

**Research Article***Copyright © All rights are reserved by Shubhapriya Bennur*

Consumers' Attention Allocation to Branded Vs Unbranded Products Online

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Eye tracking technology has rapidly advanced in recent years, giving researchers the capacity to track consumers' attention while they shop online. To understand the factors influencing the decision-making while consumers choose branded or unbranded products, this paper presents research using eye tracking technology to assess consumers' attention allocation while they shop online. The research strives to gain knowledge of consumers' preferences of branded versus unbranded products, and the results have implications for both retailers and brands. The study employs eye-tracking data to quantify the attention given to both branded and unbranded products, enabling researchers to identify the decision-making cues and drivers of purchase decisions. This paper aims to provide firms and other stakeholders with insights into the factors affecting and driving purchase decisions online, and it will be of interest to marketers and decision-makers alike.

Introduction

As online shopping has increased in recent years, it has become critical for business owners to know how online consumers behave. This understanding is necessary in order to provide a satisfying buying experience. Tracking, reading, and perception of online material by consumers must be considered. While shoppers in traditional storefronts can physically experience merchandise, online shoppers rely on visual cues such as photographs and graphics that appear on web pages of online retailers [1]. While product descriptions and texts provide significant product information, visual cues are important to online shoppers when making purchasing decisions [2,3]. This reliance on visual information raises questions about how online shoppers view product pictures, graphics, and other visual cues, and how these factors can influence their purchase decisions. Given the growing popularity of online shopping, researchers have sought to understand how web page contents impact consumer behavior [4].

The influences of various features of apparel web pages, such as banner ads, positioning of promotional ads on the website [4] and innovative designs [5], have been studied. Additionally, research has examined the impact of fashion advertising and product pricing [6]. However, little attention has been given to how consumers utilize different visual cues, such as photographs and graphics, during the decision-making process. Consequently, some studies [5,6] have called for further research to discern which product features attract consumers' attention and subsequently influence purchase decisions.

Consumers can also utilize information displayed on the product page as they make purchasing decisions. How shoppers consume the product page, in whole and in part, is critical to understand. Therefore, this study aims to explore how consumers allocate their attention to product images and other features on a product page. Apparel is one of the most popular products for online shopping. Therefore, this study seeks to investigate how

online users track and evaluate apparel products during the online shopping experience.

Past research has focused on descriptive statistics to examine consumer activity regarding advertising and the interaction of individuals with the computer [7,8]. However, more recent research suggests that analyzing consumer eye movement data provides a deeper understanding [9]. By studying eye-tracking data, we can gain insights into the process of consumers' online engagement, focusing on visual cues instead of simply identifying important product characteristics in consumer decision-making. Furthermore, by combining eye-tracking data with quantitative data, we can track variations in consumer behavior and assess how important various product information really is in relation to consumer preferences.

Theoretical background/Literature review

Clothing is often described by consumers as a "touch-and-feel product" because its texture and quality are evaluated through sensory experiences [10]. As a result, online clothing shopping environments are considered less effective compared to physical retail stores. To compensate for these limitations, it is necessary to focus on other product attributes that are more visually noticeable to consumers. One such attribute is the product image, which attracts consumers to online stores [6].

In addition, product presentation plays a crucial role in online clothing merchandising. Clothing is displayed through various means, such as product illustrations, models, or mannequins. The impact of these images and endorsements from celebrities on the behaviors of shoppers, in both online [11,12] and offline [13,14] environments, has been studied. Some studies found that human faces, more than any other visual stimulus, attract consumers' visual attention [15], while others have looked at the effect of mannequins on shopping behavior [16-20]. These latter studies found that the inclusion of a mannequin in a visual clothing display can influence purchase intention, store foot traffic, and consumers' perceptions of themselves in that clothing.

Other features of the product page, such as color in the image, product features, review stars, price, and product description, can vary in significance for shoppers [9]. These characteristics can impact consumers' attention, even if they are not actively searching for such information.

These features of a product page can be considered as one of two types, either experiential (such as price, an average star rating, and review size) or a regular feature (such as product description and review script) [21,22]. An experiential feature, which is usually displayed alongside product information, is easier to process as it involves numbers or star ratings, allowing consumers to notice and process it without having to read the text reviews [21]. On the other hand, a regular feature demands more concerted effort as it needs to be located and understood from the review script [22] or the description of the product.

When shoppers peruse the product page, they are exposed to both experiential and regular features and engage in both regular and experiential processing [22,23]. The elements that attract a

shopper's consideration are likely those that the shopper considers important for making a decision [24].

Another comparison can be made between product-related attributes (such as color, design, and product picture) and page-related information (e.g., brand, product description, price, reviews, average rating, and reviewer identification). Specific design features of a product may offer opportunities to modify features, gauge interest, and predict product success, emphasizing the importance of measuring the perceived desirability of these product features. Some eye-tracking studies on how advertisements were processed found that brand received the highest number of eye fixations, followed by text and pictures [8]. Visual cues, such as product visuals and pictures, also play a role in consumers' purchase decision-making alongside textual information [3,25]

All these features of a product page can influence how shoppers process information [26], and in turn, they can affect how products are evaluated. Studies suggest that displaying "verified purchase" on a web page can increase the probability of purchase [26]. and the usefulness of product reviews can signal positive evaluations by other consumers, influencing consumers' decisions [27]. This, therefore, can positively influence the opinions of shoppers about both the product and the reviewer [28]. Additionally, product characteristics such as design innovation, brand name, and price can also impact purchase decisions [9].

The focus on visual information in online shopping raises questions about how online shoppers view product design attributes as displayed in pictures, graphics, or other visual cues and how this view affects their purchase decisions. It is essential to explore how shoppers gather and sort all of the product design attributes, as well as to determine the importance of individual features of the product page. The following research questions are therefore formulated:

RQ1. What is the level of consumer attention on the product page of branded and unbranded jeans products?

RQ2. What is the comparative ranking of specific product page attributes regarding (a) the number of visits to the page and (b) the time spent on each product attribute of branded and unbranded jeans products?

Brand versus Unbranded

Cue utilization theory applied to a shopping scenario means that shoppers use a variety of cues when considering products to determine quality and whether or not to make a purchase [29]. This theory [30] suggests that shoppers use visual cues to reduce insecurity and risk when considering a purchase [31].

Previous research has shown that a crucial factor in a shopper's purchase intention is the concern for the quality of the product [32]. According to Nakhata and Kuo [32], a shopper's search for cues to assist in the decision-making process can involve both intrinsic and extrinsic cues. Those elements that are integral to the product, such as materials or ingredients, are intrinsic cues, while elements that are external to the product, such as brand or product presentation, are extrinsic cues.

In online shopping, trust is important, especially in a shopper's first experience with a particular vendor. A first-time shopper might secure some level of trust by relying on indicators to make some interpretations about the unknown brand [33]. Previous research has studied a number of indicators of quality or risk, including specific website features, reviews, privacy disclosures, return policies, assurances of security encryption, and statements regarding refund guarantees [34-37].

Other studies have indicated that trust and a sense of value and quality may come from other features, such as branding [38,29,39]. An Ernst & Young marketing report revealed that 69% of shoppers surveyed said that brand name significantly impacts their online purchases. However, few studies have examined brand name use as an approach to build trust in online shopping.

Sensory characteristics, in particular, have been found to influence shoppers' perceptions and their intent to purchase [40]. Branded products help to create shopper expectations for sensory characteristics, such as shapes and colors, which then create feelings toward the products [41].

One study assessing shoppers' reactions to branded versus unbranded items found a positive affiliation for branded products. Hence, brand can stimulate positive emotions toward consumption, especially when the shopper's expectations are satisfied with the message communicated [42]. The conventional belief in many cases is that branded items have superior quality and longevity [43,44] and in some cases branding is necessary for creating perceived quality [45]. In addition, behaviors such as positive word of mouth, commitment to paying higher prices, and brand loyalty are prevalent for shoppers who ascribe to a brand [40,46,47]. In view of the literature and cue utilization theory, we anticipate that extrinsic cues will serve as quality indicators and ease the concern of risk for shoppers seeking to acquire apparel online. Therefore, the following hypotheses are proposed:

H1: Perceived product quality will be higher for branded, versus unbranded, apparel.

H2: Shoppers will be more likely to have favorable purchase intentions to branded apparel versus unbranded alternatives.

Visual Attention

Through research on consumer behavior, the understanding of the use of visual cues in determining purchase intention has improved. Findings indicate that eye movements of shoppers can provide unbiased information on their attention and lead to determinations on what shoppers find attractive, which provides additional information on how they make their shopping choices [48]. Eye tracking is a tool that enables researchers to track and record eye movements of shoppers viewing websites. The resulting information provides gaze patterns, gaze plots, and heat maps. This methodology has been used in multiple studies to gain understanding of shopper perception and visual search behavior [49]. When eye tracking is used simultaneously with quantitative data collection, such as from a questionnaire, it provides a better understanding of consumer decision-making.

In most cases, shoppers complete two visual searches of a website, such as attention distribution and processing of information [50]. The visual search's effectiveness and efficiency depend on the ease of information processing. Both the content (e.g., visuals, words, labels, and logos) and affordances (e.g., ease of navigating) play a major role in information processing. Once a shopper has successfully completed both stages of the visual search, the shopper can make a purchase decision. One eye-tracking study found that packaging of chocolate influenced the buying decisions of young shoppers and that considerable attention was given to the brands on the packaging [51]. Similarly, Maslowska, et.al. [9] conducted an investigation of how shoppers use product pages. Study participants reviewed the product pages of five brands of a product with which they either did or did not have experience. The researchers found a significant difference in the attention given to various page features for experienced and unexperienced products. This finding suggests that visual attention often leads the processes that help a shopper make a purchase choice [52] [3] and that viewing patterns differ for various products.

Another study examined the attention given in the consumption trend known as "mix-and-match" and in the brand recognition of luxury fashion items. The study's findings indicated that shoppers give attention to different cues when considering fast fashion products versus luxury brands [53]. That is, when shoppers are presented with the mix-and-match apparel approach of luxury and fast fashion brands, luxury brands are more recognizable when paired with fast-fashion products than when luxury brands are presented alone. Also, study participants gave more attention to the luxury brand logo than to the actual product. This research indicates that more study is needed to understand shoppers' cognitive responses to both branded and unbranded items. In this study, therefore, visual attention given to branded and unbranded items will be tested with the following hypothesis:

H3: Visual attention (measured by total fixation duration) will be higher for branded (as opposed to unbranded) products.

Methodology

The study participants were recruited from the university's subject-pool of individuals 18 years or older and with normal or corrected-to-normal vision. To begin, 80 students participated. Five students' data were excluded due to problems with the eye-tracker calibration (i.e., accuracy scores < 90%). The final sample, therefore, consisted of 75 students (mean age 22.66, SD 2.58, 100% female). For an eye-tracking study, this sample size was not unusual; a recommended sample size is 74, and the median size is 60 [54]. Participants were told to look at five different product pages of well-known brands and five different product pages of unknown brands (i.e., existing brands but unfamiliar in the country of research). Participants were given time to become familiar with the structure of the pages and to be able to examine attention patterns. Different brands were included so that the results were not biased by a specific brand. Jeans was chosen as the product category because it is a commonly worn apparel item by all age groups and a highly versatile garment that can be found in a wide variety of styles and

price points. Additionally, jeans are often used as a benchmark for comparing brands or product lines, as there are a number of well-established norms and expectations within the marketplace. By examining participants' eye-tracking data in response to both well-known and unknown brands of jeans, the study gained insights into how consumers assess and evaluate products across a range of criteria, from visual design to product features and pricing.

Mock Product Pages

Mock product pages were created for each branded and unbranded product to mimic the actual brands (five branded and five unbranded). Each mock product page consisted of the brand name, product pictures, review highlights (pros & cons), average number of stars, total number of reviews, product price, product description, fit & sizing, and review snapshot (stars that were assigned by the reviewer). The mock product pages were created using pictures and actual product information available online. The content of the review snapshots was similar, and the snapshots were about the same size and of the same emotion (four to five stars). Care was taken to make the mock product pages similar in review features and other elements so that the focus was on how shoppers attend to product pages before they make purchase decisions, not to observe the effects of these features on particular outcomes. Therefore, because these elements were representative of an actual product page, the study could observe how frequently each was visited and how much attention each was given. As a result, an area of interest (AOI) was created for each element of the mock product page.

Procedure and Measurement

This eye-tracking study was administered in a laboratory setting. After providing consent, participants were allowed to navigate

on a desktop computer equipped with Tobii X30 eye tracker. The study began with eye-tracker calibration. Then, each participant navigated the product pages for approximately 10–15 minutes and responded to questions pertaining to purchase intentions. Eye fixation, gaze points, and revisits were recorded and analyzed. An eye fixation indicates a perceived point of interest, and the length of a fixation indicates the cognitive complexity of the information being acquired. Higher/lower fixation rates on various product pages indicate which features are more/less important in product evaluation and intention to purchase [55]. The two measures included in this study (gaze and fixation) provided information on how a shopper's eyes navigated a product page and gathered data as they looked for information. Tobii Studio software was used to analyze the AOIs for visual attention. Total fixation duration within an AOI was recorded to the millisecond. Number of revisits provided information on how many times a participant's gaze returned to a particular spot within an AOI, which aids in examining which areas repeatedly attracted attention.

A five-point Likert scale with 1 being "Not at all likely" and 5 being "Extremely likely" was used to measure purchase intentions. After participants had viewed the stimulus in the eye-tracking study, participants were asked how likely it would be that they purchase the apparel. Then, as a quality assessment question, participants were asked which jeans (branded or unbranded) were of high quality or if they detected a difference.

Results

The eye-tracking data was analyzed by creating nine AOIs on the product page (Table 1). The total time spent gazing at each AOI and revisits were recorded. The descriptive statistics in Table 1 respond to RQ1, which asked what is the level of consumer attention on the product page of branded and unbranded jeans products.

Table 1: Descriptive statistics for unbranded and branded products.

AOI	Participants	Number of visits	Total time spent
	(Percentages)	(Average count)	(Average ms)
Unbranded product			
Size chart	77.02	1.26	2045.78
Price	90.54	1.74	4579.34
Brand name tag	35.13	1.02	1578.89
Product description	95.94	1.25	12365.72
Color	55.4	1.73	5696.28
Review snapshot	97.29	1.12	1168.9
Review text	40.54	1.16	13375.96
Product picture	100	2.11	5432.38
Material & care	72.97	1.15	3456.9
Branded product			
Size chart	81.08	1.83	2788.65
Price	85.13	1.47	4094.38
Brand name tag	95.94	1.7	3684.2
Product description	60.81	1.04	6945.78

Color	98.64	1.61	7845.27
Review snapshot	66.21	1.1	935.9
Review text	39.18	1.06	4578.34
Product picture	100	2.7	6578.69
Material & care	50	1.24	2435.6

The nine AOIs most visited by participants in branded jeans were, in descending order, product picture (100%), color (98.64%), and brand name tag (95.94%; Table 1). In unbranded jeans, the AOIs most visited by participants, in descending order, were product picture (100%), review snapshot (97.29%), and product description (95.94%) [56].

For unbranded jeans, the participants spent the most time

looking at review text (13375.96 ms), product description (12,365.72 ms), and product picture (5432.38 ms). For the branded jeans, participants spent the most time attending to product color choices (7845.27 ms), product description (6945.78 ms), and product picture (6578.69). The AOIs indicated the highest number of visits in both branded and unbranded product conditions (Table 2).

Table 2: Anova test.

AOI	Unbranded product				Branded product			
	Sum of Squares	Mean square	F- statistic	P- Value	Sum of Squares	Mean square	F-statistic	P-Value
Size chart	138175	69087	1.00	0.499	875319	437659	127.08	0.007**
Price	58862	29431	1.02	0.073*	28191	14095	960.02	0.001**
Brand name tag	97987	48993	1.01	0.389	145724	72862	18.72	0.04**
Product description	139817	69,908	38.07	0.51**	734450	367225	1.29	0.02
Color	115442	57721	0.99	0.56*	957222	478611	119.03	0.08**
Review snapshot	13574	6787	143	0.05**	16544	8272	9.08	0.49
Review text	120831	60415	12.49	0.07**	193472	96736	1.32	0.51
Product picture	182077	91038	9.97	0.50**	375389	187694	14.11	0.22**
Material & care	26056	13028	2.46	0.75	14001	7000	99.76	0.009

H1 anticipated that participants would perceive that branded jeans were of a higher quality. Therefore, participants were asked which jeans, branded or unbranded, seemed to be of the higher quality or if there was no difference between the two options. Based on a chi-square analysis, a significant difference ($\chi^2 = 29.83$, $p = 0.000$) existed. The results were that 69% of subjects thought that branded jeans were of higher quality, 21% thought that the branded and unbranded jeans were of equal quality, and the remaining 10% thought that unbranded jeans were of higher quality. Thus, H1 was accepted.

H2 anticipated that participants would be more likely to purchase branded jeans than unbranded jeans. A two-sample t-test was used to compare the participants' likeliness to buy branded products compared to other alternatives, and a significant difference was found ($t = 3.02$; $p < 0.05$). Therefore, the mean likeliness to buy for branded jeans ($m = 4.13$, $sd = 1.31$) was significantly different from the likeliness to buy for unbranded jeans ($m = 3.43$, $sd = 1.76$). Thus, H2 was supported.

H3 looked at the difference in participants' visual attention to branded and unbranded jeans. A one-way ANOVA was used

to compare the mean for total time spent (in milliseconds) for participants exposed to branded and unbranded products. To calculate this mean total time spent, a participant's fixation duration on the areas of interest for each stimulus was summed (Size chart, Price, Brand name tag, Product description, Color, Review snapshot, Review text, Product picture, and Material & care). Only Price, Product description, Color, Review snapshot, Review text, and Product picture were significant for unbranded products, while Size chart, Price, Brand name tag, Color, and Product picture were significant for branded products. The mean total time spent by those exposed to branded jeans was ($m = 185572$ ms, $sd = 2.50$), and the mean of those exposed to unbranded jeans was ($m = 42934.22$, $sd = 1.84$). Thus, participants spent a longer time looking at branded jeans. This hypothesis, therefore, was partially accepted [57].

Findings and Conclusion

Perception of Quality: The results indicated a significant difference between participants' perceptions of quality for branded and unbranded jeans products. Over 69% of subjects perceived branded jeans as being of higher quality, while 21% felt there was no difference, and 10% believed unbranded jeans were of

higher quality. These findings suggest that participants generally associated branding with higher quality. The perception of higher quality for branded jeans may be attributed to the influence of brand reputation and consumer expectations. Branded products are often associated with higher quality due to consistent branding, marketing efforts, and customer experiences [58].

Purchase likelihood: A significant difference was found in the likelihood of this study's participants to purchase branded jeans compared to unbranded alternatives. Participants had a higher mean likelihood to buy branded products ($m=4.13$, $sd=1.31$) compared to unbranded products ($m=3.43$, $sd=1.76$), which indicates that participants were more inclined to purchase branded jeans, possibly due to their perceived higher quality and trust with well-established brands.

Visual attention: This study analyzed the differences in participants' visual attention of branded versus unbranded jeans. While a one-way ANOVA revealed some significant differences between the total time spent on different areas of interest, such as price, product image, and color, participants spent significantly more time looking at branded products ($m = 185572$ ms, $sd = 2.50$) compared to unbranded products ($m = 42934.22$ ms, $sd = 1.84$). The greater visual attention given to branded products suggests that participants found them more visually appealing or engaging. This could be due to factors such as attractive packaging, appealing design, or perceived value associated with the brand [59].

Overall, the findings of this study support the hypotheses that branded jeans products are perceived as higher quality, more likely to be purchased, and receive greater visual attention compared to unbranded alternatives. These results highlight the importance of brand perception and reputation in influencing consumer behavior and choices. Marketers and manufacturers of jeans products can leverage the power of branding to establish trust, increase perceived quality, and capture consumer attention [60].

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Conflict of Interest

Author declares no conflict of interest.

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