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Do Touch Screen Users Feel More Engaged? the Impact of Touch Interfaces on Online Shopping

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This study examined the potential effects of touch interfaces on online shoppers' purchase-related evaluations. Results showed that using a touch interface led to higher engagement and lower brand information recall. The findings highlight the role of a touch interface as a new online retail cue beyond website design.

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EXTENDED ABSTRACT

During recent years, one of the fundamental changes in on-line user environments is the input device which has moved from a mouse to a touch interface. However, little research has examined users' computer device types as part of online retail environments, and it is important to understand how using a touch interface influences or a mouse differs in online shopping experiences.

In offline retail environments, touch has been an important cue for purchase intentions and attitudes (Peck and Childers 2003). In online user environments, touch (i.e. touching computer interfaces) has a positive impact on perceived ownership (Brasel and Gips 2014) and students' engagement and performance (Enriquez 2010). Engagement leads to higher recall of commercials (Moorman, Neijens, and Smit 2007) and enhances satisfaction, trust, and commitment in a virtual brand community (Brodie et al. 2011). Product involvement level also affects consumer evaluations of products or services (Solomon 2013), however, little is known about how these device types and PIL influence online shopping experiences.

This study proposes a positive association between a touch interface and 1) shopper engagement among low involvement product shoppers and 2) purchase decision measures (product information recall, purchase intentions, product evaluations and satisfaction). The hypotheses also include a mediation effect of engagement between a touch interface and purchase decision measures.

Prior to the main experiment, a pilot study was conducted. The purpose of the pilot study was to determine 1) the appropriate product categories for online browsing and 2) the appropriate design and styles of test websites for the experiment to test in the main experiment Sixty-two undergraduate students participated in a survey to receive course credit. Based on the results, clothing, computers and electronics were among the top five popular product categories that students reported shopping for online. For the website design and styles, students found the e-commerce websites using large visuals and simpler layout relatively pleasing and easy to use in terms of design and usability.

Study 1 had a 2 × 2 between-group design (touch interface and mouse × camera and sweatshirt). 127 college students were recruited through e-mail to participate in experiment sessions at a research lab, where each partitioned desk had a 22-inch touch screen monitor, mouse, and keyboard. All participants were randomly assigned to four conditions of 30–35 subjects. Two conditions browsed a camera website, and each condition used either a touch interface or a mouse. The other two conditions browsed a sweatshirt website, using either a touch interface or a mouse. Product types and website details were decided based on the results of a pilot study and on the findings of previous studies of touch interfaces (Brasel and Gips 2014). Sweatshirts were low involvement products (LOW), whereas cameras were high involvement products (HIGH). After browsing the site, participants completed a questionnaire on engagement, purchase decision measures and a few manipulation checks.

Study 2 also used a 2 x 2 between-group design (touch interface and mouse x high and low product involvement). Experimental sessions were held in the same lab with the same equipment and experimental conditions except for a few minor changes in the questionnaire and procedure. Unlike Study 1, this new study tested a single product category (camera) instead of two while manipulating the product involvement level separately to ensure the role of product involvement and device types is replicated. Two different scenarios were used to manipulate the product involvement level, and each scenario was designed to induce either high (HIGH) or low involvement (LOW) toward the test product category.

Study 1 found a negative effect instead of the positive impact of using a touch interface as proposed. Touch interface users recalled brand names worse than mouse users, and this effect was significant among camera shoppers (HIGH) only (F(1, 123) = 5.67, $p < .02$). Touch interface users were more engaged with their shopping than mouse users. As proposed, this effect was significant among sweatshirt (LOW) shoppers only (F(1, 123) = 5.70, $p < .02$). Higher shopper engagement led to higher satisfaction with shopping, higher purchase intentions, and more positive product evaluations of product design and product availability ($p < .05$). However, engagement level was not significantly associated with product information recall or product evaluation of prices, resulting in no significant mediation effect of engagement ($p > .05$).

The significant findings from Study 1 were all consistent in Study 2 as well. Using a touch interface resulted in less accurate brand name recall than mouse users, and it was significant in the HIGH condition only as in Study 1. The positive association between touch interface users and engagement was also consistent in the LOW condition, and engagement level predicted product evaluation, purchase intentions, and satisfaction except for information recall.

In addition to the findings replicating the previous outcomes, Study 2 found several new effects as well. Along with brand name recall, touch interface users also did not recall price information as accurately as mouse users (F(1, 131) = 4.50, p < .05), and this effect was significant in the HIGH condition only as in brand name recall. There was an additional main effect of touch interface, which resulted in higher purchase intentions than mouse users (F(1, 131) = 10.45, $p < .002$). Finally, according to the Hayes' PROCESS macros (Hayes 2013), the mediation effect of engagement between touch interfaces and purchase intentions was significant. The effect size was within the 95% confidence interval that does not contain zero. The mediation effect of engagement was not significant in other associations. In both Study 1 and 2, the product involvement manipulation was performed successfully according to the manipulation check.

The findings of this study highlight the need to view a touch interface as part of online retail cues in addition to the traditional cues such as website design. The study also suggests that online retailers need to be aware of the device type that customers use to ensure the optimized shopping experience for different product categories as the device type matters to product information recall and purchase intentions.

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