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# **Attribute Categorization and Layering Effects on Product Design Evaluations**

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### **ABSTRACT**

Although convergence of attributes has been frequently applied as a product development strategy, its effects on consumers' perceptions of product capabilities (PC) and usability (PU), product attitudes (PA) and purchase intentions (PI) have not been sufficiently studied. In this study, I examine how usage of attribute categorization and layering in product design affects consumer attitudes, purchase intentions and perceived product usability and capability in the absence or presence of attribute descriptions. Additionally, this research examines cross-cultural differences of these perceptions by conducting the same study in the USA and Turkey.

This research operationalizes attribute categorization as a screened versus nonscreened interface of a product. These screened interfaces have increasingly been available in marketplace due to and consumers interact with them on a daily basis in a variety of products such as auto dashboards, coffee machines, smart phones etc. In addition to presence or absence of screened designs, increased consumer knowledge about products through presenting attribute information may change their perceptions. Thus, this study employed two independent variables: (1) screened vs. non-screened product designs and (2) presence of attribute information.

I conducted a 2 (design) x 2 (information) x 2 (country) between-subjects design using two products (i.e. a coffee machine and a blender) as the within-subjects stimuli. Design was manipulated by adding a LED screen to the stimuli using Photoshop and information was manipulated by adding attribute information of these products under their picture. 88 American undergraduate students who live in the Midwest and 118 Turkish undergraduate business students who live in Western Turkey agreed to participate for this research in exchange for extra course credit. The stimuli were identical in both countries. Attribute information and post-experimental questionnaire were prepared in English and back translated into Turkish using two judges who are affluent in both languages. Participants first saw the picture of the product and answered related questions and continued the same process for the second product.

Manipulation checks show that both design and information were manipulated successfully (ps<.0001). A MANOVA to analyze the potential impact of having two different products on our dependent variables show that products did not influence the results (ps<.6) and therefore both stimuli responses were collapsed. Overall, MANOVA results show that screened designs produced higher PI, PA and PC but lower PU (all ps<.05). Having attribute information increased PI, PA and PC and lowered PU for screened designs but not for non-screened designs. Turkish participants, presumably have less experience and familiarity with such appliances, had higher PI, PA and PC and lower PU than American counterparts when attribute info presented. American participants had higher PC, PA and PU than Turkish participants while Turks had higher PI than Americans for screened designs. The results also showed a significant three-way

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interaction for study dependent variables. Specifically, Turkish participants had significantly lower PI, PC, PA and PU for screened designs without info while have highest scores for screened designs with info. American participants screened product evaluations did not shift significantly because of the presence of attribute information.

### **ABOUT THE AUTHOR**

Timucin (Tim) Ozcan received his doctoral degree from University of Rhode Island in 2008. He currently serves as an Assistant Professor of Marketing at Southern Illinois University Edwardsville. His research interests focus on understanding how consumers respond to branding and positioning strategies, different product designs, product feature combinations and counterfeit products. His research has been published in Journal of Marketing Theory and Practice, Journal of Product and Brand Management, Journal of Euromarketing and Journal of Retailing and Consumer Services.

