer, Buhalis, & Ladkin, 2012; Zhang, Lu, Wang & Wu, 2015). C2C co-creation systems can be categorized as having four co-creation roles, namely, engaging, proactive, help-giving, and sharing roles (Rihova, Buhalis, Moital, & Gouthro, 2014). Parker and Ward (2000) showed that several customers assume a “help-giving” role, while “help-seekers” interact with other customers in search of information or assistance. In the consumption context, Heinonen et al. (2013) summarized four layers of the C2C co-creation, namely, detached customers, social bubble, temporary communities, and ongoing neo-tribes. First, the detached customer layer describes customers who typically visit on their own or with a single partner. Moreover, the need for privacy is high and interaction with strangers is minimal. Second, the social bubble layer describes customers who constantly share with a group of friends and family to remember their specific experience. Third, the temporary community layer describes customers who place themselves in a “place out of place” with strangers to escape daily life. Lastly, the ongoing neo-tribe layer describes the C2C co-creation layer, which reflects belonging to a specific consumer subculture. In co-creating value-in-context, customers draw on a few social resources, which include family relationships, communities, and commercial relationships (Arnould, Price, & Malshe, 2006), thereby determining and enhancing their experiential value outcomes in a contextualized manner (Baron & Harris, 2008; Heinonen et al., 2013).

2.5 S-D logic as the theoretical base

The S-D logic encourages customer involvement in the process of value co-creation (Frow & Payne, 2011). At present, customers are generally involved throughout the service process and companies are starting to explore the benefits of opening up in-house processes and involving customers in a dynamic manner (Bodin & Isberg, 2017). The joy of co-creation consists of knowledge enhancement and skills acquisition, thereby possibly enriching the customers' sense of ownership over their contributions (Prahalad & Ramaswamy, 2000; Pitt, Watson, Berthon, Wynn, & Zinkhan, 2006). Co-creators may simultaneously assume the roles of consumers and producers (O'Hern & Rindfleisch, 2010). Hollebeek and Brodie (2009, p. 342) noted that the involvement of consumers leads to improvement in products, services, and branding. In addition, the time that consumers spend using specific products/services, usage frequency, and searching for an alternative affects consumer consumption underscore the importance of involving consumers to shift their behaviors in the direction desired by the company. O'Hern and Rindfleisch (2010) defined four types of co-creation, namely, collaborating, tinkering, co-designing, and submitting. Collaborating is guided by the needs of customers for product and service improvement. Tinkering is conducted by an organization to improve product differentiation. Co-designing is a customer-led activity to reduce development costs and minimize the rates of product failures. Lastly, submitting is an organization-led activity to reduce product development cycles and increase access to new customer ideas. The quality of interaction can encourage customers to co-create a unique experience, thereby possibly becoming a new source of competitive advantage for an organization (Prahalad & Ramaswamy, 2004b). Value co-creation combines social resources, which include family relationships, communities, and commercial relationships (Arnoud et al., 2006). Furthermore, the emergence of customer involvement in value co-creation is an example of shifting boundaries "as consumers provide firms with value in the form of their purchase activity as well as their production activity" (O'Hern & Rindfleisch, 2010, p. 101). However, the existing literature has yet to address the involvement of MIPs in value co-creation, which is the focus of the current study.

This study aims to solve the problem of MIPs' dining in SMRs through a value co-creation system, which belongs to the types of "co-designing" and "submitting" co-creation (O'Hern and Rindfleisch, 2010) and the layer of ongoing neo-tribe co-creation (Heinonen et al., 2013). For examples, MIPs are actively seeking opportunities to co-design services that they consume (O'Hern & Rindfleisch, 2010) through an IT platform leading by a social enterprise's submitting co-creation. MIPs demand a balance between being controlled by restaurants and self-determined activities where they have freedom and self-esteem (Binkhorst & Den, 2009). MIPs as service designers contribute manpower and creativity through value co-creation with SMRs, although these establishments have

to enter into a dialogue with MIPs. Sigala (2012) noted that online interactions and conversations in a social community, which included MIPs' community with specific consumer subculture in the layer of ongoing neo-tribe co-creation (Heinonen et al., 2013), enrich the sharing and understanding of the service context. A social community platform can assist MIPs to create meaningful and specific value for themselves through personal interactions (Boswijk, Hommes, and Manzan, 2007). Within the complexity of social contexts, the value experience of consumers can be matched with the proposed value offerings of service providers (Helkkula, Kelleher, & Pihlström, 2012) based on the S-D logic. Different co-creation attributes can be the basis of future innovation (Prahalad and Ramaswamy (2004) to create a unique value for each individual" (Binkhorst & Den, 2009). The purpose of the value co-creation system between MIPs and SMRs triggered by a social enterprise can then drive the innovation of the hospitality industry and contribute knowledge of experience economy. Thereafter, the value co-creation system can yield a competitive advantage to service providers, satisfy the needs of customers, and enhance the well-being of MIPs by successfully handling the challenges of MIPs' dining in SMRs through a specific technological platform (see Figure 1).

3. Methodology

3.1 Case background

OurCityLove (OCL) is a technology-driven social enterprise that was created by two founders because of their experiences of witnessing family members being excluded from events and social activities. Given the increasing number of senior citizens, babies in strollers, and MIPs, OCL created an awareness, understanding, and empathy toward various forms of temporary and permanent mobility impairment (Ford, 1984). This social enterprise aims to create dignified jobs for MIPs who do not necessarily fit standard job descriptions that are designed for people without mobility impairments. Through recruiting and training, OCL provides MIPs an opportunity to experience an improved quality of life and fulfilling careers. Citizens who need help naturally understand essential MIP services because no one knows the needs of citizens with disabilities better than they do (Lin, 2016). The use of cloud computing and mobile technology enables OCL and the MIP investigators to conduct the co-creation process. Over 300 MIPs are trained and paid to be investigators to collect restaurant information, evaluate accessibility and friendliness of service, and share information with the public because MIPs know the needs of accessibility better than people without mobility-impairment (Kenny, 2017). At present, OCL designs the Friendly Restaurant app

with Chinese and English versions for 10 cities in Taiwan, Hong Kong, and Malaysia. OCL collaborates with the government and non-government organizations to incorporate diverse sources into meaningful work and contributions in different cities and countries. The MIP investigators, restaurant operators, and OCL collaborate to improve restaurant entrances, Braille menus, services, elevators, toilets, parking spaces, and facilities that rate the friendly levels of SMRs on MIP services.

To participate and become eligible SMRs for the OCL Friendly Restaurant app, a restaurant operator is required to comply with at least four criteria: barrier-free entranceway, stable dining tables and chairs, smooth walkway, and services that are equal to those provided to non-MIPs. The criteria are divided into two categories, namely, physical layout/design and intangible services (Grady & Ohlin, 2009). Following a consultation service from a certified MIP trainer, a real or potential customer will visit the restaurant and provide consulting services after the restaurant is qualified and meets the overall service requirements, which include accessible facilities and trained staff to serve MIPs. Lastly, when a restaurant has complied with all the criteria and standards, OCL publishes certified restaurant information through the Friendly Restaurant app, which is available thereafter for the use of MIPs and the public.

OCL defines itself as a social entrepreneur with the vision of creating social value by providing solutions to social problems (Dacin, Dacin, & Tracey, 2011). Practical action is to make the Friendly Restaurant app available to address MIP dining difficulties in SMRs. OCL's social entrepreneurship is considered an art of balancing its business and social mission to develop various applications for society (Peng & Lin, 2016). In this case, the researchers and OCL proposed the value co-creation design through the service experience engineering (SEE) process (see figure 2) (Peng, Lin, & Tseng, 2017). The participating restaurants have transformed the passive role of hosting (receiving) disabled or special needs customers into the active role of providing customized services to MIPs. Three stakeholders (i.e., SMRs, MIPs, and OCL) are part of the co-creation process that enables the interaction and development of a value co-creation eco-system (Yang et al., 2016).

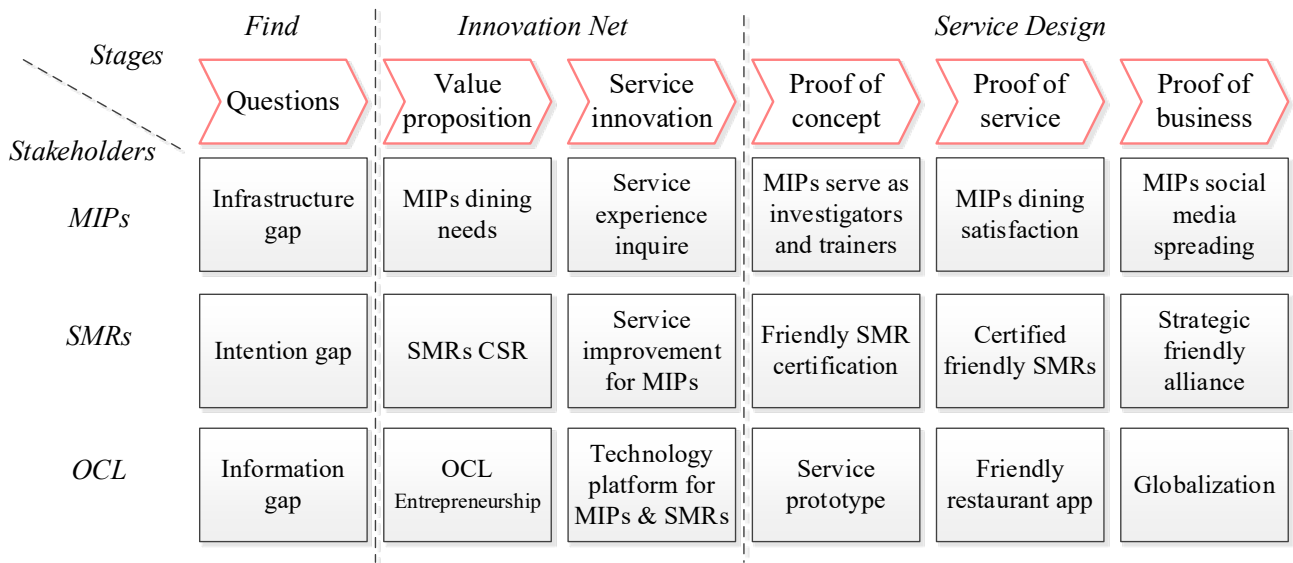


Figure 2: SEE Process of the Value Co-Creation Design

3.2 Methods

The systematic qualitative approach in deriving the research design follows the SEE process (see Figure 2). Table 1 shows the layout of the methods. Figure 3 shows the implemented blueprint of the service system. SEE includes a series of service-oriented research methods for implementing co-creation service systems from finding stakeholders' questions, constructing the co-creation service system, to eventually enhancing the service experience of MIPs dining in SMRs. The methods in SEE conclude with practical steps to ensure the continuous improvement of the new services (Hsiao & Yang, 2010). SEE focuses on exploration and solutions in a social and cultural context, thereby identifying and solving the problems of MIPs' dining experience in SMRs. The research context is concerned with value co-creation among the three stakeholders. Table 1 presents the value rationale in the SEE process. The most important element is the value co-creation among the three stakeholders for contributing to the dining experience of MIPs at SMRs. The S-D logic indicates that the three stakeholders are service providers and receivers (see Figure 1) and service is the fundamental basis of exchange. Through the value co-creation system, OCL hires MIPs to become MIP restaurant investigators, who provide feedback data thereafter to the OCL operations. From the feedback data, OCL offers the accreditation of the certified CSR to the qualified SMRs and will be listed on the Friendly Restaurant app for the MIPs' dining needs. Thus, OCL plays a mediator role to facilitate the mutual engagement of MIPs and SMRs in the value co-creation system. Value is co-created among stakeholders and assessed based on the value-in-context, where context is defined as a set of unique actors with unique reciprocal links among them (Löbner & Hahn, 2013; Storbacka, Brodie, Böhmman, Maglio & Nenonen, 2016). Thus, a value co-creation service system could be

implemented as an integrated system on the supply side and as service-oriented content on the demand side.

Table 1: Value Rationale in the SEE Process

<i>Rationale</i>	<i>Action</i>	<i>Example</i>	<i>Method</i>
Which aspect of value?	Determine the issues of the three stakeholders	Infrastructure, intention, and information aspects	Ethnography approach
How is value created?	Devote to service innovation with stakeholder capabilities	Service innovation enhanced by the technology platform	Content analysis Action research
What kind of value?	Proof of concept Proof of service Proof of business	MIP trainers help SMRs be certified by OCL's Friendly Restaurant app	Service design Quality function deployment
When is value created?	Service functions	MIPs use Friendly Restaurant app to dine at SMRs with satisfaction	Friendly Restaurant app

An ethnographic approach is applied in the current research to study the subculture of MIPs dining issues (Schouten & McAlexander, 1995). Since 2013, this approach was used at the first stage to enable researchers to understand MIPs from their point of view rather than attempting to impose the interpretation of outsiders on them (Brotherton, 2008). All data use MIP-based constructs to avoid the researchers' purposive manipulation of the study variables (LeCompte & Goetz, 1982). This strategy aimed to record MIPs' dining behavior and experience in the natural setting of restaurants. The data were collected by observations, field notes, narrative descriptions, behavior chronicles, and videotapes (Goetz & LeCompte, 1981) in MIPs' dining places. Such enormous data collected from multiple channels and methods were transformed, reduced, classified, and coded using NVivo 11 for interpretation and presentation for the data analysis in the second stage. The problems of reliability and validity have been explored thoroughly by the experimenters and other quantitative researchers, while their treatment by ethnographers has been sporadic and haphazard (LeCompte & Goetz, 1982, p.31). Thus, this ethnographic approach emphasized the credibility of understanding the nature of the MIPs' dining experiences in SMRs (Hasselkus, 1995). The credibility is applied in the ethnographic research that is different from the validity and reliability of experimental and quantitative research because of the characteristics of in-depth research (LeCompte & Goetz, 1982). All data were coded in 198 videos (OurCityLove, 2013) to be analyzed in the next research stage and released to the public to enhance the credibility of this ethnographic approach at the first stage (i.e., "the Find stage in Figure 2"). The questions were categorized into three types, namely, infrastructure, intention, and information gaps, among the three stakeholders. These

questions were expected to be solved by improving hardware and software infrastructures for MIPs, enhancing the CSR intention of SMRs, and constructing an information platform on the S-D logic basis of value co-creation together.

After defining the questions related to MIPs' dining, the action research was adapted to study social issues and effect the desired change as a path to generate knowledge and empower stakeholders (Bradbury-Huang, 2010). This approach was implemented in the second stage (i.e., "the Innovation Net stage" in Figure 2) to solve specific problems and formulate guidelines for best practices (Denscombe, 2010). In particular, the current research first explored the service value propositions of the three stakeholders (i.e., MIPs, SMRs, and OCL). Second, a value co-creation service system was designed and implemented among the three stakeholders followed the S-D logic regarding the "co-creation of value" and "co-production" (Lusch & Vargo, 2006; Shaw, Bailey, & Williams, 2011) with an empirical case. Before the action research, content analysis was performed on 46 online news and media articles and 198 videos (OurCityLove, 2013) to obtain the service requirements of the three stakeholders. The results of content analysis through Nvivo indicated that the service experience inquiry was structured as a one-on-one interaction. Accordingly, the researchers observed MIPs engaging in their typical dining activities in SMRs and discussing the difficulties on the demand and supply sides. The service requirements were extracted from the content analysis and service experience inquiry to identify the 13 service requirements of the three stakeholders. First, the OCL platform needed social entrepreneurship, social awareness, sustainability, and an IT application. Second, the SMR operators needed to practice CSR, expand the target market, improve the brand, increase profits, and meet legal requirements. Third, MIPs' demand social engagement, dining with dignity in a restaurant, and job opportunities. The outcome of stage one indicated that service requirements were structured to offer a roadmap of service functions on the supply side.

Stage 3, which is the service design stage (see Figure 2), shows the implementation of the Friendly Restaurant service system that applies the results of stages 1 and 2 to create a value co-creation system among the three stakeholders. The researchers listed, analyzed, and implemented the service mechanism using QFD in designing the value co-creation service system (Peng & Lin, 2016). QFD is a method that transforms qualitative user demands into quantitative parameters, deploys functionality to ensure quality, and applies methods for achieving design quality in subsystems and parts as well as ultimately to specific elements of the service process (Akao, 1994). QFD is a structured approach that takes various forms depending on the specific purpose. In addition, QFD assures that stakeholders' needs are attended to throughout the design, implementation, and delivery

of new services to improve the service development process (Akao & Mazur, 2003). In this study, 108 MIPs and 108 SMRs in Taipei were involved in applying QFD with OCL to design the service system (i.e., Friendly Restaurant app for MIPs), which is a value co-creation system among the three stakeholders. In QFD, the service requirements were confirmed by the three stakeholders after analyzing the ethnographic data from 198 videos in the previous Find and Innovation Net two stages (see Figure 2). The choice of service functions was decided by the researchers, OCL, SMRs, and MIP team members. With nine service functions, OCL offers the app, service innovation, social network, MIP job opportunity, and restaurant accreditation. Meanwhile, the SMR operators can offer accessible space and friendly service. Lastly, MIPs can participate in mobility research and restaurant consultation. Table 1 shows how the value was added through the implementation of service functions in the value co-creation system. Thus, the value-added services can be confirmed in QFD.

The MIP Friendly app was developed following the service blueprint (see Figure 3) for service delivery between MIPs and SMRs through OCL's services. The app was likewise developed based on the service blueprint for solving real-life difficulties of MIPs' dining in SMRs. Through the research process of service experience inquiry, service design, prototyping, implementation, management, and improvement, an app platform was created to improve the service and standards for the MIPs' dining experience in the restaurant industry and to solve the third research question. The app served as an innovative platform to create value for the three stakeholders. The OCL platform invited MIPs to investigate dining environments to understand and meet the needs of MIPs' dining in SMRs (Lin, 2016). Consequently, value co-creation was accomplished by the three stakeholders (i.e., MIPs, restaurant operators, and OCL investigators).

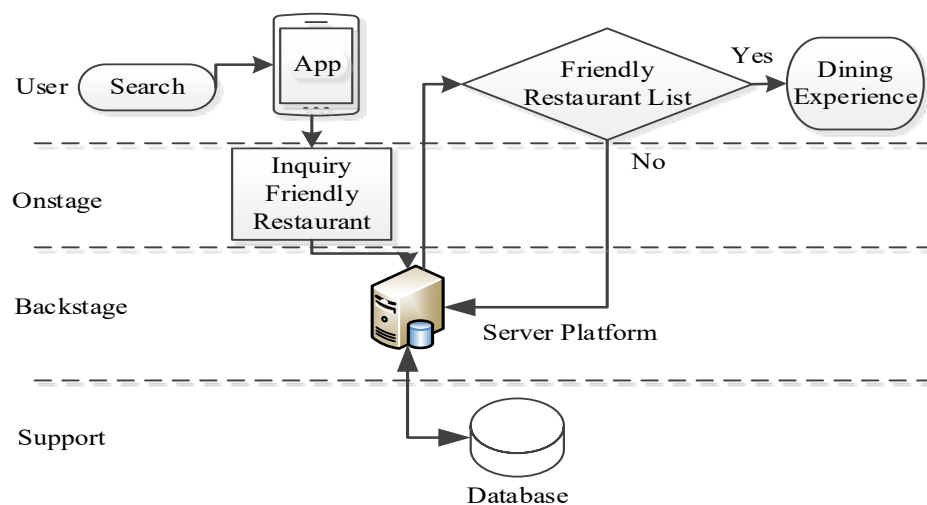


Figure 3: Service Blueprint of the MIP Friendly Restaurant app

In summary, the research design is as follows. First, service requirements are determined by (1) observing mobility-impaired obstacles, (2) interpreting life contexts and critical needs, and (3) sympathizing with the challenges faced by MIPs. Second, actions are taken to (1) create solutions and action plans from the MIP perspective, (2) innovate concepts, and (3) continue improvement based on feedback. Third, a service system is designed through QFD, thereby possibly revealing the relationships among service requirements, functions, and value co-creation services that facilitate communication among the different stakeholders (Peng & Lin, 2016, p. 1235). Lastly, the value co-creation service system is constructed to identify and satisfy the actual needs of the three stakeholders.

4. Findings and Discussions

4.1 Find and Innovation Net Stages

The credibility of the data, coding, and results of the ethnography approach at the first stage was formatted to 198 videos (OurCityLove, 2013) for the action research, service design, and system implementation research stages. The videos are for the current study and open to the public as open data. Stage two, which is the service requirement inquiry (see Figures 4-1 to 4-3), was conducted through content analysis. Enormous data were collected from multiple channels and methods, while 198 videos were analyzed using NVivo 11. The results were demonstrated to 108 MIPs, 108 SMRs, OCL, and the researchers to indicate the service requirements of the three stakeholders. MIPs received the highest weight, which is the cumulative percentage of the “frequency of text units” among the three stakeholders. This result revealed that MIPs suffered the most with dining problems in SMRs. The problems included (1) dining in the restaurant (144 text units, 36%), (2) dining with dignity (52 text units, 13%), (3) job opportunity (47 text units, 12%), and (4) social engagement (29 text units, 7%), Figure 4.1 shows the examples.

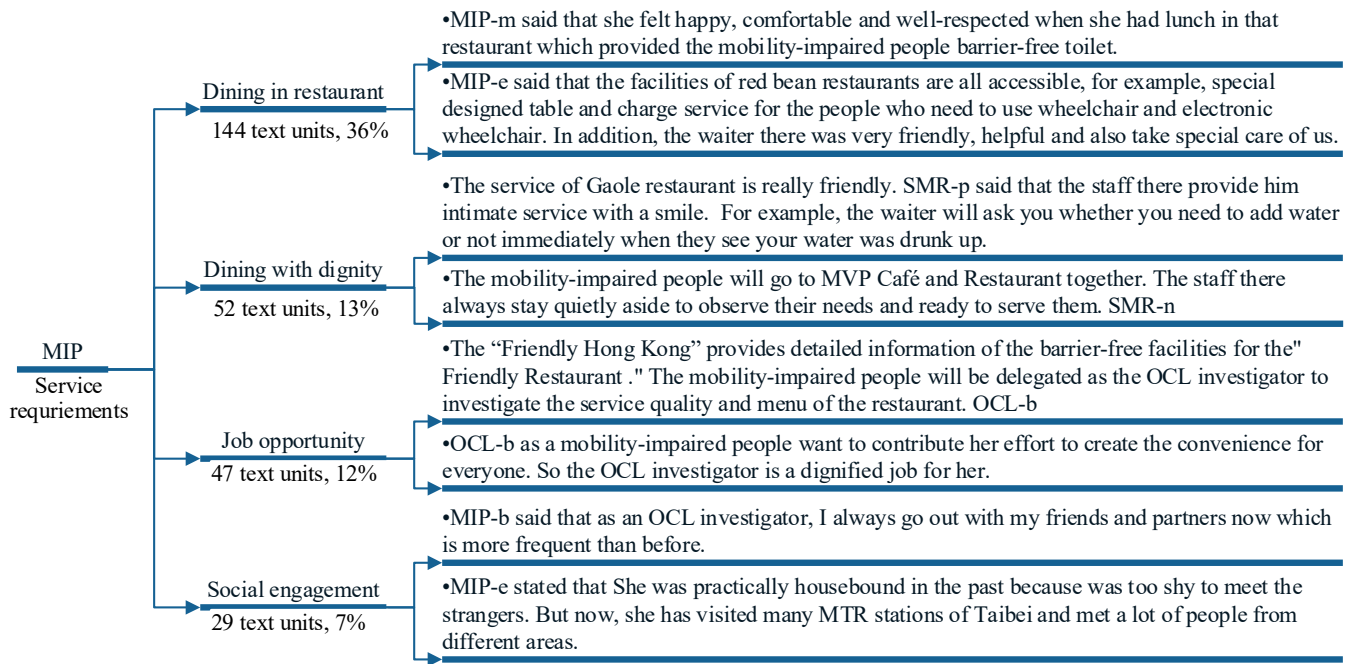


Figure 4.1: Service requirements of MIPs

In the past, only a few restaurants have understood the needs of the MIP diners. MIP-a said that “I often dine at a particular restaurant because of their flat entrance, not their food.” Furthermore, MIP-m mentioned that “When I saw that this restaurant has an accessible restroom, I was so grateful and relieved.” These responses demonstrated the frustration of MIP diners whenever they seek a venue that can meet their needs. MIPs should be able to dine with the same peace of mind that non-MIPs take for granted and not have to stress about their next restroom break. One investigator (i.e., MIP-d) thinks that “friendly” is the empathy dimension of service quality (Zeithaml, Parasuraman, & Malhotra, 2002). Stakeholders should “walk in the shoes” of MIPs before attempting to respond to the latter’s needs. Many restaurants offer accessible facilities and services that enhance the MIPs’ dining experience. MIP-e said that “When they see my wheelchair, they offer to charge my wheelchair battery, as well as very attentively provide personal service, such as serving soup.” As part of the OCL team, MIP-g said that “I feel very happy to contribute to this society.” After visiting a few restaurants, they were delighted to be part of the core project contributors. Furthermore, MIPs-b mentioned that she used to be an extremely passive person and hardly went out with friends. As part of the investigation team, she currently feels that she has found her confidence and self-worth. The results suggested that job opportunities and social engagement of MIPs are key factors in assisting them to determine the value of their contribution to society.

Second, the OCL platform received the second highest weight among the three entities: (1) IT application (38 text units, 9%), (2) social awareness (15 text units, 4%), (3) sustainability (13 text units, 3%), and (4) social entrepreneurship (10 text units, 2%). Figure 4.2 shows that examples.

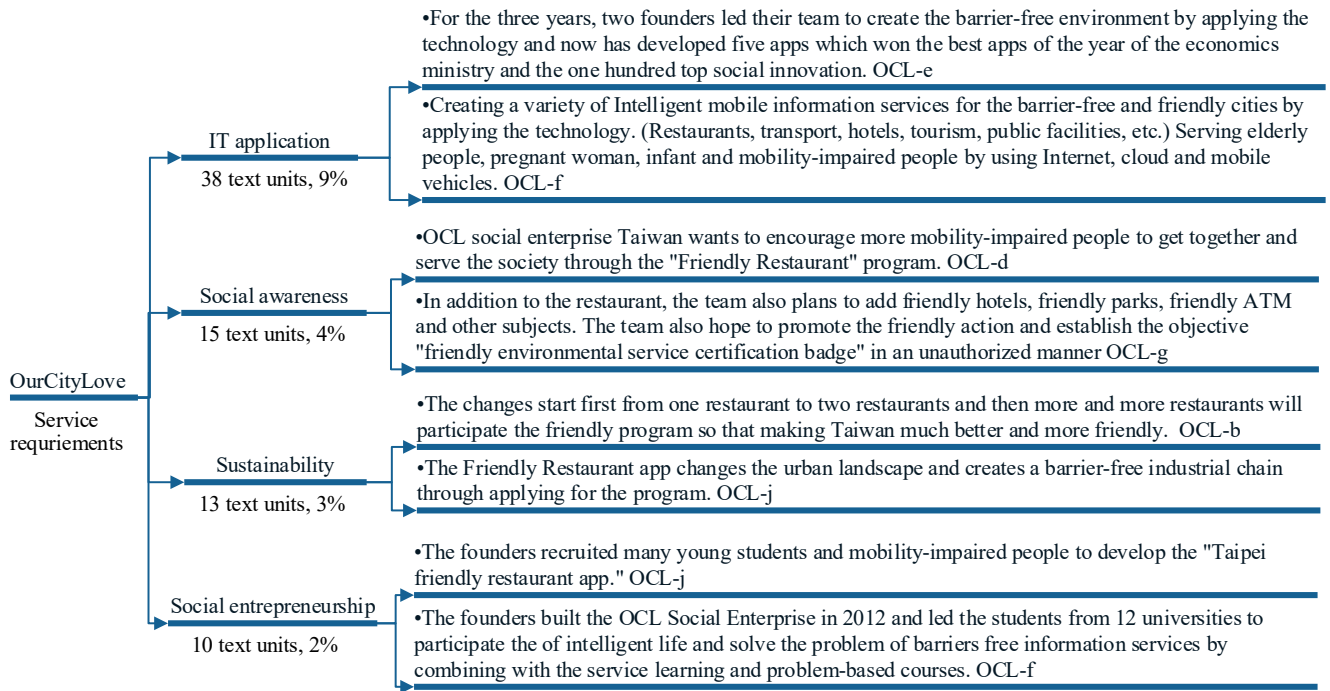


Figure 4.2: Service requirements of OurCityLove

At present, OCL is developing various apps to create an accessible environment for MIPs, including for restaurants, transportation, hotels, travel, and public facilities. By combining IT and the cloud, this platform contributes innovative services to MIPs. OCL has also received awards and support from the government. The current restaurant app aims to create a friendly and accessible restaurant dining environment and this feature could change the restaurant industry. The ultimate goal of the restaurant app is to provide services and raise awareness of the service needs of MIP diners and people with special needs.

Lastly, the SMR operators indicated that (1) CSR (23 text units, 6%), (2) increased target market (17 text units, 4%), (3) brand (7 text units, 2%), (4) profit (5 text units, 1%), and (5) legal requirements (4 text units, 1%) as various reasons to join the app service. Figure 4.3 shows the examples.

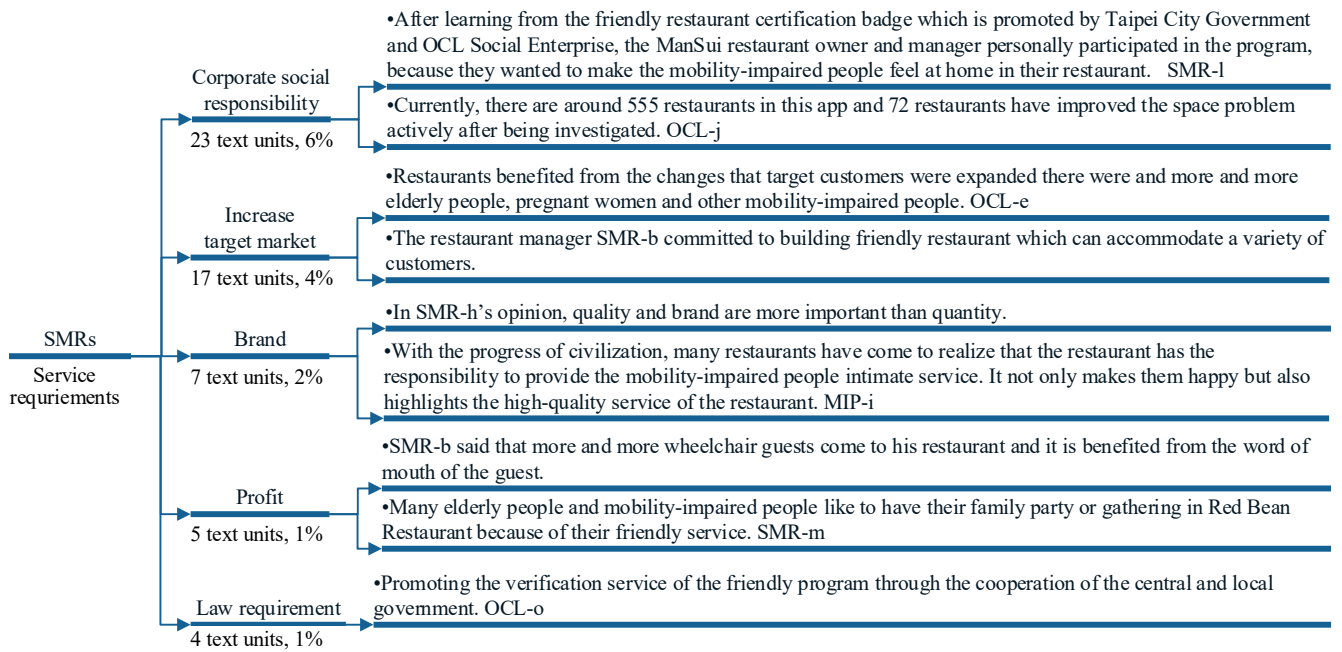


Figure 4.3: Service requirements of SMRs

One restaurant group believes that this service could incentivize the entire restaurant industry to improve services to MIP diners. One manager (i.e., SMR-k) noted that “The essence of service is friendliness.” By joining the app service, restaurant operators are willing to improve their service quality and support the needs of MIP diners. Furthermore, with proper staff training, restaurant operators mentioned that their businesses are doing better than before. The benefits of joining the app service include restaurant brand awareness and revenue increase.

4.2 Stage of Service Design

Figure 5 shows the details of the value in QFD that was co-created by the three stakeholders. QFD was constructed following the SEE process of finding questions, defining value propositions, and innovating brainstorming (see Stages 1 and 2 of Figure 2). The QFD layout is coded based on the results of previous stages for providing service functions, delivering value-added services, and eventually fulfilling the service requirements of each stakeholder at Stage 3. The process provided a systematic scenario that integrated the value propositions and service delivery for value co-creation among the three stakeholders.

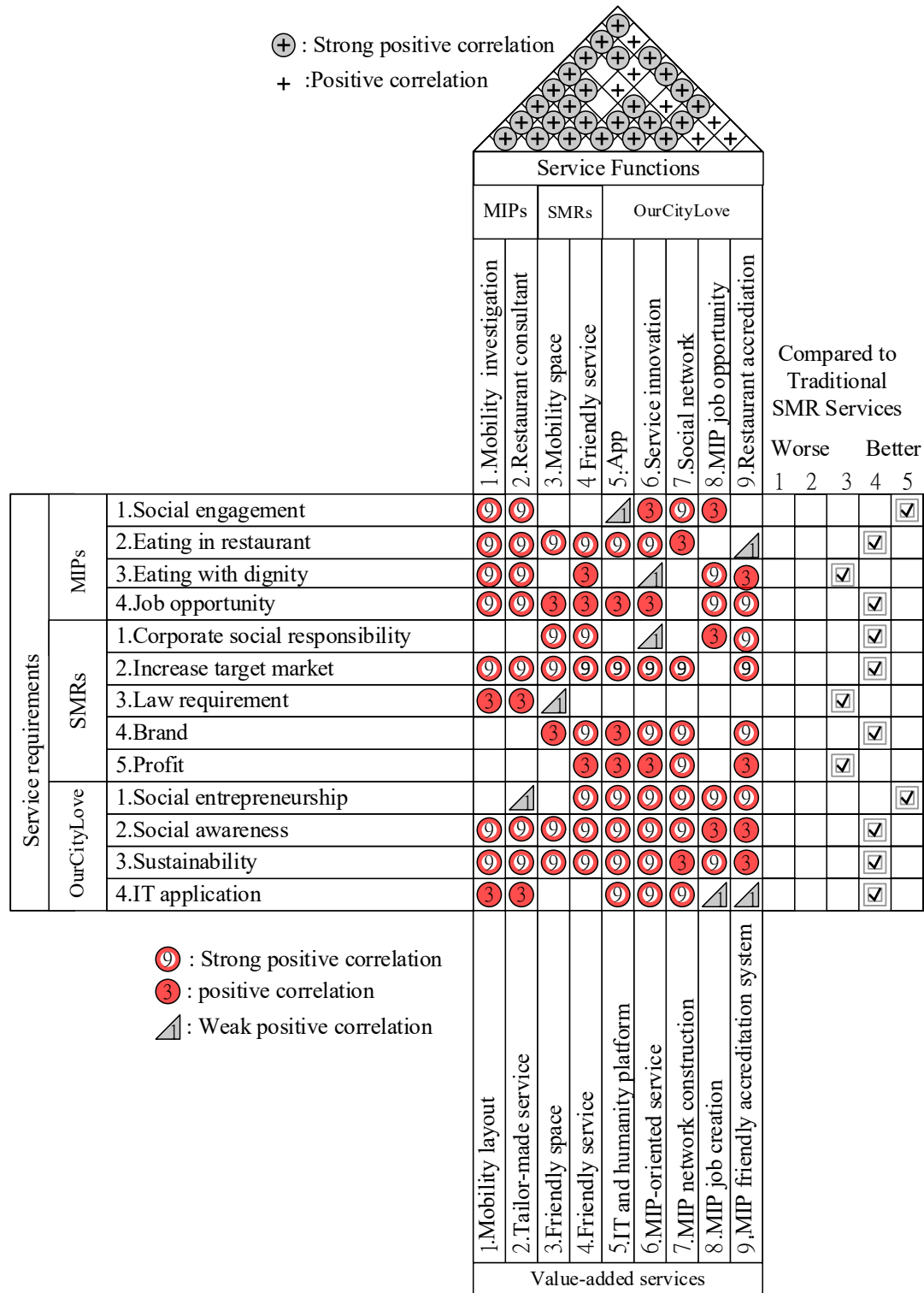


Figure 5: QFD of the Value Co-creation

Figure 5 indicates that the three stakeholders have 13 service requirements: 4 MIPs, 5 SMRs, and 4 OCL requirements. These service requirements were listed in QFD to demonstrate the value that the different stakeholders cared. Nine service functions were selected to co-create value for the three stakeholders. Each combination of service requirements and functions was evaluated by the

QFD research team to identify if the interrelationships of the QFD elements were significant (Lowe, 2000; Peng & Lin, 2016). Service functions were integrated to create value for the three stakeholders. In QFD, the positive correlation signs at the top showed the value co-creation of the service functions. The \oplus sign showed strong cohesion, while the $+$ sign indicated weaker cohesion among the service functions. The research team members analyzed the correlations of the service functions to identify how each of these service functions impacts one another to offer services that meet the service requirements (Cohen, 1995). For example, when MIPs conduct the mobility investigation for the SMR facilities and services, they can also act as restaurant consultants if SMRs ask them how to improve the facilities and services for MIPs in the future. The correlations of the service requirements and functions were indicated by the number in the middle of the matrix. The relationship matrix showed where the research team determined the relationship between service requirements and service functions to meet three stakeholders' requirements. The team asked the following question: What is the strength of the relationship between the service functions and the service requirements? Relationships can either be weak, moderate, or strong and carry a numeric value of 1, 3, or 9, respectively (Cohen, 1995, Peng & Lin, 2016). The number 9 indicated the strongest correlation, which showed the most satisfaction from a specific service function because of a specific value-added service. The current study determined that service demand and supply were met when a number is indicated in the matrix (Figure 5). Value co-creation could be considered in the entire picture and detail value was indicated by the number in the matrix. The semantic context of this analysis was the delivery of the value that came from the process of value co-creation among the three stakeholders. In the last step of the QFD process, a satisfaction survey was conducted among the three stakeholders to rate the service design compared with those of the traditional SMR services. Compared with the traditional SMR services, the proposed value co-creation service system performed better as shown on the right side of the QFD.

OCL has served as the platform for co-creating value with MIPs and SMRs. Through co-creation on the OCL platform, this study guided the interaction of the SMR operators and MIP consumers to narrow the gap in service standards and develop new opportunities for an improved society. The results supported Gummesson et al. (2014), who stated that service providers and users are no longer each other's opponents. This case has created dignified jobs for MIPs, who served as SMR investigators and conducted mobility investigations. OCL does not only emphasize people's sympathy for disability but encourages MIPs to contribute efforts based on their varying abilities, which means their disability can be their ability regarding to their own dining experiences. The uniqueness of OCL stems from being operated as a social enterprise, thereby allowing for an

innovative model to serve the stakeholders and improve the service quality in the restaurant industry in Taiwan, Hong Kong, and Malaysia.

The Friendly Restaurant app has served as a trustworthy information platform to create an inclusive, convenient, and friendly environment for MIPs to receive an excellent dining experience. This result supports Binkhorst and Den's (2009) notion of IT enhancing the consumer experience. Thus, a hub of accessibility information is created from one city to another and continuously expanding services from restaurants to hotels and eventually to the hospitality industry (Lin, 2016). Before launching the OCL platform, information flow between the SMR operators and consumers was stymied by the traditional top-down approach. Meanwhile, the current operating model of the OCL platform enables equal dialogues between the SMR operators and MIPs. This result supports Binkhorst and Den's (2009) idea that co-creation benefits consumers by giving them additional power and control in the co-creation process. The service of OCL covers 10 cities in Taiwan, Hong Kong, Malaysia, and is expanding to the Philippines, South Korea, Japan, and Thailand to promote the vision of value co-creation through the combination of technology and humanity (Lin, 2016). Figures 6.1 and 6.2 show a few of the mobile device interfaces of the Friendly Restaurant app.

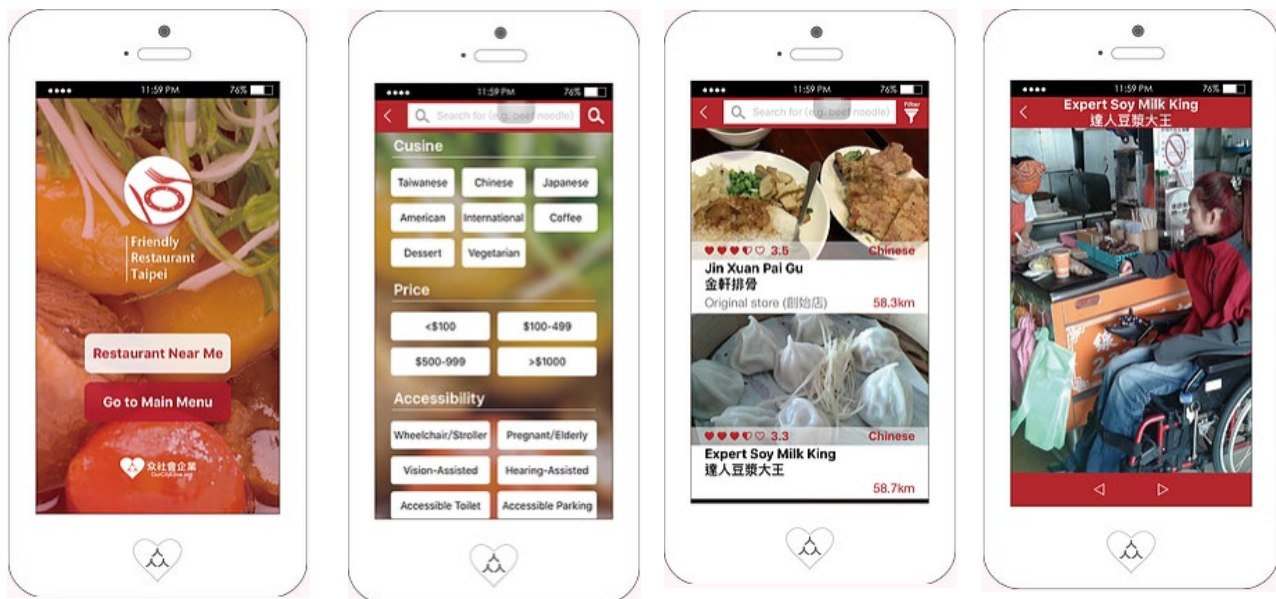


Figure 6.1: Mobile Device English Interface of the Friendly Restaurant

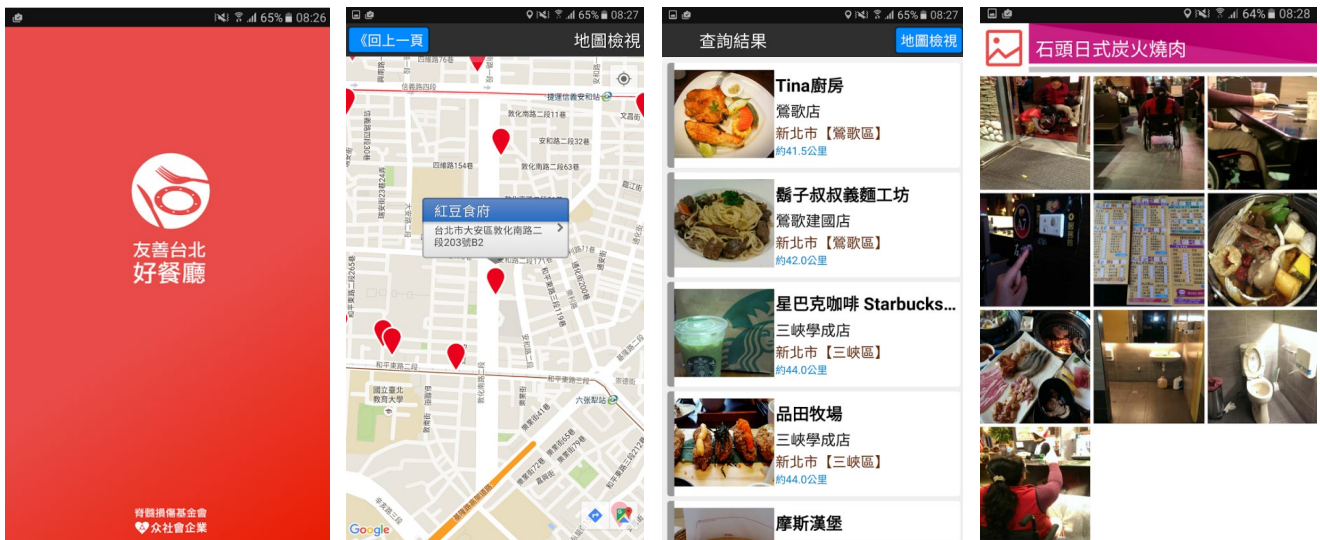


Figure 6.2: Mobile Device Chinese Interface of the Friendly Restaurant

OCL used cloud computing and mobile technology to develop a platform for MIPs with accrediting friendly SMR operators. This platform shares free information to the public through the Friendly Restaurant app. This app is the only app in the world that provides restaurant, service, and accessibility information on a single platform, thereby allowing the MIP diners to locate accessible restaurants in seconds. This outcome supports Prahalad and Ramaswamy (2004) and Gummeson et al. (2014) in advocating that the role of technology is to improve the co-creation process and interaction among consumers, consumer communities, and organizations. This app incorporates text, photo uploading, and recording functions to enrich dining content for MIPs. In particular, the Friendly Restaurant app is designed to facilitate job creation for MIPs because real-life specialists should be co-creators of the solutions that identify and target their needs. After gaining momentum and support from the public, the Friendly Restaurants are accredited with a certificate in collaboration with the city government. This recognition demonstrates that the role of social entrepreneurship contributes to business purposes and the social mission (Peng and Lin, 2016) and connects with government resources to sustain the service for long-term operation. Although the government supported the OCL growth initially, the revenue sources of OCL are currently diversifying. Restaurants pay a fee to OCL to remain in the app after obtaining a certificate for marketing, MIP consulting service, and staff training. This case presents a sustainable paradigm for value co-creation among MIPs, SMR operators, and social entrepreneurs based on S-D logic.

5. Conclusions and Limitations

5.1 Conclusions

The logic of this study starts with a framework shown in Figure 1. This framework reveals how the three stakeholders co-create value to narrow the service gap between MIPs and SMRs. The framework layouts the literature, develops the research design, conceptualizes the findings, and implements the Friendly Restaurant app platform for the three stakeholders. This study illustrates a practical case of value co-creation among a social entrepreneur, MIPs, and SMR operators, which involves the construction of a sustainable platform. In addition, past inequities in MIPs' dining rights are addressed and solutions are provided. The innovative co-creation app received recognition from other cities and countries where the app was applied, such as in Hong Kong, Taiwan, and Malaysia. Sanmargaraja and Wee (2015) indicated that barrier-free situations should be available for everyone to receive friendly service and accessible facilities, including transportation, destinations, hotels, and restaurants. With proper training for staff members, the service standards and quality of SMRs should improve diner satisfaction. Beyond the advocacy of the one-sided CSR taken by SMRs, this case has shown a practical paradigm of mutual beneficial value co-creation that contributes the knowledge of social constructivism.

In practice, involvement with a population consisting of an expanding elderly community and many people with disabilities requires creating awareness, understanding, and empathy toward various forms of temporary and permanent mobility impairment. This study demonstrates one of the solutions that can achieve equal rights for everyone in the community through a value co-creation system among different stakeholders. For SMR operators, this co-creation advances their awareness of providing accessible restaurant facilities and services (Lin, 2016). For OCL, the social enterprise develops the Friendly Restaurant app to offer MIPs a platform to search for a MIP service-friendly restaurant and transportation services. For MIPs, the service system provides MIPs with working opportunities, such as being part of an investigation team and contributing useful information to the Friendly Restaurant App. Lastly, this service platform and concept draw the attention of government policymakers in providing services as inspired by the approach taken by OCL.

According to S-D logic, the theory is extended to a three-way mutual engagement in the empirical study, whereby the value co-creation in the case fully utilizes the resources for engagements among users (MIPs), service providers (SMRs) and the moderator of a social enterprise (OCL). The result echoes to the study of Torres (2018) that co-creation as a tripartite relationship of activities, with an entity mediating between service providers and customers. QFD demonstrates the details of various levels of engagements through the co-creation process among three stakeholders. The OCL app (i.e., Friendly Restaurant platform) is an empirical outcome of the co-creation study. In addition, this study contributes to the literature of S-D logic a unique population (i.e., MIPs),

which is the first time the subjects are discussed in the context of the theory. Theoretically, this study advances the literature on the consumer behavior of MIPs from disadvantaged customers in the social theory of disability (Abberley, 1987) to value co-creation customers in S-D logic (Vargo & Lusch, 2004b). MIPs are no longer living in socially exclusive situations or as disadvantaged customers anymore (Barnes & Mercer, 2005). They are welcomed as active customers in co-designing service with SMRs for MIPs based on the S-D logic.

This study provides a practical case of implementing a value co-creation system. In the case study, key stakeholders fulfilled their value propositions through value co-creation. First, MIP diners with special needs received friendly service and accessible space at SMRs by using the Friendly Restaurant app service. Through OCL training, several MIPs were hired to participate in co-creating mobility investigation for accrediting certified friendly SMRs. Second, SMRs in Taiwan, Hong Kong, and Malaysia provided their friendly services to MIPs through the OCL services, which demonstrated the implementation of CSR internationally. SMRs have successfully increased their diner profiles to a new target market, MIPs. Third, by supporting and working with the social entrepreneur OCL, government policymakers can raise the satisfaction of MIPs' dining experiences by encouraging SMRs to be certified as friendly restaurants.

5.2 Limitations and future research

For the limitations of this case study, the Friendly Restaurant app will need additional time to become available to various users and providers worldwide. Another limitation is that cultural differences may lead to different outcomes because this study was conducted in Asia. That is, stakeholders in Western cultures may be different from Asians in the manner by which they feel and express their needs. Hence, meeting the needs of MIPs and other stakeholders in various cultures may involve different approaches. This case study offers research insights into MIPs and SMR operators through a social entrepreneur (i.e., OCL platform) with the goal of advancing the service quality of SMRs. Future research may investigate additional cases of value co-creation in the hospitality industry for general causal relations.

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