Revista Argentina de Clínica Psicológica
2021, Vol. XXX, N°1, 162-173
DOI: 10.24205/03276716.2020.2014

The Relation between Innovation and Revisit Frequency; A Moderating Role of Duration to Stay in Sports or fitness Club

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Abstract

Purpose: This study aims to investigate the impact of vicarious innovativeness, fitness innovativeness, and adoption innovativeness on revisit frequency in fitness. Moreover, the moderating role of duration to stay was checked in these relations.

Method: The data for the study were collected from 311 members of different fitness clubs by using a purposive sampling technique and analyzed by applying structural equational modelling through AMOS. First of all, the reliability and validity of data were ensured and after that hypothesis were tested.

Results: The study results highlighted a significant effect of vicarious innovativeness, fitness innovativeness and adoption innovativeness on revisit frequency of members of fitness clubs. Further, the results revealed that duration of study moderates the relation between "vicarious innovativeness and revisit frequency", "fitness innovativeness and revisit frequency" and "adoption innovativeness and revisit frequency".

Originality: Many studies explored the effect of innovation on customer behaviour intention regarding the product. This research focuses on different types of innovations with reference to behaviour associated with fitness clubs and their innovative services.

Limitation: The study is limited to innovation from the perspective of sports or fitness clubs in China. Only three types of innovations are studied because of their relevancy with scope of study. The future studies can focus on fitness clubs of other countries and use frugal innovation as a fourth type. Futhermore, the same model can be studied from the organizational context with addition of radical innovation.

Implication: The policymakers, owners of fitness clubs, managers of fitness clubs and physical fitness trainers can use this study as a framework for their policy development.

Keywords: Vicarious Innovativeness; Adoption Innovativeness; Fitness Innovativeness; Revisit Frequency; Duration of Stay

1. Introduction

The process of globalization has increased the integration of the global trade cycle, which has led companies to rapidly launch new products to outperform their competitors, leading to extreme international competition. Therefore, firms should understand the sensitivity of global markets before launching new products as choosing an appropriate market is crucial to the success and failure of a newly introduced product. The firms need to recognize which markets welcome new products and how they can spread across the target market. In their study, Chandrasekaran and Tellis (2008) stated that both goods and services could generally be termed as a product. Moreover, this evolving environment allows innovators and entrepreneurs to make some dynamic changes in the health care sector to introduce and promote new methods and techniques to facilitate health care services at affordable prices (Marques et al., 2012).

Fitness services require physical interaction between the provider and the customers, and fitness-services operations are complex (Chelladurai et al., 1987) and distinctive (Chang and Chelladurai, 2003). Therefore, fitness-services providers must understand their customers, and qualitative studies are especially useful in this regard (Lagrosen, 2001). Consumers play an essential role of innovator, in spreading and

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Funding: supported by 'the Fundamental Research Funds for the Universities of Henan Province.

adopting new products to attract the attention of many researchers (Gatignon & Robertson, 1991). A creative cognitive style (a generalized, unobservable predisposition) is one of the characteristics that has gained considerable attention; such idiosyncratic consumer innovation (ICI) is certainly related to the consumer adoption behaviour of new products (Im et al., 2007). Midgley & Dowling (1978) defined vicarious innovation as learning about new goods using consumer's experience and personal or non-personal conversations. Therefore, consumers are actively involved in specific product categories Robertson (1971), resulting in giving preferences to innovation (Goldsmith & Hofacker, 1991), formulation of new experiences (Goldsmith, 2001; Wong, 2012), risk perceptions (Truong, 2013), and favourable consumer attitudes (Carro, Mazzon, Caemmerer, & Wessling, 2011).

On the basis of previous studies on innovation, Garcia and Calantone's (2002) claimed that to determine the innovativeness of service, most scholars (e.g., More, 1982; Rothwell and Gardiner, 1988; Cooper and Brentani, 1991) have adopted the viewpoint of organizations. Therefore, many scholars have reported that service innovation is introduced only when the service development team achieves the desired results of the invention (Van Der Vegt and Janssen, 2003; Blazevic and Lievens, 2004; Avlonitis et al., 2001) or the service is operationalized after a central assessment of potential consumer's feedback (Sethi et al., 2001). It has scientifically proven that DSI positively impacts the surfing of tourism website's innovative behaviours (Couture et al., 2015). According to Citrin et al., (2000), the affiliation of internet surfing time and internet usage rate for business is moderated by the DSI. Many other scholars have experienced the moderate effects of customer innovativeness (DSI) on consumer adoption behaviour of innovation with certain adaptive variables (Bartels and Reinders, 2011; Hur et al., 2012). In the association of perceived value and destination revisit intentions, DSI also acts as a mediator. The psychological features of innovation can give rise to creativity and develop good behavioural intentions to well-known situations (Venkatraman & Price, 1990). The current study has focused on vicarious innovativeness, fitness innovativeness and adoption innovation innovativeness. The impact of these innovations was studied on revisit frequency, and this relation was examined with the moderating role of duration to stay in fitness club.

2. Literature

In the field of health-care, services management in past few years has attracted the attention of many scholars, but unfortunately, most of the research has concentrated only on the improvement of traditional health care facilities (Arcelay et al., 1999; Ennis and Harrington, 1999; Lagrosen, 2000; Wagar and Rondeau, 1998; Yasin and Alavi, 1999; Kwateng et al., 2017; Sibarani & Riani, 2017; Campos et al., 2017). Compared to traditional health care, the fitness industry has failed to get much attention from scholars (Miragaia et al., 2019; Foroughi et al., 2019; Wright et al., 2017). Similarly, sports marketing has also received considerable attention, but we found a minimal contribution of scholars in the fitness industry. However, the fitness industry is swiftly flourishing (Tawse and Keogh, 1998 and the standard of facilities in this sector is given greater importance (Papadimitriou and Karteroliotis, 2000). There is a greater need to develop systematic organizational and management practices by the health–fitness club executives to ensure their services' efficiency. A group of scholars highlighted service quality as one of the critical factors that determine an organization's lifelong profitability and its customers' persistence (McDonald & Howland, 1998; Zeithaml, Berry, & Parasuraman, 1996). It is a golden role of an organization's success that marketing efforts should be spent on retaining existing customers rather than incorporating the new ones (Fornell, 1992; Fornell & Wernerfelt, 1987; Sonnenberg, 1989). Thus, it is crucial to maintain quality services to meet or exceed customer satisfaction (Stum & Thiry, 1991).

There have been 16,983 active health clubs in the United States since January 2001, which have earned a combined profit of 11.6 billion dollars for the year 2000. During the same period, the total number of memberships has jumped from 17.4 million in 1987 to 32.8 million. A study by DellaVagina & Malmendier (2004) found that more than 50% of individuals have possessed private health clubs membership, while 34% use public health services. Thus, we can say that the health club industry has gained considerable attention and booming worldwide. According to Cracknell (2015), the growing number of health clubs has crossed the 150,000 marks worldwide, including 1.4 million members, valued at an approximate of 77.5 billion dollars. This has led the health club consumers to direct the management's attention in developing customer-desired services (Ferrand et al., 2010). Therefore, providing a constant supply of new experiences to meet customers' needs is essential

to survive in a highly competitive industry (Pine and Gilmore, 1999). However, this health care industry is worth 8 billion dollars that permit health clubs to attract 36 million potential customers while facing stiff competition within the industry, along with facing various challenges from other organizations. On the other hand, some individuals intend to train while visiting a destination or expect an exercise facility at their place. As a result, the number of homes, hotels, and resort fitness clubs is increasing rapidly. A study by Zeithaml and Bitner (2000) proposed that service firms' survival highly depends on understanding consumers' innovative behaviour to overcome their competitors and target new segments of the market. However, the above statement is especially true for "facility-driven" recreational services, including fitness clubs (Turley and Fugate, 1992). Literature has long established that modern products are always attracted to modern consumers. They tend to buy and consume modern goods in various ways that maximize their psychological and functional appeals (Choi and Kim 2016 and Hong et al., 2017). Accordingly, firms that aim to offer innovative products increase the repurchase intentions and customer loyalty to the firm (Lafferty et al., 2004; Pine and Gilmore, 1999). Consequently, managers of fitness clubs should identify the modern advancements of the fitness industry to develop a modified systematic arrangement that can improve the customer's loyalty to the club (Chang et al., 2019). Since last few decades, many attempts have strengthened to bring the service quality and its innovative features to the forefront of economic research policy (Evangelista and Sirilli 1995; Tidd and Hull 2003). Carrying out new combinations and new method of productions assist firms to develop low-cost beneficial services that have been proved instrumental in improving consumer well-being (Golder and Tellis, 1997). Thus, implementing the modern advancements of fitness innovations (FI) improve the market reputation of fitness clubs. However, consumer demand and usage behaviour also play a vital role in the success of this process.

In studies related to innovation, many highlighted the necessary aspects of consumer innovativeness, including the variety seeking, novelty seeking and an optimal level of stimulation (Wood and Swait, 2002). The desire for improvement is the basis of a consumer's tendency to acquire innovative products and is an effort to alleviate the boredom tag from branded products (Van Tripj, 1996). According to Manning et al., (1995), consumers' novelty-seeking process indicates the early phases of consumer adoption behaviour (e.g., new product awareness), while the freedom of communication means the advanced stages of new product development. Goldsmith et al., (1995) described that an international indicator of consumer innovativeness is inadequate concerning consumer adoption behaviour. However, the consumer adoption behaviour of fashion and electronic innovations restricted firmly to domain-specific innovativeness. In recent times, the study of Steenkamp and Gielens (2003) have shown that the consumer's adoption of packaged goods usually affected by the general features of consumer innovativeness. It has been highlighted that there are multiple types of consumer innovativeness, which comprised vicarious innovativeness (VI) (Hirschman, 1980), domain-specific innovativeness (DSI) (Goldsmith and Hofacker, 1991) and consumer innate innovativeness (CII) (Midgley and Dowling, 1978).

When a consumer learns and experiences the new product employing personal and impersonal interactions is known as vicarious innovativeness (Bass, 1969; Hirschman, 1980; Midgley & Dowling, 1978). Scholars have identified three essential variables that facilitate consumer personal and impersonal interactions, including exposure to advertising, modelling, and engagement in WOM communications (Bearden, Netemeyer, and Teel 1989). The term advertising is best understood as the process of providing awareness to consumers through marketing campaigns before adopting new products. The advertising process is recognized as a type of impersonal communication (Im et al., 2007). Vicarious innovativeness and NPAB innovation are positively connected. Therefore, modern consumers tend to obtain information through interpersonal communications to share their desired innovative features and, as a result, more anticipated to adopt them (Hirschman, 1980; Midgley & Dowling, 1978). The emerging trend of advertisement in the fitness industry can effect revisit intention of members. Therefore, it is hypothesized that:

H_1: Vicarious innovativeness has a positive impact on revisit frequency.

The literature has shown that consumer innovativeness has a meaningful effect on consumer's recognition and adoption behavior of innovative goods (Roehrich, 2004). Furthermore, product adoption behavior of innovative consumers involved in an ineffective relationship with innate innovativeness (Citrin et al., 2000; Im et al., 2007). Whereas, in terms of domain-specific innovativeness, consumer adoption behavior has

shown more productive association with innate innovativeness of consumers (Chao et al., 2012). According to Hong et al., (2017), DSI has a direct impact on consumer purchasing standards (hedonic and utilitarian values) and impose an indirect influence on consumer's decision to wear a smartwatch. Simlarly, Kim et al., (2017) have found out that DSI influenced sports fans' behavioral intent to buy and consume the gears of the sports team. In their study, Kim and Chiu (2019) established the fact that the development of constructive technologies optimistically influences the use of wearable sports equipment. In fitness settings, fitness customers are keener towards innovative and latest products. Therefore, we proposed the following hypothesis:

H_2: Fitness innovativeness has a positive impact on revisit frequency.

The world's most renowned corporations have announced that their products strive to meet the necessary financial objectives at a rate of over 50% (Schnurr, 2005). In this regard, the study of Hultink et al., (2000) highlighted some practices that possibly be the issues of product failure, which includes product diffusion process, rate of consumer acceptance, and the development of new products based on latest product adoption. An empirical investigation indicates that innovative products' adoption process is influenced by innate innovativeness of consumers that assist in highlighting innovators (Rogers, 2003). For the last twenty years, the concept of innovation has attained considerable attention that rose his significance in the various aspects of our lives; however, we still lack the knowledge, determinants, and economic consequences of the innovation process (Abrunhosa, 2003). The personality trait of innovation adoption with reference to fitness can be revisited in the fitness club. Based on the above discussion, we hypothesized that:

H_3: Adoption innovativeness has a positive impact on revisit frequency.

The fitness industry is commercializing day by day, and from the perspective of business, many researchers have studied fitness. Kim & Ahn (2017) investigated the effect of fitness among entrepreneurship, innovation activities and dynamic capabilities on business performance. The fitness centres worldwide offer a convenient service environment that enables fitness users to use a range of fitness equipment required in various training phases (Shehbaz, 2019; Baena-Arroyo et al., 2020). Therefore, workout enthusiasts who spend most of their time in training are more determined to accelerate the use of more equipment that increases their chance of reconsidering fitness clubs, compared to users with a short stay at fitness clubs (Wang et al., 2006a, b; Chang et al., 2020). Thus, we purposed the following hypotheses.

H_4: Duration of stay positively moderates the relation between vicarious innovativeness and revisit frequency.

H_5: Duration of stay positively moderates the relation between fitness innovativeness and revisit frequency.

H_6: Duration of stay positively moderates the relation between adoption innovativeness and revisit frequency.

Based on the discussion given above, the following model was developed for the study.

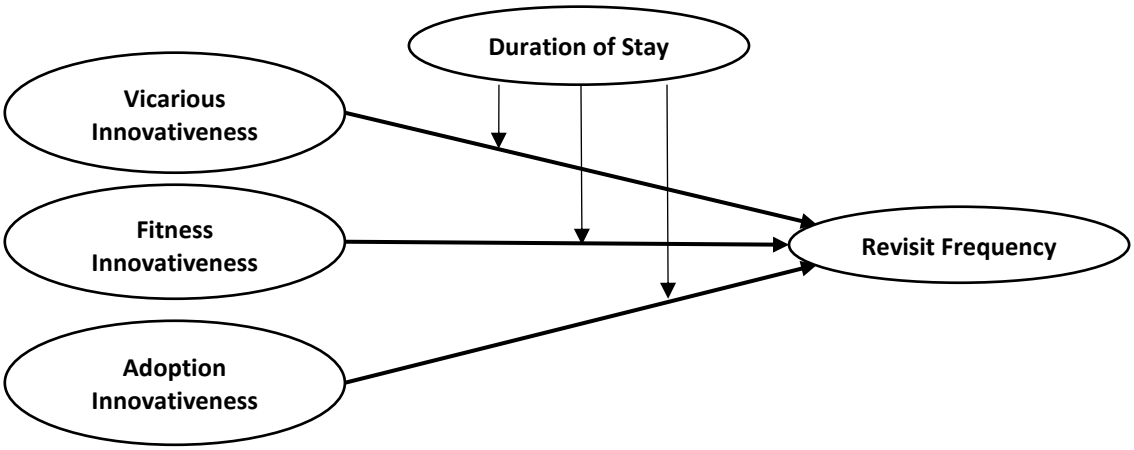

Figure 1. **Research Framework**

3. Methods

Since the last decade, the Gym, Health and Fitness Clubs industry has developed rapidly, mainly due to increasing disposable incomes and health awareness among Chinese consumers. The industry is set to generate $7.1 billion till end of 2020, having grown an annualized 4.4% over the past five years. The rough statistical analysis highlights 100000 fitness clubs in China, and the figure is going more (Ma, 2020).

The existing literature indicates that most of the past studies have utilized a quantitative research approach, while investigating consumer innovativeness. Consistent with this pattern, this study also follows similar approach to investigate study hypotheses.

3.1. Instrument Design

In the current study, a survey approach was adopted to collect primary data from fitness customers. A questionnaire was developed to investigate the predicted relationships, and items to measure the study constructs were adopted form the valid past studies, after a comprehensive literature review.

To measure the construct of vicarious innovativeness, this study adopted three factors ("exposure to advertising, modelling, and word of mouth") measurement scale from the study of Im, Mason, and Houston, (2007). To measure the advertising exposure, respondents were asked to state that they have seen the particular innovative fitness equipment in the mass-media. Modelling was measured by inquiring the respondents to state that they have witnessed many users of the specific novel equipment before their adoption. The current study measures WOM by requesting the respondents to state that "they have had personal conversations with another individual with regard to the ownership of selected new equipment before their own adoption". To measure the construct of fitness innovativeness, domain-specific innovativeness (DSI) scale was adopted from the study of Chang, Leigh, Shu, and Ma, (2019), which comprises of six items. The construct of adoption innovativeness was measured by adopting 4-items measurement scale from the study of Roberts, Becker, and Seay, (1997). Respondents were asked to respond on a five-point Likert scale (where 5= strongly agree, 1= strongly disagree). Moreover, per week visits indicate revisit frequency, while time/hour spent in each visit shows the stay duration.

3.2. Sampling and Data Collection

The study was directed in three big cities of China; Shanghai, Beijing, and Chongqing. The target population was customers of fitness centres operating in the selected cities. Purposive sampling technique was used to determine the study sample. Questionnaires were distributed to the individuals at the exit points of fitness centres. Total 350 questionnaires were delivered and 311 valid responses obtained, from which 52 percent were male and 48 percent were female. 65 percent of the respondents have an undergraduate degree; the majority were young people aged between 21-30 years (57%); most of the respondents (86%) stay in fitness center up to 1-2 hours; and the majority (64%) visits fitness center once a week. The study sample is similar to the studies of Chang et al., (2019), García-Fernández et al.'s (2018), and Couture et al.'s (2015), which confirm excellent sample quality.

3.3. Analysis Strategy

Covariance-based structural equational modeling (SEM) through AMOS-24, was used to test the study hypotheses. Confirmatory factor analysis (CFA) was used to examine model fitness. Before going for CFA and SEM, reliability, validity, and correlation analyses were also conducted.

4. Results

4.1. Convergent and Discriminant Validity

According to Fornell and Larker, (1981), composite reliability (CR) and average variance extracted (AVE) values determine the convergent and discriminant validity (Henseler, Ringle, & Sarstedt, 2015). According to Bagozzi and Yi (1988), if AVE's values are greater than 0.50, and CR is greater than 0.70, there will be excellent convergent validity. Moreover, if AVE's square root is greater than the construct correlation value, then there will be excellent discriminant validity (Fornell & Larker, 1981). Results shown in table-1 reveal excellent convergent and discriminant validities as all the value are greater than the recommended cut-off criteria.

4.2. Structural Equation Modeling

4.2.1 Measurement Model

Before testing the structural measurement model, factor analysis was conducted to observe all item's loading associated with each variable. This study follows Hair et al., (1998) recommendations about items loadings that the items having loading values less than 0.50 should be removed from the analysis. There was no item found with poor loading, hence, no item was dropped from data analysis. This is also

evident from excellent AVE results as shown in table-1, as items loading higher than 0.70 leads to AVE value higher than 0.50, which is also necessary for convergent validity.

As recommended by Anderson and Gerbing, (1988), it is necessary to examine the model fitness before testing hypotheses. CFA was conducted to test the fitness of measurement model by incorporating all study variables in a single model. The most common used fit indices; "Chisquare (χ2/df), Tucker-Lewis index (TLI), Comparative Fit Index (CFI), Incremental fit index (IFI), and Root Mean Square Error of Approximation (RMSEA)" were used to examine model fitness. The results shown in table-2 indicate that the initial 5-factor measurement model shows poor model fitness and by following the modification indices, the measurement model's good fitness was obtained.

Table 1. **Validity and Correlation Analysis**

Variables	CR	AVE	MSV	1	2	3	4	5
1- VI	0.88	0.52	0.17	**0.707**				
2- FI	0.83	0.50	0.15	0.417***	**0.706**			
3- AI	0.92	0.64	0.08	0.312***	0.467***	**0.970**		
4- RF	0.89	0.54	0.07	0.289***	0.367***	0.437***	**0.881**	
5- DoS	0.91	0.61	0.03	0.253***	0.211**	0.198*	0.016	**0.833**

N = 311; Significance of Correlations: * p < 0.050; ** p < 0.010; *** p < 0.001; MSV = Maximum Shared Variance; Diagonal elements (in bold) are the square root of the AVE.

Table 2. **Confirmatory Factor Analysis**

Measurement Models	χ^2	df	χ^2/df	RMSEA	IFI	TLI	CFI
5-factor model (original)	1485.20	521	2.85	0.09	0.85	0.84	0.85
5-factor model (revised)	953.17	423	2.25	0.07	0.93	0.92	0.93

4.3. Test of Hypotheses

The effect of predicting variables on the dependent variable is shown in table-3. Results show that vicarious innovativeness has a significant effect on customers' revisit frequency (β=0.384, P<.001). Fitness innovativeness also influences revisit frequency of customers significantly (β=0.317, P<.001). Moreover, the impact of adoption innovativeness on revisit frequency is also positive and significant (β=0.451, P<.001). Therefore, the hypotheses H1, H2, and H3 are well supported by study results and accepted.

Table 3. **Test of Hypothesis (direct effect)**

Relationships	Effect	P-Value	LB(CI) 95%	UB(CI) 95%
Vicarious Innovativeness → Revisit Frequency	0.384	<.001	0.161	0.474
Fitness Innovativeness → Revisit Frequency	0.317	<.001	0.183	0.392
Adoption Innovativeness → Revisit Frequency	0.451	<.001	0.190	0.578

N = 311; LB=lower bond; UB=upper bond; CI=confidence interval

4.4. Testing of Moderation

The moderating impacts of duration of stay (DoS) in the relationship between innovativeness and revisit frequency, are presented in table-4. Results reveal that in the impact of vicarious innovativeness on revisit frequency gets stronger in the presence of moderator DoS. The direct effect (β=0.384, P<.001) gets stronger when moderators interacts (β=0.411, P<.001), which confirms significant moderation of DoS, and acceptance of hypothesis H4. Hypotheses H5 and H6, are also supported by study results as there is significant interaction found (β=0.378 and β=0.384). In addition, significant change in R^2, f-statistics and p-values indicate significant moderation of duration of stay.

Table 4. **Moderation Effect of Duration of Stay (DoS)**

DV: Revisit Frequency	β	$R^2\Delta$	*F.Stat.*	*p*	95% CI	
VI x DoS	0.411	0.049	30.92	<.001	0.214	0.516
FI x DoS	0.378	0.023	10.86	<.001	0.135	0.446
AI x DoS	0.493	0.076	45.59	<.001	0.211	0.608

5. Discussion

Many researchers claimed innovation as a multidimensional and complex phenomenon which is very difficult to understand (Adams, 2003). To understand this phenomenon, researchers must relate it with interrelated activities of soft and hard factors, including cultural components of innovation (Bovermann and Russell, 2004), change in organizational culture (Roffe, 1999) and customer engagement (Sawhney et al., 2005). Similarly, the researchers are much motivated to study customer innovators' role in adopting new or existing products (Gatignon & Robertson, 1991). The current study has also directed the attention towards types of innovations in changing customer attitude. The attitude we focused is based on revisit frequency and intention to stay in fitness club. There is an emerging trend of research on sporting performance (Westerbeek and Smith, 2005), physical fitness and fitness club, because this fitness can enhance the leadership skills (McDowell-Larsen et al., 2002; Neck et al., 2000) and this domain is more relevant to study in current era of COVID which tends the people to focus on health for better immunity. Despite the potential importance of this field, there is a deficiency of literature on service management in the fitness industry (Hurley, 2004). Majority of studies on innovation have focused on customer attitude towards products but only some studies are based on innovation with reference to customer preference towards services (Lin, 2011; Nambisan and Baron, 2007; Nassimbeni, 2001). More specifically, only few studies focused on innovation in fitness clubs and related them with dimensions of customer attitude. The detailed literature analysis highlighted that the customer's attitude for product or service is similar for the same category. Therefore, the results are discussed mainly from product category and related with context of customer attitude towards services (i.e. especially towards gym or fitness clubs). Individuals with a higher level of domain-specific innovativeness or a strong connection with products or services rely on new or innovative products (Goldsmith and Hofacker, 1991). Our study has also highlighted that innovation adoption can change the customer attitude (i.e. duration of stay and intention to revisit). Citrin et al., (2000) also concluded that researchers should focus on product/service domains and make them innovative to attract customers. The current study's findings explored the direct effect of innovativeness on revisit frequency and through moderation of duration of stay. Hypotheses H1, H2, and H3 predict that revisit frequency is positively influenced by vicarious innovativeness, fitness innovativeness, and adoption of innovativeness. These findings are consistent with previous studies of Chang et al., (2019), and Couture et al. (2015), which found that customers with high innovativeness tend to revisit. According to Im et al., (2007) among many other types and dimensions of innovation, vicarious innovation has more significant impact on the adoption of new product and as well as retaining with existing one. The study findings recommend that high innovative customers of fitness centres have a higher tendency to exercise than those with low innovativeness. The behavioural intentions can be stimulated by sensory aspects of innovations (Venkatraman & Price, 1990). Similarly, the innovation can be moderated by several affective links (Ha & Park, 2013). Therefore, hypotheses H4, H5, and H6 predict the positive moderating effect of "duration of stay". The revisit frequency of fitness customers will be higher with longer duration of their stay in the fitness center. These finding are well supported by previous study of Citrin et al. (2000), that has similar findings about internet browsing customers. Moreover, study results are consistent with the study of Chang et al., (2019), which also focused on fitness customers.

6. Limitations and Recommendations

The deep analysis of literature has highlighted many studies focusing on innovation, innovativeness and behaviour intention from the product category. This research has highlighted three important types of innovation but still have many limitations that can be addressed by future studies. First of all, the study focused on Chinese fitness club members. Secondly, many other types of innovation are ignored. Therefore, the future studies can rely on different types of innovation. Moreover, this research can be replicated in organizational behaviour by including radical and frugal innovation.

7. Implications

The study has several theoretical, methodological and practical implications. The innovation in fitness industry is really emerging research trend. This research is first to use various types of innovativeness (vicarious innovativeness, fitness innovativeness, adoption innovativeness) on revisit frequency. Moreover, it identified the moderating role of duration to stay between these dimension of innovativeness. This study will help the managers to analyze the behaviour of fitness club members and make effective strategies to increase their revisit frequency.

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