Do we order product review information display? How?

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ABSTRACT

This article examines whether (if so, how) ordered (versus random) product review display would be more helpful and easier to comprehend. The results from a set of experiments show that product reviews ordered by their types (i.e., presenting an attribute/experience-based review before another type) are perceived to be more helpful and easier to comprehend. We further observed that displays of attribute-based product reviews followed by experience-based product reviews are perceived to be more helpful for a search product. Likewise, displays of experience-based product reviews followed by attribute-based product reviews are more helpful for an experience product.

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1. Introduction

Online product reviews or the product assessment posted by people who have used a product are among the most important sources of information that consumers refer to when making purchase decisions [18]. The rapid accumulation of reviews over time has resulted in the fundamental problem of information overload [20]. To help consumers make more informed purchase decisions, scholars and practitioners have called for research on identifying product review displays that are deemed effective for potential consumers [42,49]. Review effectiveness is reflected by two variables. One variable is whether the reviews are perceived to be helpful, and the other variable is whether the reviews are easy to comprehend [2,43]. Review helpfulness provides parameters for the degrees of information that should be included in reviews to assist consumer evaluations of focal products [45]. Ease of comprehension refers to the consumers' perception of the cognitive effort needed to comprehend the reviews [46]. A website that can present reviews effectively to potential consumers can improve consumer satisfaction, purchase inclination, and website loyalty, which lead to sustainable online business [62].

One of the product review display approaches adopted by Amazon.com is the arrangement of reviews based on characteristics. Research on product review presentation is rare. The bulk of studies conducted on general information provision and not on product review in specific. For instance, to establish the notion that the order of information display can affect a consumer's product choice, Bruine de Bruin and Keren [7] showed that, when a set of products are presented to consumers with different product orders (e.g., showing product A, product B, and then product C versus displaying product C, product B, and then product A), the consumers' choice behavior is also different. Suk et al. [68] further exemplified this point by showing that different reference prices can be formed even by ordering the prices of a single product. Previous studies have highlighted that information presentation is not trivial in the perception and subsequent decision making of a consumer [4,8,23,40]; how information, particularly product review information, should be ordered to positively affect a consumer's information evaluation is not yet well understood. Given the increasing prevalence of product review information on websites and the dearth of understanding on how such information could be more effectively presented, the present study seeks to address these questions: (1) would consumers perceive ordered product review displays as more effective, and (2) in what manner should that review information be organized?

To answer these questions, we considered two typical types of product review information, namely, attribute-based and

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experience-based [39,49,67,79]. An attribute-based product review discusses the evaluation of a product based on its attributes (e.g., a review of this type could be written as "the processing speed of this computer is good, it always runs quickly and keeps quiet"); whereas an experience-based product review is characterized by an overall evaluation of a focal product (e.g., such a review can be written as "this is really a good product. I am so proud of it"). On the one hand, experience-based product reviews are characterized by the overall experience evaluation and, thus, assist a consumer in gaining an overarching understanding of a product. On the other hand, attribute-based product reviews are denoted by specific attribute assessments and, thus, facilitate a more developed assessment of a product.

Drawing on the literature of consumer information processing and integrating it with schema theory and "fit" notion, we posit that ordered reviews, based on the review types, would be more effective than randomly displayed reviews. Through empirical validation, this study extends the literature by showing how a consumer processes information and how the display order of different types of information facilitates his review evaluation [4,11,17]. Furthermore, by considering product types, this research provides insight regarding the moderating conditions of product types on the effects of information display of different types of review information (i.e., attribute-based and experience-based product reviews) on a consumer's review evaluation.

2. Theoretical background

Online product reviews are among the most important sources of information that help consumers make purchase decisions. However, with the development of online platforms, too much information and conflicting feedback in reviews lead to information overload [10]. Thus, to facilitate potential customers to make easier purchase decisions, scholars and practitioners focus significant attention on presenting reviews that are deemed effective to potential consumers [32,48,49,80]. Review effectiveness is manifested by the following two factors: one is whether the reviews are helpful to potential consumers and the other is whether the reviews are easy to comprehend by consumers [36,43]. That is, reviews are considered effective when the reviews are helpful and easy to comprehend. With the significance of the exploration of effective reviews, the question of how to make reviews more effective (i.e., beneficial) to consumers becomes crucial.

Prior works have explored a variety of review characteristics that affect review helpfulness. For instance, Cao et al. [10] examined the relationship between the semantic characteristics (e.g., valence) of product review information and review helpfulness. They observed that, compared with product reviews that have mixed or neutral opinions, product reviews with extreme opinions receive more helpfulness votes. Li and Zhan [35] used the mining method to identify several review information characteristics (e.g., review length and review sentence length) that are related to review helpfulness. Furthermore, Willemsen et al. [78] determined that review expression density and diversity significantly predict perceived helpfulness. As regards the effect of review contextual factors, Connors et al. [14] and Forman et al. [18] have consistently determined that the reviewers who posted the review typically influence review helpfulness. The discourse of reviewer identity influences consumer perceptions and evaluations of review helpfulness. Huang et al. [27] also determined that reviewer identity discourse does influence consumer psychological distance, which leads to different evaluations of review helpfulness. Despite the differences in the theoretical lens of prior works, a commonality exists: the reviews should be presented in a manner that consumers can adequately process.

Fig. 1 shows the theoretical lens adopted in this research. Specifically, we anchor on three theoretical underpinnings: (1) information processing theories to theorize the review information display (Section 2.1), (2) schema theory to theorize the product type (Section 2.2), and (3) theoretical "fit" notion to connect review information display and product type (Section 2.3).

2.1. Information processing perspective of review information display

Information processing theories suggest that the order of information display influences the impression formation [3,15,25], judgment [7,41], and decision making of customers [23,40]. In particular, two information processing strategies are used, namely, the top-down and bottom-up strategies, which represent the concept of "part" and "unity," respectively [6,50,57]. The top-down processing strategy refers to the information processing approach in which a consumer starts with the evaluation of a product's overall performance and then assesses the performance of each specific attribute of the product. In contrast, a consumer who uses the bottom-up information processing strategy typically examines the product's individual attributes before evaluating the overall performance of a product.

The conceptualization of top-down and bottom-up information strategies can be observed in several earlier works. For instance, researchers in the field of system development have developed two system design strategies, namely, top-down and bottom-up development [58,60]. Organization management scholars proposed the top-down and bottom-up management styles in different situations to improve management efficiency [12,37], whereas market researchers observed that these two strategies are suitable for different markets in terms of resources, flexibility, and adaptability [61,66]. Although different conceptualizations are utilized in various research initiatives, the central thesis is that the top-down approach focuses on the analysis or process from the unity to the part, whereas the bottom-up approach emphasizes analysis from the part to the unity, which influences consumer decision making differently [24,52].

Relating the product review information display forms to the two information processing strategies suggests that a customer first depends on the experience-based product review information to gain an overall understanding of the product if he or she adopts the top-down information processing strategy. Then, the consumer utilizes the attribute-based product review to concentrate on assessments based on individual product attributes. Conversely, if a consumer adopts the bottom-up information processing strategy, then he/she first uses the attribute-based product review information to understand the details of a product and then uses the experience-based product review to gain a summarized picture. As exemplified in a previous study, the adopted processing strategy affects the effectiveness of a consumer's judgment [26], but questions remain regarding which strategy is more feasible for
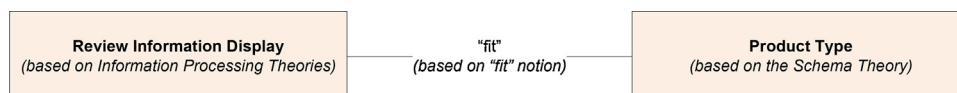

Review Information Display (based on Information Processing Theories)	"fit" (based on "fit" notion)	Product Type (based on the Schema Theory)

Fig. 1. Theoretical lens.