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# A Study on the Factors Affecting Consumers' Willingness to Accept Clothing Rentals

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**Abstract:** Fashionable clothes resource suppliers are directly linked with resource consumers through the Internet, thus replacing the traditional model. With fashionable clothes as the products for renting, this study helps relevant enterprises understand the factors influencing consumers' adoption of renting and their attitude and behavioral intention towards clothes renting. Taking the theory of planned behavior as the theoretical foundation, this study thus adopts the technology acceptance model (TAM), the innovation diffusion theory (IDT), the structural equation model (SEM), and the collected information to develop a research methodology that is both theoretical and practical. According to the research results, compatibility matters the most in driving consumers to have a positive assessment and perception of online clothes renting in terms of behavior and attitude. Additionally, personal innovativeness has significant effects and can help relevant enterprises find their target markets. In terms of subjective norm, interpersonal relationship also has a significant influence, showing that consumers today pay much more attention to friends' information sources. The self-efficacy of the perceived behavioral control also has a noticeable impact. Therefore, relevant enterprises need to consider the operability of online clothes renting to prevent consumers from feeling frustrated in their ability to use it, thus reducing their use intention.

**Keywords:** theory of planned behavior (TPB); technology acceptance model (TAM); diffusion of innovations (DOI); clothing rental

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## 1. Introduction

The sharing economy platform can be seen in food, clothes, accommodation, and travel in Taiwan in recent years. Apart from stores for clothes renting, Taiwanese consumers purchase their clothes through e-commerce or online shopping. For consumers, online shopping is convenient and saves time, and there is abundant and free information for reference. Moreover, consumers can compare the prices and products of different suppliers [1] and fashion trends have led to higher consumer demand for clothes and a higher expectation on fashionable clothes. Whether clothing rental can change the development of Taiwan's fashion industry, spreading the idea of replacing purchases with renting.

At present, clothing rental in Taiwan is dominated by wedding and dance/drama stores, which provide rental services for consumers when they need to participate in banquets or important occasions. However, consumption patterns tend to be short-lived. The main researchers expect that more clothing rental will focus on online service, and this technology refers to the network type rather than the clothing technology. In Taiwan, Amaze Fashion established AMAZE clothing rental in 2016. The company combines e-commerce and clothing. CEO Vincent Hsu wanted to subvert the traditional clothing industry through sharing mode, allowing consumers to own the right of use instead of ownership, gradually realizing subtraction lifestyle, to avoid owning too many unnecessary things, and changing consumer spending habits.

In addition, some arguments concerning clothing rental pointed out that some customers were interested in rental, participating in design, or renewing service patterns [2,3]. Rental retailers can emphasize that leasing can provide the latest fashion products at relatively low prices, and fashion-related magazines and websites would be the ideal advertising method for those consumers. Studies of Armstrong et al. (2015) showed that in clothing consulting, renting, lending, and exchange, customers showed relatively high interest in use-oriented rental, including reducing over-consumption, satisfying themselves for change, social support and interaction, saving money, and improving product satisfaction. Also, they worry about the quality of sharing products and have doubts about the feasibility of the business model [4].

The rise of renting products, which can give many things a second life, has also contributed to the sharing economy. People deem that network-based rental service can be the center of continuous development, and that network-based rental can make save resources through resource sharing and bring benefits of environmental protection. Due to climate changes in the recent years, people's environmental awareness has risen. Chiu (2014) also noted that the reasons for the rise of sharing economy include the following aspects: Economic downturn, rise of environmental awareness, and popularity of social media and other factors. In combination with this trend, enterprises can develop online rental services and, when communicating with target customers, take environmental protection and resource utilization as main appeals [5].

A total of 254 collective consumption websites have been collected on the website platform of collaborativeconsumption.org. In the categories of authorization and transfer of ownership, the exchange methods include renting, lending and exchanging, donation, and purchase [6]. In the category of ownership authorization, there are 131 websites with a renting operation mode, accounting for the highest proportion of the 254 collective consumption websites.

The mapping of 254 CC platforms revealed that the activities may be separated into two main categories of exchange: access over ownership and transfer of ownership. However, it is possible for a platform to facilitate both modes of exchange. This occurs when the platform has more than one type of trading activity, such as lending (access over ownership) and donating (transfer of ownership), causing an overlap between the main categories. Out of the 254 platforms, 191 were identified as facilitating access over ownership while 139 provided the transfer of ownership. A total of 76 platforms had overlapping categories.

Access over ownership is the most common mode of exchange. Access over ownership means that users may offer and share their goods and services to other users for a limited time through peer-to-peer sharing activities, such as renting and lending [7]. Most common was renting. Alternatively, the transfer of ownership passes ownership from one user to another through swapping, donating, and purchasing of primarily second-hand goods. For instance, services such as Swapstyle or ReSecond help users to swap unwanted clothes. Other examples are Zilch and ThredUp. Swapping and donating are the most popular categories followed by the least popular category, namely purchasing used goods. An overview of the mapping can be seen in Figure 1.

Mode of exchange	Trading activity	Monetary transaction	Market allotment	Example
Access over ownership	Renting	Yes	131 platforms	Renttherunway.com
	Lending	No	60 platforms	Couchsurfing.com
Transfer of ownership	Swapping	No	59 platforms	Swapstyle.com
	Donating	No	59 platforms	Freegive.co.uk
	Purchasing used goods	Yes	51 platforms	Thedup.com

**Figure 1.** Overview of mapping of 254 collaborative services source: Marco Böckmann (2013).

Furthermore, this analysis sheds light on numerous aspects of the sharing economy but particularly on the multiplicity of the term “sharing.” We want to emphasize that our definition of the sharing economy differs slightly from those of other scholars [8,9], as well as some other definitions of “sharing economy” [10,11] or “collaborative consumption” [12–14]. This demonstrates

that the online renting mode is popular among consumers. Renting is a new form of ownership and enables people to rent and own something at a lower price [15].

Most existing studies on renting focus on house renting and car renting, with only a few that emphasize clothes renting or sharing clothes. The above studies show that if a consumer group for clothes renting has been formed and if the predisposing factors of the behavioral intention towards clothes renting can be used to adjust marketing strategies, then a better operation mode for relevant enterprises can be provided. The information about renters' decision-making is highly important, which is the primary motive of this study. Because it is also necessary to get to know consumers in a new business mode, it is therefore essential to explore if consumers can accept this new consumption mode. What matters more are the factors influencing their acceptance of these new modes. If consumers have a simpler method and a better opportunity to choose a better consumption option in the consumer market, then they would be willing to use it continually [16]. It is hoped that those who want to offer services in relevant industries will attach more importance to these views.

To sum up, Whether or not Taiwan consumers have demand or identity of the behavioral intention of clothing rental will be the focus of this study. In the past, the relevant researches exploring the IT acceptance intention from the perspective of consumers which have been widely applied include Fishbein and Ajzen (1977) theory of reasoned action (TRA) Ajzen (1985) the theory of planned behavior (TPB), Davis (1989) technology acceptance model (TAM) and Rogers (1995) diffusion of innovation (DOI) [17–20]. Therefore, this research hopes to take the TPB as the research basis from the perspective of consumers and combine technology acceptance model and diffusion of innovation to construct the framework of this research, so as to explain the factors why the consumers accept the network clothing rental. It is very important to discuss whether consumers can accept this new consumption model and it is more important to discuss what factors will affect them to be willing to accept the new model [21]. It is hoped that people who intend to provide the relevant industries in the future can attach great importance to these viewpoints to summarize the above-mentioned main points. The purposes of this research are described as below: (1) to understand Sharing Economy and clothing market status through literature review; (2) to analyze the factors affecting new consumers' acceptance intention for the network clothing rental and compare their importance.

## 2. Literature Review

### 2.1. Sharing Economy

Sharing economy is also called collaborative consumption, which is expected to alleviate social problems, such as excessive consumption of resources, environmental pollution, and poverty [11,21]. Privately-owned items can be shared or rented through individual-to-individual markets [14]. Stephany and Alex (2015) believed that sharing economy was to put idle assets on leasing or sale, which reduced the demands of people for asset ownership [22]. Botsman and Rogers (2010) said, "People make use of collaborative consumption for sharing, barter, lending, giving and exchanging. Collaborative consumption makes it clear that the benefits of access to products and services far exceed ownership, and doing so not only saves money, time and space, but also makes new friends. These systems also provide considerable environmental benefits by increasing use rate, encouraging development of better products, and eliminating excess production and excess consumption [14]." Rifkin (2014) held that there was a wide range of possible developments from ownership to access rights [23]. Corbo and Fraticelli, (2015) deemed that the use of Internet technology to connect groups and promote more efficient use of goods, skills and things fell into the category of sharing economy [24].

Sharing economy is not a new concept. It originated from the collaborative consumption idea proposed by Felson and Spaeth in 1978 through peer-to-peer (P2P) platforms or markets, a consumption behavior mode using exchanges, sharing, bartering, transaction, and leasing as methods to reactivate things. The concept of sharing and personal exchange was derived from American culture [25]. In the past, most of the products were shared with close people, such as neighbors, family members,

and friends. In recent years, the concept of sharing has gradually evolved into a profitable business model. The growth of this sharing economy business model reflected the network relations between individuals, collaborative consumption, and authorized economies [15].

In the related research of sharing economy in recent years, benefits of sharing economy include: Reducing negative impact on environment, saving energy and reducing carbon [26,27], allowing people to have products they cannot afford [28]. Rachel Botsman (2010) classified the sharing economy into three categories: product-service systems, redistribution markets, and collaborative lifestyles [14].

- (1) Product-service systems mean that owners of certain products or services share their products or services with others by way of a fee-based rental. Consumers can enjoy the benefits of products without having to purchase, and more and more consumers begin to experience the convenience and efficiency brought by “leasing instead of purchasing”. There are multiple emerging platforms that have invested in such sharing services, such as Zipcar, Lyft and other car sharing, sharing services, and Airbnb rent sharing services.
- (2) Redistribution markets. There are often a large number of rarely used and idle assets in families. In the past, they could only be placed in storage rooms or discarded. With the rise of the Internet, these second-hand products are redistributed on online platforms to those people in need rapidly. The emergence of SwapTree, eBay, Freecycle and other second-hand exchanges, sales, or recycling platforms allows people to save resources and protect environment.
- (3) Collaborative lifestyles. The so-called collaborative lifestyles mean that multiple consumers common interests and needs may gather on social platforms to share or exchange relatively recessive assets, allowing idle resources to create greater utility, for example: Time, money, experience, and space, including P2P (peer-to-peer lending) lending platform, Zopa, Lending Club or rental services such as Airbnb.

Bockmann (2013) believed that the factors that promoted the sharing economy to create its value were community, economics, and technology. In addition, it is found that consumers have rational and emotional benefits in values of sharing economy. Finance ranks first in terms of rationality and generality ranks first in terms of emotion [15]. Through questionnaire survey, Juho et al. (2015) found that the motivation for people to participate in collaborative consumption showed that sustainability, entertainment, and economic efficiency had significant impact on attitudes of collaborative consumption. It was interesting that people thought highly of sustainability but did not take action [6]. Florian et al. 2016 adopted questionnaires to investigate the incentives for renters and lessors to participate in online leasing in term of peer-to-peer leasing services. It was found that sharing fun, sharing knowledge, fashion lifestyle, product diversity, sense of belonging, community experience, community impact, and economic benefits had significantly positive impact on the incentives for renters and lessors to participate in online leasing, and significantly negative impact on expected efforts, ownership, privacy, sharing risk have a negative impact [29].

## 2.2. Types of Leasing

In recent years, the leasing of cars, housing, computers, home appliances, clothing, and flower baskets has become an increasingly popular model. Characterized by a combination of funding and asset finance, modern leasing first emerged in the United States in the 1950s. Leasing is an economic activity that rents the right to use without changing the ownership of the property. In other words, the property owner (lessor) lets the property for the user (lessee) to use in accordance with a contract. The lessee pays a certain rent to the lessor according to a schedule. The lessor retains property ownership, and the lessee only exercises the right to use the property. Modern leases can be divided into two categories: the first category is financed leasing set up for the purpose of funding. The second category is service leasing, also known as operating leases, which providing a specific service. The operating leasing industry, which focuses on obtaining the right to use goods, has become an important component of the economic infrastructure and people’s lives worldwide. Leasing consumption also plays an irreplaceable role in promoting the sustainable development of the national economy [30].

The amount of old apparel in Taiwan is causing environmental problems, and the handling of used clothes has become a core issue for the future. The rise of the leasing industry has opened a new path for domestic apparel leasing. It is a crossover between a second-hand exchange and an online purchasing platform that sustains the concept of renting instead of buying thereby extending the useful life cycle of clothing. According to the Council for Textile Recycling (USA), the amount of textile waste discarded by consumers increased by 40% between 1999 and 2009. By 2015, the amount increased to 25 billion lbs. or an average of 82 lbs. (approx. 37 kg) of discarded textile waste per person. Taiwan disposes approximately 72,000 tons of used clothes each year. Assuming 3.2 pieces per kg, the total amount discarded is 230.40 million pieces, which is equivalent to 438 pieces of clothing each minute. On average, each person contributes 10 pieces per year. The disposal of used clothing has become a form of environmental pollution. Moreover, increasing online shopping has further promoted rapid sales and the obsolescence of clothing. Consumers are vulnerable to impulsive shopping and often consider clothes unwearable or unsuitable after a purchase. The “Complete Waste Sorting and Zero Waste Action Plan” proposed by the Environmental Protection Administration (Taiwan) states that reuse is another method of waste reduction in addition to recycling and source reduction. Achieving the goals of environmental quality and sustainable development will require efficiency in production and changes in consumption patterns in order to emphasize optimization of resource use and minimization of waste”. Therefore, if we can maximize the effect of clothing rentals by ensuring clothes are rented until they are worn out and replacing purchasing with online leasing of used clothes, could the problem of excessive consumption of clothing be temporarily solved in Taiwan?

In foreign countries, clothing rental has been developing for some time. Rent the Runway (US) was established in 2009 and has been operating for nine years. The company currently focuses on renting formal wear. It initially provided customers with a formal wear rental service for events such as banquets and weddings. Customers were only required to pay around 10% of the original price of the clothing to rent formal wear. A monthly rental service was launched in 2017. Le Tote (US) was established in 2012 and has been operating for six years. For only US\$39 per month, customers receive a customized series of clothing and accessories of different brands. Each customer receives a box containing items of clothing, and the consumer may purchase or return the items after wearing them. New users are asked questions about style preferences to help determine the contents of each delivery, and they are encouraged to give feedback on the items received including whether they fit, the color, and the number of times each item is worn. AIR CLOSET (Japan) was established in 2014 and has been operating for four years. The company introduced the product subscription model to the women’s fashion apparel market and has completed JPY 1 billion of financing. Its focus is on the Japanese boutique clothing market, and it sends three sets of clothing to subscribers every month (including tops, pants, and skirts) for a monthly fee of only JPY 6800. The company caters to young professional workers and professional mothers who have limited time to follow fashion brands. Users can exchange the clothes they receive or continue to wear them as long as they pay the delivery and dry-cleaning fees. As these clothes are all recycled and reused, users can also buy them permanently at a lower price than retail. YCloset (Mainland China) was established in 2015 and has been operating for three years. This company focuses on shared leasing of women’s fashion and is engaged in the business of “monthly dressing,” providing a membership system to female consumers, and offering them an unlimited exchange service for branded clothing (three pieces each time with unlimited replacement during the membership period).

AMAZE (Taiwan) was established in 2016 and has been operating for two years. The company currently offers more than 1200 styles and more than 5000 pieces of clothing. A variety of rental pricing options are available including NT\$999, NT\$1999, and NT\$3999, and the service is provided online. Customers can browse all the styles on the website and place orders online. They can rent clothes today and receive them two days later. Returns can even be made at the retailer 7-Eleven. Shipping is offered free of charge to provide the most convenient service to consumers. In cases where customers like a piece of clothing after renting, they can also buy it at cost. In addition, the company partners with Taiwan Washing, a dry-cleaning specialist, to ensure all rented clothing gives consumers peace of mind.

In Taiwan, the rental of fashionable network clothing is rare. Thus, according to the investigation in this research, the number of the rentals of Amaze's network clothing has reached up to 100,000 at present and there are 80,000 members. The following is a collection of various clothing rental business models for the benefit of future research (Table 1).

**Table 1.** Analysis of clothing rental business models.

Company Name/Area	Year of Establishment/ Clothing Type	Business Model
Rent the Runway (Offline store)/US	2009 Formal Wear	<ol style="list-style-type: none"> <li>1. The single rental service RTR Reserve starts at US\$30, and users can rent jewelry and formal wear for special occasions.</li> <li>2. RTR Update: Users can choose four commuter garments from over 200 brands for US\$89/month. Each month the clothes are shipped back free of charge and dry-cleaned by Rent the Runway. Clothes can also be purchased at special discounted prices.</li> <li>3. RTR Unlimited: Pricing is set at US\$159/month. Users can select four items from more than 450 brands. After returning the items within the month, users can select unlimited items and purchase products at discounted prices.</li> </ol>
Le Tote (Online Platform App)/ US	2012 Casual Clothing	<ol style="list-style-type: none"> <li>1. Subscription clothing rental where designers can provide three pieces of clothing and two accessories suitable for customers according to the data provided by customers.</li> <li>2. Users can choose to rent daily commuter clothing for a monthly subscription of US\$49/month.</li> </ol>
AIR CLOSET (Online Platform)/ Japan	2014 Casual Clothing	<ol style="list-style-type: none"> <li>1. Clothing combinations matched by professionals offered for a monthly payment of JPY 6800. A JPY 9800 monthly fee is required for unlimited deliveries.</li> <li>2. Each piece of clothing on the platform is accurately measured. Through the use of virtual reality (VR) technology, big data, and the artificial intelligence system Sensy Closet, the size, body shape, preferences, habits, and search contents of each user are analyzed to recommend the most suitable outfit for each user.</li> </ol>
YCloset (Online Platform App)/ Mainland China	2015 Casual Clothing Formal wear	<ol style="list-style-type: none"> <li>1. Main consumer group consists of young white-collar workers aged 20 to 30.</li> <li>2. User membership fee of CNY 499/month; newcomer fee for the first month is CNY 299; additional deposit of CNY 300.</li> <li>3. Self-built ERP system to manage the placement of goods, forecast, and plan the time of goods entering and leaving the warehouse through data analysis of user orders and returns.</li> <li>4. A limit of three pieces per order and a rental period of 3 to 10 days. A courier picks up the clothes after the end of the experience.</li> <li>5. Cooperation with intelligent, environmentally friendly, and clean factories with efficient sanitary processes</li> </ol>
MS Paris (Online Platform App)/ Mainland China	2016 Casual Clothing Formal Wear	<ol style="list-style-type: none"> <li>1. Newcomers' first month's membership fee CNY 288; special offer of CNY 98 for 18-day new members.</li> <li>2. May order up to 5 pieces each time or a maximum of 30 pieces per month</li> <li>3. Five-star cleaning and disinfection services; member of the China Laundry Association</li> <li>4. Home deliveries and pick-ups free of charge</li> <li>5. Largest consumer group is 23 to 27 years of age; professions include CEOs, white-collar workers, and students.</li> </ol>

Table 1. Cont.

Company Name/Area	Year of Establishment/ Clothing Type	Business Model
AMAZE (Online Platform app)/ Taiwan	2016 Casual Clothing	1. Orders made on app or website; returns made at 7–11; package includes a return packet and logistics list
		2. Monthly members (membership fee: NT\$49/month, shipping: NT\$80), semi-annual members (membership fee: NT\$290/half year, free shipping), annual members (membership fee: NT\$380/year, free shipping)
		3. Celebrity endorsement
		4. Offers rental fee discounts to members and referred customers

Source: Compiled from this study (in order of establishment).

### 2.3. Theory of Reasoned Action (TRA)

On the basis of social psychology, Fishbein and Ajzen developed the theory of reasoned action (TRA) to discuss the relationship between attitude and behavior. The basic hypothesis of the theory of reasoned action is that personal behavior is under the control of will. In other words, a person thinks before taking action and does not take an action until he/she knows its meaning. According to TRA, what is the most effective in predicting actual behavior is behavior intention, which is influenced by personal attitude toward behavior and subjective norm. Behavioral intention refers to the degree to which a person wants to show a specific behavior. The intensity of behavioral intention determines the occurrence of actual behavior [17]. Attitude toward behavior refers to a person's positive or negative feeling about specific behaviors. It consists of behavioral beliefs and outcome evaluation. Subjective norm means that a person's perception is influenced by whether he/she is expected to show specific behaviors. It depends on the combination of normative belief and motivation to comply. It has been demonstrated by researchers of many different fields that TRA is an effective model providing an effective prediction of behavioral intention or actual behavior [31–34].

### 2.4. Theory of Planned Behavior

Although TRA is widely used to interpret behaviors, it is restricted by its basic hypothesis that personal behavior is voluntary. In most cases, the occurrence of behavior is influenced by many factors. For instance, if a person who wants to buy the latest fashion does not have adequate money or use frequency is too low, then it would be hard to achieve use behavior. Therefore, appropriate opportunities or resources, such as time and money, will influence behavior, but not all these factors are behaviors controlled by personal will. Hence, [18] proposed the theory of planned action. The restriction on TRA is extended to predict the behaviors of those with a weak control. Different from TRA, TPB includes "perceived behavioral control". According to TPB, "actual behavior" is determined by "behavior intention", but perceived behavioral control also influences actual behavior; "behavior intention" is determined by three factors: "attitude toward behavior", subjective norm", and "perceived behavioral control".

If individuals have the high behavior intention, they will have the higher probability to engage in this behavior. The behavior intention has a very close relationship with actual behavior, so TPB's measurement of actual behavior is replaced by behavior intention, also known as intention model [17]. Namely, TPB's behavior intention is the variable that is expected to have the best acceptance willingness. In many researches, it is suggested that the dimension of normative belief should be decomposed into reference groups [35–37]. Bhattacharjee (2000) classified the reference groups into interpersonal influence and external influence in the research on the ordering service of electronic security network. When the potential adopters attempt to adopt something, they will seek for the experience of the previous adopters (interpersonal influence) or consult the experts from the mass media in this field

(external influence), so as to reduce the uncertainty. Thus, the potential adopters form their opinions for innovation according to the two sources (interpersonal and external influence) [38].

The effect of reference groups has been proved in many researches [20,38,39]. Therefore, in this research, the normative belief defined the reference groups according to Bhattacharjee's research (2000) where the reference group is classified into interpersonal influence and external influence. The perceived behavioral control refers to the control ability in the required resource and opportunity when the perceived individuals are going to do the certain act, i.e., the difficulty degree perceived by individuals to complete one specific behavior. For instance, when individuals perceive that they possess more and more resources and opportunities, the expected obstruction will become smaller and smaller and their perception of control of the behavior will become increasingly strong. Thus, individual's behavior intention will become stronger and the relationship between behavior intention and actual behavior will become more stable [18]. The perceived behavioral control consists of the sum of products of control belief (CB) and perceived facilitation (PF).

According to Ajzen (1985), perceived behavioral control can be classified into 2 predisposing factors: Self-Efficacy and Facilitating Condition [18]. Compeau and Higgins (1995) considered that the self-efficacy refers to one person's self-evaluation for his ability to use the computer and it focuses on what individuals will be able to complete in the future instead of what they have completed in the past. From the perspective of IT use, the higher self-efficacy will cause the higher behavior intention and IT use [40]. Ajzen (1991) proposed that self-efficacy refers to individual's self-evaluation for their ability whether they are able to complete the certain behavior successfully. Bhattacharjee (2000) believed that self-efficacy is like the internal restriction factor. If individuals perceive that their ability to complete this behavior is lower, their perceived behavioral control for this behavior will be lower [41]. Bhattacharjee (2000) called the Facilitating Condition the external restriction factor, namely when individuals perceive that the resources required to complete this behavior are fewer and fewer, their perceived behavioral control for this behavior will become lower. Based on the research of Bhattacharjee (2000), the predisposing factor of perceived behavioral control is classified into self-efficacy and facilitating condition [38]. The research into TPB proves the relationship between PBC and behavior intention [41] and perceived behavioral control is significantly correlated to behavior belief [38,42].

After an empirical study, Ajzen and Madden found that "theory of planned action" is more effective than "theory of reasoned action" in explaining behaviors. Many other studies have also demonstrated that TPB is a rigid behavioral theory that can predict the information technology acceptance intention [42–45]. This study targets to know the acceptance of clothes renting and find out the belief that drives consumers to use online renting, so as to give suggestions on improving consumer behavior. Therefore, this study adopts TBB to explore consumers' acceptance of clothes renting (Figure 2).

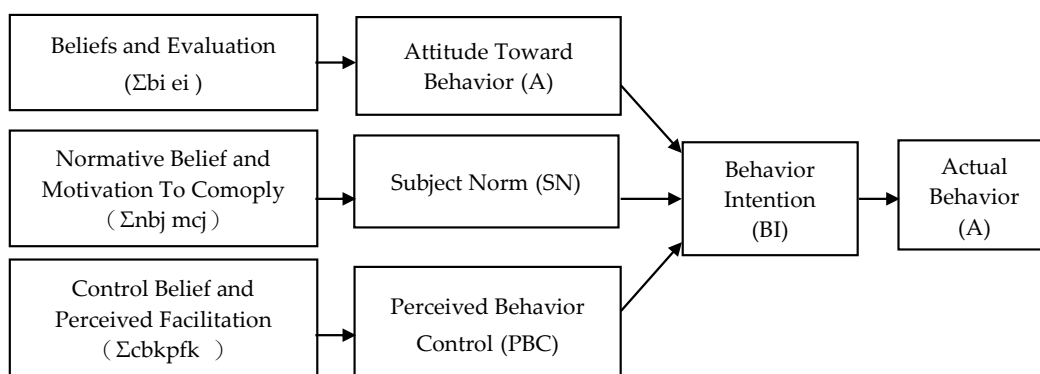


Figure 2. Theory of planned action Ajzen (1985).



### 2.5. Technology Acceptance Model (TAM)

The technology acceptance model (TAM) was developed by Davis from the revision of TRA (Figure 3). It was established to simplify TRA in order to propose a general theory and build a rigid theoretical foundation [19]. It is used to explain and predict the behavior of users' information technology acceptance and to analyze the factors influencing users' information technology acceptance.

According to TAM, perceived usefulness and perceived ease of use are the two factors that influence attitude. Similar to TRA, TAM assumes that the use of a computer depends on behavioral intention. In other words, TAM believes that behavioral intention has significant positive effects on actual behavior.

Lu et al. revised TAM to predict and explain consumers' acceptance of the mobile wireless network [46]. The findings of their study show that perceived usefulness has significant positive effects on the attitude toward using the mobile wireless network. Oh et al. found in their study on the application of broadband network that perceived usefulness is the factor that determines and influences attitude [47].

In the studies on information technology, many experts have expanded TAM and discussed the other factors that may play a role [42,48]. Therefore, this study not only considers TPA and TAM, but also introduces IDT, with the hope of adding other factors that may influence consumers' online clothes renting and discussing and explaining consumers' behaviors of online clothes renting on a broader basis.

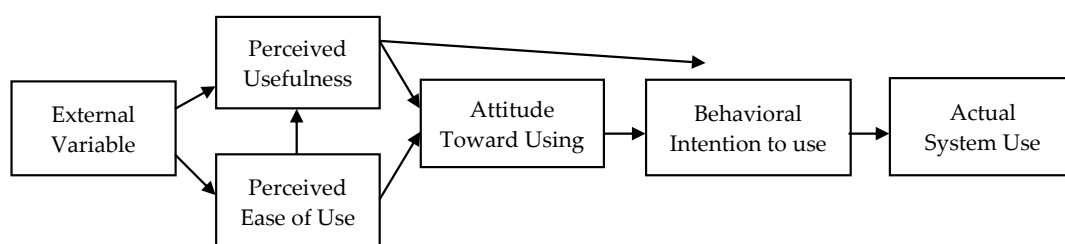


Figure 3. Technology acceptance model Davis (1986).

### 2.6. Innovation Diffusion Theory (IDT)

Innovation means that a person or a unit perceives a new idea, habit, or object. As long as the idea is new for the person, it is innovative for that person [49,50]. Kotler believed that innovation is a new service, commodity, or creativity in the eye of people [51]. Even if creativity has existed for a long time, as long as someone regards it as new, it is still innovation for that person. Online renting provides consumers with the renting of information technology in terms of form and content. It is consistent with the definition of innovation from the perspective of all the above scholars. Hence, it is safe to say that online clothes renting is innovation. Therefore, this study makes an analysis with IDT. In the past, studies on the application of innovation proposed different views and adopted different reference norms. Applications of innovation have been tested by many researchers in different fields. The application and diffusion of innovation are influenced by three things: (1) innovation characteristic; (2) personal innovativeness; and (3) information sources and communication channels [52,53].

#### 2.6.1. Attributes of Innovation

Rogers (1995) compiled five major attributes of innovation from literature related to innovation, namely, relative advantage, compatibility, complexity, trialability, and observability. Based on Rogers' theory, Moore and Benbasat (1991) conducted detailed research on the attributes of innovation and eight proposed attributes in total of which relative advantage, trialability, compatibility, and ease of use (the opposite of Rogers' complexity) were consistent with Rogers' attributes of innovation. Observability was further divided into result demonstrability and visibility, image was derived from relative advantage, and voluntariness was added [20,52].

Tornatzky and Klein (1982) studied 75 articles on diffusion and found that only relative advantage, compatibility, and complexity were related to innovation adoption [54]. Moore and Benbasat (1991) suggested similarities between TAM and DOI and found that relative advantage is similar to perceptual usefulness in TAM. Complexity was also found to be similar to perceived ease of use in TAM [52].

During their research on consumer adoption of innovative products, Taylor and Todd (1995) found that consumers were more likely to adopt innovative products when they perceived that innovative products were superior to previous products [42]. Chin and Gopal (1995) conducted a study on the use of group decision support systems [55]. The results also showed that when potential users perceive a higher relative advantage or compatibility in an information system, their willingness to adopt that system is much higher. Liao et al. (1999) found that when consumers perceive a higher relative advantage, higher compatibility, or lower complexity in internet banking, consumers are more likely to adopt internet banking [56]. In a study of virtual stores, Chen et al. (2002) found that compatibility has a significant positive impact on consumer attitudes toward using technology [57]. Empirical studies (Adams et al. 1992; Moore and Benbasat 1991) support the importance of relative advantage or usefulness as a predictor of adoption behavior [52,58].

### 2.6.2. Personal Innovativeness

Personal innovativeness can be defined as an individual's willingness to change [59]. Bommer and Jalajas (1999) believe that personal innovativeness is reflective of an individual's tolerance to risk. If individuals are more willing to take risks, they are also more willing to engage in innovative behavior [60]. In the field of IT, the definition of personal innovation is an individual's willingness to test new IT [39]. Agarwal and Prasad (1998) showed that personal innovativeness affects an individual's perception of IT innovation. Personal innovativeness is a personal characteristic (Hurt et al. 1977) that promotes positive attitudes toward the formation of innovative behavior. An important aspect of personal innovativeness is the difference in perspectives on IT held by individuals [59]. This helps us understand how each viewpoint affects consumer attitude toward online clothing rental services.

Limayem et al. (2000) conducted long-term research on online shopping mainly to explore factors affecting consumers' online shopping. Based on the TPB, the research found that personal innovativeness influences both online shopping attitudes and behavioral intentions. Subjective norms as well as subjective norms combined with perceived behavioral control affect online shopping intentions, and perceived behavioral control also significantly affects shopping behavior [61]. Jones et al. (2002) studied the use of sales automation systems by merchants and found that personal innovativeness had a positive relationship with consumer attitudes toward using the new system [62].

### 2.6.3. Information Resources and Communication Channels

Information resources and communication channels are similar to social influences, the essence of which is normative beliefs [62]. This is a view that has been discussed considering the TPB. In a study of perceived attributes and adoption of innovation, Tornatzky and Klein (1982) found that among the five perceived attributes of innovation, only relative advantage, compatibility, and complexity have a consistent correlation with consumer willingness to adopt [54]. Moore and Benbasat (1991) compared their eight attributes of innovation with the TAM proposed by Davis (1989) and suggested that relative advantage and ease of use are similar to the TAM's perceived usefulness and perceived ease of use, both of which have an effect on attitude [42,43,45]. Ram (1987) categorized the attributes of innovation as follows: (1) Relative advantage, compatibility, and complexity. Different possibilities for adoption arise due to the differences in the level of the adopter's perceived attribute of innovation. (2) The trialability and observability of innovation itself [63]. Exploring the attitude factors affecting consumers' adoption of online clothing rental services helps us study consumers' perception of the attributes of innovation, which influences their attitude toward online clothing rental services. Therefore, relative advantage, compatibility, and complexity should be used as the influencing factors of attitude toward behavior.

This study combines TAM and IDT to develop perceived usefulness, perceived ease of use, compatibility, and personal innovativeness as the factors that influence attitude toward behavior.

### 3. Methods

#### 3.1. Research Procedure

This research aims to analyze the advantages and disadvantages of network clothing rental industry as well as its opportunities and discuss the connotation of use behavior of network clothing rental to further understand its possible correlation. According to the aforesaid literature review, the research procedure of this research is constructed as shown in Figure 4.

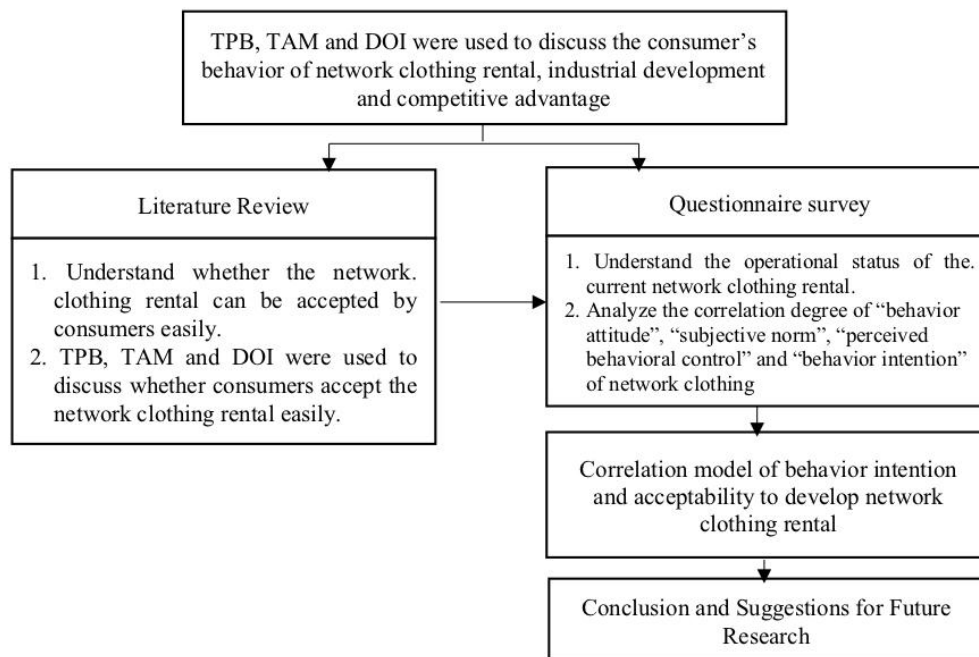


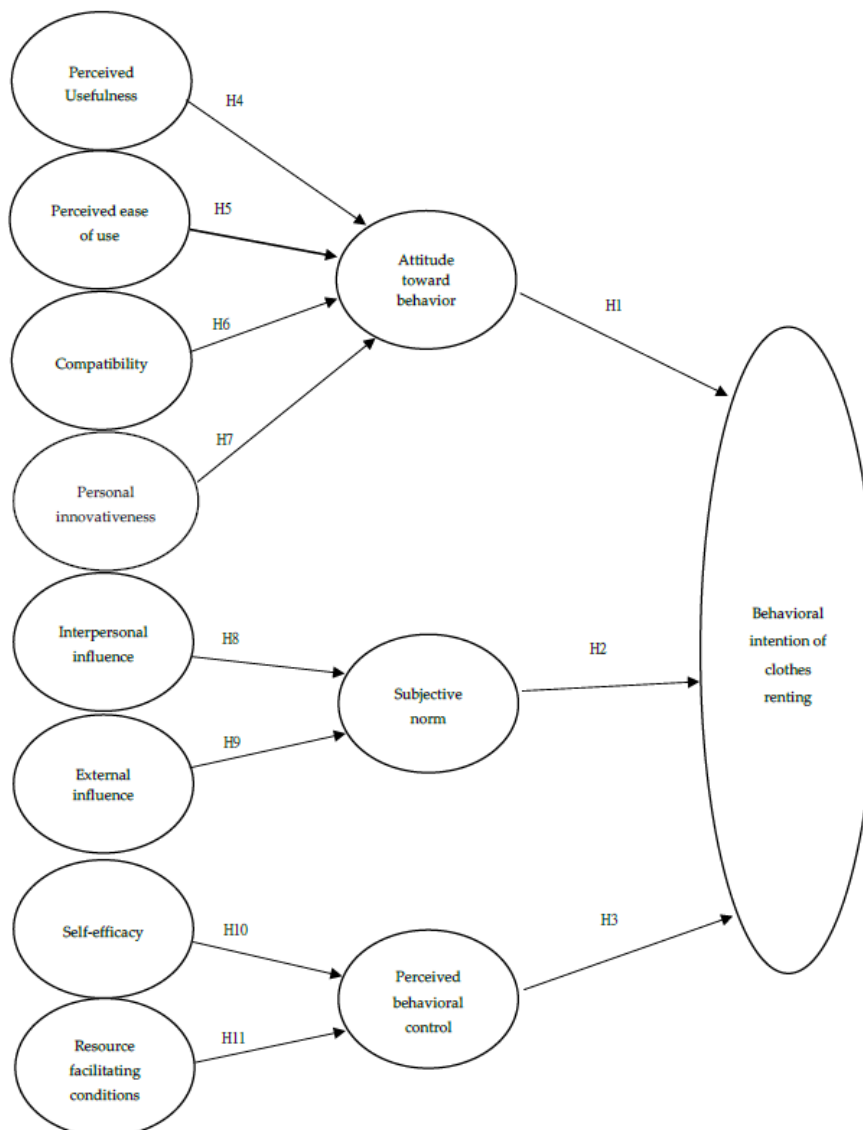
Figure 4. Research procedure.

In this study, the discussion was conducted from two dimensions: on analysis of consumers' acceptance mode, through the theory of planned behavior, technology acceptance model, innovation diffusion theory and discussion of other literature, the paper tried to analyze if online clothes renting is easy to be accepted by consumers and the possible difficulties to be encountered. In addition, by questionnaire method, the paper analyzed the correlation degree of "behavioral attitude", "subjective norm", and "perceived behavioral control" and "behavior intention" of online clothes renting by using the argument on technology acceptance model. In the meanwhile, the feedback of users and potential users of online clothes renting was collected via online questionnaire survey. In the end, based on the conclusion of this study, it is hoped that the paper gives relevant suggestions to practitioners engaging in online clothes renting, the government and future researchers.

#### 3.2. Research Structure

In clothes renting, information technology is taken as the medium. Therefore, the application of online renting is an application of information technology. Clothes renting is a behavior of innovation. Previous studies on the information technology acceptance and the innovation diffusion theory often adopted TPA by Ajzen (1985), TAM by Davis (1989), and IDT by Rogers (1995). With TPA as the theoretical foundation, this study combines IDT with TAM to predict and explain users' acceptance of clothes renting [18–20]. The research structure of this study is shown in Figure 5. Currently, online clothes renting is not universal in Taiwan. Therefore, the test on behavioral intention is better than

actual behavior as a dependent variable. Hence, behavioral intention rather than actual behavior is adopted to predict and explain users' acceptance of clothes renting.



**Figure 5.** Research structure.

### 3.3. Research Scope and Subject

In the part of research industry, this research is mainly aimed to discuss the factors affecting consumer's acceptance intention for network clothing rental. The network clothing rental in Taiwan still in early phases of development and the rental operators focus on the special modeling clothing (such as wedding dress, performance costume, etc.). The products of network clothing rental in this research are targeted at the daily popular clothing. With the Taiwan's online clothing rental operator—AMAZE rental fashion platform as the research platform, this research was based on TPB and combined TAM and DOI to construct the framework of this research to explain the factors affecting consumer's acceptance of network clothing rental. The research subjects were mainly the consumers of AMAZE rental fashion platform and they filled out the questionnaires were filled in by connecting with platform.

### 3.4. Research Subjects

In this study, by questionnaire method, the sample data were collected via online questionnaire, aiming at understanding the behavior intention of online clothes renting. Pre-test study subjects: Fifteen subjects who had and had not used the renting service were investigated. In the pre-test, some people who have the same characteristics with the research groups were chosen firstly to try to complete this questionnaire. 15 consumers have used the network clothing rental and they are also the members. The other 15 consumers have not used the network clothing rental or they ever purchased goods through online shopping.

In the official questionnaire, consumers of rental fashion platform were selected as the participants. Limited by resources, time, narrow range of study subjects and other factors, the feasible way of convenient sampling was adopted for survey. As one of the non-random sampling ways, convenient sampling is beneficial for collecting some preliminary data. Under certain conditions, some useful data can be produced.

### 3.5. Research Hypotheses

According to the above-mentioned research objective and structure, the following hypotheses on the relationship among the variables in the research structure are proposed.

#### 3.5.1. Behavioral Intention

Behavioral intention refers to the tendency for which a person wants to take a specific action, and it can be measured by a person's willingness to have a try or the effort he/she makes to take an action. In the proposal of TPA, Ajzen pointed out that behavioral intention is the best way to predict individual behavior. In other words, if a person has a stronger intention to take some action, then the probability of taking the action will be higher. The three main factors that determine behavioral intention include attitude, subjective norm, and perceived behavioral control. These three factors have a significant positive correlation with behavioral intention [18]. Klobas explored the adoption of electronic information resource, and Taylor et al. studied consumers' adoption of innovative product. Both studies have demonstrated that attitude, subjective norm, and perceived behavioral control have positive effects on the behavioral intention of renting [43,64]. Therefore, this study assumes that "attitude toward behavior", "subjective norm", and "perceived behavioral control" also have positive effects on the behavioral intention of clothes renting.

**Hypothesis 1.** *"Attitude toward behavior" has a positive effect on the "behavioral intention of clothes renting".*

**Hypothesis 2.** *"Subjective norm" has a positive effect on the "behavioral intention of clothes renting".*

**Hypothesis 3.** *"Perceived behavioral control" has a positive effect on the "behavioral intention of clothes renting".*

#### 3.5.2. Attitude toward Behavior

Attitude refers to a person's evaluation of an action. Taylor and Todd further pointed out that relative advantage has a positive correlation with attitude; complexity has a negative correlation with attitude; and appropriateness has a positive correlation with attitude [42]. According to them, relative advantage is the perceived usefulness in TAM; and complexity is the perceived ease of use in TAM. Therefore, attitude toward behavior is deconstructed into the following four predisposing variables according to IDT: perceived usefulness (the degree to work performance or learning is improved by using a specific system or tool), perceived ease of use (the degree to which effort is saved by using a specific system or tool according to users), compatibility (the degree to which the innovation

meets potential users' current values, experience, and current demands), and personal innovativeness (personal innovativeness users have effects on attitude toward behavior and behavioral intention).

**Hypothesis 4.** *“Perceived usefulness” has a positive effect on “attitude toward behavior”.*

**Hypothesis 5.** *“Perceived ease of use” has a positive effect on “attitude toward behavior”.*

**Hypothesis 6.** *“Compatibility” has a positive effect on “attitude toward behavior”.*

**Hypothesis 7.** *“Personal innovativeness” has a positive effect on “attitude toward behavior”.*

### 3.5.3. Subjective Norm

According to Ajzen, subjective norm refers to the effects of important people or groups on a person when he/she shows specific behaviors, and the important people or groups can be regarded as a reference group [41]. Taylor and Todd argued that if the opinions of two different reference groups were placed on the same dimension, then the effects might be mutually offset or reduced, which would make it impossible to see the effects of subjective norm on behavioral intention. Hence, subjective norm is deconstructed into two predisposing variables: peer influence and superior influence [42].

Bhattacharjee divided the reference group into interpersonal influence and external influence in the study on the service of ordering e-securities online. Interpersonal influence refers to the effects of the oral account by superiors, peers, and those who have adopted innovation. External influence refers to the reports of mass media, the opinions of experts, and other non-interpersonal information [38]. According to the research results, both interpersonal influence and external influence are the factors that determine subjective norm. In practice, there are a large number of factors that influence online clothes renting. Therefore, this study adopts “interpersonal influence” and “external influence” and assumes that they have positive effects on the “subjective norm” of clothes renting.

**Hypothesis 8.** *“Interpersonal influence” has a positive influence on “subjective norm”.*

**Hypothesis 9.** *“External influence” has a positive influence on “subjective norm”.*

### 3.5.4. Perceived Behavioral Control

Taylor and Todd deconstructed perceived behavior according to the study by Ajzen. According to them, the dimension that influences perceived behavioral control can be divided into two parts: the first is the internal notion of individual or self-efficacy; the second is the limit on external resources that can be subdivided into resource facilitating conditions. Therefore, perceived behavioral control is deconstructed into the following two predisposing variables: self-efficacy (the measurement of a person's confidence in his/her performance of a certain behavior) and resource facilitating conditions (the accessibility to time, money or other specific resources for certain behavior) [18,41,42]. In the study on the orders of e-securities traders, Bhattacharjee found that self-efficacy and resource facilitating conditions have positive effects on perceived behavioral control [38]. Hence, this study assumes that “self-efficacy” and “resource facilitating conditions” have positive effects on the “perceived behavioral control” of clothes renting.

**Hypothesis 10.** *“Self-efficacy” has a positive effect on “perceived behavioral control”.*

**Hypothesis 11.** *“Resource facilitating conditions” has a positive effect on “perceived behavioral control”.*

### 3.6. Definition and Measurement of Operability

The hypothesis structure of this study consists of 12 dimensions, and the variables of each dimension are defined and operated according to relevant literature. The questionnaire items of variables are appropriately modified according to users' use of online clothes renting. The definition of variable operability and the reference sources of the scale are shown in Table 2.

**Table 2.** Definition of Variable Operability and Reference Scales.

Research Variables	Conceptual Definition	Reference Scholars
Behavioral intention of clothes renting	The intention of renting clothes	Fishbein and Ajzen (1977) [17]
Attitude toward behavior	Positive or negative comments on clothes renting	Fishbein and Ajzen (1977) [17]
Subjective norm	Social pressure caused by clothes renting	Fishbein and Ajzen (1977) [17]
Perceived behavioral control	Evaluation of the ability to rent clothes after assessing personal environmental resources	Ajzen (1985); Taylor and Todd (1995) [18,42]
Perceived usefulness	Subjectively believe that rented clothes can make life more convenient	Davis (1989); Taylor and Todd (1995) [19,42]
Perceived ease of use	Subjectively believe that clothes renting does not require too much learning	Davis (1989); Taylor and Todd (1995) [19,42]
Compatibility	Subjectively believe that using rented clothes is consistent with the values and demands of current lifestyle	Taylor and Todd (1995) [42]
Personal innovativeness	The degree to which consumers accept new ideas and things or the intention to test new products	Bommer and Jalajas (1999) [60]
Interpersonal influence	Effects of the opinions of superiors or peers (friends, brother, and sisters) on clothes renting	Bhattacharjee (2000) [38]
External influence	Clothes renting is influenced by the reports of mass media, the opinions of experts, the statements of celebrities, or online forums	Bhattacharjee (2000) [38]
Self-efficacy	Degree of confidence in the performance of renting or collocating clothes	Taylor and Todd (1995) [42]
Resource facilitating conditions	Accessibility to time, money, and other specific resources for clothes renting	Taylor and Todd (1995) [42]

## 4. Research Results and Discussion

### 4.1. Analysis of Pre-Test Questionnaires

The variable items of this questionnaire are created according to the research structure, while the questions and meanings are based on relevant literature and the research topic. Likert's 7-point scale was adopted: each item scores from 1 to 7, from "Strongly disagree" to "Strongly agree", respectively. After the questionnaire was finished, what read confusing or odd or what was mistranslated in the questionnaire was erased or modified to achieve the initial draft of questionnaire. Cronbach's  $\alpha$  was tested in the pre-test to measure the consistency among the items, and then the initial draft was revised to achieve the official questionnaire. The questionnaire pre-test was conducted from October 9 to 14, 2017. Fifteen subjects who had and had not used the renting service were investigated.

Cronbach's  $\alpha$  was adopted to test the "internal consistency reliability" of the scale. Cronbach's  $\alpha$  higher than 0.7 indicated "reliable", and those items with insignificant importance were removed. The test results are shown in Table 3. Except for the items under "Attitude toward behavior" and "Self-efficacy" that needed to be removed to ensure that Cronbach's  $\alpha$  was over 0.7, Cronbach's  $\alpha$  of the items under the remaining dimensions was higher than 0.7. This indicates a certain degree of reliability.

**Table 3.** Reliability of Internal Consistency of the Dimensions of the Trial Test Questionnaire.

Dimension	Number of Trial Test Items	Original Cronbach's $\alpha$	Number of Items after Removal/Modification	Cronbach's $\alpha$ after Modification
Attitude toward behavior	4	0.6670	One was removed/3	0.8967
subjective norm	3	0.8013	No need to remove/3	0.8013
Perceived behavioral control	3	0.8451	No need to remove/3	0.8451
Perceived usefulness	8	0.7758	No need to remove/8	0.7758
Perceived ease of use	4	0.8773	No need to remove/4	0.8773
Compatibility	4	0.8527	No need to remove/4	0.8527
Personal innovativeness	4	0.8878	No need to remove/4	0.8878
Interpersonal influence	4	0.7591	No need to remove/4	0.7591
External influence	3	0.7167	No need to remove/3	0.7167
Self-efficacy	4	0.6522	One was removed/3	0.8822
Resource facilitating conditions	4	0.7466	No need to remove/4	0.7466

Source: Compiled by this study.

#### 4.2. Questionnaire Analysis

The study sample was selected from the rental platform consumer group AMAZE, and the sampling of the online questionnaire started on October 16, 2017 to December 1, 2017. Of the 328 retrieved copies, 300 were valid and 28 were invalid. The valid copies accounted for 91.46%.

As shown in the Table 4, as the investigation is mainly published on the network clothes platform, most of the samples were collected from women. The age range was from 16 to 45 years old, and most of them fell in the 35 to 44-year-old range. The monthly income was equally distributed relatively. In addition, this study mainly investigated the behavior intention of online clothes renting. Therefore, the clothing costs and network renting experience were also investigated. The average expenses of online shopping NTD 1200 were used as the dividing line. Sixty percent of people thought that they need not spend more than NTD 1200 per month. Because it is a service to rent clothing, whether they wore other people's clothes in the past was also considered, and 80% of them had relevant experience. The renting platform was the online behavior, the frequency of online shopping may also affect the willingness of consumers to use, and the proportion of people who buy or do not buy goods online account for 50% and high-frequency purchase also account for 1/4.

**Table 4.** Table for sample basic data.

Sample	Category	Number	Percentage
Gender	Male	137	45.7%
	Female	163	54.3%
Marital status	Single	157	52.3%
	Married	143	47.7%
Age	16–24 (including) years old	70	23.3%
	25–34 (including) years old	95	31.7%
	35–44 (including) years old	100	33.3%
	Above (including) 45	35	11.7%
Monthly average income (NTD)	Above NTD 20,000	60	20%
	NTD 20,000~40,000	58	19.3%
	NTD 40,000~60,000	79	26.3%
	NTD 60,000~80,000	55	18.3%
	Above NTD 80,000	48	16%
Monthly clothes expense (NTD)	Below NTD 1200	186	62%
	NTD 1200~2400	56	18.7%
	Above NTD 2400	58	19.3%
Have ever worn clothes of other people	YES	250	84%
	NO	50	16%
One year of experience in clothes renting 1	NO	135	45%
	Moderate frequency (within 10 times)	85	28.3%
	High frequency (more than 11 times)	80	26.7%

Source: Compiled by this study.



This study adopted SEM for the data analysis to explore the causal relationship among the variables of the research mode. The maximum likelihood estimation (MLE) was applied to estimate the parameters, and LISREL8.52 was used for the analysis. Many scholars suggested that the structural equation model (SEM)-based evaluation should be conducted from basic goodness-of-fit, general goodness-of-fit, and internal goodness-of-fit [65,66].

#### 4.2.1. Basic Goodness-of-Fit

In this study the first step was to screen the abnormal estimates and correct the modification model. The variables were modified or removed according to the modification indicators suggested by the SEM-based data analysis, so as to enhance the explanatory ability of the model. Through repeated examination and the adjustment of the modification model, the results of the modification of the dimensions are shown in Table 5.

**Table 5.** Revised Questions.

Dimension	Code	Questions
Perceived usefulness (6 items)	P1	I think clothes renting is very convenient.
	P2	I think clothes renting is useful for me.
	P3	I think clothes renting can make me more fashionable.
	P4	I think clothes renting can quickly bring me the products I want.
	P5	I think clothes renting can save my money.
	P8	I think I can effectively manage storage space through clothes renting.
Perceived ease of use (4 items)	P9	I think the way to use clothes renting is clear and highly understandable.
	P10	I think clothes renting does not require too much learning.
	P11	I think the learning of clothes renting is simple and easy.
	P12	I think I can select clothes through appropriate renting according to my needs.
Compatibility (3 items)	P13	I think the products of clothes renting are consistent with my values on renting.
	P14	I think the products of clothes renting are consistent with my current lifestyle.
	P15	I think the products of clothes renting fascinate me.
Personal innovativeness (4 items)	P17	I am more open to new ideas or creativity than my friends.
	P18	I enjoy trying something new.
	P19	If I hear of new products for renting, I would manage to try them.
	P20	Generally speaking, I am slow to try new products for renting.
Interpersonal influence (4 items)	P21	My family members believe that I should use clothes renting to rent products.
	P22	My friends believe that I should use clothes renting to rent products.
	P23	My family members influence my using clothes renting.
	P24	My friends influence my using clothes renting.
External influence (3 items)	P25	I think mass media influences my intention of renting clothes.
	P26	I think the views in online forums influence my intention of renting clothes.
	P27	I think what celebrities say influences my intention of renting clothes.
Self-efficacy (3 items)	P28	I think I can select and purchase clothes by myself if I have a catalog of products for renting.
	P29	I think I can rent clothes by myself if there is an introduction to the collocation of clothes.
	P30	I have time to use the products of clothes renting.
Resource facilitating conditions (3 items)	P32	I think I have adequate time to rent clothes.
	P33	I think I have adequate money to rent clothes.
	P34	I think I can easily rent clothes.
Attitude toward behavior (3 items)	R1	I think it is a good idea to rent clothes.
	R2	I think it is wise to rent clothes.
	R3	I enjoy renting clothes.
Subjective norm (3 items)	R4	I think the people who can influence my decision-making believe that I should rent clothes.
	R5	I think those who are important to me (peers or family members) support my renting clothes.
	R6	I think those I am concerned about hope that I will rent clothes.
Perceived behavioral control (3 items)	R7	I have the resources, knowledge, and ability to rent clothes.
	R8	I can make good use of clothes renting.
	R9	Everything is under my control when I rent clothes.
Behavioral intention of clothes renting (4 items)	R10	I choose to rent clothes rather than purchasing clothes.
	R11	I try to replace the purchase of clothes with the renting of clothes.
	R12	In the future, I will rent clothes rather than purchasing clothes.
	R13	In the future, I will voluntarily share my thoughts on clothes renting.

Source: Compiled by this study.

According to the SEM-based confirmatory factor analysis, the effects of P6 and P7, two observation items in the “perceived ease of use” of the deconstruction dimension of attitude toward behavior, were insignificant; the effect of P16, the observation item in “compatibility”, was insignificant; the effect of P31 in the “state of convenience” of control belief was insignificant. These items were removed according to the suggestion based on the modification indicators.

#### 4.2.2. General Goodness-of-Fit

According to Hair et al., the measurement of general goodness-of-fit can be divided into three kinds: the measures of absolute fit, the incremental fit measures, and the parsimonious fit measures [66]. As is shown in Table 6, the absolute goodness of fit index (GFI) of this study was 0.87. Browne and Cudeck suggested that GFI should be higher than 0.8. The GFI of this study was 0.84, meeting the suggestion by Browne and Cudeck [67]. It is suggested that an adjusted goodness of fit index (AGFI) should be higher than 0.9 [68]. This study’s AGFI was 0.85, falling short of the suggested level. It is suggested that a root mean square error of approximation (RMSEA) should be lower than 0.05. This study’s RMSEA was 0.026, meeting the requirement. According to the results of the test on absolute goodness-of-fit, the mode established in this study and the observation data meet the fit. The incremental fit indices, which are often used to evaluate general goodness-of-fit, include the normal fit index (NFI), the non-normed fit index (NNFI), and the comparative fit index (CFI).

**Table 6.** General Goodness-of-fit.

General Goodness-of-Fit	Indicator	Research Results	Fit with the Ideal Appraisal Value
Measures of absolute fit	GFI	0.87	Close
	AGFI	0.85	No
	RMSEA	0.026	Yes
Incremental fit measures	NFI	0.98	Yes
	NNFI	0.99	Yes
	CFI	0.99	Yes
Parsimonious fit measures	PNFI	0.86	Yes
	PGFI	0.73	Yes

Source: Compiled by this study. GFI: Goodness of fit index; AGFI: Adjusted goodness of fit index; RMSEA: Root mean square error of approximation; NFI: Normal fit index; NNFI: Non-normed fit index; CFI: Comparative fit index; PNFI: Parsimony normed fit index; PGFI: Parsimony goodness of fit index.

This study’s NFI, NNFI, and CFI were 0.98, 0.99, and 0.99, respectively, all of which were higher than the standard value of 0.9. This manifests that the general goodness-of-fit of the model and observation data of this study were ideal. The simple goodness-of-fit is a parsimony normed fit index, which must be higher than 0.5; the parsimony goodness fit index must be higher than 0.5. As is shown in Table 4, this study’s PNFI and PGFI were 0.86 and 0.73, respectively, both of which were higher than 0.5. These research results show that the model established in this study is a parsimonious one.

#### 4.2.3. Internal Goodness-of-Fit

Hair et al. advocated evaluating the internal goodness-of-fit of the model through the measurement model fit [66]. Following the suggestion by Bagozzi and Yi, this study selected the most frequently-used individual items to evaluate the measurement model [65]. The details are as follows.

Individual item reliability: The reliability of the measurement indices reflects the degree of consistency when the measurement tool is applied to measure the research dimensions. In the LISREL model-based analysis, the reliability indices of the observation variables are R-Square, and square multiple correlation (SMC) was adopted for the analysis. If SMC is closer to 1, then it means that the observation variable is an appropriate measurement tool of potential variables; a higher SMC indicates higher reliability. The SMC values of the observation variables are shown in Table 7.

**Table 7.** SMC Indices of Observation Variables.

Dimension	Observation Variables	SMC
Perceived usefulness	P1	0.66
	P2	0.65
	P3	0.47
	P4	0.38
	P5	0.36
	P8	0.67
Perceived ease of use	P9	0.75
	P10	0.70
	P11	0.78
	P12	0.78
Compatibility	P13	0.69
	P14	0.80
	P15	0.88
Personal innovativeness	P17	0.68
	P18	0.82
	P19	0.75
	P20	0.46
Interpersonal influence	P21	0.63
	P22	0.67
	P23	0.76
	P24	0.54
External influence	P25	0.70
	P26	0.79
	P27	0.51
Self-efficacy	P28	0.77
	P29	0.76
	P30	0.71
Resource facilitating conditions	P32	0.70
	P33	0.54
	P34	0.46
Attitude toward behavior	R1	0.79
	R2	0.85
	R3	0.83
Subjective norm	R4	0.51
	R5	0.67
	R6	0.83
Perceived behavioral control	R7	0.52
	R8	0.87
	R9	0.65
Behavioral intention of clothes renting	R10	0.85
	R11	0.69
	R12	0.70
	R13	0.84

Source: Compiled by this study.

According to the table, the SMCs of P3, P4, P5, P20, and P34 were lower than 0.5, but those of most observation variables were higher than 0.5. This indicates that most of the measurement indices of this study are reliable. The composite reliability (CR) of potential variables: The CR of potential variables refers to the reliability composition of all measurement variables and indicates the internal consistency of dimensional indices. A higher level of reliability indicates a higher level of consistency among these indices. It is generally believed that 0.7 is the acceptable minimum. As is shown in Table 8 the CR

values of all potential variables were higher than 0.7, which means that the dimensional reliability is high.

**Table 8.** Analysis of Reliability of Variables.

Research Variables	Variables	Composite Reliability	Variance Extracted
Perceived usefulness	P1, P2, P3, P4, P5, P8	0.871	0.533
Perceived ease of use	P9, P10, P11, P12	0.924	0.752
Compatibility	P13, P14, P15	0.917	0.787
Personal innovativeness	P17, P18, P19, P20	0.894	0.691
Interpersonal influence	P21, P22, P23, P24	0.880	0.647
External influence	P25, P26, P27	0.857	0.668
Self-efficacy	P28, P29, P30	0.889	0.714
Resource facilitating conditions	P31, P32, P34	0.795	0.566
Attitude toward behavior	R1, R2, R3	0.918	0.705
Subjective norm	R4, R5, R6	0.854	0.662
Perceived behavioral control	R7, R8, R9	0.873	0.697
Behavioral intention of clothes renting	R10, R11, R12, R13	0.932	0.773

Source: Compiled by this study.

The variance extracted (VE) of potential variables: The VE of potential variables is the variance in the measurement of extracted variables and evaluates the ability of measurement variables to explain the variance of potential variables. It can be used to review the convergence validity of potential variables. A higher VE indicates a higher level of reliability and convergence validity of potential variables. Fornell and Larcker suggested that VE should be over 0.5. As is shown in Table 8, the VE values of the variables in the research model were all higher than 0.5, which complies with the suggestion of Fornell and Larcker. This demonstrates that this study has a high level of convergence validity [69].

#### 4.3. Hypothesis Explanation

As for the standardized coefficients in the structure equation model, such as the regression  $\beta$  weight, a higher coefficient indicates great importance in the causal relationship. As is shown in Table 9 of the 11 hypotheses of the research model reached a significant level, except for H5, H9, and H11. The structural model in Figure 6 clearly shows the direct effects among the variables.

**Table 9.** Hypothesis Test of the Dimensions.

Hypotheses	Potential Relationships Among Variables	Path Coefficients	t Value	Test Results
H1	"Attitude toward behavior" has a positive effect on the "Behavioral intention of clothes renting".	0.85	15.21 **	Valid
H2	"Subjective norm" has a positive effect on the "behavioral intention of clothes renting".	0.17	4.98 **	Valid
H3	"Perceived behavioral control" has a positive effect on the "Behavioral intention of clothes renting".	0.14	3.38 **	Valid
H4	"Perceived usefulness" has a positive effect on "attitude toward behavior".	0.35	4.54 **	Valid
H5	"Perceived ease of use" has a positive effect on "attitude toward behavior".	0.06	1.46	Invalid
H6	"Compatibility" has a positive effect on "attitude toward behavior".	0.48	6.31 **	Valid
H7	"Personal innovativeness" has a positive effect on "attitude toward behavior".	0.11	3.08 **	Valid
H8	"Interpersonal influence" has a positive influence on "Subjective norm".	0.31	3.32 **	Valid
H9	"External influence" has a positive influence on "subjective norm".	-0.02	-0.22	Invalid

Table 9. Cont.

H10	“Self-efficacy” has a positive effect on “perceived behavioral control”.	0.87	10.34 **	Valid
H11	“Resource facilitating conditions” has a positive effect on “Perceived behavioral control”.	0.11	1.47	Invalid

Source: Compiled by this study.

#### 4.3.1. Verification Hypothesis 1 ( $t$ Value 15.21 \*\*; Test Results: Valid)

The attitude of consumers toward using online clothing rental services positively affects behavioral intentions. Fishbein and Ajzen (1977) proposed that attitudes refer to the positive or negative evaluations that an individual has toward a certain behavior [17]. In other words, attitudes represent the individual’s continuous positions of liking or disliking.

#### 4.3.2. Verification Hypothesis 2 ( $t$ Value 4.98 \*\*; Test Results: Valid)

The subjective norms of consumers using online clothing rental services positively affect behavioral intentions. Based on the TPB, Jiang (2012) constructed the behavioral intentions of consumers who buy boutique jeans and empirically analyzed their attitudes, subjective norms, and perceived behavioral control [70]. The results showed that all three factors have a significant impact on consumers’ intention to purchase jeans, particularly subjective norms. The above studies have confirmed that the subjective norms of potential users regarding the target behavior have a significant impact on behavioral intentions. Since clothing leasing is still in the early stages of innovation diffusion, this study that consumers’ subjective norms of online clothing rental services positively affect behavioral intentions.

#### 4.3.3. Verification Hypothesis 3 ( $t$ Value 3.38 \*\*; Test Results: Valid)

The perceived behavioral control of consumers toward online clothing rental services positively affects behavioral intentions. Explanation: Empirical studies of the TPB include the study of spreadsheets by Mathieson (1991), the study of consumer behavior in adopting innovative products by Taylor and Todd (1995), and a study based on TPB by Hsu (2009) examining how consumers’ attitudes, subjective norms, and perceived behavioral control affect their willingness to buy green cars [43,45,71].

The study showed attitude toward behavior is the most important factor that influences the behavioral intention of clothes renting, followed by subjective norm and perceived behavioral control. According to this, whether online clothes renting will replace the purchase of clothes first depends on consumers’ evaluation of and feeling about online clothes renting, then the influence of surrounding reference groups, and finally the ability and resources needed.

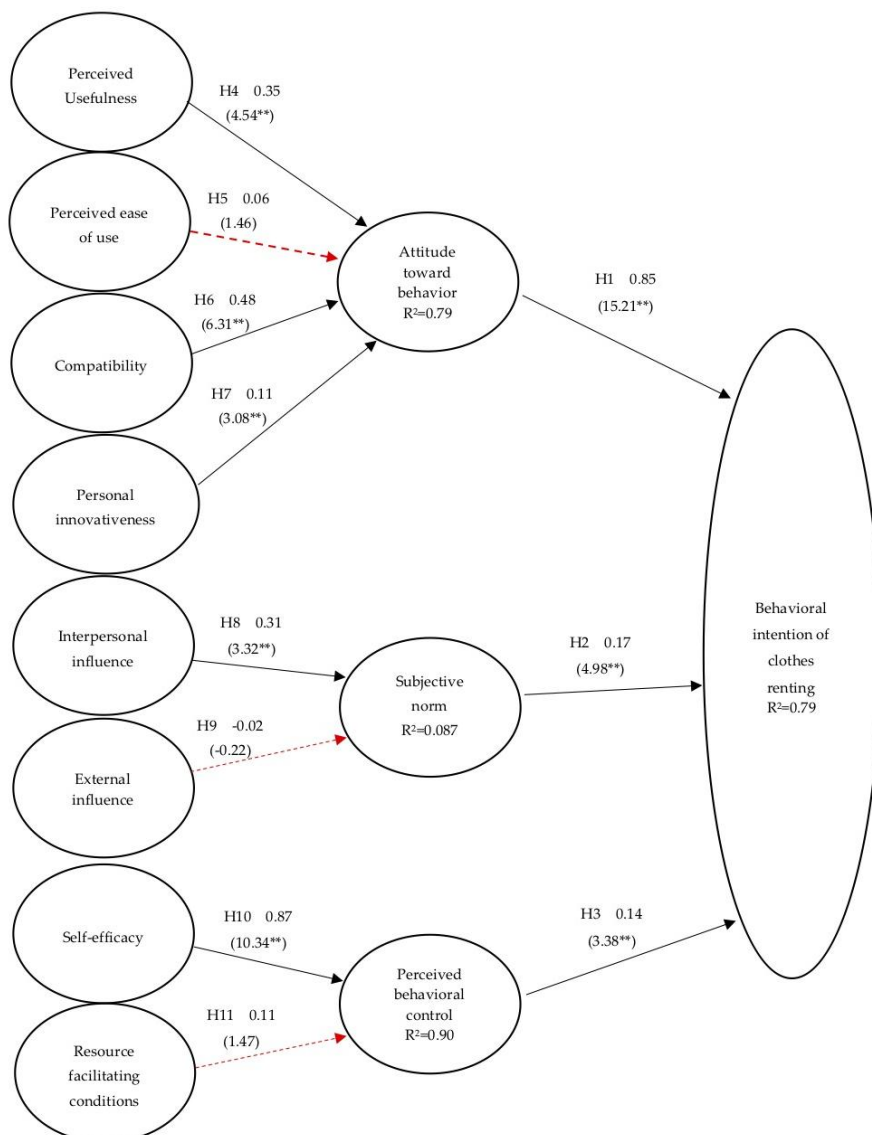


Figure 6. Research structure pattern diagram.

4.3.4. Verification Hypothesis 4 (t Value 4.54 \*\*; Test Results: Valid)

The perceived usefulness of consumers using online clothing rental services has a positive impact on their attitude toward such services. Both Oh et al.’s (2003) study of the use behavior of broadband networks and Klopping and McKinney’s (2004) study on e-commerce online shopping behaviors indicated that perceived usefulness has a positive and significant impact on their attitude toward online shopping [47,72]. When consumers perceive that online clothing rental services bring many benefits, their attitude becomes more positive.

4.3.5. Verification Hypothesis 5 (t Value 1.46; Test Results: Invalid)

Consumers’ perceived ease of use of online clothing rental services has not a positive impact on their attitude toward using such services. Mathieson and Chin’s (2001) study of bulletin board System (BBS) both found that perceived ease of use has a significant positive correlation with attitude [73]. But, study found that users perceive that online clothing rental services are not easy to use, their attitudes toward such services are affected.

#### 4.3.6. Verification Hypothesis 6 (*t* Value 6.31 \*\*; Test Results: Valid)

Consumers' compatibility with online clothing rental services has a positive impact on their attitude toward such services. Takacs and Freiden (1998) considered the Internet to be a new product and an attribute of innovation should be used to study its diffusion and adoption. The authors suggested that when users develop a habit of computer use, they will increasingly use the Internet indicating that the higher the compatibility, the higher the willingness to adopt [74].

#### 4.3.7. Verification Hypothesis 7 (*t* Value 3.08 \*\*; Test Results: Valid)

Consumers' personal innovativeness has a positive impact on their attitude toward online clothing rental services. Using the TPB, Limayem et al. (2000) conducted long-term research on online shopping and explored the factors affecting consumer online shopping. The results indicated that personal innovativeness had influential effects on attitudes toward online shopping and behavioral intentions. Additionally, subjective norms, attitude, and perceived behavioral control affected online shopping intentions. Perceived behavioral control also significantly affected shopping behavior. This study found that since consumers' personal innovativeness affects their perception of IT innovation, it also affects their attitude toward the use of e-books [61].

The hypothesis of compatibility for attitude toward behavior is valid and shows positive effects and the greatest influence. This shows that what consumers are most concerned about in online clothes renting is whether it is related to personal habit and demand for renting. The hypothesis of perceived usefulness for attitude toward behavior is valid and shows positive effects. This indicates that if the effects of online clothes renting are increasingly similar to or better than those of clothes stores, then consumers are more likely to make positive comments on online clothes renting. The hypothesis of the influence of personal innovativeness on attitude toward behavior is valid and shows positive effects. This shows that those who have the desire to try something new are naturally more positive about the thing and the desire to have a try. Perceived ease of use was not supported by the hypothesis of attitude toward behavior, and the possible reason is that the subjects of this study were asked to read the procedure of online clothes renting and the use interface, and the operation was so simple that all consumers would perceive the ease of use for online renting. Hence, it is impossible to evaluate if perceived ease of use has a significant influence on attitude toward behavior.

#### 4.3.8. Verification Hypothesis 8 (*t* Value 3.32 \*\*; Test Results: Valid)

Interpersonal influences have a positive impact on consumers' subjective norms of online clothing rental services. Bhattacharjee (2000) divided a reference group into interpersonal and external influences in a study of electronic ordering services for securities. According to the theory of diffusion of innovations, potential adopters evaluated innovation based on interpersonal and external sources of information. Interpersonal influences refer to the influences of friends, superiors, classmates, and others who have already adopted the innovation. Bhattacharjee (2000) conducted a survey of 172 electronic brokers that accepted e-commerce services and found that interpersonal influences are a determinant of subjective norms [38].

#### 4.3.9. Verification Hypothesis 9 (*t* Value −0.22; Test Results: Invalid)

External influences have not a positive impact on consumers' subjective norms in terms of online clothing rental services. Although scholar according to the theory of diffusion of innovations, potential adopters form evaluations of an innovation based on interpersonal and external sources of information. External influences refer to reports from the mass media, expert opinions, and other non-interpersonal information [38].

The hypothesis of interpersonal influence to subjective norms is supported, compared with external information, consumers were still more confident of suggestions from surrounding friends. The interpersonal influence on subjective norm was supported. The effect of external influence on

subjective norm was insignificant. This demonstrates that consumers show more trust in information from acquaintances than information delivered through TV or the Internet.

#### 4.3.10. Verification Hypothesis 10 (*t* Value 10.34 \*\*; Test Results: Valid)

Consumers' self-efficacy in using online clothing rental services has a positive impact on their perceived behavioral control. Using 111 college students as subjects, Coffin and MacIntyre (1999) showed that the level of self-efficacy is significantly related to the extent to which users accept IT [75]. Wang's (2002) study on the use of information systems in universities, and Wen's (2004) study of the use of text message vouchers all confirm that self-efficacy has a positive impact on perceived behavioral control [76,77].

#### 4.3.11. Verification Hypothesis 11 (*t* Value 1.47; Test Results: Invalid)

The convenience of consumers who use online clothing rental services has not a positive impact on their perceived behavioral control. Although scholar Taylor and Todd (1995) divided the state of convenience into two structures in their study. The first structure related to resources such as money and time while the other structure is related to technology. The results found that when other conditions remain unchanged, the less time and money spent, the greater the users' behavioral intentions and actual use. Bhattacharjee's (2000) study of electronic ordering services for securities found that the state of convenience had a positive impact on positive behavioral control [38,42].

The hypothesis of the influence of self-efficacy on perceived behavioral control was valid. This means that if consumers show more confidence in their ability to rent or collocate clothes, then the control over the resources for renting will be stronger. The hypothesis of the influence of resource facilitating conditions on perceived behavioral control was invalid, and the possible reason was that consumers failed to make a timely evaluation of the control over the time, money, and other specific resources for clothes renting. In other words, the resources for clothes renting today, including the Internet, are no longer a problem for consumers, or consumers do not feel strong control of clothes renting, just because of possessing the resources for clothes renting today.

## 5. Conclusions

In this study, the responses to findings and conclusions will be made based on 2 study purposes in order, hoping to provide references to the future operation strategies and development guidelines in this industry and make contributions to the industry.

### (1) Current market situation, bottlenecks and opportunities of online clothes renting

In Taiwan, the clothing retail industry focuses on small scale (the proportion of middle and small-sized enterprises is up to 99.51%) and it is aimed at the domestic consumption market. However, due to the realistic environment of smaller market scale, economic downturn and the decrease in actual income in Taiwan, consumption pattern changes easily to jointly affect the operational activities of clothing retail industry. At the same time, it will also exert an effect in terms of consumer's increased awareness, diversity of brand choice and rise of the inexpensive clothing ([78] p. 13).

MIC, Institute for Information Industry has investigated and analyzed consumer's online shopping behavior and found that consumer's annual consumption amount in online shopping in Taiwan has presented the rising trend: from NTD 21,681 in 2014 to NTD 27,715 in 2016 and the consumption amount in 2016 has increased by 12% compared with 2015 (NTD 24,744), which is enough to prove that Taiwanese consumer's reliance on online shopping has the trend of continuous rise. According to the investigation results, it is found that the proportion of monthly online shopping amount in the total consumption expenditure each month has been rising year by year. The proportion of online shopping amount accounted for 12.3% and 15.4% respectively in 2014 and 2015, while it reached up to 17.8% in 2016. Based on this, Xiao-Chi Chang, the industry analyst of MIC, Institute for Information Industry explained that the current net friends mainly focus on the consumption in



physical store, but the proportion growth in recent 3 years has shown that the transfer from “offline” consumption to “online” consumption has been formed gradually [79].

Through overview of the current development of online clothes in Taiwan, most businesses still focus on purchasing of clothes, that is, the usage right and the ownership are consumer-oriented, which has become the main market of clothing industry. However, from the renting due to the special demands for wedding dresses and performance costumes in the early promotion of online clothes renting in Taiwan, to the renting of current fashion clothing, it cannot escape from the range of customers’ demands on clothes. Directing at the application of online clothes renting, this study paper tries to figure out if the online clothes renting can be accepted by the public. This study makes analysis by using questionnaire from the perspective of consumers or potential users, but most users have no experience in online renting. Hence, from the study, it can be seen that style diversity or practicability is constantly stressed in the industry of clothes renting, but the attraction to users is still limited. The study in this paper may provide reference to the industry of online clothes renting, to think how to make users want to touch the strange consumption model.

(2) Relationship of “behavioral attitude”, “subjective norm”, “perceived behavioral control” and “behavior intention” of online clothes renting

From the analysis on questionnaire survey in this study, the relationship of behavior intention of online clothes renting provides supports to 8 of the 11 hypotheses and has no significantly positive impact on 3 hypotheses. “Perceived ease of use” of online clothes renting consumers has no significantly positive impact on “behavioral attitude”, which indicates if the ease of use exists in usage modes, learning operation and style demands of online clothes renting platforms for consumers. “External influence” has no significantly positive impact on “subjective norm”, which indicates mass media reports of online clothes-renting platforms, online forums and celebrity endorsements have no impact on consumers’ subjective thoughts on renting. “Resource convenience” has no significantly positive impact on “perceived behavioral control”, which indicates if consumers are satisfied with the resource convenience for time and budget of online clothes renting platforms as well as universality of clothes renting.

Based on the results of questionnaire survey in this study, most consumers have not clearly recognized the perceived ease of use, external influence and resource convenience of online clothes renting, and such results are discrepant with the industrial expectations. The three items show that, in the industry of online clothes renting, the platform application interface is required to clearly present the media or spokespeople part. The most representative media or spokespeople who consumers expect can be surveyed, and consumers’ renting time and budget can refer to the formulation ways in various industries. However, the clothing renting in Taiwan lacks universality, and in the future, more clothing industries are expected to be joined in.

(3) Whether online clothes renting is easy to be accepted by the public

Online platform is a global emerging industry and online clothes renting is also one of the modes integrating clothes into innovative consumption. It can be found that the combination of clothing and network channel has become the trend of online shopping. In terms of the online shopping, this research took the network model as the discussion direction and adopted the concept of “Replace Buying with Rental” in Sharing Economy to guide consumer in rental. As for consumers, they are relatively not afraid of the excessively complicated consumption model and usually have the sufficient economic capability and their attitude towards innovation is deliberate. Meanwhile, consumers possess fewer resources, so they are not willing to accept online shopping until all the uncertainties related to innovation have been eliminated. The fashionable clothing is the necessity in daily life. However, under the circumstance that the clothing styles are changed and innovated continuously in different seasons, consumers will increase their shopping methods, i.e., the same new clothing is

purchased from another consumption model and it is expected that consumers can adopt the rental method for consumption [21].

According to the results of this study, 45% participants have no experience in online clothes renting, which indicates that, at this stage, the public's acceptance of online clothes renting is still relatively low. Some may hear of renting but not clothes renting or see family or friends use things rent, but they have no strong motivation to affect behavior intention. It remains to be achieved by firms who invest in clothing industry, to actively develop attractive application of trend renting and create consumer's demands, so that online renting can be implemented in the future clothing industry.

### 5.1. Suggestions for Future Studies

#### 5.1.1. Suggestions for Academic Studies

There are many different online clothes platforms operated by different enterprises in the market, for instance: wedding photography and special festival clothes renting etc. This study currently conducts renting studies in fashion clothing. But there is a great variety of clothing, and in various clothes, which are the rent clothes with consumer priority or in high demands. Whether the factors that influence consumers' acceptance of online clothes renting vary from the type and form of renting can be further explored by future studies. Moreover, there are only a few consumers who have had experience in clothes renting, but online clothes renting will definitely become a trend. As the number of people who choose clothes renting increases, future studies can involve more samples and explore consumers who have used online clothes renting for a long time. They can also take the degree of consumers' involvement in clothes renting as a variable, so as to make a more complete study on clothes renting. Therefore, it is suggested that future studies compare different online clothes renting platforms to find out if there is any difference in factors influencing the acceptance of clothes renting among different platforms.

#### 5.1.2. Suggestions for Industrial Management

Compared with purchase in physical stores, the marketing design of online clothes renting is more diversified with more complicated demands. The market development space is larger. As for small and medium-sized clothing enterprises or designer studios good at clothing matching and design with limited styles, online clothes renting brings a brand-new way. For the market scale is still small at current stage and the industry leader has not yet appeared, the small and medium-sized clothing enterprises or designer studios have a great chance to win market recognition. Many online clothes-renting firms have been established in foreign countries (Rent the Runway, Le Tote . . . etc.) and online clothes renting enterprises in Taiwan are suggested to refer to the oversea operation modes. In addition to understanding consumers or industrial acceptance factors based on academic study results, discussions will be further conducted on operation modes of different countries to promote long-term sustainable development of online clothes renting in Taiwan.

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