



Design deepening path of non-heritage festival services: a study of the effect of DART strategy on positive customer behavior

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Abstract. The positive behavior of participants occupies a central position in the service design of NRM festivals. Service providers can optimize the service design system through the theory of value co-creation so as to improve service quality to obtain high profits. This study explores the impact of DART strategy on participants' value co-creation behaviors in non-heritage festival services through participants' empowerment and psychological ownership feelings in non-heritage festival services. Taking the Dong Duoye Festival as an example, five hypotheses were tested through structural equation modeling. The data show that DART strategy has a direct positive impact on participants' positive customer behavior. And the sense of empowerment and psychological ownership have a parallel mediating role and a chain mediating role in the effect of DART strategy on positive customer behavior. This research can help enterprises to increase the positive behaviors of tourists with the help of DART strategy, empowerment theory and psychological ownership theory, and optimize the non-heritage festival tourism service system.

Keywords: DART strategy, Empowerment theory, Psychological ownership, Value co-creation behavior, Structural equation modeling.

1 Introduction

Chengyang Bazhai in Liuzhou is one of the holy places of ethnic culture and tourism, belonging to Guangxi Zhuang Autonomous Region, and has received more than 900,000 tourists for three consecutive years. Chengyang Bazhai takes “Monthly Festival” and “Non-heritage Culture” as its tourism promotion point. The Doye Festival is a kind of non-heritage festival that thousands of people participate in, and tourists have a significant experience of it, so the data is credible. The fieldwork found that during the festival, there are problems such as imperfect service system, unprotected publicity quality, few channels for experience and interaction, and limited service modes, etc. The paper utilizes structural equation modeling to quantify the value of the festival. This paper uses structural equation modeling to quantify the impact of value co-creation

theory on customers' positive behaviors, and improves the non-heritage festival experience service system from the perspective of value co-creation.

2 Feedback and Questions

Chengyang Bazhai in Liuzhou is one of the holy places of ethnic culture tourism, belonging to the Guangxi Zhuang Autonomous Region, and has received more than 900,000 tourists for three consecutive years. Chengyang Bazhai takes the “Monthly Festival” and “non-heritage culture” as its tourism promotion points. The Doye Festival is a non-heritage festival with thousands of participants and strong interaction, which is a significant experience for tourists, and the data have credibility. Fieldwork found that during the Doye Festival, there are problems such as imperfect service system, unprotected quality of festival culture promotion, few interactive channels for non-heritage experience, and limited business service mode. This paper uses structural equation modeling to quantify the impact of value co-creation theory on customers' positive behaviors and to improve the non-heritage festival experience service system from the perspective of value co-creation.

3 Conceptualization and Assumption

3.1 DART Strategy

There are two important perspectives of value co-creation theory, based on consumer experience and service dominant logic^[1]. Service-dominant logic assumes that the success of a service lies in the collaboration between the firm and the customer, and the DART model is a type of service-dominant logic that focuses on exploring value co-creation behaviors between consumers and service providers^[2]. The DART model identifies the elements of a value co-creation strategy as Dialogue, Acquisition, Risk Assessment, and Transparency. Consumers provide expert advice to the company through in-depth engagement. Acquisition is experiencing part of the product value but not owning the product. Access to service information gives consumers freedom of choice in festivals. The service provider proactively shares information about service risks with the consumer, making the customer more responsible for the risk. The service provider proactively discloses information about important business processes in the service process to consumers, i.e., it is increasing system transparency.

3.2 Empowers

In service systems, empowerment is the act of transferring power from service personnel to consumers^[3]. Empowerment enhances personal rights, authority, and consumer decision-making freedom. By promoting a strong sense of personal efficacy to enhance individual motivation to achieve goals, the experiencer feels empowered and capable of influencing the service arrangement of the activity^[4]. Availability and customization of consumption choices; more product information and online access; self-expression

and co-creation; control of the consumption experience and enrichment of the consumer experience can effectively contribute to consumers' feelings of being empowered [5]. This study proposes to use the Doyle Festival as an example to seek evidence that enhancing the DART strategy will positively affect the empowered feelings of those experiencing the non-heritage festivals. Hypothesis 1, H1: DART strategies have a positive influence relationship on the feeling of being empowered of participants in non-heritage festival services.

3.3 Psychological Ownership

Psychological ownership refers to the feeling of possession that a person generates for material and non-material products, and this sense of ownership will be acquired through three motives: control, self-identification and taking a place [6]. In a service system, people want to have a sense of presence and dominance in the service. Ownership occurs when people feel in control, closely informed, or fully invested in the target event [7]. Alaaddin Colak et al. found that psychological ownership mediates the effect of destination attachment on tourists' responsible behavior. And it is worth exploring whether psychological ownership also has some kind of mediating role in the NRM festival service system. To this end, Hypothesis 2, H2: Empowering NRM festival service participants has a positive effect on their feelings of psychological ownership.

3.4 Positive Customer Behavior

Value co-creation behaviors are divided into two kinds, customer citizenship behavior and customer participation behavior [8]. This study using customer citizenship behavior alone as the dependent variable. Markus Groth defines customer citizenship behavior as a type of behavior that does not require formal rewards and is voluntary and autonomous on the part of the customer. This behavior is not required, but generally contributes to the functionality and efficiency of the service organization. It is reflected in the activities of "advocacy, feedback, helping other customers, and forgiveness [8]. Psychological ownership in the non-heritage experiential product services need to be proved, in order to explore whether psychological ownership can have a mediating effect on positive customer behavior, the proposed hypothesis 3, H3: psychological ownership in the relationship between the impact of the DART strategy on the positive behavior of the customer has a mediating effect. Service design in which the service provider and the planner can increase the value output between the service provider and the user through the theory of value co-creation, Hypothesis 4, H4: DART has a positive influence in the relationship of the participants' positive customer behavior is proposed. Empowerment in service design same as psychological factors that can influence consumers to actively participate in festivals, and the impact on positive customer behavior is also not known. Hypothesis 5, H5: Empowerment participants have a positive influence relationship on their positive customer behavior. The hypothesized relationships are detailed in Figure 1.

The hypotheses are as follows:

H1: The DART strategy has a positive influence relationship on the feeling of being empowered of NRM festival service participants.

H2: There is a positive influence of empowered NRM festival service participants on their feelings of psychological ownership.

H3: Psychological ownership has a mediating effect in the relationship of the DART strategy's influence on customers' positive behavior.

H4: DART has a positive influence relationship on participants' positive customer behavior.

H5: Empowerment participants have a positive influence relationship on their customer positive behavior.

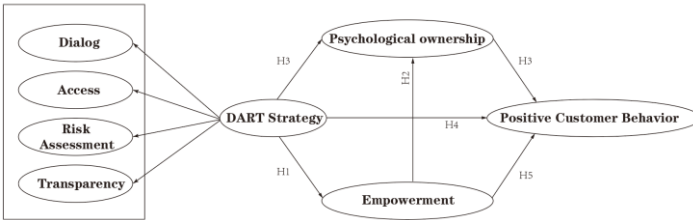


Fig. 1. Diagram of hypothetical impact relationships

4 Research Design

4.1 Sample Collection and Questionnaire Design

In this study, the sampling method was used to sample the Doye Festival experiencers in Chengyang Bazhai, Linxi Town, Liuzhou City, Guangxi Zhuang Autonomous Region. The Reunion Doye Dance and Pumpkin Fighting activities are free for consumers to participate in and are highly interactive. The questionnaire was sent to the tourists who had experienced the Reunion Doye Dance and Pumpkin Fight at the Doye Festival. The survey locations are mainly concentrated in Pingzhai, Yanzhai and other places where people gather. The questionnaire used a 5-point Likert scale with 29 basic questions and 9 general questions. The basic questions include seven modules of the DART model of dialogue (3 questions), transparency (4 questions), risk (3 questions), access (5 questions), empowerment (4 questions), psychological ownership (5 questions), and positive customer behavior (5 questions). Questionnaires were distributed 328 copies and 300 valid questionnaires were returned. Quantitative analysis was performed using SPSS 25 with Amos 28 software.

4.2 Reliability Analysis

Reliability analysis was conducted on the data of Chengyang Bazhai Duoye Festival experience participants. According to Table 1, it can be seen that the Cronbach α coefficients of the seven dimensions are between 0.864 and 0.918, and the overall Cronbach α coefficient is 0.889, which is higher than 0.7, which indicates that the questionnaire has a high level of reliability, internal consistency, and dependability.

Table 1. Cronbach's reliability analysis

Dimension	Items	Cronbach α	Items Overall Cronbach alpha coefficient
Dialog	3	0.894	
Access	5	0.896	
Risk Assessment	3	0.864	
Transparency	4	0.895	0.889
Psychological ownership	4	0.888	
Empowerment	5	0.918	
Positive Customer Behavior	5	0.892	

Table 2. KMO and Bartlett's test

	KMO value	0.829
	Approximate chi-square	6066.617
Bartlett's test of sphericity	df	406
	p value	0.000

The data were further subjected to KMO and Bartlett sphericity tests to assess the validity of the questionnaire. The results are shown in Table 2, the KMO value is greater than 0.8, which indicates that the recovered questionnaire data is suitable for factor analysis with good sampling fit. bartlett's sphericity test is significant ($p < 0.001$). It proves that there is a correlation between the seven items indicating that this questionnaire is suitable for factor analysis.

4.3 Validation Factor Analysis

The fit and validity of the hypothesized model assessed by the validation factor analysis are detailed in Table 3. In terms of the absolute fitness parameters, the values of GFI, AGFI, and RMSEA are qualified, indicating that the model has a good overall fit. In the value-added fitness parameters, the NFI, IFI, CFI, and RFI indicators are all greater than 0.8 to meet the fit standard, indicating that the model has a high value-added fit.

Table 3. Model fit

Indicator category	Indicator Name	Fitting Standard	Test Result	Acceptability
Absolute fitness parameter	GFI	>0.8	0.920	Acceptable
	AGFI	>0.8	0.902	Acceptable
	RMSEA	<0.08	0.021	Acceptable
Value-added fitness parameter	NFI	>0.8	0.936	Acceptable
	IFI	>0.8	0.992	Acceptable
	CFI	>0.8	0.992	Acceptable
	RFI	>0.8	0.927	Acceptable
Simple fitness parameter	CMIN/df	<3	1.133	Acceptable
	PGFI	>0.5	0.753	Acceptable

4.4 Analysis of Effects

Table 4. Summary of effects analysis process

effect	term	Effect	SE	t	p	LLCI	ULCI
Direct effect	DART strategy ⇒ positive	0.349	0.081	4.331	0.000	0.191	0.507
	DART Strategy⇒Sense of Empowerment	0.464	0.097	4.803	0.000	0.275	0.653
	DART Strategy ⇒ Psychological Ownership	0.478	0.086	5.568	0.000	0.310	0.647
Indirect effect process	Sense of Empowerment⇒Psychological Ownership	0.219	0.050	4.412	0.000	0.122	0.316
	Sense of Empowerment⇒Customer Positive Behavior	0.185	0.046	4.040	0.000	0.095	0.274
	Psychological Ownership⇒Customer Positive Behavior	0.130	0.052	2.518	0.012	0.029	0.232
Aggregate effect	DART Strategy⇒Customer Positive Behavior	0.510	0.077	6.610	0.000	0.359	0.661

From the direct effects in Table 4, DART strategy has a significant direct effect on customer positive behavior. From the indirect effect data, DART strategy has a significant positive effect on empowerment, psychological ownership; sense of empowerment on psychological ownership, positive customer behavior; psychological ownership on positive customer behavior. The total effect data shows that the total effect of DART strategy on customer positive behavior is significant. It verifies that H1 and H2 hypotheses are valid, and also shows the chain mediation effect of H1 to H5, H1 to H2 to H3, and the parallel mediation effect of empowerment and psychological ownership in the DART strategy on customer positive behavior.

5 Conclusion and Recommendations

5.1 Conclusion of the Study

This study used structural equation modeling for validation analysis to illustrate the influential relationship between psychological ownership, sense of empowerment, value co-creation behaviors, and DART strategies, and hypotheses H1, H2, H3, H4, and H5 were valid. It indicates that enhancing dialogue, access, transparency, and risky services in Doyle's section service system can stimulate more positive customer behaviors. This phenomenon is more pronounced when psychological ownership and empowerment factors are involved. The final data proves that “DART strategy - sense of empowerment - positive customer behavior” and “DART strategy --The final data

demonstrate the parallel mediation of “DART strategy - sense of empowerment - positive customer behavior” and “DART strategy - psychological ownership - positive customer behavior”. Chain mediation of “DART strategy - sense of empowerment - psychological ownership - positive customer behavior”. The chain mediation relationship of “DART strategy - sense of empowerment - psychological ownership - positive customer behavior”. It provides important empirical evidence for the sustainable development and optimization of the non-heritage festival service system.

5.2 Research Suggestions and Insights

In summary, the following recommendations are made to summarize the optimization of the cultural service system for NRM festivals, as detailed in Figure 2:

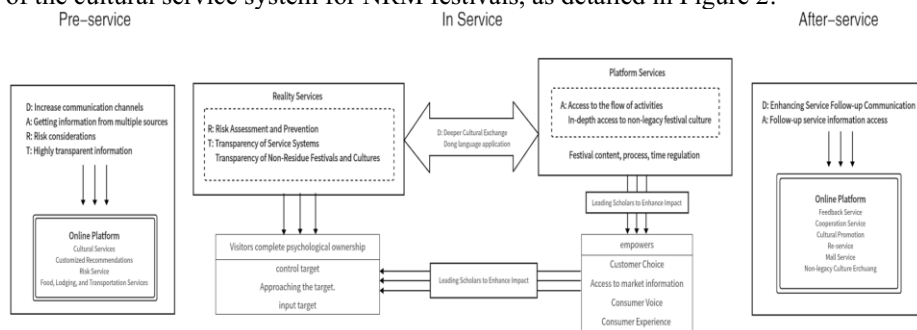


Fig. 2. Experience System Optimization Diagram

I. DART's intervention in the non-heritage festival experience system

Intervene in four aspects of enhancement: enhancing dialog, obtaining information, improving system transparency, and sharing risk assessment. The service provider can establish an online platform to increase communication efficiency, reduce offline communication costs, and promote service promotion. Before and in the middle of the service, users utilize the platform to understand local folklore and conduct risk assessment in advance. The platform provides consumers with one-stop food, accommodation and transportation reservation services, reducing the time cost of tourists. In the late stage of service, consumer problems are fed back through the platform, and relevant professional consumers can use their own knowledge, skills and experience to negotiate with the service provider for the best solution and realize value co-creation.

II. empowering intervention in the non-heritage festival experience system

In the pre-service period, one or more leader roles are enrolled in the online system, and this identity requirement of helping others and tolerating others can stimulate visitor participation and protagonist feelings. Users learn about the experience service, festival culture and risk precautions in advance on the platform. At the mid-point of the service, deliverables are distributed to and empowered by the leaders. Consumers book the experience program list in advance through online voting, enabling service providers and tourists to reach a two-way choice. In the late stage of the service, professionals,

experiencers and leaders among the tourists are allowed to influence the design of the experience service and are given practical benefits.

III. Psychological Ownership Involvement in Non-heritage Festivals Experience System

Before the service, recommend personal preference services for people of different origins based on platform information. During the service process, participants who take the initiative to learn about the culture are tapped, focusing on explaining the local non-heritage culture to such people and recommending in-depth experience programs to them, so as to strengthen the sense of identity of the Dong culture. After the service, in-depth experiencers are more likely to give feedback on effective service pain points, recommend the program to others and patiently help other clients. Tourists who are still interested in Dong non-heritage culture can learn more about the non-heritage culture through leading scholars or service personnel, obtain opportunities to cooperate with professionals, and participate in the dissemination and inheritance of non-heritage culture together.

In summary, the new service system starts from the psychological concepts of empowerment, psychological ownership and value co-creation strategies to optimize the non-heritage festival experience service system of Dong Duoye Festival. It directly increases positive customer behavior and accomplishes value co-creation between consumers and service providers. Indirectly, it increases the degree of cultural publicity of non-heritage festivals, guarantees the inheritance of non-heritage skills, and provides a new style of experience service for other non-heritage festival-themed tourist places.

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