MBDS × Ipsos Design Challenge:

The Behavioral Biases of Consumers in Contactless Shopping and Companies' Next Steps to Reduce Them

Noah Beam
Bingling Wang

1. Introduction

Contactless shopping has grown rapidly in the past decade. Retail e-commerce sales worldwide have grown from $1.34 trillion in 2014 to $4.28 trillion in 2020, and e-retail revenues are projected to grow to $6.39 trillion in 2024 (Sabanoglu, 2021). As technology rapidly advances, contactless shopping will quickly grow and be more accessible in all countries, including those with smaller GDPs (Coppola, 2020). The Covid-19 crisis in the past twelve months has accelerated this growth, facilitating an expansion of e-commerce towards new consumers, products, and companies ("E-commerce," 2020). Yet the rapid growth has illuminated behavioral biases and decision-making changes in consumers, creating a gap between consumer expectations and what companies provide. Understanding these behavioral barriers can help companies improve their business performance and give consumers better shopping experiences.

In this report, we would like to present our work on identifying the behavioral gaps and suggesting the next steps that companies can consider. We will discuss three themes that have been and will be increasingly important in the contactless world: privacy and personalization, sustainability, and social commerce. The report will go in the order of how we approached the problem. We will first explain the context of the themes in contactless shopping, integrating insights from past literature, business reports, and interviews that we conducted. Then, under each theme, we will demonstrate the different behavioral biases consumers have, the impact of these biases on consumer behavior and companies, and potential solutions or directions for future research. Lastly, we will discuss additional factors that companies should pay attention to and conclude the report.

Theme 1: Privacy & Personalization

2. Context

2.1 Privacy

With the development of online shopping, privacy has become a concern that most consumers hold. Consumers sometimes have to disclose their personal information to companies via the Internet (Dinev et al, 2006), creating a loss of control for individuals of their personal information (Culnan & Williams, 2009). Being vulnerable to companies' potential opportunistic behavior, consumers have raised skepticism over shopping online, which has inhibited the development of e-commerce (Smith et al., 2011).

In line with the past literature, our interviews indicated that shoppers - both Gen Z and Millennials - hold negative attitudes towards brands or apps seeking personal information during the stages of knowledge building and search/deliberation. One shopper detested "when sites ask for email addresses before I can even browse the website." This negative emotion spills over and impacts trust: "[the website] cannot be trusted if it asks for too much personal information."

2.2 Personalization

Advances in technology increase the range and depth of personalization. By leveraging AI, brands are quickly able to recommend products to shoppers based on their past orders or the orders of people similar to them. Personalization makes it easier to find great products, and research shows that personalization capabilities can provide a 25% revenue lift (Abraham, 2021).

However, personalization does prevent a few user hurdles in contactless shopping. It narrows instead of broadens the range of products that consumers see. Two of our interviewees said "It's hard to search for other things. I see items that are great for me, but it's hard to find stuff for my boyfriend," and "I explore less. I try the same things over and over, rather than trying a new product I could like even more." Consequently, personalization negatively impacts the shopping experience. People enjoy the browsing experience, viewing it as a treasure hunt (Li, 2020). Yet personalization infringes on people's abilities to explore and find new "treasures."

2.3 Privacy and Personalization

There is a trade-off between privacy and personalization. Collecting personal data is inevitable for companies to provide personalized service to individual consumers (Lee et al., 2011). Consumer data are also provided to advertisers to offer tailored advertisements (Zhang & Zhu, 2014). Many consumers now face a personalization-privacy predicament (PPP) on whether to sacrifice their private information and accept the risks of having their information held by a third party in exchange for more personalized products and services (Chellappa & Sin, 2005).

3. Behavioral Biases

3.1 Cognitive Dissonance

Cognitive dissonance happens when people avoid or ignore a conflicting belief or attitude because they feel uncomfortable about it (McGrath, 2017). In e-commerce, consumers disapprove of disclosing too much information to a company or website but they also appreciate personalization (The Decision Lab, 2021).

As people experience conflicting beliefs, they might ignore privacy issues and instead focus their attention on the benefits of personalization. Or, people will retreat from the website to avoid unwanted feelings of privacy invasions. Neither option is the optimal choice for brands. Ignoring privacy issues and focusing on personalization can render customers feeling upset regarding their personalization, as mentioned in the above quotes when interviewees struggled to explore new products and were left feeling frustrated. Retreating from the website immediately decreases the customer base of a brand, as customers never enter the shopping funnel.

3.2 Fatigue

Fatigue arises when people have high demands and their goals are routinely not met (Hardy et al., 1997). Privacy fatigue is reflected in people's beliefs there is no way to effectively

manage personal information nor control its over-disclosure online (Hargittai et al., 2016). Unlike people with cognitive dissonance, who refuse to think about the issue, people with privacy fatigue give up finding a solution. Over-complicated privacy settings, which combine a feeling of resignation with lack of control, lead to privacy fatigue (Keith et al., 2014).

People with privacy fatigue disengage themselves from the problem and no longer devote decision-making efforts to manage their information. People also lose interest in - and develop negative affective responses to - interacting brands that do not match their privacy expectations.

4. Direction of Future Research

4.1 Confronting the Paradox

Addressing the conflicting situation for shoppers will help companies reduce people's cognitive dissonance and privacy fatigue. People may disagree about what defines personal information, but everyone wants to protect their information and seeks a user-aligned experience.

Companies will better understand information disclosure opinions through user surveys and interviews, which should include current users and previous users who may have retreated to protect personal information. Using this research, companies can communicate transparently their privacy settings with consumers, possibly differing by user segment according to the survey results. Engaging consumers in the companies' decision-making process increases engagement and satisfaction while reducing privacy fatigue and enhancing consumers' trust (Riegger et al., 2021). Avoiding jargon and confusing phrases, while being slow and cautious to ask for personal information will prevent shoppers from dropping out of the funnel. Finally, companies can explore advertising privacy settings, just like other advertisements of products, to encourage people to acknowledge the issue and communicate their opinions.

4.2 Personalization and Exploration

Personalization saves time and simplifies shopping, but makes shoppers less likely to explore and try new products. Advances in personalization should not infringe on, but rather support, people's abilities to explore and find great, new products. Similar to *Spotify's* Tastebreakers, a playlist of songs from genres that are new to listeners, shopping platforms could incorporate methods for shoppers to find new items different from their usual purchases.

Theme 2: Sustainability

5. Context

5.1 Mindful Shopping

According to Kahneman (2011), people have two modes of thinking. System 1 is fast, instinctive, and emotional, while System 2 is slower, more logical, and more effortful. Many

brands address consumers' System 1 thinking in advertisements. For example, time-limited promotions convey a sense of urgency, leading to fast thinking and impulse purchases.

However, people are becoming more aware of products' consequences for health, wellness, and sustainability (Puttaiah et al., 2021). In Asian countries, Covid-19 has enhanced the culture of frugality among consumers (Mehta et al., 2020). It encourages responsible buying: consumers should buy what they need and avoid unnecessary purchases. In Western countries, there has been a rise in the desire for prosocial companies and value-based purchasing (Puttaiah et al., 2021). Consumers actively seek to buy from companies that match their social, environmental, and political ideals (Johnson, 2021).

Global changes in consumer behavior indicate consumers are switching from System 1 to System 2 thinking. They want more thoughtful and aware shopping experiences.

5.2 Green Buying

Along with mindful shopping, sustainability continues to gain importance for consumers. The sale value of sustainable products in the US has risen from $107.3 billion in 2014 to $128.5 billion in 2018 (Wunsch, 2020). According to a 2019 Nosto survey of US and UK consumers, 50% of people want more sustainability in the fashion industry, and 75% of people want less packaging (BigCommerce, 2021). Consumer preferences and government goals carbon neutrality guide the emerging trend of green buying (Akenji & Bengtsson, 2014; Lozano et al., 2015).

Although more people intend to purchase sustainable products, consumers are easily tricked by their own behavioral biases: an intention-action gap currently hinders further development of sustainable retail (Diddi et al., 2019). In the US, 65% of people reported they want to buy value-driven brands to support sustainability but only 26% had done so (White, 2019). Sustainability's intention-action gap is present across the world, with significant evidence from the UK (Young et al., 2009), Canada (Durif et al., 2012), and China (Lee, 2008).

This gap harms both sustainable brands and society as a whole. It is important to eliminate these biases so consumers can buy what they want and brands can more confidently invest in mindful shopping and value-based products to promote sustainability and increase sales (Geiger, 2019). In the following sections, we will identify some behavioral biases that contribute to this gap and directions of future research to overcome these biases and promote green buying.

6. Behavioral Biases

6.1 Present Bias

People prefer outcomes that are closer to the present even if the more present outcomes are less beneficial than the future outcomes (Kleinberg et al., 2016). When this bias overrides people's intention to purchase green products, they will purchase conventional products instead.

Sustainable products by nature are future-focused. While conventional products tend to provide more short-term and straightforward benefits, the benefits of sustainable products are more abstract, uncertain, and psychologically distant (Spence et al., 2012). Products ranging

from steel straws to solar panels provide consumers long-term benefits. The higher upfront cost of a durable good will be lower than the total cost of repeatedly consuming a disposable product. Most sustainable products, such as bamboo clothing and beauty products, provide long-term, not short-term, societal benefits. The benefit of reducing carbon emissions can be neither directly nor immediately observed by consumers. Thus, it is easy for consumers to ignore the larger future benefits of sustainable products and instead purchase conventional products.

6.2 Choice Overload

Choice overload is when the amount of choices is more than the amount that people can cognitively process (Chernev et al., 2015). When people's cognitive resources are used up, people tend to choose intuitively using System 1 instead of deliberately using System 2 (Chernev et al., 2015). Thus, choice overload often leads people to make decisions they regret.

Large e-commerce platforms provide pages of options for consumers after a text search. Due to choice overload, consumers do not explore every page but choose from products listed at the top. Sustainable products are less likely to be ranked at the top of search results. In addition to keyword relevance, product search algorithms rank products based on price, sales performance history, and reviews (Sorokina & Cantu-Paz, 2016). Compared with conventional products, sustainable products generally have higher prices (Carlsson, 2010) and a lower market share (Kronthal-Sacco & Whelan, 2020), generating low performance on the factors on which product search algorithms rely most. With less chance to appear at the top few lines of the search results, sustainable products are less likely to be noticed by consumers than conventional products.

6.3 Salience Bias

Salience bias refers to the tendency for people to focus on information that stands out and ignore unremarkable information, leading people to favor more prominent choices (Tiefenbeck, 2018).

E-commerce platforms highlight product characteristics that could bring more sales, such as price, brand, and ratings (Sorokina & Cantu-Paz, 2016). Information on sustainability is mostly not highlighted in that it has a limited ability to bring profits. Instead, this information, if there is any, is often in the specific introduction of products that are presented after consumers click on the option. Unless consumers know exactly which sustainable product to buy, it is effortful for consumers to browse sustainable products. And it is unlikely for consumers who know little about sustainability to be introduced to green buying since the concept of sustainability does not show up during their shopping process.

7. Direction of Future Research

7.1 Concrete, Digestible Information

The abstract and future-focused benefit of purchasing sustainable products is hard to grasp, leading to present bias that hinders green buying. One possible remedy is to communicate the consequences of green buying in more concrete ways to help consumers hold a stronger sense of self-efficacy, which is confidence their actions make a meaningful impact. This remedy has shown success in increasing sustainable behavior such as electricity-saving (Thaler & Benartzi, 2004). However, little research has studied the effect of communicating concrete information on the long-term benefits of sustainable products online. Below are several ways to convey concrete and digestible information during contactless shopping.

Describing the environmental impact using local reference points is a powerful tool. For example, New York City's recent waste-reduction advertising campaign explained the city's garbage in one day can fill the Empire State Building (New York City, 2015). Brands can also use spokespeople who relate to local consumers with minimal additional cost (Gupta & Ogden, 2009).

Providing statistics on the long-term benefits of a sustainable product gives consumers a clearer picture of how much they can potentially save. For instance, instead of only listing the price of a LED light bulb, on the package, the brand can present how much will be saved on electricity bills. Only showing the upfront cost gives consumers a blurred picture of what they gain in the long run, and people by nature dislike and avoid doing cognitively demanding calculation tasks (Kahneman, 2011). When this calculation is done for them, customers can more quickly understand the value of purchasing sustainable products.

Making conventional and sustainable products directly comparable can help consumers relate to sustainable products. Websites such as Google Shopping and PriceGrabber already compare prices of the same product among platforms. This service helps reduce consumers' searching effort, avoid misinformation, and attract consumers to purchase. Similarly, direct comparison of conventional and sustainable products can reduce consumers' searching effort and foster more vivid images of using the sustainable product, which is based on consumers' previous experiences of using the conventional product. However, more research on the comparison metrics is needed, in that unlike comparing apples to apples, different products have unique and sometimes subjective benefits and costs that are difficult to compare.

7.2 Easy Access to Information

Consumers can easily fall victim to choice overload and salience bias because of the effort required in searching for sustainable products Therefore, it is important to create easy access to information on sustainable products, especially for uncommitted green buyers whose purchasing decisions are affected by other factors.

Product labeling is the primary way consumers understand the sustainability credentials of products (Jones & Ansons, 2019). Amazon has announced using the Climate Pledge Friendly

label to help consumers find green products. Similarly, sustainability can be included in some filters so consumers can view only sustainable products. Brands can create sustainability-only sections that provide detailed descriptions of green products, which both reduces the searching effort for those who actively seek green products and introduces green buying to uncommitted green buyers. Brands should integrate behavioral tools such as framing and choice architecture in their designs. While providing convenience to consumers, these features will also give brands a prosocial image and earn trust from consumers.

Although there are multiple ways to make information accessible, brands should conduct their own research on the method that best suits their products and targeted consumers. Our interviewees suggested they prefer to buy a sustainable product if it is a one-time, low-impact purchase such as a pair of blue light glasses. Older interviewees (at about 50 years old) paid less attention to sustainability during shopping than younger people (at about 20 years old), although they expressed similar concerns about protecting the environment. Brands with an older audience may require more effort in making information on sustainable products salient and accessible.

Theme 3: Social Commerce

8. Context

Social commerce happens either on social network sites or e-commerce platforms with social networking features (Zhang et al., 2014). Social commerce allows shoppers to purchase directly in the app's UI, rather than navigating to a website browser. Two popular examples are Instagram Shopping and TikTok's Shopify Integration, quicker and easier options for shoppers. Another blossoming trend is Facebook's Instant Experiences, which are full-screen ads that allow users to browse product catalogs without leaving the Facebook ad.

Privacy is a concern among both users, as mentioned earlier in this report, and lawmakers. For example, Apple's recent iOS 14 changes prompt users with the choice to opt-out or opt-in to apps tracking their behavior. Previously, apps tracked users without their consent or applied a choice default of opting users into tracking (Johnson et al., 2012). With more users opting out, the ideal way to cater to shoppers' user flow is with techniques such as Instagram Shopping, TikTok's Shopify Integration, or Facebook Instant Experiences. All of these tools shorten the distance between the shopper and the brand, reduce choice fatigue, tackle behavioral friction, and increase purchase probability (Augenblick et al., 2009).

9. Behavioral Biases

9.1 Peak-End Rule

Instead of remembering every moment of the experience, people remember and judge an experience based on the intense and final moments (Geng et al., 2013). So, the peaks and the end

of a shopper's online shopping experience are important indicators of the shopper's experience and whether the shopper will return to the platform.

The current practice of price shrouding, in which retailers hide taxes and fees, is the opposite of an ideal experience according to the peak-end rule. Shrouding fees increases the likelihood a customer makes an initial click, but then the hidden fees increases the likelihood a customer drops from the funnel during checkout (Dertwinkel-Kalt, 2020). These two events offset and lead to a net-zero effect on demand and revenue. Consumers do not experience a net-zero effect, however. Leaving the funnel because of price shrouding is very salient to the shopper's memory of the experience (Geng et al, 2013). Being the last moment of the experience, a shopper is likely to give this moment extra weight and thereby associate the brand with a negative overall experience.

Remembering mainly negative shopping experiences, consumers may develop high perceived risk (Roostika, 2012), low perceived value (Lin & Want, 2006), and low trust (Al-Adwan & Kokash, 2019) in using the current platform. Consequently, consumers will have lower purchase intention and a higher likelihood to choose new shopping avenues (Chen et al., 2018).

9.2 Status Quo Bias

People are inclined to stay at the current state of affairs rather than change. Status quo bias builds resistance to innovative ideas and products like social commerce (Hew et al., 2019).

Social commerce, especially in the form of mobile purchasing, is a new alternative to traditional online shopping (Zhu & Chen, 2015). However, because of status quo bias, consumers have resisted switching their shopping platforms to social media and instead developed avoidance behaviors such as eliminating advertisements and switching shopping modes (Jones et al., 2004; Van den Broeck et al., 2018). This inertia to change is caused by consumers' already-formed shopping habits and their misperceptions of the switching costs, economic risk costs, and learning costs of social commerce (Nel & Boshoff, 2020).

Consumer resistance to social commerce hinders brands' ability to utilize social influence and personalized advertisements on social media to increase sales (Zhu & Chen, 2015). Resistance also prevents consumers from being introduced to well-suited brands and products.

9.3 Social Influence

Interdependent behavior involves descriptive and social norms. Descriptive norms are based on empirical expectations, which are what people think others are doing. Social norms are based on both empirical and normative expectations. Normative expectations are what people think others expect them to do, indicating the approval or disapproval of a behavior (Bicchieri, 2016).

Social commerce is an interdependent behavior. Consumers share shopping information and recommend products to others on social media. While companies expect these behaviors to increase sales, social behavior can also lead to undesired outcomes through the spread of

negative word-of-mouth. Additionally, people's behavior is most influenced by their reference network (Bicchieri, 2016). When people around them do not adopt social commerce, it is likely for shoppers to think other people are not using the platform and that other people expect them to not use social commerce.

10. Direction of future research

10.1 Create Positive Peak and End Experience

Firms should create positive - and remove negative - peak and end shopping experiences to increase consumers' willingness to pay and return to the platform. Further research should be done to study factors of negative online shopping experience in addition to price shrouding.

The impact of price shrouding within contexts of a specific brand can be confirmed with a between-subjects experiment. One group of randomly selected customers would experience price shrouding, while the other group would experience 'transparency,' with KPIs such as conversion rate or conversion value determining the most effective strategy.

10.2 Norms Messaging

To mitigate the effect of status quo bias and social norms, we first recommend identifying the severity of the gap between actual use and perceived use. Our interviews gave anecdotal evidence that social norms are a driving factor of reduced social commerce. Quotes included "I don't partake… don't think [social commerce] is popular," and a few people concurred with an interviewee's statement of "I only buy famous [social commerce products]." A larger representative survey would confirm the prevalence of social norms.

Then we recommend brands and platforms reconcile the impacts of status quo bias and broaden shoppers' reference network by implementing norms messaging to incentivize them to engage in Social Commerce for their contactless shopping. Considering these two expectations…

1. *Empirical:* shoppers do not think other people use social commerce
2. *Normative:* shoppers do not think other people expect them to use social commerce

companies will be most effective by updating people's empirical expectations. When empirical expectations and normative expectations conflict, empirical expectations win (Bicchieri, 2016). Common behavior implies that people find the behavior acceptable, so the conflicting normative information loses value and the empirical expectation wins. Empirical information is effective when delivered by a trusted messenger from a relevant reference network and paired with public examples of positive behavior.

11. Discussion

In this report, we discussed three themes: privacy and personalization, sustainability, and social commerce. Privacy and personalization is a trade-off from which consumers have retreated

because of cognitive dissonance and fatigue. Companies have the opportunity and ability to reconcile the negative emotions surrounding this trade-off to benefit and win more customers. Sustainability is a hot topic in many areas. In contactless shopping, the importance of sustainability is reflected in the growing trends in mindful shopping and green buying. Companies can increase sustainable shopping by tackling present bias, choice overload, and salience bias by providing consumers with accessible and digestible information. Social commerce continues to grow as social media and technology remain integral in our lives. Norms messaging is the best way for platforms to help consumers overcome status quo bias and increase their presence in social commerce.

Most of our research focused on the current users of contactless shopping methods. However, we recommend taking the approach of designing for mismatches and prioritizing users who are currently shut out to improve contactless shopping.

Contactless shopping brands should both be cognizant of how income affects the behavior of their targeted customers and actively involved in increasing accessibility where possible. Most of the recent increases in online shopping are attributed to households in higher income brackets (Charm, 2020), mainly because these people have higher accessibility to contactless shopping (Horowitz, 2020). However, the income shares in many countries such as the US have been trending towards the upper class and away from the middle class. The K-shaped recovery from the pandemic has also exacerbated this discrepancy. Depending on the products and customer base, while maintaining consumers with higher income, it is important to ensure middle and lower classes are included.

Companies also should research how to reduce behavioral barriers caused by age. Younger people are more open to accepting technology (Phang et al., 2016), which the contactless world is heavily relying on. Meanwhile, older generations may be more resistant to innovations such as sustainable products and social commerce. Furthermore, people in Gen Z are more likely to switch brands than the older generations (Charm, 2020). The past twelve months have witnessed brand-switching at an unprecedented rate, driven by Gen Z and particularly benefitting large, trusted brands. Large companies have the resources to enable older generations the same power to switch brands, and small companies can hold a competitive advantage in the marketplace by increasing accessibility for older generations to switch brands. By shifting focus from the current users to users who are currently mismatched for the system, designers can produce three key benefits for a product or service (Holmes, 2019):

1. Increasing accessibility
2. Improving usability
3. Growing the user base

Addressing the shut-in/shut-out problem of who can access the product, brands will increase accessibility. Taking the extra step to design for mismatches gives more people access to the product and accelerates innovation, thereby benefiting all users.

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