

How Service Recovery of Smart Speaker Impacts Experiential Value in the Social Customer Journey? The Moderation of Product Types

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Abstract

This research centers on service recovery and seeks to investigate how service recovery influences the experiential value following the social customer shopping journey. A total of 243 valid questionnaires were gathered through online questionnaires and pre-recorded interactive videos of the experiment. Participants were prompted to immerse themselves in the scenario and respond to subsequent inquiries. The research revealed varying experience values of service recovery based on different product types in instances where a smart speaker encounters a service failure.

Keywords: Smart Speaker, Social Customer Journey, Service Failure, Service Recovery, Experiential Value

1. Introduction

Advancements in science and technology, particularly in information technology, have provided us with new problem-solving avenues. The rapid growth of artificial intelligence products, like smart speakers, has led to the seamless integration of human interaction methods into our daily routines. Through continuous engagement, these technologies can comprehend and adapt to user behaviors, ultimately enhancing user experiences and offering numerous conveniences in our lives (Peltier et al., 2023).

Over the last two decades, smart speakers have emerged as the auditory embodiment of integrated artificial intelligence voice assistants. Through verbal communication with these assistants, users can activate them using specific keywords, directing commands to be processed and interpreted in designated locations. Subsequently, these assistants can grasp the intent behind user commands and deliver tailored responses to fulfill individual needs effectively (Shum et al., 2018). Presently, smart speaker voice assistants offer users the capability to place coffee orders at Starbucks and facilitate online Uber bookings, enhancing convenience in daily tasks.

However, owing to certain technical limitations, these smart speakers may still encounter errors, potentially leading to disruptions in our routines. For instance, mispronunciations or environmental noise can lead smart speakers to misinterpret user commands, causing incorrect comprehension. This misinterpretation can result in service errors or outcomes vastly different

from what users intended, ultimately culminating in a service failure. While existing research primarily examines service failures in the restaurant industry (Lewis & McCann, 2004), retail sector (Holloway & Beatty, 2003), and human and robotic services (Yang et al., 2022), there remains a scarcity of studies investigating service failures attributable to artificial intelligence.

Therefore, this study primarily focuses on enhancing smart speaker services through experimental design methods and situational models. It explores the variation in customer experience value post-shopping journey with smart speakers, incorporating product types as intervening variables. The aim is to investigate the influence of different product types on the experience value within the context of smart speaker service recovery.

2. Literature Review

Virtual assistant-enabled smart speakers like Amazon Echo and Google Home have garnered significant popularity. These devices feature voice recognition systems that allow users to engage with the speaker in real-time, accessing instant information and enabling remote voice control for task execution (Yoon et al., 2022). This confluence of features has coined the term "intelligent voice assistant speaker" (K. Lee et al., 2020). Moreover, smart speakers have started collaborating with external services like car-sharing services such as Uber and Grab, as well as Voice Banking by Capital One, enhancing the overall user experience by adding experiential value (Benlian et al., 2020).

Smart speakers are emerging as a fresh channel for customer-business interactions. Research suggests that cognitive information strategies prove successful with smart speakers; however, the key aspect of marketing via smart speakers lies in delivering valuable information to the user (Smith, 2020). As an instance, Amazon developed a voice application for its smart speaker Alexa, enabling consumers to utilize smart assistants for tasks like acquiring information and making product purchases. This technological innovation not only benefits customers by enhancing their shopping experience but also aids enterprises in gathering valuable data to offer tailored product recommendations through smart speakers in subsequent interactions.

Holbrook and Schindler (1994) defined experience value as the customer's perception and preference for product attributes or service performance. They highlighted that value can be augmented, and consumer objectives can be attained through interactive processes. Holbrook and Schindler (1994) defined experience value as the customer's perception and preference for product attributes or service performance. They highlighted that value can be augmented, and consumer objectives can be attained through interactive processes. Okazaki (2009) emphasizes that social influence factors within virtual communities have a positive impact on customers' willingness and intention to participate. Leveraging big data to track customer purchases, smart speakers can introduce products and services aligned with customer preferences, creating tailored interaction models for varying customer segments.

Nevertheless, owing to constraints related to system interface, robots and artificial intelligence excel in addressing intricate cognitive challenges within service domains but fall short when it comes to tasks demanding emotional and social skills (Wirtz et al., 2018), thereby leading to

inevitable service failures (Honig & Oron-Gilad, 2018). Service failure is characterized by a company's inability to deliver services that align with a customer's criteria or expected level of service, resulting in unmet customer expectations during service provision (Brodie et al., 2011). With the rise of service robots alongside human involvement in recent years, errors in service have become increasingly attributed to these robots as well, contributing to inevitable service inaccuracies (Pinillos et al., 2016).

Many companies have adopted the creation of detailed action plans aimed at resolving issues, transforming negative perceptions regarding customer discontent, and securing customer loyalty through service recovery as a pivotal crisis management strategy (Boshoff, 1997). When confronted with service breakdowns, numerous businesses frequently employ established internal communication protocols to address service issues, including strategies like acknowledging errors, offering apologies, issuing discounts, providing extra services, and more (Hoffman et al., 1995). For many companies, promptly recognizing and apologizing for problems represents the simplest and most impactful approach to implementation, as noted by Tax et al. (1998). Robots in service recovery have increasingly adopted humorous communication as a vital trait (Tay et al., 2016). Among these, self-defeating humor stands out as the predominant form, employing self-deprecation to humorously critique oneself or highlight personal shortcomings, thereby diminishing awkwardness. Consequently, this study will center on exploring the use of self-deprecating humor as a means to endear oneself to others by playfully embracing weaknesses and making jokes.

Prior research has underscored the significance of "product type" as a crucial determinant in service recovery strategies. Holthöwer and van Doorn (2023) specifically highlights the role of service robots in mitigating service-related awkwardness based on the particular product involved. In the context of functional products that prioritize product functionality and service utility, smart speakers have the potential to enhance customer relations significantly. Smart speakers can swiftly address and resolve product issues in real time, offering apologies to customers for any inconvenience caused, as noted by Davidow (2003). Conversely, consumers exhibit a heightened focus on emotions and feelings when acquiring hedonic products, emphasizing the significance of emotional experiences during the consumption of such products. Xu et al. (2018) suggested humor as a vital human element that fosters positive attitudes. They posited that the interplay of humor and self-deprecation could uplift consumer emotions and effectively mitigate negative perceptions of brand errors. Consequently, we can formulate the following hypotheses:

Hypothesis 1: The experience value of service recovery varies when a smart speaker encounters a service failure under different product types.

Hypothesis 1A: For functional products, smart speakers offer a higher experience value by using standardized communication as service recovery rather than humorous approaches.

Hypothesis 1B: For hedonic product, smart speakers offer a higher experience value by using humorous approaches as service recovery rather than standardized communication.

3. Research Method

Experimental design. This study adopts the method of interactive situation simulation, including two types of service recovery (standardized communication /humorous communication), and two types of products (functional /hedonic). It is result in a total of four groups (2x2) of experimental videos. Therefore, the samples in this study are randomly divided into four groups.

Scenario of service failure: A service failure occurs when a service provider fails to meet the expectations of the service recipient (Zeithaml et al., 1990). This can manifest as the enterprise's inability to deliver the necessary service, deviations from standard procedures, delays, or providing service below acceptable levels due to various factors (Bitner et al., 1990). Therefore, this scenario design will focus on the service below acceptable levels. When smart speakers serve customers, they misunderstand customer needs and provide wrong products and information to customers, resulting in customer dissatisfaction.

Scenario of service recovery (standardized /humorous): When a service failure occurs, service recovery is a specific action to resolve the problem, change the negative customer satisfaction, and retain the customer (Zemke & Bell, 1990). Common service recovery is divided into four steps: (1) identify the fault point (2) solve the customer's problem (3) communicate the classification of service failures (4) consolidate information and improve overall service (Tax et al., 1998). This scenario design focuses on the part of communication classification service failures:

Humorous communication - the video mainly focuses on the interaction between smart speakers and consumers. When consumers find service failure caused by product order item errors and need to be remedied. Smart speakers communicate with consumers in a humorous and interesting self-deprecating tone to alleviate consumer anger.

Standardized communication - the video mainly focuses on the service failure caused by product order item errors during the interaction between smart speakers and consumers. Customers need the service recovery. Smart speakers first confirm the problem and immediately admit the mistake, and then use a standardized communication process to apologize to the consumer in a humane way to alleviate consumer emotions.

Scenario of product types (functional /hedonic): The value proposition of the product can be divided into functional and hedonic products (Dhar & Wertenbroch, 2000). Hedonic products provide consumers with more experience, fun and stimulation, while functional products mainly fulfill consumers with basic functions and needs (Holbrook & Hirschman, 1982). In this scenario design, books with both functional and hedonistic types will be selected as experimental products. Text books are representative of functional products for this experiment, and comics are representative of hedonic products.

Sample and procedure. This study explores the service recovery of smart speakers influence customer experience value under different product types. Four videos based on interactive scenario simulations, and samples were randomly collected by distributing questionnaires on

the Internet. After eliminating invalid questionnaires, such as extreme values and random answers, there are 243 valid samples. The analysis will use SPSS statistical methods and manipulation tests to verify the hypotheses. As for the descriptive statistics, there is 119 male (49.0%) and 124 female (51.0%); the main age distribution is between 30~39 around 30.45%; in terms of occupation, the service industry is the main group, with a total of 75 people, accounting for 30.86%. To sum up, the collected samples are roughly in line with the original target group of this study.

Measurement model assessment. All measures were adapted from literature, and we measured each item with 7-point Likert-type scales ranging from 1 (strongly disagree) to 7 (strongly agree). Product types was measured with 8 items and the Cronbach's α is 0.814. Experiential value was measured with 17 items and the Cronbach's α is 0.916. The measurement model assessment includes reliability and validity tests. As for the reliability, in line with Hair and others (2019), all the Cronbach's α is higher than 0.7. It means there is acceptable reliability. In terms of measuring validity, this study uses the analysis method of construct validity and uses composition reliability (Composite Reliability, CR) and average variance extracted (Average Variance Extracted, AVE) as judgment indicators. CR can test internal consistency reliability and it must be higher than 0.6 (Hair et al., 2019). As for the convergent validity, the AVE must be higher than 0.5 as well (Fornell & Larcker, 1981). The results of the validity analysis shows that the CR is between 0.878 and 0.917, and the AVE is between 0.439 and 0.644. Hence, those are meeting the threshold suggested by the scholar.

4. Finding and Discussion

The research uses single variance analysis by SPSS general linear model to discuss the hypotheses. First, research on hypothesis 1 is to explore whether experience value of service recovery varies when a smart speaker encounters a service failure under different product types. As a result, there is an impact through different types of service recovery to experiential value of different product types ($F=34.846$, $P=0.00$). Therefore, Hypothesis 1 is supported (see Figure 1).

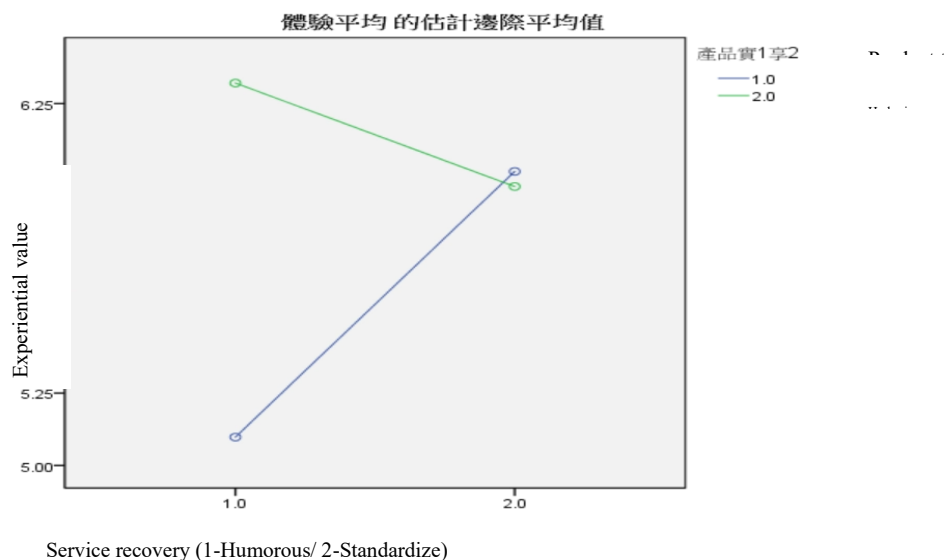


Figure 1. The result of Hypothesis 1

Assuming that the H1A product is a functional product, the smart speaker has better experience value when a service recovery is standardized communication rather than humorous communication. As shown in the results of Figure 1, functional products (blue line) have higher experiential value under standardized communication (recovery mode 2) than humorous communication (recovery method 1). To sum up, the hypothesis 1a is supported.

Assuming that the H1B product is a hedonic product, the smart speaker has better experience value when a service recovery is humorous communication rather than humorous standardized communication. As shown in the results of Figure 1, hedonic products (green line) have higher experiential value under humorous communication (recovery mode 1) than standardized communication (recovery method 2). Consequently, the hypothesis 1b is supported.

5. Conclusion

This study used pre-filmed situational videos and online questionnaires to explore the three-factor relationship between experiential value, service recovery, and product type in the context of service failures made by smart speakers. The results show that in the case of service failures for different product types, different service recovery needs to be used to improve the experience value. When the product is functional, standardized communication as a service recovery can bring consumers better experience value. Because standardized communication is more humane and formally provides product information, it is better to meet the needs of consumers who pay more attention to the functional level of the product. On the contrary, when consumers purchase a hedonistic product, they more focus on feelings and entertainment. Smart speakers can bring better experience value to consumers by using humorous communication to stimulate positive emotions as a service recovery.

Implications for theory. With the advancement of science and technology, the development of smart products is becoming more and more popular. Many people are gradually adopting smart devices in their daily lives to improve convenience and efficiency. Among them, smart speakers are widely used, because people can interact with them through dialogue and get a quick response. In academic research on smart speakers, most of them focus on the discussion of the interaction between people and smart speakers. However, in terms of service failure, the existing literature mainly focuses on human or robotic service failure in the catering and hotel industry (Lewis & McCann, 2004) and the retail industry (Holloway & Beatty, 2003). Therefore, this study tries to give information about how to address service failure of smart speakers by combining two types of service recovery (humorous communication and standardized communication) and two types of products (functional and hedonistic). The study concludes that the recovery modes and product types have an interactive effect on the experience value when the smart speaker makes a service failure.

Implications for practice. According to the findings of this study, we suggest practical insights for enterprises and practitioners in the smart speaker industry. These recommendations aim to assist companies in making informed decisions regarding product development, service delivery, and enhancing user experience. The various product types suggested in this study exhibit an interactive effect when employing different communication methods for service recovery. Consequently, it is evident that enterprises can develop tailored smart speaker service recovery strategies based on the distinct product characteristics to enhance customer satisfaction and loyalty. For instance, in the case of functional products, customers prioritize practicality and performance. Regarding smart speaker service recovery, enterprises can offer precise and detailed technical support communication methods tailored to these products to address any customer issues effectively. Furthermore, offering advice and recommendations on product usage through smart speakers can enhance product efficiency and boost customer satisfaction. When it comes to hedonic products, customers focus on the entertainment and emotional value that the product provides. Regarding smart speaker service recovery, businesses can address customers' emotional product needs by delivering tailored product suggestions and engaging interactions. Furthermore, smart speakers can offer entertainment content or activity details related to the product to deepen the emotional bond customers have with it, ultimately fostering brand loyalty.

This study employs the Google Nest Mini as the experimental device. Nevertheless, the market offers alternative smart speaker brands like Apple HomePod mini, Amazon Alexa, and Xiaomi Xiaoi. Moreover, variations in language usage and participants' familiarity with specific brands could influence their preconceived notions, potentially resulting in deviations in the outcomes. In future research, scholars can use different brands of smart speakers to conduct experiments to increase the diversity of research.

The gap between the film simulation situation and reality. Due to time and space constraints, this experiment was designed with the pre-recording of four situational videos. Participants were asked to imagine themselves experiencing the purchasing scenario while performing the experiment. This method may not fully capture the authentic purchasing experience or the true

interactive effects of communicating with a smart speaker, potentially influencing participants' responses in the questionnaire, for instance: not being able to experience the true tone of the smart speaker's voice or answer and purchase issues. In the future, if time and space allow, it is recommended to have participants operate smart speakers in real-life scenarios to reduce experiential biases. In cases where time and space constraints exist, it is suggested to pre-record with AI voices or the originally selected smart speaker's tone effects to enhance vividness and realism.

Different moderators. The moderator in this study is "product types". In future, scholars can use different moderators to discuss possible linkage between service recovery and experiential value.

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