

The Influence Mechanism of Digital Marketing on Participate Willingness in Mass Sporting Events

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Abstract: In the context of the deep integration of the digital economy and national fitness, digital marketing has become a key engine for mass sports events to stimulate participation willingness and expand domestic demand. Based on the SOR theoretical model, this study introduces the mediating variable of customer value perception and constructs a structural equation model with digital marketing channels, content marketing, e-word-of-mouth marketing, and key opinion leader marketing as independent variables, and participant's willingness to participate as dependent variable. Through the questionnaire and mathematical analysis for hypothesis testing, the empirical results show that: digital marketing channels, content marketing, electronic word-of-mouth marketing, and key opinion leader marketing have a positive effect on the willingness to participate, and value perception plays a part of the intermediary effect, which verifies the "technology empowerment-value perception-behavioural transformation" logical chain. This validates the logical chain of "technology empowerment-value perception-behavioural transformation".

Keywords: Digital Marketing; Mass Sports Events; Participation Intention

1. Introduction

At present, with the rapid iteration of digital technology and the concept of national fitness deeply rooted in people's hearts, the sports industry and the digital economy are deeply integrated, resonating with each other and travelling in the same direction, forming a benign coupling relationship for the synergistic development of the tertiary industry and the green economy, which will further stimulate the potential of the sports consumption market, promote the innovation and upgrading of the

tournament organisation mode, provide important support for the construction of a new pattern for the fitness of the whole people and the promotion of new upgrading of the consumption of sports and inject new impetus into the It also injects new kinetic energy into the construction of high-quality development and green economic system of the sports industry. Under this macro background, mass sports events, as a key part of promoting the in-depth implementation of the national fitness strategy, are in the process of transformation and reshaping of their operation mode, communication media and public participation mode. The Working Programme on Restoring and Expanding Sports Consumption issued by the General Office of the State General Administration of Sports marks that China's sports industry is stepping into the fast lane of diversified and high-quality development, and clearly points out the necessity of integrating digital technology into sports events, which is necessary to enhance the operation and management effectiveness of the events, optimize the participation experience, enhance the participation willingness and satisfaction of the general public, expand the demand for mass sports events, and ensure the stability of domestic demand for mass sports events. The stability of domestic demand for sports events should be ensured to realise the comprehensive recovery and sustainable growth of sports consumption. As a new type of hub between sports events and the public, digital marketing has become increasingly important. However, the current digital marketing of mass sports events presents the problems of superficial use of technology, biased insight into users' needs, and inefficient use of resources, resulting in the dilemma of overloaded information and low reach rate of core groups, boring marketing content and poor interactive effect, and a single channel and poor dissemination effect, leading to the lack of strong willingness of the masses

to participate in sports events. There is a lack of systematic and in-depth research on the internal mechanism of how digital marketing affects the public's willingness to participate in sports events, which still needs to be deeply cultivated from theory to practice. This study takes sports fans as the research object, takes the research paradigm of SOR (Simulus-Organism-Response) theoretical model as the basis, introduces the intermediary variable of customer value perception, and constructs the path model of the role of digital marketing channels, content marketing, electronic word-of-mouth (eWOM) marketing, and Key Opinion Leader (KOL) marketing to the participant's willingness to participate in the competition, in an attempt to unravel the psychological process of the role of digital marketing in the willingness to participate in mass sports events of sports fans. In this way, the digital marketing of mass sports events can inspire the motivation of sports enthusiasts to participate, expand the domestic demand for mass sports events in an all-round way, so as to increase the participation rate of mass sports events, attract traffic to the events, build the event brand, and generate actual economic and social benefits.

2. Research Hypothesis and Conceptual Model

2.1 The Direct Effect of Digital Marketing Channels on the Willingness to Participate in Mass Sporting Events

In the digital marketing of mass sports events, the more commonly used marketing channels include (1) social media platforms. Short video platforms represented by Jittery and Shutterbug can present the highlights of the event in an entertaining narrative and visual way, achieving rapid target transmission of information and activating interest. Moreover, social media platforms such as WeChat's circle of friends and public numbers, relying on acquaintances' social networks and virtual communities, form fission propagation through users' spontaneous forwarding, and enhance the credibility of the tournament by using the social relationship chain. (2) Sports APP: Take KEEP APP's recommendation of marathon events as an example, when users have completed running punch cards for many times, and the sports data have accumulated on the platform for a long time, forming a unique user profile, APP

automatically identifies and pushes the nearby marathon events, attracting the attention of users to create internal demand, and associated with the delivery of training plans, equipment and other derivative content. (3) Official government platforms (e.g., the national national fitness information service platform). In the era of diverse and complicated information, the event information pushed by the official government platform can guarantee the reliability, safety and accuracy. It has been shown that social media and sports APPs are the main carriers of marketing activities in the online marketing of sports events, which interact with consumers, promote brand information, services and products, and stimulate consumer desire. [1] Therefore, the following hypothesis is proposed:

a1: Digital marketing channels have a positive effect on the willingness to participate in mass sports events

2.2 The Direct Effect of Content Marketing on the Willingness to Participate in Mass Sporting Events

Research has been conducted to classify content marketing into three categories: informational content, entertainment content and emotional content. Generally speaking, information content and entertainment content marketing are believed to change consumers' perception of products, thus promoting consumers' purchasing decisions; while emotional content is believed to promote consumers to make more informed choices by increasing consumers' participation in the brand. [2] In the digital era, sports event marketing takes the basic information of the event as the main content, entertains the event culture, connotation and other elements with the support of digital technology and means, shows the content in a pleasant form, conveys the spirit of sports, and enriches the emotional content in the form of athletes' participation experience, post-game interviews, and stories of the event's development, so that it constitutes a cognitive framework of the event's information for the users, provides emotional value, and establishes an emotional tie. Effectively promote potential participants to become participants and make participants become loyal participants. Therefore, the following hypotheses are proposed:

a2: Content marketing has a positive effect on

the willingness to participate in mass sporting events

2.3 The Direct Effect of Electronic Word-of-Mouth Marketing on the Willingness to Participate in Mass Sports Events

Mass sports event services are immediate, intangible and irreversible, and there is no "return and refund" after the event service and participation experience, so electronic word-of-mouth has become an important basis for participants to make decisions, and event organisers "sell themselves". The marketing effect of "self-promotion" by event organisers is limited, but the evaluation of services given by the same consumer is more empathetic, persuasive and credible. Existing research shows that word-of-mouth (WOM) can influence consumers' attitudes and behaviours, and is seen by many marketing managers as an inexpensive and effective marketing method, which is becoming increasingly useful for corporate marketing. [3] Electronic word of mouth (eWOM) has both positive and negative content, and highly subjective, multi-detailed evaluations of the event experience are more likely to motivate potential participants to make participation decisions. Therefore, the following hypothesis is proposed:

a3: Positive and positive electronic word of mouth has a positive effect on the willingness to participate in mass sports events

2.4 The Direct Effect of Key Opinion Leaders (Kols) on the Willingness to Participate in Mass Sports Events

In mass sports events, key opinion leaders are mostly sports anchors who often participate in the same kind of events, have professional knowledge, innovation ability, communication and expression ability, and have a certain fan base, which is a role with the functions of event experience transformation, information asymmetry elimination, and participation behaviour guidance. Existing studies show that key opinion leader interactivity, product relevance, professionalism [4], communication ability, innovation ability [5], personality traits, and activeness [6] positively influence consumers' willingness to buy and participate. Therefore, the following hypothesis is proposed:

a4: Key opinion leaders have a positive effect

on the willingness to participate in mass sporting events.

2.5 The Mediating Effect of Perceived Value on Digital Marketing and Willingness to Participate in Mass Sporting Events

Mass sports events can provide users with cultural value, functional value and social interaction value through digital marketing. Based on the digital platform and algorithms to collect, collate and analyse data and the function of powerful dissemination, it reduces the cost of information search for participants, eliminates the asymmetry of audience information, realises the visualisation of information, and enhances the accessibility perception of functional value; secondly, it is to present information in an entertaining and emotional way, which makes it relatively easy for the users to receive and digest the information, and realises the emotional value and the cultural value; lastly, the formation of online virtual communities in the process of digital marketing can realise the value of user communication. Finally, the formation of online virtual community in the process of digital marketing can realise the value of user communication. Digital marketing of mass sports events stimulates users' perception in terms of usefulness, intentionality and fun, thus enhancing their willingness to participate. There are fewer similar studies in the field of sports, but in the field of tourism, Qin Junli (2022) [7] found through structural equation modelling that social media marketing can effectively increase the perceived value, which in turn enhances consumers' willingness to travel to the countryside. Yang Cundong (2024) [8] believes that digital marketing is an important factor influencing consumers' perceived value, and perceived value plays a positive mediating role between digital marketing and residents' tourism consumption intention. Therefore, the following hypothesis is proposed:

b1: Perceived value mediates between digital marketing channels and willingness to participate in mass sports events

b2: Perceived value mediates the relationship between content marketing and willingness to participate in mass sports events

b3: Perceived value mediates the relationship between electronic word of mouth and willingness to participate in mass sports events

b4: Perceived value mediates the relationship between key opinion leaders and willingness to participate in mass sports events

3. Research Design

3.1 Modelling

Based on the SOR theory, it is believed that digital marketing (external stimuli) affects the willingness to participate (response) of mass

sport event participants (organism) through their value perception. Based on the SOR theory, this study designs digital marketing channels, content marketing, electronic word-of-mouth marketing, and Key Opinion Leader (KOL) marketing as external stimuli to make mass sports event participants enhance their value perception and thus promote participation intention. (As shown in Figure 1).

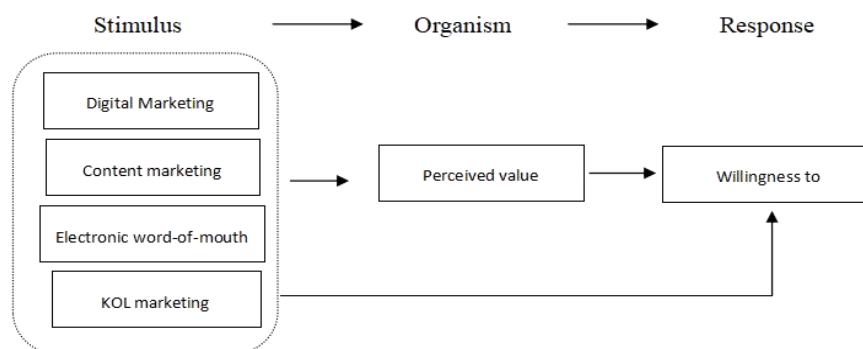


Figure 1. Conceptual Model Diagram

3.2 Questionnaire Design

The questionnaire was designed in 2 parts: the first part was the basic information; the second part was the measurement dimensions of digital marketing, value perception, and willingness to participate, with a total of 6 observational variables, including the independent variable (digital marketing channels, content marketing, e-word-of-mouth marketing, and KOL marketing), the mediating variable (value perception), and the dependent variable (willingness to participate), and a total of 39 question items were designed. A Likert 5-point scale was used, with higher scores representing higher levels of agreement. Among them, 5 question items were designed for each of the 4 indicators of the independent variable, and the design of these indicators and question items mainly referred to Yuan Chu [9], Peng Wei [10], Han Chaoyang [11], and Zhao Dawei [12] and other scholars' studies on sports events and digital marketing; and the design of the mediator variable and the dependent variable mainly referred to Liu Yan's [13] mature scales, "Participant's Perceived Value Measurement Scale" and "Participation Behavioural Intentions Scale," which consisted of 8 question items and 6 items, respectively.

3.3 Data Collection and Questionnaire Correction

Although the questionnaire was designed with

reference to a large number of literature and scales from existing studies, there may still be differences due to different environments, therefore, a pre-survey was conducted before the formal distribution of the questionnaire, and the quality of the questionnaire was analysed by obtaining data through a small-scale distribution of the questionnaire. Interviews and surveys were conducted with the participants of mass sports events, and 69 questionnaires were obtained. SPSS26 was applied to test the reliability and validity of the main part of the questionnaire, and it was found that the value of Cronbach's α was greater than 0.7, but Exploratory Factor Analysis (EFA) found that the factor loadings of a total of five question items, namely, 9, 10, 11, 31, and 33, were lower than the minimum standard, and therefore, the question items were deleted. Therefore, the question items were deleted. After adjustment, the questionnaire entered the formal measurement stage, using both offline and online forms of distribution, a total of 327 questionnaires were distributed, of which 286 valid questionnaires were returned.

4. Data Analysis

4.1 Reliability and Validity Tests

In this paper, the reliability and validity of 286 valid samples were analysed by spss26.0 and AMOS24.0. The overall Cronbach's α value of

the questionnaire is 0.984 (see Table 1), and the internal consistency coefficients Cronbach's α and combined reliability (see Table 2) of the six dimensions, including digital marketing channels, content marketing, e-word-of-mouth marketing, KOL marketing, willingness to

participate, and value perception, are all at the critical value 0.7 above, indicating that the reliability of each latent variable within the questionnaire is good, the internal consistency and stability of the questionnaire is strong, and the scale design is reliable.

Table 1. Reliability Statistics

Cronbach's α	Cronbach's α based on standardised terms	item count (of a consignment etc)
.947	.948	29

Table 2. Reliability and Validity Tests of the Scale

Dimension (math.)	Entry (in a dictionary)	Standardised factor loadings	Cronbach's α	CR	AVE
Digital marketing channels	Q6	0.824	0.889	0.8889	0.7275
	Q7	0.874			
	Q8	0.86			
Content marketing	Q15	0.775	0.906	0.9077	0.7113
	Q14	0.873			
	Q13	0.833			
	Q12	0.888			
Electronic word-of-mouth marketing	Q19	0.769	0.893	0.8949	0.6307
	Q18	0.757			
	Q17	0.866			
	Q16	0.819			
	Q20	0.754			
KOL marketing	Q25	0.828	0.918	0.9188	0.6941
	Q24	0.776			
	Q23	0.839			
	Q22	0.897			
	Q21	0.821			
Willingness to participate	Q34	0.845	0.930	0.9304	0.6905
	Q35	0.78			
	Q36	0.875			
	Q37	0.839			
	Q38	0.784			
	Q39	0.858			
Perceived value	Q26	0.767	0.918	0.9184	0.6524
	Q27	0.793			
	Q28	0.824			
	Q29	0.794			
	Q30	0.821			
	Q32	0.845			

Construct validity was mainly tested by convergent and discriminant validity using AMOS24 software. The main measures of convergent validity are factor loadings and Average Variance Extracted (AVE), and the results show (see Table 2) that the factor loadings are all greater than 0.6 and the AVE values are all greater than 0.5, which meets the requirements. In addition, the correlation coefficients between each variable and other quantities are less than the square root of the AVE value of the variable, indicating good

discriminant validity, and the results show (see Table 3) that the discriminant validity meets the requirements.

4.2 Model Fit Test

In this study, structural equation modelling (SEM) was carried out on the questionnaire data using AMOS 24.0 software, and the model fit was assessed by absolute and refined fit indicators. The results showed that the CMIN/DF was 1.606, the GFI was 0.883, the CFI was 0.964, the NFI was 0.91, the TLI was

0.959, and the RMSEA was 0.046, and all the fit indices met the desirable criteria for model fit, showing a good model fit, and thus the

model can be used for subsequent hypothesis testing.

Table 3. Distinguishing Validity

	Willingness to participate	KOL marketing	Electronic word-of-mouth marketing	content marketing	Digital Marketing Channels	perceived value
Willingness to participate	0.831					
KOL marketing	0.472***	0.833				
Electronic word-of-mouth marketing	0.476***	0.373***	0.794			
Content marketing	0.549***	0.549***	0.388***	0.843		
Digital marketing channels	0.492***	0.373***	0.473***	0.491***	0.853	
Perceived value	0.549***	0.479***	0.5***	0.579***	0.496***	0.808
AVE	0.6905	0.6941	0.6307	0.7113	0.7275	0.6524

Note: * denotes <0.05, ** denotes <0.01, *** denotes <0.001

4.3 Hypothesis Testing

4.3.1 Direct effects test

The results of the direct influence path of the indicators of each dimension of digital marketing on the participation intention of participants in mass sports events (see Table 4) show that: digital marketing channels, content marketing, electronic word-of-mouth marketing, and KOL marketing all have a significant impact on the participation intention, with a p-value of less than 0.05, in which the p-value of the corresponding paths of content marketing, and electronic word-of-mouth marketing is less than 0.01. The standardised path coefficients of the four indicators of the participation intention are 0.157, 0.218, 0.169, and 0.138. The standardised path coefficients of the four indicators are 0.157, 0.218, 0.169, 0.138 in order. accordingly, hypotheses a1, a2, a3 and a4 are valid.

The results of the direct influence path of digital marketing indicators on the value perception of mass sports event participants (see Table 4) show that: digital marketing channels, content marketing, electronic word-of-mouth marketing and KOL marketing all have a significant impact on value

perception, with a p-value of less than 0.05, in which the p-value of the path corresponding to digital marketing channels is 0.01, and the p-value of the path corresponding to electronic word-of-mouth marketing and content marketing is less than 0.001. is less than 0.001; the standardised path coefficients of the four indicators on the path of influence on value perception are 0.17, 0.31, 0.239 and 0.151 respectively; the p-value of the path of direct influence of value perception on the willingness to participate of the participants of the mass sports events is less than 0.001, and the standardised path coefficient is 0.32, which indicates that the path is effective and significant.

4.3.2 Tests for mediating effects

To further validate the mediating role of value perceptions, this study adopts Mackinnon's methodology and applies Bootstrap in the AMOS24 programme to test the mediating effect through the estimation of confidence intervals for indirect effects. Repeated random sampling was used to draw 5000 samples from each of the 286 samples, and 95% confidence intervals were constructed and tested in conjunction with p-values.

Table 4. Path Test Results

Direct impact path			path factor	S.E.	C.R.	P	Standardised path factor
Digital marketing channels	→	Willingness to participate	0.147	0.062	2.379	0.017*	0.157
Content marketing	→	Willingness to participate	0.256	0.085	3.016	0.003**	0.218
Electronic word-of-mouth marketing	→	Willingness to participate	0.164	0.062	2.649	0.008**	0.169
KOL marketing	→	Willingness to participate	0.125	0.058	2.172	0.03*	0.138

Digital marketing Channels	→	perceived value	0.147	0.057	2.592	0.01**	0.17
Electronic word-of-mouth marketing	→	perceived value	0.214	0.056	3.798	0.000***	0.239
Content marketing	→	perceived value	0.347	0.077	4.506	0.000***	0.32
KOL marketing	→	perceived value	0.126	0.053	2.377	0.017*	0.151
Perceived value	→	Willingness to participate	0.21	0.078	2.707	0.007**	0.194

From the results of the analysis (see Table 5), the four direct effect paths and the four mediating effect paths are significant ($p < 0.05$) and the confidence intervals do not include 0. That is, it indicates that value perception has a mediating role between the four latent variables of digital marketing channels, content

marketing, e-word-of-mouth marketing, and KOL marketing and willingness to participate, and the hypotheses b1, b2, b3, and b4 are valid, and the direct effect and the indirect effect exist simultaneously, the model is a partial mediation model.

Table 5. Results of the Mediation Effect Test

Type of effect	efficiency value	Bias-corrected 95 per cent CI			Percentile 95 per cent		
		Lower	Upper	P	Lower	Upper	P
Intermediary effects1	0.031	0.006	0.077	0.008	0.005	0.073	0.012
Direct effect 1	0.147	0.013	0.277	0.034	0.01	0.274	0.037
Total effect 1	0.178	0.045	0.31	0.012	0.044	0.308	0.013
Intermediation effect 2	0.073	0.025	0.143	0.003	0.022	0.139	0.005
Direct effect 2	0.256	0.084	0.442	0.002	0.083	0.441	0.003
Total effect 2	0.329	0.163	0.514	0	0.163	0.514	0
Intermediary effects3	0.045	0.015	0.097	0.003	0.012	0.091	0.005
Direct effect 3	0.164	0.043	0.295	0.011	0.039	0.291	0.013
Total effect 3	0.209	0.091	0.336	0	0.087	0.332	0
Intermediary effects4	0.026	0.005	0.065	0.011	0.004	0.063	0.015
Direct effect 4	0.125	0.003	0.247	0.046	0.001	0.246	0.048
Total effect4	0.151	0.027	0.275	0.019	0.029	0.276	0.018

5. Conclusion

This study constructed a structural equation model of digital marketing on the willingness to participate in mass sports events. After empirical testing, it was found that digital marketing channels, content marketing, electronic word-of-mouth marketing, and key opinion leader marketing all have a direct effect on mass sports event participation intention, and value perception has a partially mediated effect in digital marketing channels, content marketing, electronic word-of-mouth marketing, and key opinion leader marketing.

Acknowledgments

This work was supported by the 2022 Hubei Higher Schools Philosophy and Social Science Research Major Project (Hubei Social Science Fund Pre-project, (Project No.22ZD079)); Supported by Graduate Innovative Fund of Wuhan Institute of Technology (Project No.CX2024505).

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