

PRODUCT DESIGN AND PRODUCT PERFORMANCE IN THE COURSE OF PRODUCT-USER INTERACTION: DOES PRODUCT USAGE MAKE A DIFFERENCE?

Prof. Dr. Nicola Stokburger-Sauer, Janina Kuhnle, MSc, Dr. Verena Hofmann

Abstract

This research investigates how the perception of product design and its influence on consumer behavior changes from consumers' first visual online product perception to consumers' offline perception and inspection of the product to the first time actually using the product. The longitudinal design shows that the relevance of the design dimensions of aesthetics and functionality grow over time while symbolism has no significant increase. This study contributes to the current literature by crossing the bridge between marketing and industrial design research and by taking a long-term perspective. Thus, companies should not only focus on the point of purchase but also enable "real" product-user interactions, for example, through product trials.

Conceptual Background

- Product design is a strategic tool that impacts on consumers' affective, cognitive, and behavioral product responses (Homburg, Schwemmler, and Kuehn 2015; Mugge and Dahl 2013) and company success (e.g., market share; Jindal et al. 2016; Micheli and Gemser 2016).
- The dimensions of product design comprise aesthetics (i.e., the beauty of a product), functionality (i.e., the likelihood to fulfill the functional purpose), and symbolism (i.e., the product's portraying of the consumers' self-image; Jindal et al. 2016).
- Past research shows that consumers' perceptions of aesthetics change with a repeated number of exposure (Landwehr, Wentzel, and Herrmann 2013). The role of exposure can be theoretically explained by the concept of processing fluency (Van den Bergh and Vrana 1998). Different exposure levels lead to different fluency levels and different responses. While repeated exposure usually enhances fluency, too many exposures might reduce such positive responses (Landwehr, Wentzel, and Herrmann 2013; Van den Bergh and Vrana 1998).

Research Objectives

To investigate how the perception of product design and its influence on consumer behavior changes

- from consumers' first visual online product perception of the product to
- the consumers' offline perception and inspection of the product to
- the first time actually using the product, considering different levels of exposure (Jia, Shiv, and Rao 2014).

Conclusion

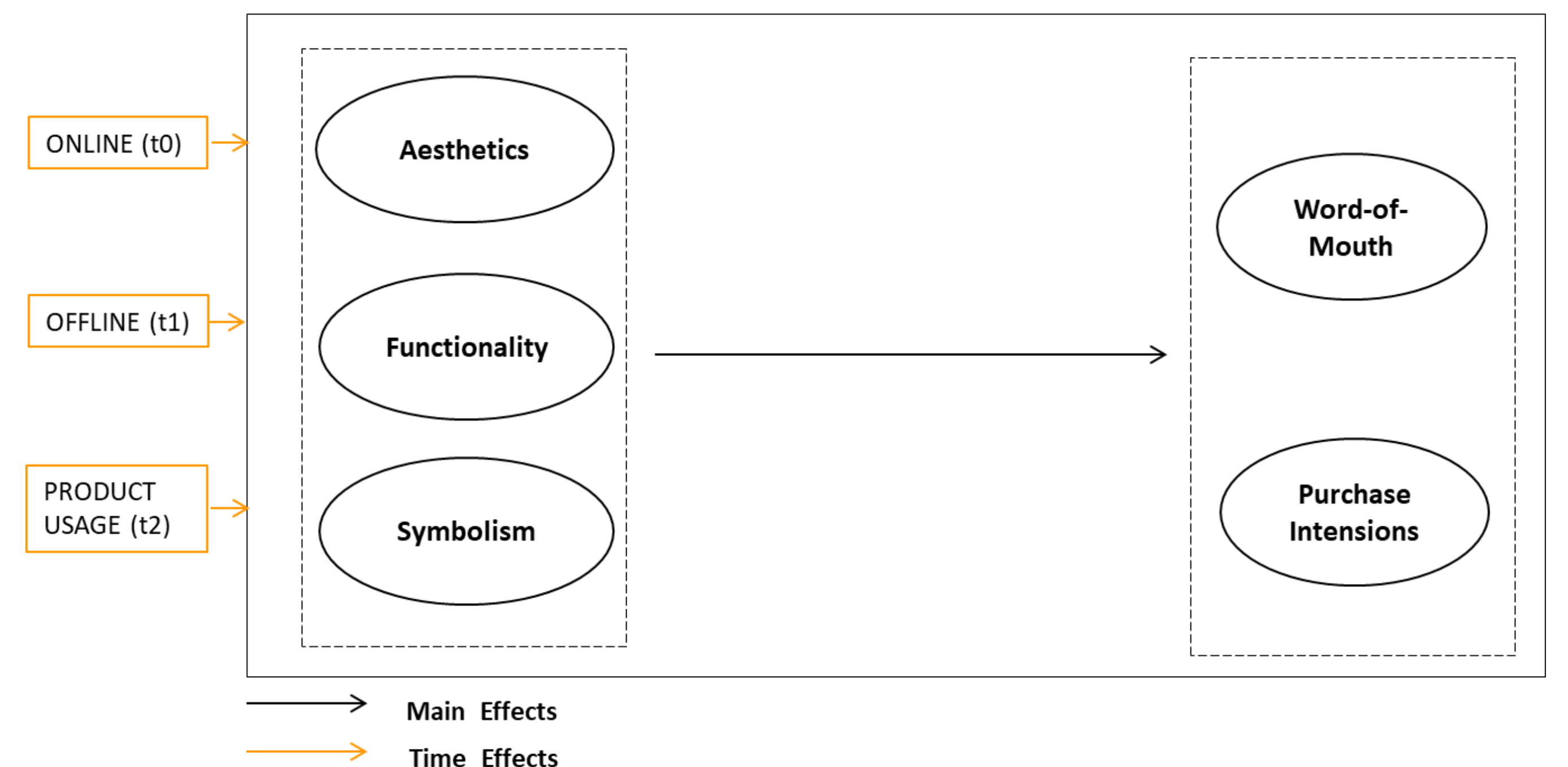
The study demonstrates that the design dimensions of aesthetics and functionality and the performance outcomes of purchase intention and word-of-mouth indeed increase over time. Considering different exposure levels in the course of product-user interaction thus seems imperative for marketing research and management.

- The research crosses the bridge between the marketing and industrial design literature.
- The design dimensions of aesthetics and functionality indeed change over time; that is, they increase, along with higher levels of purchase intention and WOM.
- Pure visual inspection of products might not be enough for product success. Product-user interactions are an important driver of product performance:



Enable product testing for specific target groups. Monitor post-purchase behavior of consumers to gather potential changes in design perceptions, WOM and repurchase intentions.

Research Model



Stimulus



Structure of Data Collection

Data collection covers the differential perceptions of design and how the design dimensions affect various design performance outcomes when consumers' are actually using versus (only) visually observing the product, thus considering different levels and kinds of exposure (Jia, Shiv, and Rao 2014).

T₀: Online perception of the product

First questionnaire which exposed participants to a picture of the stimulus (i.e., the skis) online one day before the product testing started.

T₁: Offline perception including actual product inspection

On the following day, the participants were invited to the skiing area, where they could examine the skis in a neutral room for about 15 minutes. Subsequently, they filled in the second questionnaire with similar scale items.

T₂: Product usage

Participants were invited to test and experience the skis for an average of 4.5 hours and then participate in the final survey.

Sample

- N = 100
- 47% female
- M_{age} = 29, SD = 9.38



Impressions of the data collection can be found here

Results

- The perception of the product design dimension of aesthetics constantly increases from t₀ (M=4.91, SD=1.33) to t₁ (M=5.31, SD=1.18) to t₂ (M=5.66, SD=1.08) with this being statistically significant from t₀ to t₁ (t(99)=4.16, p < .001) and from t₁ to t₂ (t(99)=3.87, p < .001).
- The same is found for the product design dimension of functionality: t₀ (M=4.93, SD=1.27) to t₁ (M=5.49, SD=.99) to t₂ (M=5.98, SD=1.36) with this being statistically significant from t₀ to t₁ (t(99)=4.98, p < .001) and from t₁ to t₂ (t(99)=3.70, p < .001).
- Symbolism shows no significant effect during the three data collection points (t₀: M=2.68, SD=1.32 to t₁: M=2.80, SD=1.47 to t₂: M=2.99, SD=1.71; all p > .01).
- Both performance outcomes (PI, WOM) constantly and significantly (all p < .001) increase from t₀ to t₁ to t₂: Purchase Intention (t₀: M=3.40, (SD=1.51); t₁: M=3.95, (SD=1.54); t₂: M=4.68, (SD=1.66) and Word-of-mouth (t₀: M=3.67, (SD=1.70); t₁: M=4.53, (SD=1.42); t₂: M=5.81 (SD=1.20).



Contact:
Prof. Dr. Nicola Stokburger-Sauer
Department of Strategic Management, Marketing and Tourism

University of Innsbruck – Faculty of Business and Management, Austria
Nicola.Stokburger-Sauer@uibk.ac.at