Direct and Indirect Signals of Demand in Retail Displays

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Retail display strategies impact how consumers interpret product availability as a signal of demand. Uncertain consumers make antithetical inferences about product popularity from product availability when observing direct versus indirect signals of demand in a product display, which ultimately leads to paradoxical product choices.

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EXTENDED ABSTRACT

Consumers use scarcity cues as signals of quality and popularity to guide their consumption decisions (Caminal and Vives 1996; Jeong and Kwon 2012; Van Herpen, Pieters, and Zeelenberg 2009; Verhallen 1982). A well-documented scarcity cue is that of empty shelf space, which provides a visual signal of product demand, leading consumers to infer that a product’s limited availability is a direct result of prior consumers’ purchases (Van Herpen, Pieters, and Zeelenberg 2009; Van Herpen, Pieters, and Zeelenberg 2014). However, not all retail display strategies allow for the observation of direct signals of demand. Without direct signals of demand, it is not clear how uncertain consumers react to and utilize product displays as a source of information.

We investigate this question by exploring how consumers interpret product availability in an efficient assortment retail environment characterized by demand-based shelf allocations (Jenkins and Kornfeld 2003; Kurt Salmon Associates 1993) and fully-stocked shelves (Convenience Store Decisions Staff 2011; Flick 2012) which do not allow for the observation of direct signals of demand. We propose that when examining the aisle of an efficient assortment retailer, consumers will use allocation quantity as a cue of consumer demand. Efficient assortment retailers allocate more shelf space to popular products (Broniarczyk, Hoyer, and McAlister 1998; Curhan 1973; Kurt Salmon Associates 1993), and we expect that consumers will infer those highly available products displayed to be high in popularity. In this manner, we believe that consumers will interpret retailer product allocation quantities as an indirect signal of consumer demand by basing their assumptions on retailers’ experience and sales expectations.

Overall we show that retailer inventory strategies dictate whether consumers can observe direct or indirect signals of demand from product displays, which ultimately lead to contrasting interpretations of product popularity from displayed product availability, impacting product choice. This work contributes to a growing understanding of consumer inferences from product displays and serves to inform both retailers and marketers about the consequences and compatibility of their inventory and signaling strategies.

To examine how retail environment impacts consumer choice, 197 Mturk participants viewed one of two displays of masked pasta sauce brands and select which sauce brand they would choose to purchase. The direct signal of demand display condition featured a shelf containing two brands with an equal number of potential shelf facings, yet one brand exhibited empty space, where a few jars had been removed, creating a cue of scarcity. The indirect signal of demand display condition featured a fully-stocked shelf of two sauce brands with one of the brands having a greater number of facings than the other; this condition is consistent with an efficient assortment inventory strategy. Across both conditions, we refer to the brand with the highest number of facings as being more available and the brand with the least number of facings as less available. Results featured a main effect of display condition on brand choice ($\chi^2(1) = 7.03$, $p < .01$); consumers in the direct signal condition were more likely (61%) to choose the less available brand while those in the indirect signal condition preferred (58%) the more available brand.

To further the generalizability of our effect of retail environment on choice, we conducted a study where participants made a real choice from an assortment of sodas. 78 business students filled out a short survey and were invited to select a free soda from an assortment of two brands of strawberry Japanese Ramune soda. The focal product was chosen under the assumption that subjects would not have prior brand associations; the two soda brands had similar bottles and colors to deter the potential for either brand garnering extra attention (Janiszewski 1998). Students chose from either a soda display arranged with a direct signal of demand (empty space) or an indirect signal of demand (fully-stocked but with disparate allocation quantities). Complementing the results of study 1, display condition significantly affected soda brand choice ($\chi^2(1) = 5.23$, $p < .05$); participants in the indirect signal condition were more likely (67%) to choose the most available brand, while participants in the direct signal condition were more likely (60%) to choose the least available brand.

We then performed a mediation study to show that the information consumers were gaining from product availability in our conditions was indeed informative of product demand and driving choice. Using the same stimuli as study 1, 124 Mturk participants saw a product display exhibiting either a direct or indirect signal of demand; participants then specified how popular they believed each sauce to be and indicated their preferred choice. A main effect of choice between display conditions was confirmed ($\chi^2(1) = 16.86$, $p < .01$) as well as significant differences in perceived popularity of the more ($F(1,116) = 35.81$, $p < .01$) and less ($F(1,116) = 5.78$, $p < .05$) available brands between display conditions. A mediation analysis showed that popularity ratings of more available and less available brands successfully mediated the link between display condition and product choice; consumers in the indirect signal condition perceived the more available brand to have high popularity which induced choice of that brand while consumers in the direct signal condition perceived the less available brand to have high popularity, driving choice of the less available brand.

Lastly, we tested the strength of direct versus indirect signals of demand. 114 undergraduates viewed a display of pasta sauces containing either an indirect signal of demand or mixed signals of demand. The mixed signals of demand condition contained both a direct demand cue of empty shelf space and an indirect demand cue of disparate allocation quantities; cues were arranged in opposition to each other to test the strength between the two signals. Display condition had a significant effect on brand choice ($\chi^2(1) = 7.03$, $p < .01$). Participants in the indirect signal condition chose the more available brand more often (66%). In the mixed signals condition, participants were more likely to choose the less available brand (59%); this result illuminates consumers’ tendency to defect to direct signals over indirect signals of demand.

REFERENCES


