How Influencer Attributes Influence Healthy Behavior Intention

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Abstract. Since fitness influencer has begun to impose their impact on audience through various media, it raises a question about what attributes may get these influencers more appealing to their audience. To devle into such question, this paper constructed a theory model invovling three-dimension attributes, perceived value and the behavior intention based on S-O-R theory. After conducting analyses such as structural equation model analysis on the collected data from the survey, we are positive that there is a positive relationship between these three concepts. In other words, influencer's certain attributes does arouse audience intention to follow such a healthy lifestyle through their perceived value.

Keywords: Influencer Marketing, Perceived Value, S-O-R Theory.

1. Introduction

The internet has assumed a significant crucial role in society and has progressively transformed the way people live due to the technologies and information revolution of the previous century. Social media has developed over the past several years from being a simple tool for information sharing and discovery to becoming one of the most important pieces. As people became more interconnected in their daily lives, it became obvious that the use of social networking websites had massively increased. The world's information is expanding and spreading rapidly every day. Previous research demonstrates that social media websites are beneficial for changing customers' healthy behaviour [1].

Social media does have an effect on today's society. Influencers, advertisements, visual and speech material, as well as other information all have an impression. Influencers, sometimes called opinion leaders, are someone who utilize their knowledge and expertise and attractiveness to inform people about this in a particular area; they may have a significant audience and create a tremendous influence. To sell and promote their products and services, companies and organizations often look into influencers as they have a significant effect on consumers. According to several studies, social influencers have the power to significantly affect customers' intentions [2,3]. As a consequence, social

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celebrities' effect is even more significant than that of conventional influencers [4,5]. From the social platform, the consumer may learn more knowledge in their interested area or buy anything that would satisfy their actual requirements.

Because of the social support, the social norms and the exposure to health-related information, social influences can positively influence physical activity promotion and health behaviours and outcome [6]. Social media is a primary factor of modern social influences on health behaviours [7]. It is reported that 80% of Internet users utilize numerous online sources to search for fitness-related information, and thereby social media platforms such as YouTube, TikTok, Instagram may become a promising avenue to promote public health content [8]. Meanwhile, health and fitness are topics which are intensively discussed over the several years, using by the social media marketin [9].

In contemporary society, rather than stay in a physical environment, consumers who have busy lifestyles and fragmented downtime tend to stay in an online environment [10]. Holding the thought that online environment may provide more connections as incentive to exercise, we continue to look at other possible factors that will change people's lifestyles. A study indicates that, in addition, increasing people who share their lifestyle and give suggestion to others [11] are ascribed to the hyped health promotion on social platform [12]. In other words, these fitness influencers on YouTube can attract their followers by showing off their body shapes, giving professional exercising tips from their workout experiences, and providing free workout tutorials and online coaching, which allows followers to exercise at home rather than at a gym [13]. Regardless of the time and place, consumers are able to consume the fitness content and do their workouts via fitness channels like YouTube whenever they are freed from their daily tasks [14].

This article will investigate the correlation between influencer marketing, perceived value and consumers' healthy behaviours. We focus on three qualities of influencers: social interaction, professionalism, and attractiveness to evaluate the effect of an influencer on perceived value and, consequently, impact consumers' fitness behaviours. We initially conducted interviews with people from different cultural backgrounds and age group to consult their perspectives on fitness influencers to obtain additional information. Then we started to create an online questionnaire in both Chinese and English and polled multiple observation groups. A total of roughly 300 people responded to the questionnaire that we especially issued to those who regularly exercise. Then, to test our hypothesis, we examined the statistic by using SPSS26.0 and AMOS25.0.

2. Literature Review and Hypothesis Development

2.1. Theoretical Background-S-O-R Theory

Based on the notion that people tend to give responses to certain stimulus, Woodworth disclose organism's effect in this process [15]. He argued that external stimuli are related to behavioural responses only through the organism. While Mehrabian and Russell developed the S-O-R theory and claimed that the stimulus(S) in environment will affect people's organisms(O) that result in approach and avoidance response(S) [16]. This framework originated from Environmental psychology is applied in other fields for offering scholars a perspective to detect environmental cues and their influences. Donavan and Rossiter introduced it into business and focused on how retail store's environmental cues like colour and lighting contribute to consumers' purchase intention [17]. It is also available even though online shopping has been in the ascendant over the traditional ones under the puissance of Internet. Eroglu and McKinney examine the effect of involvement and internal motivations separately [18,19]. With the development of Internet and media, online shopping or online marketing is not limited to merely E-commerce platforms but consists of many other behaviours. This study is based on the fundamental notion of the S-O-R theory and health-related context, proposing that fitness influencer's attributes serve as the stimulus(S) and pose an effect on

audience's perceived value(O). And according to differed perceived value, individual may exhibit different levels of behaviour intention to adopt such healthy lifestyles.

2.2. Fitness Influencer's Attributes and Perceived Value

Influencer is also referred to the opinion leader which defines as individuals who exert a strong influence on consumers' attitudes and behaviours [20] usually via word of mout [21], because of their superior status, social prestige, personal appeal or expertise [22]. Researches mentioning Influencer's attributes has occupied a significant part of the growing body of Influencer Marketing literature. After go through the essays, this study decides to divide the attributes into three dimensions: professionalism, social interaction and attractiveness. Firstly, influencer always tend to diffuse information or concept. The more professional he is, the more likely audience may accept the information. Secondly, when following an influencer online, fans will be equipped with the ability to interact with other audience and the influencer (eg. comments). such engagement tools help set up his individual bond attachment to the group and the influencer. As a result, the influencer may gain more puissance [23]. What's more, a prevalent influencer is believed to be attractive. Attractiveness refers to the audience's perceptions of how the influencer is liked and respected by others and they may choose to follow a more popular one [24].

The definition of consumer perceived value can be traced back to Zeithaml [25], who proposed an overall assessment of a product or service in terms of consumers' perceptions of what they get and what they pay for. Monroe extends Zeithaml's definition by stating that consumer perceived value is the perceived benefit compared to the perceived cost, where perceived cost is no longer solely the price paid [26]. And among all the perspectives to segment perceived value, trichotomy is the most applicable one. Park 's research provides the theoretical basis for the "trichotomy" of consumer perceived value [27]. Based on the literature of Journal of Marketing, he suggested that consumer needs can be classified into three types, including functional needs, experiential needs and symbolic needs, which can also be used to classify customer perceived value. In a more in-depth study of the theory by subsequent researchers such as Sheth and Holbrook, this study summarizes consumer perceived value into three levels: functional value, emotional value and social value [28,29].

As what have been discussed above, this study is based on the S-O-R theory, assuming the fitness followers' perceived valu, which is represented by the O, are influenced by their evaluations and interpretations of the influencer's attributes which are assumed as S. In other words, the cognitive appraisal of the influencer results in audience's three dimensions of perceived value (functional, emotional, and social) during watching posts related to workouts. Hence, we assume that there is a positive relationship between influencer attributes and perceived value. Two hypotheses are listed below:

H1:Influencer attributes are positively associated with perceived value

H2: Perceived values are positively associated with behavior intention

As explained in previous context, people normally make judgement on the perceived cots and perceived benefits which related to influencer's attributes (stimulus), forming their perceived value. Behaviour intention is instruction that people give themselves to behave in a particular way [30]. Under the study's context, we define it as an intention to adopt a robust lifestyle like exercising regularly or eating healthy. If people have positive perception from the influencers, they could be more willing to improve their behaviours. Therefore, we assume that the perceived value affects behavioural intention positively.

2.3. Model Development

Basing on the literature review, we developed a research model that is represented visually in Figure

1. The perceived value in the middle acts as a bridge between influencer attributes and behavioural intention. In the left, the perceived value results from three influencer's attributes, they are social interaction, attractiveness and information quality respectively. in the right, the perceived value could give rise to intention to exercise or to improve their health conditions.

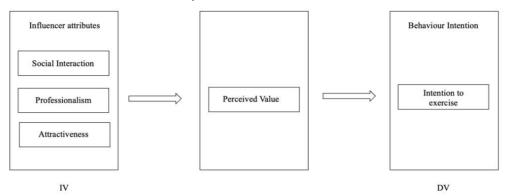


Figure 1: Research model.

3. Methodology

3.1. Online Survey Design

We separated influencer characteristics into three different categories: social interaction, professionalism, and attractiveness, as independent variables. The goal is to evaluate the impression an influencer has over a customer. The process of dynamic interplay people exercise among each other during social encounters is known as social interaction. It typically refers to in-person interactions when participants are present with each other for a predetermined period of time. In our article, social interaction is used to evaluate how well consumers can engage with influencers' platforms. We take into account how well they get along with other members and whether they can generate a response from an influencer or other users. We want to utilize this element to determine if consumers' relationships with social influencers on the internet are positive. The second factor is professionalism, which can be characterized by four clusters: adherence to ethical practice principles; effective interactions with customers; effective interactions with other people working in the social media; dependability and commitment to autonomous maintenance and continuous knowledge and skills improvement [31]. We explore the connection between influencers professionalism and customers' healthy behavior. The third factor is attractiveness, which we define from both a social and physical standpoint. From a physical perspective, we look at how appealing influencers are, and from a societal point of view, we look at how many subscribers or followers they have. We examine the connection via the angle of customer perceived value, which is the assumption that a good or service may satisfy a client's requirements or expectations. This perception may have an effect on a product's demand and cost. And we take into account consumers' behavior from a functional, emotional, and sociological standpoint. In the end, we take into account how customers respond healthily. We also inquire about how long viewers have been affected by influencer videos and if they plan to recommend this influencer to others.

3.2. Likert Scale

Each reflexive item is scored by 1 = strongly disagree to 5 = strongly agree, except for demographic questions (i.e., 1 = never to 7 = always) via a 5- point Likert scale. The most popular type of question used in primary research is the Likert scale, which is used by many individuals [32]. This is the ideal

sort of survey inquiry since it is required to assess the degree of skill, quality, agreement, and perception [33]. Likert scales are often built from 3 to 10 response options, allowing respondents to more accurately convey their view or attitude regarding such issues [34]. The most typical method people use it is to split respondents' opinions symmetrically, from strongly disagree to strongly agree. Although not all intermediate points in a Likert scale make sense, they frequently cause bias and outcomes to be distorted [35].

3.3. Choice of Questions

The questionnaire was focused on the same target group, mainly fitness-interested individuals that follow certain fitness influencers on a regular basis. This study attempted to explore how well influencers may affect customers' healthy behaviors. We started by asking respondents which fitness influencers they follow and how often do they watch fitness influencers' videos. There are also "screening questions" that respondents must answer positively in order to continue the questionnaire before they are given a chance to answer other questions [36]. If they do not routinely follow fitness influencers, they will not proceed to next questions about the impact of influencers and the intention of customers to make healthier choices. Following these screening inquiries, participants will be asked roughly 15 Likert-scale questions. Each question was designed in a closed structure using a Likert scale, with responses ranging from severe disagreement to disagreement to agreement to strong agreement.

First, respondents will be asked three questions about their interactions with other consumers and fitness influencers [37]. Next, we ask whether the fitness influencer has professional knowledge in fitness-related fields such as methods and diet structures, as well as how much experience they have in this domain. After all, they will be questioned about the influencer's attractiveness, including whether or not they are well-liked, have a significant audience, and are particularly attractive or good looking [13]. Additionally, we inquire about respondents' behavioral intentions and look into whether or not people would work out with the fitness influencer, pass along the influencer's name to others, or alter their behavior as a result of the influencer [38]. After answering such questions, respondents must provide five more personal details: age, gender, nationality, degree of education, and income. These information collections are designed to analyze possible factors that influences their answers.

3.4. Data Collection

To date, the literature examining the impact of the characteristics of the influences on promoting healthier behavior seems to be limited in general, and in particular regarding perceived value. This research conducted a quantitative method which is an online questionnaire-based survey to collect the primary data. The use of questionnaire is advantageous to contact our target group directly.

The unit of analysis in this study was our acquaintances who are keen on sports and then may regularly exercise and follow a fitness influencer on the social media. Data was collected by means of an internet survey developed through Google form, a free tool to create our questionnaire. The questionnaire was firstly posted on two platforms: Amazon Mechanical Turk and Wenjuanxing which is a Chinese online platform providing functions equivalent to Mturk. At the meantime, the link of questionnaire was shared in some fitness-related groups of social software such as GroupMe, a popular message software in the US, and WeChat, the most popular free messaging and calling application in China. This way of publishing the questionnaire ensures that the outcomes of questionnaire could become more representative with less bias. Furthermore, it was designed in both English and Chinese, granted that English was the more dominant language as there are more people (216 people totally) used the Mturk which asked questions in English to finish it than those (67 people in total) using Wenjuanxin in Chinese. 100 participants from Mturk are offered incentive of \$0.1 to

complete the survey. The rest of participants are all volunteers. All participants using Wenjuanxin are from a general population from China. However, only 35 responses from Wenjuanxin are valid since only people that follow fitness influencers are the focus group of this survey. Moreover, the condition for data collection was the same since respondents were provided the same number and content of questions to answer and took approximately 5 minutes to complete.

Nevertheless, this survey had a limitation that is judgement sampling. To be more specific, judgement sampling means that, based on the perspective of the expert, participants show their interests and answer the questions [39]. In other words, this is a non-random sample and thereby it brings bias into questions [39]. Admittedly, our research might be hard to control who is in the sample and our results might not represent that of the whole representative. However, it holds the benefits such as low cost, savings of the time, fast results, etc. In short, our research still accepts this widely used method to collect and then analyze our data.

Eventually, we combined English and Chinese version of the questionnaires and thus collect our result. At the same time, we checked for missing data and outliers in order to polish our data before analyzing.

3.5. Participants

There are 283 participants in total taking part in the survey, of whom 241 people is valid who have watched fitness influencers' video. In these 241 participants, 119 are female, 122 are male, and the left 2 people prefer not to say their gender. People who belong to the 18-25 age group take up the largest proportion of the total, which is nearly 35%. The number of people aging between 26 and 35 is only 1.7% less than the number of participants from 18-25, with the percentage as 35.3%. 48 volunteers are 36-45 ages old (19.9%), while 10 people with ages above 56 (4.1%). As the survey is open to everyone online, people are from many different countries, mostly from America (65%), followed by Asia (19.5%), especially China, and so on. Because of the variation of nationality, the fitness influencers that they followed is quite distinct. People who complete this survey with their perception on diverse influencers, and they can receive money for their efforts. The demographic information of the research participants is indicated in Table 1.

Table 1: Demographic analysis of respondents.

Variables (N=241)	Characteristics	Frequency (%)
C 1	Female	119(49.4%)
Gender -	Male	122(50.6%)
	18-25	85(35.3%)
_	26-35	81(33.6%)
Age	36-45	48(19.9%)
_	46-55	17(7.1%)
_	Above 56	10(4.1%)
Race	African American/African/Black/Caribbean	12(5.0%)
-	Asian/Pacific Islander	47(19.5%)

Table 1: (continued).

	Caucasian	147(61.0%)
_	Hispanic/Latino	12(5.0%)
_	Native American	23(9.5%)
	Junior high school and below	2(0.8%)
	High school	9(3.7%)
Education —	Undergraduate	181(75.1%)
	Postgraduate	49(20.3%)
	Less than \$15,000	29(12.0%)
	\$15,000 - \$24,999	36(14.9%)
_	\$25,000 - \$34,999	26(10.8%)
	\$35,000 - \$49,999	43(17.8%)
Income Level —	\$50,000 - \$74,999	72(29.9%)
	\$75,000 - \$99,999	23(9.5%)
_	\$100,000 - \$150,000	9(3.7%)
_	\$150,000 and above	3(1.2%)
	Everyday	117(48.5%)
_	Twice or three times a week	51(21.2%)
Frequency	Every week	35(14.5%)
_	Every two weeks	21(8.7%)
-	Every month	17(7.1%)

4. Results

4.1. Reliability and Validity Analysis

After finishing collecting all the data needed, this study proceeded to use SPSS26.0 and AMOS25.0 for testing the theoretical model and hypotheses listed before, we initially conducted a reliability and validity analysis of our scale to make sure that the data collected is qualified to support further analysis. We used SPSS to calculate the Cronbach's alpha coefficient and listed them at the table below. As it illustrates, the Cronbach's alpha coefficient of every variable and secondary variable is greater than 0.7 which indicates good reliability. Specifically, the independent variable, influencer attributes, gains 0.913 as the values of the mediator variable and dependent variable are both above 0.8. The results suggest that our scale has an acceptable internal consistency and reliability.

Table 2: Analysis of reliability.

Variables	Secondary Variables	Items	Cronbach's alpha coefficient			
Influencer -	Social Interaction	3	0.874			
Attributes	Professionalism	3	0.867	0.913		
	Attractiveness	3	0.860			
Perceived Value	Social Value Functional Value Emotional Value	3	0.856	0.856	0.941	
Behavior Intention	Behavior Intention	2	0.816	0.816		

A successful scale is not only internally consistent but can also reflect what we are searching for. Tending to assess this, SPSS 26.0 was used to measure the collected data through KMO values and Bartlett's test of sphericity. Results obtained are shown in the table below.

Table 3: Analysis of KMO and Bartlett's test of sphericity.

Variables	KMO	Bartlett's test of sphericity(sig)
Social Interaction	0.725	.000
Professionalism	0.737	.000
Attractiveness	0.729	.000
Perceived Value	0.729	.000
Behavior Intention	0.500	.000
Overall	0.932	.000

When the KMO value is greater than 0.6, it indicates that the data has sufficient validity for factor analysis. In the case of Bartlett's sphericity test, a sig parameter less than 0.05 means that the data are significant and suitable for factor analysis. According to the test results in the table 3, the KMO values of almost all variables in this scale are greater than 0.6 with the sig parameter remaining 0.000, which is less than 0.005. Failing to meet 0.6, the KMO value of the dependent variable, behaviour intention may ascribe to having only two question items. Thus, we decided to conduct factor analysis to determine whether the construct of behaviour intention achieves the purpose of measurement, to test the audience's action willingness after receiving a stimulus from the fitness influencer.

Then we introduced the rerated factor loading matrix for factor analysis. As shown in table 4, all items loaded on the constructs, with loadings greater than 0.60, provides evidence for validity. And there are no invalid constructs with components higher than 0.6 in two dimensions at the same time. Hence, we regard the scale as a valid one broadly.

Table 4: Rotated factor loading matrix.

Variables				Component		
	SI1	0.785				
Social Interaction	SI2	0.755				
	SI3	0.812				
	PR1		0.807			
Professionalism	PR2		0.733			
	PR3		0.790			
	AT1			0.794		
Attractiveness	AT2			0.737		
	AT3			0.729		
	PV1				0.719	
Perceived Value	PV2				0.665	
	PV3				0.777	
Behaviour Intention	BI1					0.751
Denaviour Intention	BI2					0.754

4.2. Hypothesis Testing

Approaching to solve the research questions, we must verify the constructs that relate to each other before probing into what exact mutual relationship they are in. Therefore, we further calculated the correlation coefficient firstly and then conducted structural equation analysis by AMOS to verify whether each hypothesis is valid or not.

4.2.1. Correlation Analysis

In this paper, we use the general Pearson coefficient to explore whether there is a correlation between the variables. Table 5 shows that the correlation coefficient suggests existing correlations among social interaction, professionalism, attractiveness of a fitness influencer, audiences' perceived value and their behaviour intention to exercise, laying the foundation for analysing the research hypotheses.

Table 5: Correlation matrix.

	Social Interaction	Professionalis m	Attractivenes s	Perceive d Value	Behaviou r Intention
Social Interaction	1				
Professionalis m	.561**	1			
Attractiveness	.613**	.764***	1		
Perceived Value	.791** *	.733***	.719***	1	
Behaviour Intention	.671** *	.712***	.729***	.744***	1

4.2.2. Model Fit Analysis

Compared with traditional regression analysis, structural equation analysis can replace methods such as multiple regressions to deal with multiple dependent variables at the same time and analyse the interrelationship among individual indicators. In this paper, AMOS 25.0 was used to perform a standardized path analysis of the structural model through the maximum likelihood estimation method. The model fitness indices are shown in Table 6. Although CMIN/DF > 3.0, other indices meet the criteria nicely, supporting reasonable overall fit between the model and the observed data.

Table 6: Modet Fit Index.

Fit Index	Suggested	Outcome
CMIN	As low as possible	297.350
CMIN/DF	1.0 < CMIN/DF < 3.0	4.248
GFI	>0.9	.937
AGFI	>0.8	.906
RMSEA	< 0.08	.071
NNFI(TLI)	>0.9	.952
IFI	>0.9	.964
CFI	>0.9	.963

4.2.3. Results of Path Analysis

In this section, structural equations were used to test the hypotheses, and the parameter estimation was done by using great likelihood estimation. Figure 2 shows the results of the structural equation

model test for the full sample. From Table 7, we can tell that social interaction, professionalism, and attractiveness of opinion leaders have a positive and significant effect on the perceived value of the audience, with the influence of professionalism being relatively more significant. The results also show that perceived value significantly affects behavioural intention. In other words, when perceived value is satisfied, the audience has a higher likelihood to exercise. The above findings indicate that the hypotheses H1 to H4 proposed in this paper are verified.

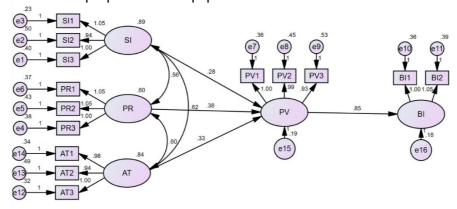


Figure 2: Relationship of the Different Constructs in the Model.

	Hypothesis	Estimate	S.E.	C.R.	P	Result
Н1	Social Interaction→Perceived Value	.282	.045	6.289	***	Pass
H2	Professionalism→Perceived Value	.375	.050.	7.485	***	Pass
Н3	Attractiveness→Perceived Value	.326	.054	6.026	***	Pass
H4	Perceived Value→Behavior Intention	.852	.041	20.738	***	Pass

Table 7: Structural Equation Modeling Results.

5. Conclusion

5.1. Conclusion

Along with the vast usage of internet, online information and influencer marketing change people's lifestyle in every aspect. In this paper, we want to track the possible route that incentive people to take exercise. With this objective, we formulated two hypothesis and developed a model that indicates the connection among three influencer attributes, perceived value and behavioural intention. For every factor in this model, we came out with several related questions, designing a completed questionnaire which has been sent to 283 volunteers. Through analysing data collected, we verified that our hypotheses are validity, Interaction, professionalism, attractiveness all affect people's perceived value, which leads to behaviour changes. Three influencer attributes positively influencing perceived value and perceived value leading to intention to exercise.

5.2. Limitation and Further Research

While our work shed some light on the impact of the fitness influencers on the healthy behaviour, we would like to admit the limitations of the research. Even though it is sufficient to conduct a conclusion from our research with the sample size of 283 participants, the more responses we received the more convincing the findings are. 100 participants are offered a small incentive of \$0.1 to complete the survey. This may cause the result to be bias. With respect to the demographic characteristics of participants, the people aged 18-25 took the lead, standing at 35.3%. the people between the ages of 26 and 35 were responsible for 33.6%, in comparison to a mere 4.1% which was people who were above 56 years old. This means that this research focuses more on the young people, resulting in not representative all the people who follow fitness-related influencers. Future research can also focus more on the culture influences based on race.

Furthermore, the only approach to develop the research was the quantitative method that is all formulated in a Likert-scale. The questions were determined by the author and the expression of questions may guide the participants to give an answer towards the direction that author hope to forecast, leading to a potential bias. Meanwhile, the participants may exaggerate the amount of self-reported physical activity [40]. Hence, in order to be more precise, further studies should extend the study to age and additionally combine the qualitative method such as focused group and interviews.

Our model only limits to the three general attributes of fitness influencers, with three questions designed for each attribute, which may not be effective enough to reflect all situations. More designed questions can be added to each section. Specifically, there are many different fitness influencers who are well-known for various kinds of exercises, such as yoga, stretching and aerobic training. For each kind of fitness, people may likely be affected by plenty of reasons. For example, the background music and exercise intensity could all have impacts of people's intention. In future research, we could consider the possible variables in a more thorough way and with more prudence.

At last, we only find out that the pathway which from influencer's attributes going through perceived value have impacts on exercise intention is established, but we didn't assess whether perceived value have mediating effects. How will influencer affect beginners and change their behaviours? This could be analysing further in our future study or project.

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