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Abstract

This paper investigates the effects of haptic inputs on consumers' preference for large assortments after selecting an option from different assortment sizes. Our experiments reveal that physically touching and imagining touching (i.e., haptic imagery), compared to the control (i.e., no-touch) condition, eliminate adverse effects caused by large assortments. A moderate, but not high, level of touch frequency is required to reduce perceived difficulty and increase preference for large assortments when being exposed to large (vs. small) assortments. These findings expand our current understanding of the literature on haptic and choice overload.

Keywords

haptic, inputs, mitigate, can, choice, overload?

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Abstract: This paper investigates the effects of haptic inputs on consumers' preference for large assortments after selecting an option from different assortment sizes. Our experiments reveal that physically touching and imagining touching (i.e., haptic imagery), compared to the control (i.e., no-touch) condition, eliminate adverse effects caused by large assortments. A moderate, but not high, level of touch frequency is required to reduce perceived difficulty and increase preference for large assortments when being exposed to large (vs. small) assortments. These findings expand our current understanding of the literature on haptic and choice overload.

Although this has long been a controversial topic, choice overload research states that choosing from large assortments can result in negative attitudes and behaviors (Chernev, Böckenholt, & Goodman, 2015; Scheibehenne, Greifeneder, & Todd, 2010). The literature on choice overload has now shifted from providing empirical evidence of the existence of the phenomenon to finding moderators that determine when choosing from large assortments may or may not result in negative effects (Chernev, Böckenholt, & Goodman, 2010; Chernev, et al., 2015).

While it is common to see retailers displaying abundant products in stores which may challenge consumers to find the best possible item, it is equally common to see consumers physically touching these products before buying. Despite happening concurrently often, the influences of touch when consumers select an option from large assortments is yet to be investigated. In fact, touch may have an important role in eliminating the difficulty of choosing when consumers face numerous options. The direct nature of touch may help consumers feel having more direct control over their decision-making. This is because touching an object increase perceptions of ownership (Peck & Shu, 2009), and changing the perceived ownership could change the locus of control (Brasel & Gips, 2014). Thus, this paper proposes that, after being exposed to a large assortment of numerous options, consumers with an appropriate level of haptic inputs may rely on the heightened perceived control to inform their judgments.

Across three experiments, we support the moderating role of touch in affecting participants' judgments and decision-making when they select an option from large versus small assortments. Further, we show that perceived control mediates these moderating effects of haptic inputs.

In Experiment 1, we show that having an opportunity to touch reduces the negative effect of increasing assortment sizes on the preference for large assortments. Participants (n = 110) chose a key ring from a large (24) or small (4) assortment, knowing that they would

have a chance to receive the one they picked via a lucky draw. While being presented with the assigned assortment, participants were also asked to either touch or not to touch the keyrings. Results of a 2 x 2 ANOVA revealed a significant interaction between assortment size and haptic input ($F(1, 106) = 7.487, p = .007$). After choosing from a large (vs. small assortment), participants in the no-touch condition reported a lower preference for large assortments ($M = 3.14$ vs. $M = 5.22, F(1, 106) = 21.563, p < .001$). However, such result was not significant for participants in touch condition ($M = 4.30$ vs. $M = 4.64, F(1, 106) = .599, p = .441$).

In Experiment 2 ($n = 199$), we support that imagining touching also results in similar consequences to those of actual touch, controlling for individual differences in the need for touch (Peck & Childers, 2003). Results of a 2 (assortment size: small, large) x 3 (haptic inputs: touch, haptic-imagery, no-touch) ANCOVA revealed a significant two-way interaction ($F(2, 192) = 7.851, p = .001$). In the no-touch condition, participants choosing from a large assortment reported a lower preference for large assortments than participants choosing from a small assortment did ($M = 3.48$ vs. $M = 5.25, F(1, 192) = 17.171, p < .001$). In contrast, for both haptic-imagery and touch conditions, there were no significant differences (all $F < 1.475$, all $p > .226$). The effect of individual differences in the need for touch on the preference for large assortments was not significant ($F(1, 192) = .296, p = .587$).

In Experiment 3 ($n = 234$), we show evidence that perceived sense of control (Lachman & Weaver, 1998) mediates the moderating effects of haptic inputs on perceived difficulty and preference for large assortments. We varied the level of touch frequency (i.e., no-touch, touch-a-few-items, touch-all-items) while participants chose a pen from a large (30) or small (6) assortment. Results of a 2 x 3 ANOVA revealed a significant two-way interaction on perceived control ($F(2, 228) = 8.158, p < .001$). Only participants in the touch-a-few-items condition reported a higher level of control when choosing from a large (vs. small) assortment ($M = 11.01$ vs. $M = 9.82, F(1, 228) = 12.914, p < .001$). For participants in the no-touch and touch-all-items conditions, the differences were not significant (all $p > .13$).

Results of a 2 x 3 ANOVA reveal a significant interaction between assortment sizes and haptic inputs on perceived difficulty ($F(2, 228) = 3.676, p = .027$). For participants in the no-touch condition, choosing from a large assortment, relative to choosing from a small assortment, was more challenging ($M = 3.25$ vs. $M = 2.39, F(1, 228) = 7.201, p = .008$). However, such result was not significant for participants in touch-a-few-items condition ($M = 2.38$ vs. $M = 2.54, F(1, 228) = .222, p = .638$). Yet, for participants in the touch-all-items condition, choosing from a large assortment, relative to choosing from a small assortment, was more challenging ($M = 2.76$ vs. $M = 1.76, F(1, 228) = 8.905, p = .003$).

Regarding the preference for large assortments, for participants in the no-touch condition, the number of people who preferred a set of 30 pens when choosing from a small

assortment (53.7%) was higher than when choosing from a large assortment (30.0%; $\chi^2(1, n = 81) = 4.653, p = .031$). However, in the touch-a-few-items condition, there was no significant difference (43.6% vs. 48.7%, $\chi^2(1, n = 78) = .206, p = .650$). Yet, in the touch-all-items condition, the number of people who preferred a set of 30 pens when choosing from a small assortment (44.7%) was higher than when choosing from a large assortment (21.6%; $\chi^2(1, n = 75) = 4.507, p = .034$).

A logistic regression was performed to ascertain the effects of assortment size, haptic inputs, the interaction between assortment sizes and haptic inputs, and perceived control on the likelihood that participants prefer large assortments. The logistic regression model was statistically significant ($\chi^2(6) = 20.813, p = .002$, Nagelkerke $R^2 = .115$). Results also revealed that touch ($p = .007$), assortment size ($p = .016$), and their interaction ($p = .017$) significantly affect the preference for large assortments. Controlling for these factors, the effect of perceived control on preference for large assortments remained significant ($p = .004$).

This present work is the first to introduce the moderating influences of haptic inputs to choice overload literature. Our findings demonstrate that when touch is allowed, at a moderate frequency level, or when there are haptic imagery cues, the negative effect of choice overload on the preference for large assortments is mitigated.

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