

Use of Digital Technologies in Consumer Fitness Practices: Insights from Service-Dominant Logic

Yuanfei Guo

University of Waikato
daisy_catherine@qq.com

Mary FitzPatrick

University of Waikato
maryfitz@waikato.ac.nz

Roy Larke

University of Waikato
roy.larke@waikato.ac.nz

Abstract

Suboptimal health and chronic disease are major health issues worldwide, accounting for 63% of the cause of deaths globally in 2012 (World Health Organization, 2012). In China, the increasing numbers of young Chinese consumers with suboptimal health are causing concern to healthcare policy-makers and providers. This paper presents research findings that show state-of-the-art digital technologies (e.g., smart devices and fitness apps) influence Chinese Gen Y consumers' fitness practices and therefore offer the potential for improving their lifestyles. Using a non-experimental quantitative methodology, we examined the construct of 'value' for 230 Chinese Gen Y consumers in relation to their fitness practices facilitated by digital technologies. Given the research focus on value and value co-creation that occur within virtual fitness communities, we adopted Service-Dominant (S-D) logic as the theoretical framework. Analysis showed that respondents reported high fitness-oriented and experience-oriented value in the use of digital technologies in their fitness practices, whereas socialising-oriented value was the least important value. The findings of this study provide a new application of S-D logic to consumers' online fitness behaviours, which substantiates S-D logic's applicability in interpreting emerging consumer behaviour phenomena in complex service contexts. Finally, by addressing the gap in marketing research on consumer fitness practices facilitated by digital technologies, this research sets a base for future studies of consumer health and wellbeing using the latest electronic tools, systems, devices and resources that generate or process consumer data.

Key words: Services marketing, digital technologies, fitness practices, value co-creation, service-dominant logic.

JEL classification: M31.

1. Introduction

Health is not merely the absence of disease but a state of complete physical, mental and social well-being (World Health Organisation, 2017). In recent years, the concept of suboptimal health has attracted increasing attention because of the established links between a continuous state of suboptimal health and the risk of chronic diseases, including cardiovascular diseases, diabetes and cancers (Li et al., 2013; Yan et al., 2012). Suboptimal health is linked directly to environmental factors, stress and unhealthy lifestyles (Chen & Pu, 2014). Such environmental conditions are commonplace in the daily lives of many people so suboptimal health and chronic disease today represent 63% of cause of deaths globally (World Health Organization, 2012). In China, this figure has reached a significantly higher rate than the international statistic. China is a developing country undergoing rapid economic development and social change. However, the improvement of people's living standards co-exists with environmental pollution and food safety issues. Correspondingly, suboptimal health is a particularly severe issue for China.

There are a number of specific contextual factors that help to explain China's high percentage of people who experience suboptimal health. These factors include the fact that the Chinese Gen Y cohort, as children of Baby Boomers or early Gen X, formed another demographic peak in Chinese history (Chinese Statistics Bureau, 2010). Severe pollution, sedentary lifestyles, highly competitive living conditions and a unique sub-culture have resulted in a large proportion of the Chinese Gen Y cohort suffering from sub-optimal health. Commentators are aware that the sub-optimal health status of Gen Y is likely to place a heavy burden on Chinese medical services in the future, unless there is an intervention to improve these trends.

In this challenging context, digital technologies offer the potential to improve lifestyles. Previous research indicates that digital technologies (including wearable smart devices and fitness apps) are helping Chinese people with sub-optimal health to exercise, eat healthier, manage sleep, and improve their social lives (Chen & Pu, 2014). Certainly, digital technologies offer low cost information flow, accessible data visualisation, intelligent data collection, powerful social networking capabilities and influence (Conroy et al., 2014; Vickey et al., 2011) to help individuals - consumers and healthcare providers alike - who are interested in fitness and health. These important developments are also attracting attention from government, research communities, and the commercial sector in China because of the substantial role that digital fitness technology might play in reducing chronic disease through supporting healthy living habits and lifestyle.

Chinese Gen Y consumers, who make up the largest cohort using digital technologies in their fitness practices, are extremely heavy users of internet and mobile devices. This cohort has lived through the development of the Chinese internet industry and exists in today's mobile internet era; therefore, virtual communities are an integral part of their internet consumption practices and deeply ingrained in their value system.

With these contextual factors in mind, the goal of this research is to investigate digital technology use in the fitness practices of Chinese Gen Y consumers. Employing a marketing perspective, the research sought to investigate the use of digital technologies and fitness practices in the day-to-day lives of Chinese Gen Y consumers, specifically to answer the research question: What value is constructed by Chinese Gen Y consumers in digital technology-facilitated fitness practices? Our aim was to provide empirical evidence that will enable service providers to better understand Chinese Gen Y consumers' value constructions and needs as the basis for designing improved fitness and health-related services.

2. Literature Review

Several research gaps were found in our review of the literature. First, in the broad category of sport and fitness marketing, more studies have been conducted in the sports and health care field than in the fitness area. Second, despite the importance of customers' participation and engagement in healthcare and fitness practices (Gummesson & Grönroos, 2012), only a few studies have provided insights into value co-creation. Third, despite the impact of digitalisation in people's daily lives (Shallcross, 2015), little empirical research has been conducted on online fitness that employs a service marketing perspective. Fourth, the majority of existing sport and fitness marketing research was conducted in Western and developed countries, whereas studies in Asian and developing countries are lacking.

This study, which aimed to fill these gaps, was designed to answer the following question:

What is Chinese Gen Y consumers' value construction in their digital technology-facilitated fitness practices? Thus, the main focus of the research was on value co-creation using smart devices and fitness apps among Chinese Gen Y consumers; therefore, we adopted Service-Dominant (S-D) logic as the conceptual framework to analyse and interpret the data. S-D logic was born in the digital era and is developed on the foundation of all previous service marketing research (Gummesson & Grönroos, 2012). These attributes make it one of the most advanced and well-rounded logic frameworks amongst theories related to service marketing (Maglio & Spohrer, 2008) that can be adapted effectively to current developing social and economic circumstances (Yan, Ye, Wang, & Hua, 2010). By contrast with previous studies on 'services', S-D logic clearly distinguishes 'service' from 'services'. S-D logic considers service as the basis or nature of economic and social exchange (Vargo & Lusch, 2004) rather than service activities or value-added services that are often offered to enhance a good (Gummesson & Grönroos, 2012; Vargo & Lusch, 2004). Furthermore, S-D logic can be applied to a wide range of fields, including fitness and health care (McColl-Kennedy, Vargo, Dagger, Sweeney, & van Kasteren, 2012), and to a wide range of all market offerings, including those that involve tangible goods in service provision.

3. Method

To investigate Chinese Gen Y consumers' value construction in their digital technology-facilitated fitness practices, we followed a non-experimental quantitative methodology and designed an exploratory descriptive study to explore basic issues within the phenomenon before identifying key variables using S-D logic as the conceptual framework. Finally, we followed a survey method, choosing to use an online questionnaire because we could pose relatively complex questions in a cost-effective way. Moreover, gathering data via an online questionnaire aligned well with the participants being frequent users of smartphones and social media. The sample consisted of 230 Chinese Gen Y consumers born between 1980 and 1995, who had used a smart device and/or fitness app for at least one month in their regular fitness practices. Respondents came from 21 of the 31 provinces in mainland China, with more than half residing in Beijing.

We designed the questionnaire based on our review of previous sports marketing research. The questionnaire was translated from English into Mandarin. Sojump was used to design and administer the questionnaire. The invitation to participate in the research was sent through WeChat, one of the most popular social media platforms in China. SPSS was used to analyse the data.

4. Results and Discussion

The smartphone was the technology most used by respondents for exercising (95.2%), with the second most commonly used device being the smart bracelet (52.2%). Other frequently used wearable and unwearable devices were smart watches (18.7%) and smart weighing scales (24.8%). Bluetooth headsets (17.8%) were the most commonly used independent device. In comparison, although smart sportswear (10.0%) and motor sensing devices (8.3%) had been tried by some respondents, they were relatively unpopular among the Chinese Gen Y respondents. Results indicate that Chinese Gen Y consumers consider their economic situation when choosing smart devices that require a higher level of expenditure in their value co-

creation. Furthermore, the findings suggest that the smartphone might be a preferable alternative to wearable devices because most people already own and carry one, so no extra cost and effort are required.

In terms of the persistence of use, 2.2% respondents had discarded the smartphone as an exercise tool, whereas all other smart devices had 30.0% to 70.0% abandonment rate within a month. A comparison between the two results of “have ever used” and “have used >1 month” revealed that the smartphone is the device used for longest time in the majority of Chinese Gen Yers’ fitness practices.

The most popular fitness apps in Chinese Gen Y consumers’ exercising were daily record apps (83.0%) and target training (with social media) apps (61.3%). The next highest category was target training (without social media) apps (24.4%), sleeping apps (23.9%), health platforms in the smartphone (18.7%), and diet apps (18.3%). Gamification apps and O2O apps were the least popular. The data also showed that WeChat sports and Keep are the most popular daily record and target training (with social media) apps respectively.

From an S-D logic perspective, smart devices and fitness apps are the main resources used in online fitness practices while sports venues (e.g., gyms) and equipment are the main offline resources. Both online and offline resources are integral parts of Chinese Gen Y consumers’ fitness practices. Data indicate that online fitness resources do not replace offline fitness resources but, rather, the two complement and support each other in Chinese Gen Y consumers’ fitness practices. With reference to sport and fitness marketing in the digital era, online fitness resources provide a valuable source of information as well as social incentives through internet-based online fitness communities. Also, digital technologies enable respondents to exercise and monitor their health anywhere that is comfortable and convenient. However, to gain benefit from the use of digital resources in fitness practices, individuals have to be equipped with basic knowledge about technology and fitness while a degree of self-discipline is required to persist in exercises.

Respondents were asked to rate the importance of 12 benefits of using a fitness app. Three factors with eigenvalues greater than 1 were extracted: fitness-oriented value, experience-oriented value, and socialising-oriented value. These three factors explained 59.9% of the variance. *Fitness-oriented value* refers to the benefits of smart devices and fitness apps in helping respondents exercise more effectively or more conveniently, thus helping them reach their fitness goals. *Experience-oriented value* refers to increased experiential benefits in the respondent’s use of a smart device or a fitness app. These benefits include not only easy use due to ‘user-friendly’ design, but also the pleasure gained from engagement, internal motivation, and multi-actor interactions. *Socialising-oriented value* refers to increased benefits in the respondents’ socialising activities they experienced in their fitness practices. Respondents who emphasised this value orientation were more willing to show themselves to others as well as meet new people and make friends in virtual fitness communities. Table 1 shows the overall importance of each value orientation in Chinese Gen Y consumers’ digital facilitated fitness practices.

Value factor	Mean	SD	Corresponding Likert scale	N=230
Fitness-oriented value	3.75	.69	Important	
Experience-oriented value	3.70	.75	Important	
Socialising-oriented value	2.42	.92	Not important~Neutral	

Table 1. Value orientations

To summarise, fitness-oriented and experience-oriented value are both pivotal in Chinese Gen Y consumers' value construction in their digital technology-facilitated fitness practices. In comparison, socialising-oriented value is less important. This finding is consistent with previous research in the offline fitness marketing (Woolf, 2008) suggesting that socialising is not an important motive for people to take part in physical activities.

From the S-D logic perspective, where 'value' is always uniquely and phenomenologically determined by the individual (Vargo & Lusch, 2008), Chinese Gen Y consumers' value constructions vary according to fitness level and gender. Moreover, in relation to S-D logic, these value constructions are likely to be influenced by the nature of the Chinese fitness industry and Chinese Gen Y consumers' subculture as relevant institutions (Vargo & Lusch, 2016). Not surprisingly, the perceived importance of fitness-oriented value grows with an increase in fitness level. Correspondingly, it may be the case that Chinese Gen Y consumers who are at a higher fitness level are more attracted to online fitness practices as opposed to offline fitness practices because they are cheaper, more accessible, and more flexible.

Chinese Gen Y consumers also consider experience-oriented value to be an important factor in their use of smart devices and fitness apps. There are several possible explanations for this result. One possibility is that the abundance of choice in today's market (Gay & Leijdekkers, 2012) encourages Chinese Gen Y consumers to have high expectations of products and therefore a user-friendly interface seems to be a necessary element for a product's popularity (Chen & Pu, 2014; Conroy et al., 2014; Kranz et al., 2013). Additionally, Chinese Gen Y consumers as 'natural-born netizens' (Jing & Ruiming, 2013) are used to rapidly-changing technologies in their daily lives and have great enthusiasm for experiencing new and 'cool' products.

Despite the overall low importance of socialising-oriented value in the sample, socialising-oriented value is important to those who enjoy socialising with others compared to those who do not enjoy socialising with others, and males compared to females. Following the S-D logic emphasis on institutions in value-creation, it is reasonable to expect that the socialisation and living circumstances of Chinese Gen Y consumers (Vargo & Lusch, 2016) will lead to higher levels of socialising-oriented value for males. For example, because the ratio (1:1.05) of Chinese Gen Y males to females (Chinese Statistics Bureau, 2010) can result in increased pressure for single males to marry, some of them are likely to consider virtual fitness communities as a way to meet females.

5. Conclusions

This research confirms the importance of smart devices and fitness apps in helping Chinese Gen Y consumers in general to perform fitness practices more effectively and hence increases the possibility for them to develop a healthier lifestyle. Therefore, the study indicates that smart

devices and fitness apps might be extremely helpful in addressing the issue of increasing numbers of Chinese Gen Y consumers with suboptimal health status.

Moreover, the findings of this study have important implications for S-D logic and service marketing. First, the study provides a new application of S-D logic in the online fitness context, which substantiates S-D logic's applicability in interpreting new phenomena in complex service ecosystems. Thus, the research contributes to S-D logic by revealing that Chinese Gen Y consumers phenomenologically co-create value in their fitness practices in relation to other consumers and firms. Moreover, the research indicates that institutions play an important role in explaining consumers' value constructions and their value co-creation behaviours.

6. Limitations

Findings of this research are limited by the comparatively small sample size, necessitated by limited time and resources. A larger sample of Chinese Gen Y consumers from all 31 provinces in mainland China would better represent the research population and improve the reliability of the findings.

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