Research Design

02: Review Eye Tracking Study; Questions and Research; Hypotheses

Scott Spencer | Columbia University

Check-in, questions about anything so far

Critical review of the eye tracking study

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Consumer attention to price in social commerce: Eye tracking patterns in retail clothing☆

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ABSTRACT

Although the literature establishes the importance of pricing in relation to traditional retailers and e-commerce, few studies consider its importance in social commerce. This study uses eye tracking to examine observational behavior as fixation time on price and the total fixation time on a Facebook page that displays clothing products. This study employs interventions both directly related (via different prices of clothes and price visibility) and indirectly related (via human models vs. mannequins) to the price label. Results show a U-shape function for fixations on price and total fixations on a page with respect to price for females who buy for themselves and males who buy for their partners. This finding points not only to the utilitarian position of price, but also to its informational role. This study introduces a conceptual framework for further research, focused on the mechanisms through which social commerce can lead to increased sales and profits.

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1. Introduction

Social commerce is a business activity—social media platforms such as Facebook, Twitter, Instagram, and Pinterest mediate this activity and allow people to participate in the marketing, selling, comparison, buying, and sharing of products and services (Zhang, Zhou, & Zimmermann, 2013). Currently, social media has the potential to bring direct economic value to retailers as a result of transaction-based social commerce activities. For example, a Facebook storefront provides retailers with an additional outlet for promotion and sales opportunities and many retail-clothing companies have begun to exploit this channel to sell products (Kang & Johnson, 2015), which gives rise to "f-commerce." F-commerce is a form of social commerce that by definition uses Facebook as a platform to facilitate and execute sales transactions (Kang & Johnson, 2015).

Although clothing retailers have adopted social media such as Facebook to a great extent as an extra promotional screen and even as a sales platform, the clothing industry—in contrast with other sectors—has been slower to adopt online commerce in general (Sender, 2011). Consumers often characterize clothing as a "feel-and-touch product" that requires high sensory evaluation and/or trial to judge its quality (Kim & Kim, 2004), and for this reason, online clothing shopping environments are understandably less efficient than traditional retail stores in the provision of such opportunities to the consumer. Such limitations of online environments would increase the relative importance of those attributes attached to a product offer that are more perceptible to the consumers' eyes. Price, as one such attribute, attracts consumers to online stores and is among those attributes that ensures they return (Reibstein, 2002). However, with regard to the overall relationship between price and demand, the findings in the literature are not straightforward (e.g., Gijsbrechts, 1993; Somervuori, 2014). The economics and marketing literature widely acknowledges price to have attractive as well as aversive effects on demand (Gaur & Fisher, 2005; Rao, 2005; Rao & Monroe, 1988), and considers that price affects consumer choice both as a budget constraint and as a signal of subjective quality (Sigurdsson, Foxall, & Saevarsson, 2010; Zeithaml, 1988). Studies show that price has a negative effect on perceived value and willingness to buy (Dodds, Monroe, & Grewal, 1991). However, pricing can also increase both perceived effectiveness and the actual efficacy of products, as Shiv, Carmon, and Ariely (2005) demonstrate. This lack of consistency in the effects of price on consumer behavior warrants further empirical study in an online environment, especially as pricing becomes a more salient product attribute as customers cannot touch,

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Structure of the research paper?

Purposes?

Descriptions of earlier work?

Design of the experiment?

Variables?

Types of measurements?

Sample sizes?

Results?

Inferences and limitations?

Identifying research questions that inform impactful action

Recall that a good research question or study has:

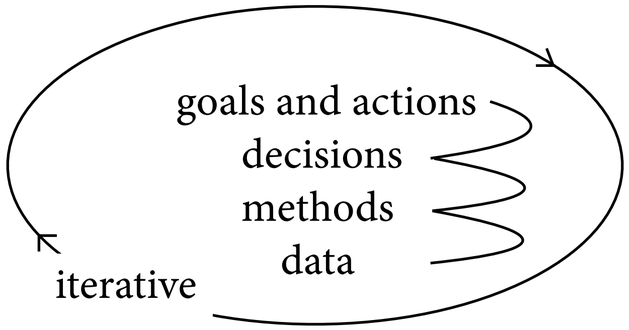
The new information obtained is *measurable*.

It is possible to *gather* this new information.

The results obtained through analysis will lead to clear *conclusions*.

The strategies supported by the results would be *actionable*.

The selected strategies could lead to meaningful *improvements*.



Exercise: ideating research to inform business concerns

A retail clothing company tests out many new fashion products each year. Some are successful, and others fail. To maximize profit, the ideal plan for the company includes:

> Forecast the sales of each product as accurately as possible.
>
> Plan the initial inventory accordingly.
>
> Respond to early trends in sales by changing subsequent production.

How can we design research studies to better understand and improve this process?

What research projects may inform or enable the above hypothetical company to realize its goals? Let's see how many we can come up with. With each idea, address its characteristics, linking data to decision. Use pre-lecture notes to get started.

Hypotheses

Null and alternative hypotheses, typical notation

$$H_0 : \mu = \mu_0$$

$$H_A : \mu \neq \mu_0$$

Simple examples

$$H_0 : \mathbb{E}(P(\text{flip} = \text{heads})) = 0.5$$

$$H_A : \mathbb{E}(P(\text{flip} = \text{heads})) \neq 0.5$$

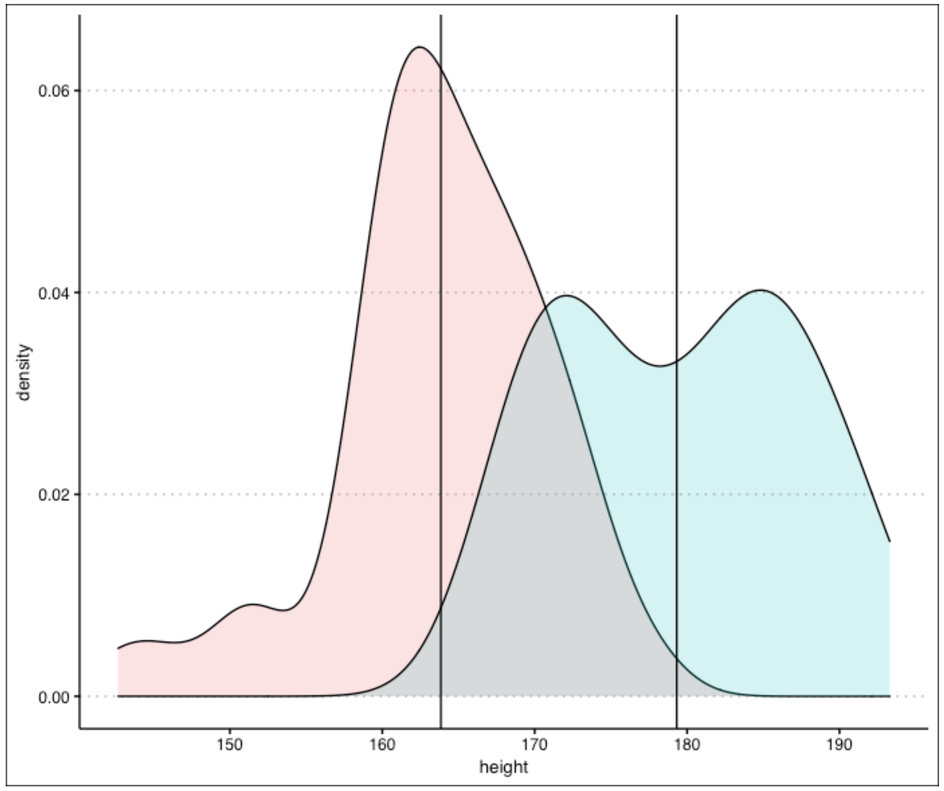
$$H_0 : \overline{\text{height}}_{\text{men}} = \overline{\text{height}}_{\text{women}}$$

$$H_A : \overline{\text{height}}_{\text{men}} \neq \overline{\text{height}}_{\text{women}}$$

Example, recall our random sample of heights in NYC

Sample mean for both groups,

male	x_bar
FALSE	163.8453
TRUE	179.3198



How do we decide whether to reject H_0 in favor of H_A?

$$H_0 : \overline{\text{height}}_{\text{men}} = \overline{\text{height}}_{\text{women}}$$

$$H_A : \overline{\text{height}}_{\text{men}} \neq \overline{\text{height}}_{\text{women}}$$

We need some kind of test!

A general procedure for a statistical test

Assume an appropriate *probability model* to describe the behavior of the random variable under investigation.

Define a *null* hypothesis and an *alternative* hypothesis that permits meaningful conclusions.

Specify a *test statistic*.

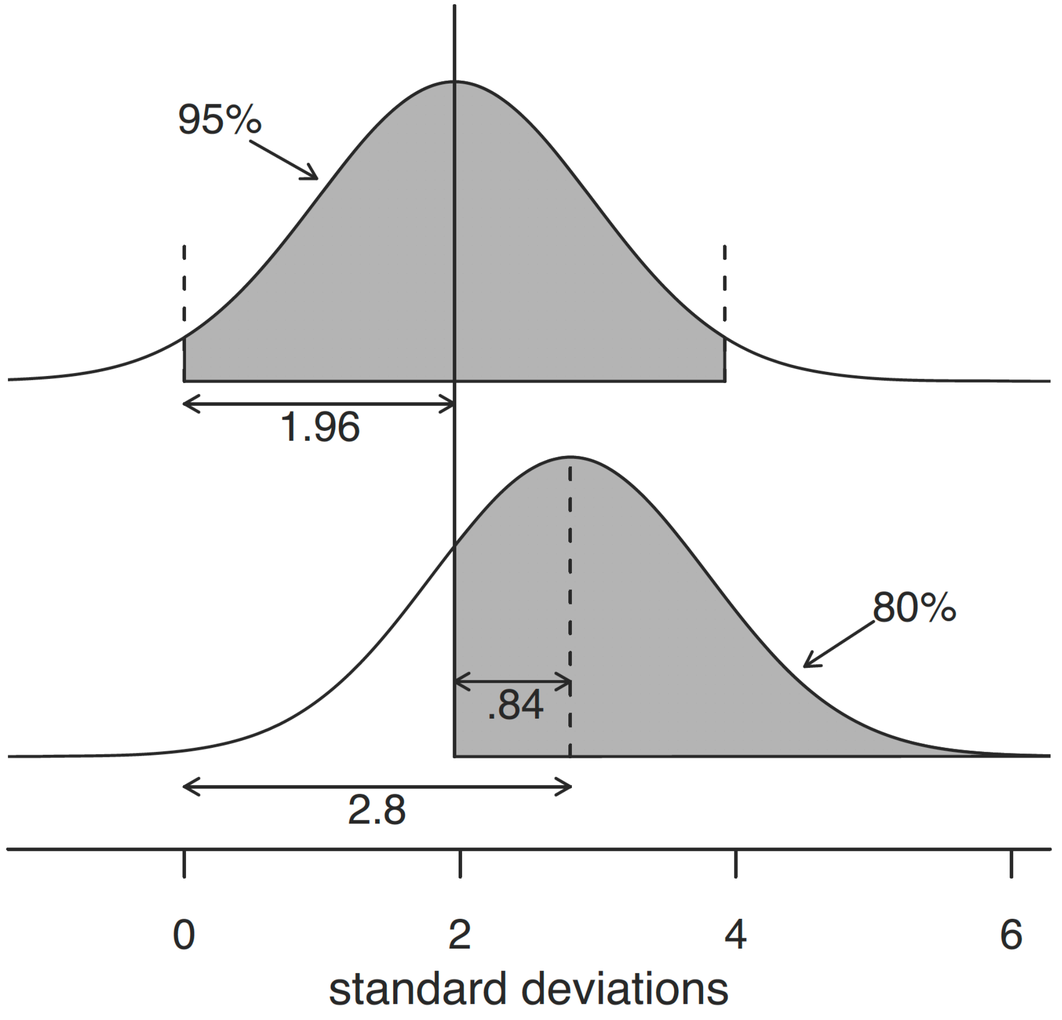
Choose a *level of significance* α for the test.

Determine a *distribution* and *critical region* of the test statistic.

Calculate a value of the test statistic from a random sample of data.

Accept of reject H_0 by comparing the calculated value of the test statistic with the values defining the critical region.

Generic normal distribution, distance to zero, at a 95 percent *confidence interval* and 80 percent *power*



Technical questions, coding, related information in other classes …?

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