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Evaluating value co-creation activities in exhibitions: An impact-asymmetry analysis

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ABSTRACT

The goal of this study is to assess the symmetric and asymmetric effects of value co-creation activities performed by exhibitors that affect their satisfaction and dissatisfaction with exhibitions. This study encompasses two types of value co-creation activities: participation and partnership activities. An enhanced impact-asymmetry analysis method is introduced to identify the three-factor structure of satisfaction for participation and partnership value co-creation activities in exhibitions. The results of analyzing 437 exhibitors surveyed at four exhibitions in Macao indicate that 'engagement' is a delighter; 'information sharing' is a satisfier; 'information seeking' and 'resolving conflict' are dissatisfiers; and 'responsibility', 'situational awareness', 'knowledge transfer', and 'commitment' are hybrids. These findings assist exhibition organizers in formulating co-creation strategies to increase the value of their exhibitions. This study also enriches our knowledge of the theory of value co-creation using the three-factor theory.

1. Introduction

Prahalad and Ramaswamy (2004) defined the co-creation of value as follows: 'The consumer and the firm are intimately involved in jointly creating value that is unique to the individual consumption. The interaction between consumers and firms becomes the new locus of co-creation of value'. The value co-creation process involves a firm and its customers' inputs. From the firm's perspective, creating value for a customer begins with an understanding of the customer's value-creating processes (Payne et al., 2008). Therefore, an understanding of value co-creation activities performed by customers is very important, as customer value co-creation activities will affect customer satisfaction and dissatisfaction.

Kano et al. (1984) developed a model of customer satisfaction containing five type of quality attributes (must-be, one-dimensional, attractive, indifferent, and reverse). Since 'indifferent' attribute does not lead to customer satisfaction and dissatisfaction; and 'reverse' attribute has a negative effect on customer satisfaction and dissatisfaction (Lin et al., 2017), so Brandt (1988) proposed a simple method of looking at customer satisfaction by classifying product or service attributes into minimum-requirement, value-enhancing, and hybrid attributes. Matzler et al. (2004) further classified quality attributes into three categories (basic, excitement, and performance) by considering their potential for creating satisfaction or dissatisfaction. This is regarded as the three-factor theory. Since the factors of each of the three types show different effects on customer satisfaction and dissatisfaction, the identification of the factor structure of value co-creation attributes is essential for service providers to formulate effective strategies to increase the value of services that can improve customers' levels of satisfaction.

Unique among hospitality business sectors, the exhibition sector demands exhibitors' input to create value in the exhibitions. For general hospitality business sectors such as hotels and restaurants, customers participate in value co-creation activities to obtain higher satisfaction values themselves. Those value co-creation activities are primarily participation activities. However, in the exhibition industry, exhibitors not only are participating in the exhibition but are also partnering with the exhibition organizer to serve exhibition visitors. Therefore, their value co-creation activities address both participation and partnership activities. Although both types of value co-creation also exist in other hospitality business sectors, the levels of customers' participation, collaboration, consciousness, and activity coverages are not as strong as exhibitors' levels in exhibitions. Thus, the study of value co-creation in exhibitions is important. As previous studies of value co-creation activities in exhibitions are limited, this study is designed to investigate the factor structure of satisfaction and dissatisfaction for both participation and partnership value co-creation activities in exhibitions.

This study attempts to provide research contributions from four

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aspects: (1) This study develops a value co-creation measurement scale that consists of participation and partnership value co-creation dimensions. (2) To distinguish the factor structure of the participation and partnership activities, this study enhances the extant impact-asymmetry analysis developed by Mikulic and Prebezac (2008) by introducing Partial Least Square (PLS) analysis to assess the formative measurement model. (3) Although the results of Mikulic and Prebezac's impact-asymmetry analysis assist service managers in prioritizing the improvement of service attributes, the extant impact-asymmetry analysis methods do not provide the overarching strategic actions as a typical importance-performance analysis (IPA). This study formulates strategic actions for attributes in different factor categories to design an impact-asymmetry analysis. (4) This study attempts to make a contribution by integrating the three-factor theory into the value co-creation theory. Since most of the previous studies of value co-creation only described the linear relationships between value co-creation factors and their consequences, some important asymmetry factors might have been overlooked. The combination of three-factor and value co-creation theories extends our knowledge in classifying and prioritizing symmetry and asymmetry factors of value co-creation to strategically increase the value of co-creation processes.

2. Literature review

2.1. Three-factor theory and impact-asymmetry analysis

The three-factor theory of customer satisfaction (Kano et al., 1984) presumes that the influence of a product/service attribute on overall customer satisfaction varies based on its performance. The three-factor theory suggests that attributes can be categorized into three factors: basic, excitement, and performance. As shown in Fig. 1, basic factors cause great dissatisfaction (in the left lower quadrant) if not fulfilled and have little influence on overall satisfaction (in the right lower quadrant) even when implemented (Anderson and Mittal, 2000). Excitement factors show a more significant impact on satisfaction (in the right upper quadrant) when implemented and do not trigger dissatisfaction (in the left upper quadrant) when absent (Lee and Min, 2013). Therefore, a negative or positive asymmetric relationship exists between a product/service attribute and overall customer satisfaction when the product/service is basic or exciting. Performance factors create both satisfaction (in the right upper quadrant) and dissatisfaction (in the left lower quadrant); therefore, they show a symmetric link to satisfaction (Matzler et al., 2004).

Based on the symmetric and asymmetric nature of these three factors, few quantitative methods have been developed to identify the factor structure of product/service attributes. A common method is the

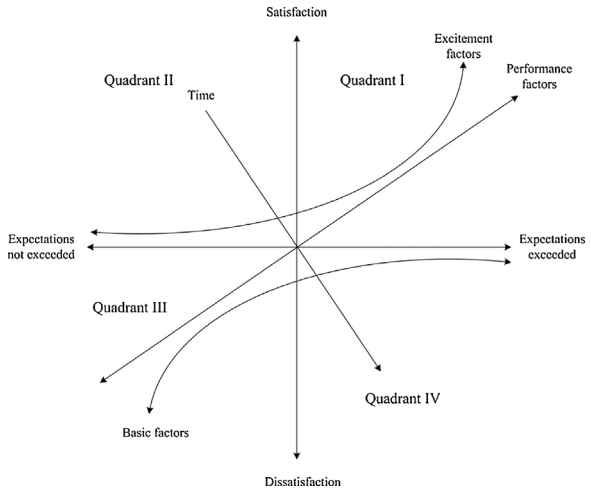

Fig. 1. Kano's model of customer satisfaction (adapted from Kano et al., 1984).

penalty-reward contrast analysis developed by Brandt (1987). In this method, a reward index and a penalty index are generated by a multiple regression analysis with two sets of dummy variables. Eq. (1) shows a basic formula to calculate the reward and penalty indices for a research model with only one attribute. The researcher then compared the values of the reward and penalty indices to classify the factor structure of the attribute. If the value of the reward index of an attribute is larger than the value of its penalty index, the attribute is an excitement factor; alternatively, if the value of the reward index of an attribute is smaller than the value of its penalty index, the attribute is a basic factor; and, if the value of the reward index of an attribute is approximately equal to the value of its penalty index, the attribute is a performance factor.

$$OS = C + reward\_index \times reward\_dummy + penalty\_index \times penalty\_dummy + error \quad (1)$$

where OS = overall satisfaction and C = constant.

Recently, Mikulic and Prebezac (2008) extended the penalty-reward contrast analysis for assessing the asymmetric range of an attribute's impact on satisfaction; namely, impact range-performance analysis (IRPA) coupled with impact-asymmetry (IA) analysis. They suggested that when establishing priorities for improving an attribute, we should first consider its range of impact on overall satisfaction (RIOS) (Eq. (2)) and then compare its satisfaction-generating potential (SGP) (Eq. (3)) to its dissatisfaction-generating potential (DGP) (Eq. (4)). When the SGP is greater than the DGP, the attribute is a satisfier. Alternatively, when the SGP is less than the DGP, the attribute is a dissatisfier. They suggested using a value that is referred as to IA (Eq. (5)) for quantifying the asymmetry of an attribute's impact on overall satisfaction.

$$RIOS = rewardindex + |penaltyindex| \quad (2)$$

$$SGP = \frac{rewardindex}{RIOS} \quad (3)$$

$$DGP = \frac{|penaltyindex|}{RIOS} \quad (4)$$

$$IA = SGP - DGP \quad (5)$$

Mikulic and Prebezac (2008) further suggested subdividing IA into five categories based on the degree of asymmetry of its impact on overall satisfaction to reflect extremely low and extremely high performance. The five categories are: (1) "delighters" ($IA > 0.6$), (2) "satisfiers" ($0.6 \geq IA > 0.2$), (3) "hybrids" ($0.2 \geq IA \geq -0.2$), (4) "dissatisfiers" ($-0.2 > IA \geq -0.6$), and (5) "frustrators" ($IA < -0.6$) (Mikulic and Prebezac, 2011). In addition, to facilitate a distinction between more or less relevant attributes in the creation of overall satisfaction, the attributes were also subdivided into three categories based on their RIOS, referred to as the impact range (IR), as follows: (a) "high-impact attributes" ($RIOS > 0.225$), (b) "medium-impact attributes" ($0.125 \leq RIOS \leq 0.225$), and (c) "low-impact attributes" ($RIOS < 0.125$). A graph is plotted using IR as the x-axis and IA as the y-axis to classify the attribute into fifteen quadrants, as shown in Fig. 2. Based on the attributes' positions in the graph, Mikulic and Prebezac (2008, 2011) suggested that service managers can make decisions concerning improvement priorities of service attributes. However, they have not provided corresponding strategic actions for attributes in each quadrant of the impact-asymmetry analysis.

For the measurement of impact-asymmetry analysis, Mikulic and Prebezac (2008) used nine single-item measures for evaluating the services at a major Croatian airport; Coghlan (2012) employed 19 single-item measures for evaluating four types of trip attributes at the Great Barrier Reef Marine Park in Queensland, Australia; Mikulic and Prebezac (2011) selected 16 single-item measures for evaluating three types of hotel animation programs at Mediterranean sun-and-sea resorts; and Back (2012) employed 17 single-item measures for evaluating four types of services at Korean restaurants in the United States. The researchers only applied single-item measures for a factor