

# *Research on the Influence Mechanism of Online Comment Information on Enterprise Product Innovation*

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**Abstract:** The open innovation with consumers as the main body in the Internet era has become an inexhaustible motive force for enterprise development. This paper is based on an open innovation perspective, constructs a theoretical framework for the effect of online reviews on product innovation, and inspects the mechanism of the important factor of innovation environment. The framework holds that the usefulness and credibility of online reviews have a positive impact on enterprise product innovation and the innovation environment has medium effect in the impact of online reviews on product innovation.

## **1. Introduction**

As an important form of online word of mouth, online reviews are more easily trusted by consumers than traditional information channels. For companies, online reviews from consumers have become an important direction for companies to improve product functions and improve product innovation models. However, due to the characteristics of network virtuality, anonymity, and low cost, not all online reviews are valuable. Some consumers will also irresponsibly publish false comments, this led to appear serious overloading and uneven of quality of online reviews and so on. In the era of consumption personalized, consumers are increasingly unwilling to be mere buyers or product recipients. They increasingly want to join in the process of product innovation, design, and production. So how can companies make more consumers participate in product innovation through online reviews in the fierce market competition? What is the impact mechanism of online comment information on enterprise product innovation? This research will explore the influence mechanism of the usefulness and credibility of online comments on enterprise product innovation. Through systematic literature research, answer the important question that how consumers to participate in the enterprise product innovation through online reviews.

## 2. Theoretical Background

### 2.1 Related research on online review

Online reviews originally came from traditional word of mouth. Traditional word-of-mouth refers to the earliest spoken communication behavior between people in relation to a brand, product, or service. Chatterjee (2001) first proposed the concept of “online review” when researching whether consumers would refer to previous purchasers’ reviews during the purchase process [1]. In later research, the concept of online review was gradually improved. Dellarocas (2007) defines "online review" as a feedback system for customers to conduct two-way communication on the Internet [2]. At present, the research on online review mainly focuses on two aspects, such as organizations and consumers: One is the impact of online reviews on the sales volume of enterprises, such as Dellarocas et al investigated the impact of online word of mouth on sales revenue. The other is online reviews will influence consumer brand loyalty. Studies by Bowman and Narayandas (2001) have shown that positive word-of-mouth information will enhance brand loyalty [3]. And Guo et al (2010) pointed out that negative word-of-mouth has a significant positive impact on consumer brand switching intentions.

#### (1) Research on the usefulness of online review

With the widespread use of online reviews, the focus of research has shifted from online reviews to the usefulness of online reviews. Aitken, Gray, and Lawson (2008) use the definition of advertising effectiveness to define online reviews usefulness as the extent to which readers of online reviews can perceive the information the review sender wants to express, and to what extent this information can influence the reader's attitude, emotional state, and support willingness to the product or service [4]. In foreign countries, Dellaiocas et al (2007) found that consumers think extreme reviews are more useful than neutral reviews. Because positive or negative reviews make it easier for consumers to make choices. For the mechanism of online comment usefulness, Yan et al (2012) studied the text content of the review and found that the more objective the review, the more product information it conveys and the description is more consistent with the material object, the more useful the review is. Excessive subjective information is contained in the content of the review, and the usefulness of the review is lower. Hao et al (2010) found that the emotional enthusiasm, length of reviews, and high positive and negative emotions confounding in the reviews have a significant positive impact on the usefulness of the film review.

#### (2) Research on the reliability of online review

In the reality, driven by factors such as pecuniary benefit, people will exaggerate or slander a product by writing deceptive reviews. The study by Hu et al (2010) also showed that merchants can manipulate the online review system to a certain extent and this phenomenon does exist. Eagly and Chaiken (1993) believe that the more positive attributes the information sender has, the stronger the credibility of the information. The information sent by the highly reliable information source is high-credibility, which is more helpful the dissemination of information. Chevalier and Mayzlin (2006) confirmed in the research that the higher the quality of the information, the higher the credibility of the information. People will carefully read the concrete content of the information, and make the right judgment based on the quality of the content [5].

### 2.2 Research on innovation environment

Environment can provide physical and social stimulation for the emergence of new ideas, thus inspiring people's creativity. Studies have confirmed that business activities in an enterprise can

affect the perception of the enterprise's environment by the members of organization, as well as affect its creativity and innovation. Some social organization environmental factors could better motivate and help employees to implement innovative work. Amabile (1996) believed that employees' subjective perceptions of the organizational system, style of administrator and other work environments, it is contributing to the formation of values related to innovation or enterprise culture and will affecting their own innovations or influencing organizational innovations in a deeper level [6].

### 2.3 Research on enterprise product innovation

With the development of the Internet, the key to product innovation in the perspective of open innovation lies in the ability to fully and effectively use information from end users, to excavate the advantages and disadvantages of enterprises' products from user review information, and enterprises will adjust the research and development strategy of follow-up products in a targeted manner based on the information. Therefore, from the perspective of dynamic research, the ability of enterprise product innovation is the continuously innovation activities of original ideas, methods, and systems. The process of specific to enterprises can be divided into three stages: theory formation, opportunity identification, and scheme implementation [7]. The theory formation includes the abilities to finding problems and seeking solutions. Opportunity identification is an ability in which the enterprise seeks new product innovation solutions and evaluates, screens, and determines them. The scheme of product innovation generally includes introduction of new technologies, improvement of old technologies, reengineering of management processes and recombinant of resource allocations, etc. Through the above stages, enterprise ensure the smooth implementation of product innovation solutions. Based on the above analysis, the product innovation of enterprises under a dynamic perspective not only reflects the ability of the enterprise to own resources and knowledge, but also emphasizes the use of these resources and knowledge to achieve performance goals.

## 3. Research Model and Propositions

### 3.1 Construction of research model

The purpose of this study is to explore “the effects and mechanisms of online reviews on the product innovation of enterprises” and to research the role of online reviews in corporate product innovation through the usefulness of online reviews and the credibility of online reviews. And the role of the innovation environment as an intermediary mechanism. The conceptual model of this study is as follows:

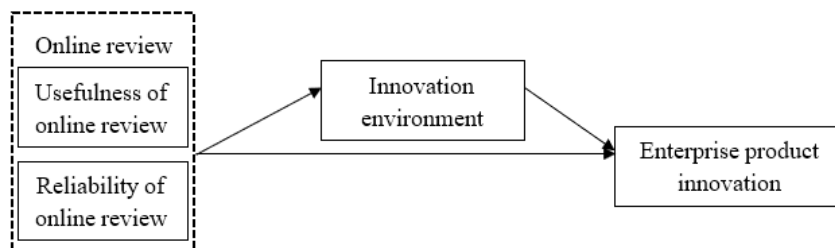


Fig. 1 Research model

### 3.2 Export of research proposition

#### **Proposition 1: Online review has a significant positive effect on enterprise product innovation**

When enterprises conduct product innovations, they need to absorb vast quantities new knowledge and resources from the external. In the context of open innovation, consumers can serve as a source of external knowledge and resources. The information of Market and user is a source of R&D creativity and learning. Dahlander and Piezunka (2014) believe that external consumer opinion is the form of internal-oriented knowledge that firms can most easily obtain from consumers. Mudambi and Schuff (2010) defined the quality of information from the perspective of information diagnostics in information economics and used review polarity and review depth as a measurement index of the usefulness of reviews and established an evaluation model. In management practices, in-depth reviews that include product advantages and disadvantages are more useful, credible and persuasive than single and one-sided reviews. Therefore, this study believes that the usefulness of online reviews has a significant positive impact on the enterprise product innovation.

Compared with usefulness, the reliability of online reviews emphasizes the evaluation of online reviews from the perspective of information content, such as the reliability of reading information sources, the consistency of reviews and the quality, etc. Therefore, high-reliability online reviews have a significant impact on the product innovation capabilities of enterprises. Jensen et al. (2013) attempted to judge the relationship between the reliability of commentators and corporate behavior from the perspective of language expectations. The research confirmed that the content of the reviews contained both the positive and negative information of the product and the appropriate emotional density. This all have promoting effect to the perception of the reliability of commentators, and indirectly promotes the behavior of the enterprise. In addition, the more professional the online review is, the more willing customers are to express their thoughts in the review community and provide related suggestions for the enterprise's product innovation model. Therefore, this study believes that the reliability of online reviews has a significant positive impact on the enterprise product innovation.

#### **Proposition 2: The media role of the innovation environment**

Enterprises are in a dynamic and open innovation environment. They need to constantly exchange activities with the outside world to collect various resources and information needed for the development of the enterprise, thus make up for the deficiency of existing resources or create new resources for enterprises to complete innovation activities. Online review, as an important factor in the external environment, has an inevitable influence on the enterprise innovation environment. When employees are in an environment that strongly supports their own innovation, employees are more satisfied with their work and are more active in innovation work. Therefore, the enterprise innovation environment will be affected by online review. Kim et al. (2013) found that the team members are more willing to make innovations in an atmosphere that supports innovation. The innovation environment can effectively promote innovation behaviors, that is, the innovation environment is positively affecting enterprise innovation. When employees perceive that enterprises support innovation and make innovation practice that are safe and effective, they are more willing to actively innovate or propose innovative view and suggestions. Therefore, this study believes that the innovation environment plays an intermediary role between online reviews and enterprise product innovation.

### 4. Conclusion

The online comment information provides rich resources for enterprise product innovation and

continuous improvement. The main conclusions are as follows: First, the usefulness of online reviews and the reliability of the online reviews have an important impact on the enterprise product innovation capabilities. Second, the innovation environment plays an intermediary role between online review and enterprise product innovation. Online reviews influence product innovation of enterprise by affecting the innovation environment. The theoretical significance of this study is that, the framework model of the impact mechanism of online comments on enterprise product innovation concretely and abstractly reveals the mechanism of consumers' participation in enterprise innovation under the open perspective, it enriches the theory of enterprise innovation.

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