The Research on the Paying Behavior of Influencer Virtual Derivatives based on Consumer Emotional Needs

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Abstract. People are no longer simply satisfied with material pursuits, but continue to explore spiritual abundance, and virtual derivatives are becoming a promising market. In previous studies, scholars have mostly focused on physical products and a small portion of knowledge-based virtual products, but rarely on hedonistic products, especially on the combination of emotional needs with hedonistic derivatives. This paper builds a research model based on the SOR theory, which includes personal factors, product factors, retailer factors, contextual factors, emotional needs, and consumer behavior. The possible effects of each factor and the mediating influence of emotional needs on consumption behavior are explored by SEM.

Keywords: Hedonistic Influencer IP, Virtual Derivatives, Emotional Needs, Mediating Effects

1   Introduction

The influencer has gradually transformed from a phenomenon into an economic industry. They expand their influence and attract fans by producing engaging content. As fans gather in large numbers, they convert fans' attention into purchasing power through their content. In the past, physical products were the mainstream of people's consumption, but with the increasing standard of living in current society, people are not satisfied with material pursuit and want to be spiritually enriched. Therefore, virtual derivatives have started to attract more customers and gradually become an essential way to meet consumers' spiritual world. In this light, this paper is based on hedonistic Influencer virtual IP derivatives and explores the influencing factors of virtual derivatives' payment behaviors by using SOR theory and SEM model from the perspective users' emotional needs.

Compared with the previous literature, the possible innovations of this study are: 1. The emotional needs of users are included in the discussion, and the influencing factors of the payment behavior of virtual derivatives are further explored from the psychological level; 2. From the user's point of view, new ideas are provided for the future development of merchants of virtual derivatives.

2   Concepts and Theory

2.1   Influencer

Influencer refers to a part of people or brands that attract the public's attention through the Internet due to something or behavior in real life or the network, and the consumer market derived from this has formed a new economic model called the Influencer economy. Compared to traditional consumers, this type of fan is more loyal and willing to share within the group, thus forming a more stable community consumption [1]. They also have the characteristics of impulsive consumption and over-consumption. The fan consumption psychology shows more compulsive and addictive features.

2.2   Hedonistic Influencer IP Virtual Derivatives

IP originally refers to intellectual property, but nowadays, it can be a character, a story, or something. IP derivatives are products with commercial value derived from the distinctive features of the original IP, including physical derivatives (e.g., dolls, clothing, and other related items with physical existence) and virtual derivatives (e.g. emoticons, skins, and other products that only exist on the Internet or video carriers). Derivatives of Influencer IPs have begun to become the mainstream of consumption gradually. For example, cartoons and comic derivatives are cultural products developed by derivatives based on original works such as animation, comics, and games, with rich connotations and wide market demand. It can not only bring audiences a variety of rich entertainment experiences but also create abundant commercial profits and value.

2.3   SOR Theory

Stimulus-Organism-Response (SOR) theory was developed by Mehrabian and Russell in 1974 based on SR theory [2], which starts from consumer psychology and studies the response of the user's internal organism under the stimulation of the external environment. S refers to external stimuli (e.g. services and marketing activities), O refers to the internal organism state (e.g. consumer demands and awareness), and R refers to the response such as consumer behaviors and business performance. Now SOR theory is widely used to study the influence of external environmental changes on consumer psychology, affecting subsequent consumption behaviors.

3   Literature Review and Hypothesis

3.1   Consumer Behavior

Consumer behavior refers to consumers purchasing goods at their disposal to achieve self-fulfillment of their needs, impacting the consumers and society [3]. When products can satisfy the needs of consumers, they will repeat the purchasing behavior and recommend it to the people around them. In1969, Howard and Sheth created the Howard-

Sheth Model to analyze consumption behavior [4]. The model divides the process of consumer buying behavior into extrinsic, stimulus or input, intrinsic factors, and reaction. The 'extrinsic' is the consumer's stimulus from the outside world, such as culture, time, or financial pressure. The 'stimulus or input' is derived from the product or the salesman and feedback from society. The 'intrinsic factor' refers to the psychological activities of the consumer after receiving the stimulus and the reaction is the consumer's final purchasing behavior.

3.2   Emotional Needs

The vast majority of papers on virtual derivatives are focused on economic or financial aspects, with less attention paid to the perceptual needs of users. Regarding consumer behavior characteristics, Fang Ting and other scholars point out that the behavioral aspects of derivative product users are irrational, fanaticism, emotionalism, collecting fetish, and value supremacy tendencies [5]. All these words reflect the influence of the relevant needs that consumers will receive from the organism in similar behaviors, that is, the emotional needs that are the focus of this article. Emotional needs are now viral in the commodity field, and theories such as sensory engineering have been born in the home furnishing and other necessity industries so that sensory needs are no longer just empty words.

3.3   Hypothesis

3.3.1 Personal Factors.

The reason why customers are willing to choose a specific type of brand for a long time mainly will be influenced by the brand promise [6]. It refers to the customer, even with low satisfaction, because of the lack of choice or the cost and emotional factors to consider the repeated option. It is an essential potential factor in sustaining customer loyalty and a relatively stable psychological indicator [7]. For virtual derivatives, the significance and core concepts carried by the parent platform or brand are essential factors that motivate the birth of products, and thus, loyalty to the parent brand will also affect the consumption intention of subsequent consumers.

H1 Personal factors have a positive effect on the payment behavior of Influencer IP Virtual Derivatives Considering Users' Emotional needs.

3.3.2 Product Factors.

The significance of objects lies in the fact that they are embedded in a specific cultural background and embody relationships within a particular environment. The birth of a product itself is the excavation and construction of the parent body, so the product's effective extension of the concept of the parent body will motivate consumers to want to buy it. According to Lowe & Alpert [8], the perception of product innovation needs to innovate from creativity and technology and allow customers to perceive the creation. Virtual products have no physical existence, and most studies believe that consumers will only be willing to consume if the goods provide value to them, so as a

hedonistic non-functional virtual product, increasing the practicality of the product that can be experienced by consumers and improving the driving force of the product for the users will have a positive effect on guiding consumers to generate consumption behavior. When users recognize the innovation and practicality of the product, this psychological implication will increase their consumption rate.

H2 Product factors have a positive correlation effect on the payment behavior of Influencer IP Virtual Derivatives Considering Users' Emotional needs.

3.3.3 Retailer Factors.

People are no longer limited to a single choice, and when selecting goods, they are not only concerned about the goods themselves. 'Comparing goods with three families' is no longer just about comparing the price of goods but also includes the retailer's favorable comments, turnaround rate. For physical derivatives, consumers face more uncertainty when the items are in network transactions due to information asymmetry, the subject of virtuality and other characteristics [9]. In contrast, virtual derivatives, whether online or offline, have the above risks so that retailers can improve their credibility, for the consumption of virtual products has a positive correlation. Users usually make multiple purchases for retailers with many positive reviews and high credibility. Under the influence of the herd mentality, most customers are bound by the feedback from people around them when shopping, especially in the online shopping and virtual derivatives market, where it is difficult for consumers to have direct access to the products themselves.

H3 Retailer factors have a positive correlation effect on the payment behavior of Influencer IP Virtual Derivatives considering Users' Emotional needs.

3.3.4 Contextual Factors.

In economic theory, Thaler [10] believes people will divide their property into different accounts according to their financial status and psychological tolerance, collectively known as psychological account theory. Consumers make various financial decisions through separate accounts, and when users need to pay, they will use the loss account, which will generate psychological burdens and pain in the process. Promotions and other activities will reduce the consumer's perception of the cost, thus reducing their psychological burden and further promoting the user's paying behavior. When the game platform launches skin promotions or discount activities, users will be more inclined to focus on consumption during that time, similar to the current shopping festival activities of many platforms, which is conducive to consumers' contextual change and will have a positive effect on the payment behavior.

H4 Contextual factors have a positive effect on the payment behavior of Influencer IP Virtual Derivatives Considering Users' Emotional needs.

3.3.5 Emotional Needs.

For virtual derivatives, consumers can't obtain any physical products through consumption behavior, so the emotional and spiritual value it brings is the primary purpose of consumers. In 2018, Marder B et al. [11] conducted a relevant questionnaire survey

on the purchase of virtual props for an online game, and the survey results about the consumption motivation are divided into two points: one is the commodity-led motivation, and the other is the payment-led motivation. The former includes novelty, aesthetics, self-pleasing, role dedication, which pay more attention to some product characteristics. The latter includes showing off, giving back, and paying for participation, which are paid behaviors that stimulate consumers emotionally. Showing off refers to the fact that users can enhance their status in social activities by purchasing some premium game skins or exquisite emoticons. Giving back is that some games or retailers will claim that the paid behavior will participate in some charitable activities, which in turn makes consumers feel that their ethical behaviors are practiced, while paid participation is that some players will think that the purchasing behavior can help to maintain the game or the parent platform to continue to operate.

H5 Emotional needs have a mediating role in considering the paying behavior of Influencer IP Virtual Derivatives Considering Users' Emotional needs.

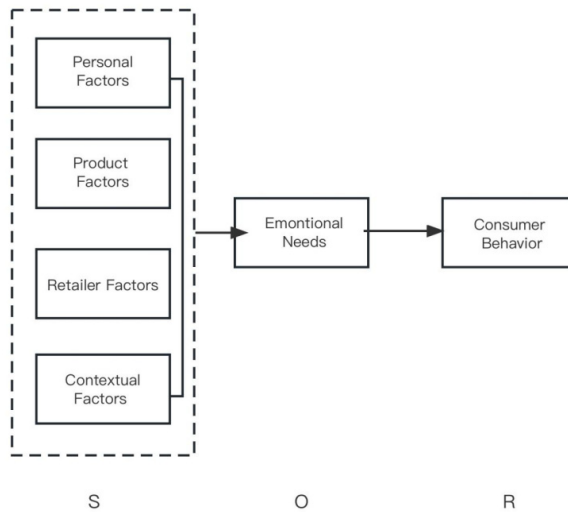Based on the above results and SOR theory, we built the following model (see figure 1):

Fig. 1. Theoretical Model

4   Model Construction

4.1   Structural Equation Model

Structural equation model (SEM) has been widely applied to the study of effect relationships between different variables. For traditional regression analysis, the variables cannot be measured with error, which is difficult in the data acquisition process. The structural equation model is relatively more flexible and practical. It includes two parts:

measurement and structural model. The measurement model is to represent the explanatory relationship between the observed variables and the latent variables, and to verify the reasonableness of the relationship between the latent variables and the observed variables through the data analysis. In this study we used a questionnaire to collect data, combined with the use of reflective measurement modeling to examine the relationship between the six explicit variables and a series of questionnaire questions that were used to measure specific measures of these structural variables.

Therefore, we would use structural equation model to explain the relationship between the variables.

5   Results

5.1   Distribution of Personal Information

In order to ensure the reliability of the data, before the formal distribution of the questionnaire, a small range of questionnaire distribution and one-on-one recovery feedback, according to the feedback and fill in the effect of the questionnaire modification, the pre-survey recovered 202 questionnaires, 200 valid questionnaires. As for personal information, the gender of participants is relatively average, with 78% being female and 22% being male. The distribution of education is dominated by bachelor's degree participants, accounting for 44% of the total, followed by a master's degree, accounting for 49%. As for the age, the number of 18~25 years old participants is the largest (142), which indicates that young people are the main target of the survey.

5.2   Model

We have created the following model and before we discuss the relationships. First, we checked reliability, validity and discriminant validity of this model. We imported the questionnaire into SPSS for reliability analysis. The alpha coefficient of the whole questionnaire is .921, indicating that the reliability of the entire questionnaire is good. In addition, the coefficients of all the latent variables are more significant than 0.8, which meets the questionnaire's reliability requirements. Usually, the data are categorized into structure validity, convergent validity, and discriminant validity. In our paper, the CMIN / DF of 2.684 is less than 3, the GFI of 0.846 is more significant than 0.8, which indicates that the structural validity is good. The criterion for the convergent validity judgment is verifying the value of CR and AVE. Through the calculation, we found that except for the CR value of F1, which is slightly lower than 0.7, all the others meet the criteria, so the test can also test the convergent validity of the model. Regarding the discriminant validity, there is validity since the factors in the questionnaire, although as independent as possible, is not wholly unrelated due to the discriminant validity of concepts such as perceptual factors.

5.3   Mediating Effects

Since we added emotional needs to the discussion in this paper, we need to determine whether this factor mediate the effect when users engage in paying behavior. Through the AMOS software, we set the coefficient relationship between each latent variable and the mediating and dependent variables.

In system, we named every variable (as shown in Table 1), and got the formula as the following. Then the result was got by AMOS in Table 2.

Table 1. Latent variables and Measurement items

Latent variables	Code name	Measurement items
Personal Factors	1	Having a relatively high level of awareness and trust in the parent platform will make me more likely to purchase the related virtual derivatives
	2	I am more likely to buy virtual derivatives if more friends around me have such purchasing behavior.
	3	When purchasing derivatives, I would pay more attention to the experience rather than the price/performance ratio.
Product Factors	4	Effective extension of the original concept of the parent product will make me more likely to buy the virtual product.
	5	A high degree of interactivity or innovation in the product would make me more likely to purchase the virtual product.
	6	The more useful and continuous the product is, the more I will be attracted to buy the virtual derivatives.
Retailer Factors	7	The more followers the merchant has, the more likely I am to buy the virtual product.
	8	A detailed introduction of the product by the merchant will make me more likely to buy the related virtual derivatives.
	9	A good service attitude of the merchant will make me purchase the related virtual derivatives.
Contextual Factors	10	Positive feedback from other consumers would make me purchase the virtual product.
	11	Special promotions of the product will motivate me to buy the virtual derivatives.
	12	A high degree of fit between the derivative product and the parent platform would motivate me to purchase the virtual derivative product.
Emotional Needs	13	Purchasing virtual derivatives of IP will motivate me to communicate with other people.
	14	Purchasing virtual derivatives of IP can bring me psychological pleasure.
	15	Purchasing virtual derivatives of Netflix IP can give me a sense of belonging to a group.
Consumer Behavior	16	If the above needs can be satisfied, I am willing to continue to use virtual derivatives.
	17	If the above needs can be satisfied, I am willing to pay more to buy virtual derivatives of IPs
	18	If the above demand can be satisfied, I am willing to recommend the virtual derivatives I use to my friends and relatives.

$$DE=a+b+c+d \tag{1}$$

$$IE=(o+g+h+i) *j \tag{2}$$

$$TE=DE+IE \tag{3}$$

Table 2. The mediating effect of emotional needs

Parameter	Estimate	Lower	Upper	P
DE	.519	-.053	.984	.066
IE	.553	.170	1.121	.026
TE	1.073	.680	1.413	.007

Based on the results we conclude that the significance of the direct effect is greater than 0.05, while the intermediate and all coefficients are less than 0.05, and the mediation cases we summarize as three: 1. No mediation 2. Complete mediation 3. Partial mediation. Combined with the table, we conclude that the emotional needs factors have a fully mediated effect in this model.

6   Conclusions and Discussions

Through the above discussion and analysis, we can conclude that under the SOR theory system, when users receive external stimuli and produce psychological changes, they will also have a collateral effect on consumption behavior, so under the influence of perceptual demand, users' consumption behavior for virtual derivatives will receive the positive impact. In this regard, we also put forward the following suggestions for virtual derivatives merchants. Emotional needs will positively impact users' consumption behavior, so must extract key points from continuous customer communication and feedback to optimize their products and further promote consumption. For example, perceptual engineering, born in apparel design, is a mathematical method to quantify the perceptual needs that are difficult to quantify, qualitative, irrational, and illogical to quantify the people's demand for ' things'. The sensual imagery of ' things' is expressed quantitatively and semi-quantitatively and is associated with product design features to reflect consumers' emotional state and meet their emotional needs through design. For virtual derivatives merchants, the absence of physical products is more important for merchants to get users' feedback. The limitation of this paper lies in the limited sample size and scope of the research, with only 202 questionnaires distributed throughout the country. Due to the restriction of time and other problems, there is a big difference in the distribution of male and female ratio in the sample size, which may have a particular impact on the research results. In addition, most of the samples in this study were young users, and future studies need to include more players of other age groups to make the findings more generalizable. In the current virtual derivatives market, the variety is getting richer and richer, including but not limited to the emoticon skins that we are familiar with, so for this type of targeted products, whether there will be more influencing factors on the consumer behavior, it is worthwhile to explore in the future.

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