



Influencing Factors for Consumer Behavior and Psychology under the Perspective of Embodied Cognition - Based on the Perspective of Mental Simulation

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Abstract. The notion of embodied cognition has emerged as a significant area of focus in consumer behavior research, offering fresh insights into consumer psychology and product marketing. This research examines the role of mental simulation in the field of embodiment and explores the impact of individuals' sensory experiences on consumers' cognition and behavior, as well as the influence of mental simulation on consumer behavior. The current study determines that the impact of sensory experience on consumption may be categorized into two distinct effects: the assimilation effect and the compensation effect. The assimilation effect has a favorable impact on consumption, whereas the compensating effect has a negative impact on consumption. Mental simulation can both encourage and hinder consumption. It is imperative to conduct additional research on consumer behavior in internet scenarios, focusing on embodied cognition. This includes investigating the impact of sensory interaction on consumer behavior and understanding how consumer characteristics influence their decisions and actions. Additionally, it is crucial to recognize the role of Mental simulation in marketing.

Keywords: Embodied Cognition, Mental Simulation, Consumer Behavior and Psychology.

1 INTRODUCTION

The inception of embodied cognition theory can be traced back to the 1980s, during which study mostly centered around philosophy. This research delved into the mechanisms by which humans receive and process information by means of the reciprocal interaction between their bodies and the surrounding world. Through extensive investigation, researchers have come to recognize that this theory is not just relevant to philosophy, but also to disciplines such as psychology and management. Consequently, the theory of embodied cognition gained significant traction in studies within these domains, emerging as a novel research paradigm. During this process, the notion of mental simulation eventually emerged. Mental simulation involves reproducing and predicting the external world's situation at the mental level. This process has the ability to impact

people's cognition and behavior. For instance, individuals may engage in mental simulation of product usage while shopping to aid in their decision-making process. The technique of cognitive modelling has a significant role in shaping consumer behavior.

Hence, the utilization of embodied cognition theory and mental simulation in consumer behavior research has the potential to significantly enhance comprehension of consumer behavior and psychology. This offers scholars novel viewpoints and approaches to investigate the fundamental principles of consumer behavior and psychology, while also providing further insights and direction for developing successful marketing tactics.

This study commences by providing a concise overview of the fundamental principles of embodied cognition and mental simulation, as well as elucidating their interconnection. Embodied cognition highlights that cognitive processes occur through the interplay between the body and the environment, with mental simulation serving as a crucial tool in this interactive process. Mental simulations allow humans to replicate and anticipate circumstances in the external world within their minds, so impacting cognition and behavior. This research examines the influence of embodied cognition and mental simulation on consumer behavior. Through the process of summarizing and condensing extensive research, a set of factors that impact consumer behavior and psychology are identified. These elements encompass the individual's sensory perception, the consumer's psychological engagement with the product, and the strategic positioning of the product.

Ultimately, we provide a concise overview and evaluation of the current research, highlighting several issues encountered in these investigations, such as the constraints of the study technique and the inadequacy of the theory. Based on these premises, we suggest potential avenues for future research, such as investigating consumer behavior in Internet situations via the lens of embodied cognition, exploring how sensory interactions impact consumer behavior, and examining how consumer traits influence decision-making and behavior.

The primary objective of this paper is to offer novel theoretical viewpoints and research approaches for studying consumer behavior by extensively examining embodied cognition and mental simulation. The ultimate goal is to further the progress of the field. Given the extensive research conducted, we anticipate that the theory of embodied cognition will have a growing significance in the examination of consumer behavior. This theory will offer additional insights and direction for comprehending consumer behavior and psychology, as well as for devising successful marketing strategies.

2 THE CONCEPTS OF EMBODIED COGNITION AND MENTAL SIMULATION

2.1 The Concept of Embodied Cognition

Embodied cognition is a novel approach in cognitive psychology research that highlights the significance of the body in the cognitive process. It asserts that the body not only contributes to cognition but also impacts the cognitive process. This perspective

emphasizes that an individual's mental activity is grounded in sensory experience and that mental activity interacts with the body [1,2]. The interaction between cognition and the body is not one-way, as usually believed for cognition, but two-way, meaning that cognition not only influences the body, but the body also influences cognition [3]. Cognition refers to the process of perceiving the body, which encompasses the brain as well. The body's anatomical structure, movement patterns, and sensory and motor experiences directly influence individuals' perception and perspective of the world. The body and its movements have a significant role in shaping cognition. The "mental program software" does not directly manipulate the "body hardware" to regulate bodily functions. The body is not controlled by a "mental program" that operates on its hardware. In contrast to the conventional cognitivist perspective, which regards the body as a passive receiver of inputs and executor of actions, the body is assigned a pivotal and definitive role in the development of cognition, and the significance of the body and its actions in elucidating cognition is underscored.

Examining the theoretical frameworks of embodied cognition reveals a clear and strong connection between this theory and the investigation of consumer behavior. In the field of marketing, specifically in the growing trend of sensory marketing, corporations frequently employ diverse sensory stimuli to generate immersive physical experiences that can be leveraged to sway consumers. Researchers are particularly interested in examining how physical experiences impact consumers' cognitive processes, which subsequently affect their overall behavior. Embodied cognition theory stresses the impact of the body on cognition, aligning with the fundamental component that scholars have focused on in marketing. Hence, the notion of embodied cognition can offer substantial theoretical backing for research on consumer behavior.

2.2 The Concept of Embodied Cognition

Although there has been a growing fascination with embodied cognition in recent times, it is important to note that physiological states are merely one of the fundamental elements of cognition. The study focuses on mental simulation, which refers to the reproduction of perceptual events and is a significant aspect of cognition. Mental simulation refers to the cognitive process of mentally reproducing perceptual, motor, and introspective states that occur during interacting experiences with the external environment, one's own body, and one's own thinking. It involves recreating past sensory experiences in the mind (Barsalou) [2]. Mental simulation allows people to turn their thoughts into real plans to take action. For one thing, it is easier and faster to take action in real life because the individual is able to visualize the real situation in his mind through mental simulation. Secondly, thinking about and visualizing how a situation would occur in the mind provides the individual with the information he or she needs to act in a more purposeful manner [4].

To summarize, mental simulation enables humans to revisit a prior state of sensory experience and triggers the associated perceptual regions of the brain, hence impacting individual cognition, judgment, and behavior. Barsalou noted that cognition is rooted in the body and that traces of the body are left in cognition. Therefore, when the body is in a specific state, it is probable that the cognition linked with the body will be

engaged (Wei Hua et al.) [1]. Therefore, mental simulation is a significant "embodied" method for producing cognition, alongside metaphors, physiological states, and actions. Mental simulation is a simulation of action and sensory experience that triggers neural mechanisms, and this simulation of a past or virtual state has a strong embodied effect that can influence an individual's behavioral intentions [5].

2.3 Classification and Development of Mental simulation

Mental simulation is divided into two distinct types: process simulation and outcome simulation. The term "process simulation" refers to the examination of how a particular action unfolds, prior to actually carrying out the action. It involves mentally envisioning or recalling the sequence of steps required to successfully complete a given task, as well as understanding the nature of each individual step. This is the central focus of process simulation analysis. Outcome simulation, in contrast to process simulation, prioritizes the intended result and motivates the individual to concentrate on the fulfilment of the finished task. Outcome simulation motivates individuals to persist in their actions by envisioning the most favorable result, providing them with positive mental reinforcement to endure challenges and disappointments, ultimately enabling them to accomplish their self-defined objectives [4]. The field of mental simulation encompasses various elements. In the context of new product marketing, a prevalent strategy is to enable consumers to engage with the product through mental simulation. This involves using vivid and descriptive language to prompt consumers to imagine the potential benefits and positive impact the product could have on their lives. By employing this approach, consumers can enhance their favorable perception of the novel product and opt to make a purchase.

3 THE IMPACT OF EMBODIED COGNITION AND MENTAL SIMULATION ON CONSUMER BEHAVIOR

3.1 The Influence of Sensory Experiences on Consumer Cognition and Behavior

The impact of sensory experience on consumers can be categorized into two distinct effects: the assimilation effect and the compensation effect. The assimilation effect pertains to the phenomenon where an individual's sensory experience leads them to exhibit changes that align with the metaphor during the subsequent consumption process. Conversely, the compensation effect refers to the phenomenon where an individual's sensory experience prompts them to seek compensation that opposes the metaphor during the subsequent consumption process. (1) Assimilation effect: Some scholars conducted experiments related to auditory marketing and found that when music is added to the consumer scene, the consumer's ability to perceive the surrounding environment or things will be affected, and the positive and reasonable music will leave a deep impact on the consumer and create a preference for a certain product or brand [6]. Additionally,

Huang, Zhang, Hui, and Wyer found that warm environments fostered a stronger sense of connection with others, leading to the greater influence of others' choices on consumption attitudes and decisions. Both experiments demonstrate the assimilation effect, where an individual's perception of temperature influences their cognitive processes, which in turn affects their final eating behavior. (2) Compensation effect: When a person is experiencing an uncomfortable situation, their need to change that state is triggered. If they are unable to directly satisfy this need for change, they will seek alternative sources of compensation. When someone experiences physical coldness, they naturally desire warmth. This can be directly achieved by consuming a hot beverage. Alternatively, the goal of warmth can be indirectly fulfilled by watching a movie that portrays interpersonal warmth. For instance, during festive occasions like Christmas, New Year's Eve, and the Chinese New Year, movies that promote a sense of family and coziness are often released. Based on the analysis provided, it is evident that the compensation effect will only occur in certain scenarios. Specifically, if a scenario does not cause consumer suffering, the compensatory effect will not occur.

3.2 The Impact of Mental Simulation on Customer Behavior

The Function of Mental Simulation in Enhancing Consumer Behavior. There has been a growing body of research dedicated to investigating the impact of mental simulation in the marketing area. The subject directs the subjects to engage in various forms of mental simulation in order to study the mechanisms involved. In the field of marketing research, participants are frequently instructed to mentally envision the process of purchasing and utilizing the product. Consider, for instance, envisioning the procedure of choosing and purchasing a mobile phone, envisioning the procedure of utilizing the mobile phone following its acquisition, and contemplating the consequential influence it has on customers' lives, among other aspects. In essence, the cognitive process of mental simulation occurs when individuals engage in thinking and imagining certain processes within their thoughts. Through mental simulation, individuals can create a substitute encounter by envisioning the use of a specific product. The knowledge acquired from this simulated experience will subsequently impact consumer behavior.

The Suppressive Impact of Mental Simulation on Consuming Behavior. Mental simulation can have the effect of both promoting and inhibiting consumption behavior. It has the ability to decrease persons' desire for consumption and their actual intake. Repeated mental simulations might lead to feelings of boredom. For example, the mental simulation of inhibition of eating in the mental simulation of sensory experience found that making individuals feel satiated and bored with food reduces their desire to consume and actual consumption, i.e., inhibits eating [7]. Individuals who engaged in frequent mental simulations of consuming a particular meal (such as cheese) later consumed a smaller amount of that food during a real eating session, compared to those who engaged in less frequent mental simulations of consuming same food or who mentally simulated consuming a different type of food (such as candy). They did so due to their desire to consume a smaller quantity of food, not because they saw the food as

being less flavorful. Furthermore, the placement of the product in the advertisement, whether it is positioned to the right or the left, influences the viewers' perception of how the product can be utilized. In their investigation, Elder and Krishna found that when the "dominant hand" and the "object orientation" matched, it led to a mental simulation of interacting with the "object" [8]. Improved mental simulation then amplifies the likelihood of making a purchase. Nevertheless, engaging in mental imagery of unfavorably perceived foods can impede an individual's eating or consumption patterns. For instance, Elder and Krishna discovered that placing a spoon on the dominant hand side of cheese and tomato soup, which is a negatively valenced food, resulted in increased mental simulation and a more intense negative experience. This, in turn, led to a decreased willingness to purchase the soup, as compared to when the spoon was placed on the non-dominant hand side [8].

4 FUTURE DIRECTION

4.1 Improve the Investigation of Consumer Behavior by Focusing on Embodied Cognition in Internet Settings

The advent of digital technology has significantly transformed customers' purchasing patterns, leading many to transition from traditional offline shopping to the more convenient realm of online shopping. Exploring the attributes of consumer behavior in Internet scenarios from the standpoint of embodied cognition is a promising avenue for future scholarly investigation. Unlike conventional purchasing, individuals frequently maintain a stooped posture while shopping via cell phones. How does this altered state impact consumer behavior? In the conventional retail setting, individuals typically make purchasing choices within shopping malls or franchised establishments. However, the convenience of the Internet enables consumers to make consumption decisions at their convenience, regardless of location. Future research can explore the impact of this phenomenon on consumer behavior.

4.2 Research on consumer behavior focusing on embodied cognition through the lens of sensory interaction

Human perception is influenced by the input of information from one sensory channel, which in turn impacts the perception of other sensory channels. This process is known as multisensory interaction. Zampini, Mawhinney, and Spence discovered that the sound level influenced consumers' perception of a product's roughness. They observed that louder and harsher sounds led individuals to perceive the object as rough, while smaller and softer sounds made the object appear smoother [9]. Furthermore, disparate information originating from the same sensory channel also mutually influences one another. Hagtvedt and Brasel conducted a study which revealed that there is a positive correlation between color saturation and the perceived size of a product by consumers [10]. From a standpoint of sensory interaction, when one sensory channel perceives another sensory channel due to the information qualities of the former, it can influence consumer behavior. Future research could investigate, using an embodied cognition

approach, whether the magnitude of a sound impacts consumer behavior by affecting the perceived texture of a tactile sense, specifically roughness and smoothness.

4.3 Emphasize the Significance of Mental Simulation in Marketing

The importance of mental simulation in marketing has been growing in recent years. Currently, self-media is experiencing a period of rapid growth, and network marketing is gaining prominence and respect. As an e-commerce platform operator, it is crucial to understand how to effectively utilize the network platform to attract consumers. In this regard, mental simulation proves to be a highly effective marketing tool. By employing mental simulation, businesses can successfully entice more consumers to browse and purchase their products, ultimately resulting in increased sales and higher profits. In the realm of new product promotion, a prevalent marketing tactic involves allowing consumers to engage with the new product using mental simulation. Merchants can employ expressive language to persuade consumers to envision the potential benefits of owning the new product and the transformative impact it could have on their lives. The merchants on the shopping page of the advertisement utilize captivating text and vibrant videos to lead customers through a simulated process, hence enhancing the likelihood of potential consumers making a purchase. This strategy enhances a positive perception of the novel product and ultimately results in a transaction. In contrast, advertisers have the option to enhance cognitive engagement by utilizing visual representations of products, hence leading to a boost in purchase intentions. For instance, even a minor alteration in the arrangement of mugs in a store can have a substantial influence on consumers' purchasing behavior, as it prompts consumers to mentally imitate the action of holding the mug more intensely. In addition, mental simulation also enhances the connection between consumers and brands; therefore, in order to build a strong relationship between consumers and companies, marketers should focus on how to stimulate mental simulation in marketing and communicate with consumers in a timely manner, regardless of the means, whether online or offline [11].

5 CONCLUSION

This paper presents two psychological concepts, namely embodied cognition and mental simulation, to examine consumer behavior and psychology from a novel perspective. This approach not only broadens the scope of applied research on embodied cognition and mental simulation but also introduces a fresh research outlook on consumer behavior and psychology.

The study's findings can be summarized as follows: (1) The impact of sensory experience on consumption, as viewed through the lens of embodied cognition, can be categorized into two effects: assimilation and compensation. The assimilation effect has a favorable impact on consumption, whereas the compensating effect has a negative impact on consumption. (2) Mental modeling can have both a facilitating and inhibiting effect on consumption.

This paper explores the mental simulation of consumer behavior, offering merchants a fresh approach to enhance marketing performance. It highlights the significance of "embodied" psychological simulation in marketing and advertising, challenging the conventional cognitive perspective to address the issue at hand. Advertisers can enhance purchase intention by utilizing visual representations of products to stimulate mental simulation. For instance, a minor alteration in the arrangement of mugs in a store might have a substantial influence on consumers' purchasing psychology since they will more extensively replicate the act of gripping a cup.

While consumer behavior research from the perspective of embodied cognition has yielded numerous findings and valuable insights, it is important to acknowledge the existing limits in this field of study. Upon reviewing the existing research on consumer behavior from the perspective of embodied cognition, it becomes evident that only a limited number of studies have investigated the influence of consumer traits. During the consuming process, the features of consumers, which are significant individual variables, have a substantial impact on consumer decisions and behaviors. Future research on consumer behavior based on embodied cognition should address the topic of how various customer traits function as mediating variables in determining the effects of psychological simulation on consumer behavior.

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