From Deception to Convenience: An Analysis of Design Strategies for Online Shopping

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Abstract. Manipulative strategies designed to target shoppers while benefiting online businesses are becoming increasingly common. This exploratory study investigates how varying degrees of deceptive design in an online shopping interface influence online shoppers' perceptions, decision-making, and overall satisfaction. As a major online shopping platform worldwide, Amazon's mobile user interface is the reference for this case study. While Amazon is lauded for its convenience, it has been criticised for incorporating manipulative tactics that can steer users toward decisions misaligned with their original intentions. Although seasoned users might overlook these tactics due to their established trust and convenience, new digital shopping platforms may face different challenges if they simply follow arguable industry standards. In this study, the interaction with two high-fidelity redesigns of Amazon's mobile user interface —one that suppressed and one that intensified deceptive elements —were compared against the original app. Based on the perception and feedback of users, we then propose four key recommendations aimed at guiding new designers in creating online shopping experiences that prioritise an ethical approach to design. These recommendations focus on transforming potentially deceptive elements into features that improve users' satisfaction. By addressing the delicate balance between manipulation and convenience in industry practices, this study aims to assist designers in fostering a more ethical digital shopping environment.

Keywords: Deceptive design · Ethical design · Online shopping.

1 Introduction

Online businesses increasingly adopt deceptive patterns in interaction design, exploiting cognitive biases to influence decisions that may not align with users' best interests, such as overspending, unintended subscriptions, or excessive data sharing [6, 15]. These practices raise ethical concerns by prioritising short-term gains for the business, or "convenience" for online shoppers over building a longer-term trust.

For example, the "Buy Now" button used by Amazon facilitates rapid purchases. As it eliminates a multi-step checkout, it encourages impulsive decisions [17]. Well-known for applying deceptive patterns as a business strategy,

Amazon already faced legal scrutiny for employing deceptive patterns to promote Prime memberships, such as complicating the cancellation process after a free trial to boost subscriptions and maintain user engagement [13]. Yet, Amazon is a leading force in the e-commerce sector. As of 2025, it is expected to have 310 million active customer accounts global [18] and commands nearly 40% of the US e-commerce market, solidifying its dominance in online retail [22]. This vast influence allows Amazon to set industry standards and shape global consumer behaviour despite ethical concerns. The company is often referenced for its combination of business practices with customer experience design patterns. Amazon's "flywheel" model directly links customer experience gains with increased user engagement, which in turn leads to more competition among sellers, prompting them to reduce prices, which benefits the customer experience [10]. Reduced friction in this cycle drives Amazon's revenue growth.

This paper analyses the controversial business strategy of employing deceptive patterns in online shopping interfaces, with a specific focus on Amazon, from the perspective of online shoppers. It addresses the following research question: How do varying degrees of deceptive design in an online shopping interface influence online shoppers' perceptions, decision-making, and overall satisfaction? Through a primarily qualitative approach, we examine users' awareness and tolerance of these deceptive patterns, exploring how such perceptions influence their satisfaction with the interaction.

This exploratory study contributes to the literature by recommending design strategies for online shopping platforms. These recommendations are grounded on practices by a leader that sets standards in shopping experience online. With an ethical perspective, we suggest shifting from manipulation to enhancing convenience. The study underscores the importance of conducting research on established industry practices with a critical lens.

As follows, a conceptual background on user behaviour and deceptive design is presented, followed by the methodology description. Results on awareness and the deception-convenience trade-off are then reported, concluding with actionable design recommendations.

2 Conceptual Background and Related Works

Transparency, consent, and autonomy are crucial for ethical online shopping. Users should clearly understand pricing, terms of service, and available options. Obscuring this information, complicating service termination, and hiding costs violate these ethical principles [5]. Although features like pre-selected payment and delivery options or subscriptions can reduce purchasing friction and cognitive load, they may also prompt impulsive decisions misaligned with users' original intentions [7]. This presents designers with a dilemma: balancing a simplified user experience with ensuring well-informed, deliberate decisions. Moreover, not all users are actual buyers, but deceptive patterns often aim to convert browsing users into buyers by artificially boosting urgency or incentives to directly influence their decision-making process [23].

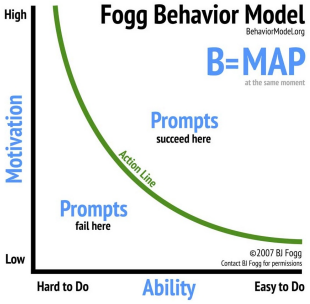

Fig. 1. Fogg Behaviour Model in *https://behaviormodel.org*

Fogg's Behaviour Model (Fig. 1) explains behaviour in such contexts [14], identifying three key variables: Motivation, Ability, and Prompts (MAP). Deceptive patterns exploit these by creating urgency (boosting motivation), simplifying actions (enhancing ability), and timing prompts to align with moments of high emotional engagement or low attention. Conversely, motivation and ability can be reduced when actions, such as cancelling a purchase, lack prompts. This restricts user autonomy and complicates informed decision-making, raising significant ethical concerns [15].

For Cialdini [9], there is a distinction between *ethical persuasion* and *manipulation*, which lies in the user's agency. While persuasion transparently leverages psychological triggers, manipulation covertly exploits users' biases against their best interests. Manipulation of purchase decisions without consumers' full awareness has been documented as early as the 1950s [20]. However, online shopping has expanded opportunities for such strategies, sometimes in subtle ways.

For instance, *visual interference* through vibrant banners or distracting animations promotes certain actions while concealing others [15]. Other examples include strategies like *subscription traps*, *roach motels*, or *forced continuity*, which simplify sign-up processes but make cancellation deliberately difficult [21, 12]. Additionally, *urgency* and *scarcity*, though distinct, both pressure users into acting quickly, often causing emotional stress and reducing satisfaction with the shopping experience [3, 1].

A related concept, *nudging*, from behavioural economics, subtly influences decisions without limiting choice [24]. In online shopping, nudges often appear as pre-selected options, default settings, or prominent "Buy Now" buttons [14]. These tactics exploit cognitive biases, leveraging perceived convenience to shape shopper behaviour in ways that benefit businesses [2]. Such elements are part of the broader concept of *choice architecture*, encompassing all design tactics that influence how choices are presented and made [16]. Many usual deceptive design patterns refer back to psychologically manipulative strategies used in advertisement [1]. Yet, a more recently standardised taxonomy for categorising deceptive patterns remains absent.

3 Methodology

For a comparative analysis of deception awareness and tolerance, Amazon's mobile user interface was first catalogued with deceptive strategies and partially redesigned into two high-fidelity interactive prototypes: a non-deceptive version and a deceptive enhanced version. The versions are illustrated in Fig. 2, where the non-deceptive version of the home screen is on the left side, next to the original (in the centre), while the deceptive-enhanced is on the right. Although

Amazon's actual app does not incorporate some of the more extreme deceptive elements featured in the redesign, these elements were included in the enhanced prototype to create a deliberately deceptive shopping experience, enabling the evaluation of users' reactions when facing a deceptive interface.

a) **Non-deceptive version.** In this redesign, the user interface structure remains, but urgency cues, promotional language and pre-selected options were omitted. As an illustration, on the home screen, more subtle colours were chosen to lose the feeling of pressure and shop by categories were favoured rather than deals (as in Fig. 2 left side). Along the checkout process, users could review their choices at each stage, with delivery options presented neutrally, without pre-selected defaults. Extra information to inform decisions about delivery and subscription were added.

b) **Deceptive enhanced version.** This hypothetical prototype based on the original Amazon app portrays highly manipulative experiences. Vivid colours, patterns of urgency (countdown timers), scarcity (e.g., "Only 2 left in stock!"), and nudging (e.g., pre-selected subscription option) were further amplified, as illustrated in the home screen (Fig.2, left side). Enhanced strategies added to the checkout page are listed and illustrated in Fig. 3.

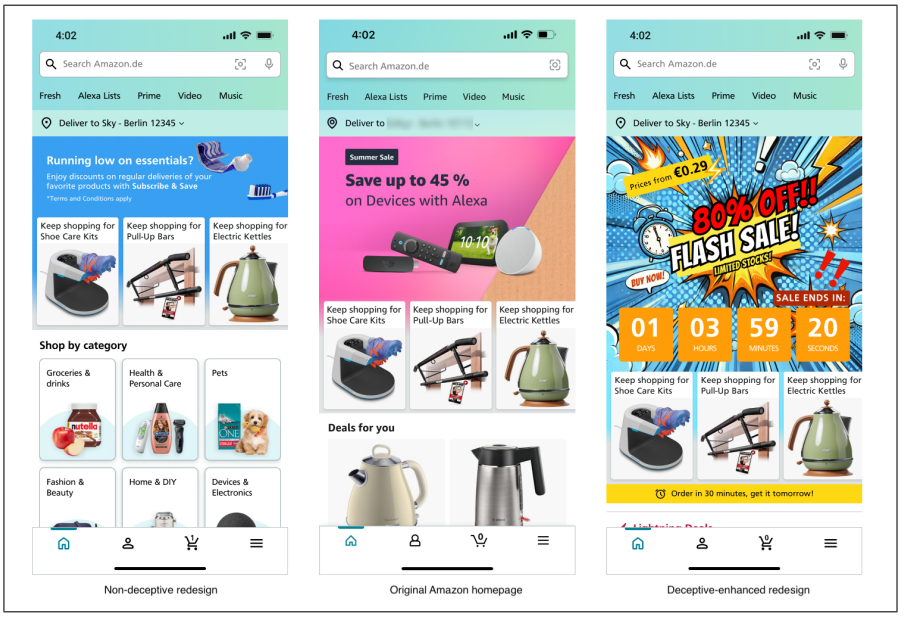

Fig. 2. Illustrations of the redesigned versions (left and right) and the original Amazon app home screen

User tests: The user tests covered the complete journey from the home screen to checkout, where upselling and obscure navigation could potentially trigger unintended purchases [8]. Participants searched for a product, added it to the basket, and checked out first in the live Amazon app, then repeated the task in one redesigned prototype.

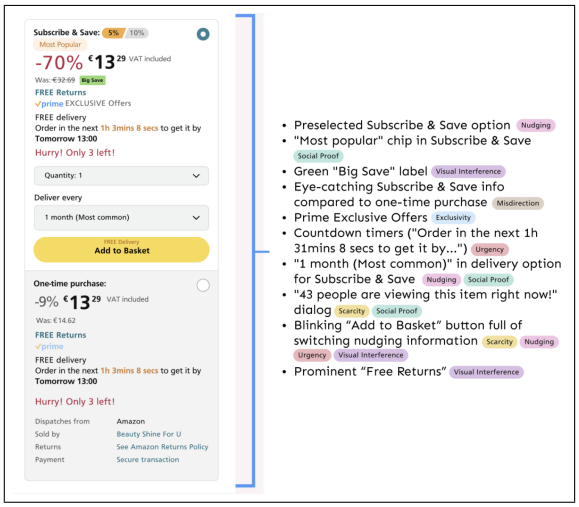

Fig. 3. Checkout page redesign with enhanced deceptive strategies listed

The think-aloud protocol [11] encouraged participants to share their perceptions of usability and clarity, with no mention of deceptive patterns beforehand to avoid bias.

A semi-structured interview followed, focusing on standout elements of the home and product pages, clarity of product information, and features like search, add to cart, and checkout (e.g., "How smooth was the checkout process?" and "Did you feel well-informed about the costs and options available?"). It also explored overall satisfaction, engagement, and distractions. Finally, participants rated their satisfaction with the prototype and the original Amazon app on a scale from 0 to 10 for comparison.

Sessions were recorded and transcribed, and thematic analysis [4] was conducted to identify patterns in the verbalisations and interview data.

4 Results

A total of 10 participants from 25 to 48 years old already familiar with Amazon shopping participated in the study. The sessions were conducted individually, online, and lasted from 30-50 min each. The participants were randomly divided into two groups of 5 each. Both groups interacted with the original Amazon app first, then Group A used the non-deceptive version, while Group B the deceptive enhanced one.

4.1 Qualitative analysis

While familiarising with the data, the researcher coded text snippets with reactions, mainly to deceptive design patterns. Then, cross-referenced the codes with the prototype version they interacted with. Initial codes identified include "feeling pressured", "feeling in control", "anxiety due to manipulative tactics".

Thereafter, these codes were grouped into clusters with similar participants' perspectives, pain points or needs, leading to the following list of themes:

Perceived Pressure: Used when participants felt rushed or manipulated due to urgency, scarcity, Fear Of Missing Out (FOMO), etc. Perceived mainly in the deceptive prototype referring to countdown timers, social proof, and scarcity language. Examples of quotes include *"I don't need this information, but it's making me hurry."* and *"Those notifications make me feel rushed, which is uncomfortable."*

Trust and transparency: Focuses on users' appreciation for clear communication. In the non-deceptive version, it commonly referred to the simple layout or the clear design language. *"I don't really prefer to use Amazon any more because of these reasons... Everything has the same tag, trying to just get you to buy the thing as quickly as possible."*

Confusion and frustration: Refers to participants' inability to comprehend terms or expenses associated due to obfuscation, such as hidden fees or unclear options. Example: *"It's like negative feedback right away, you're trying to do something, and you get this immediate effect of having to pay full price, while others who invite a friend get a discount."*.

Visual overload: When participants' reported lost due to the visual distractions, such as *"There was so much going on, I almost forgot what I was shopping for. It was a bit chaotic."*.

Manipulation awareness: Used when participants realised they were being deceived or manipulated, such as the perception of hidden tactics or misdirection. *"It's tricky because it wasn't clear I was adding four. That feels manipulative."*.

Convenience vs ethics: Participants' conflict between choosing convenience despite being aware of unethical design. E.g. *"I actually appreciated not having all the extra product they show (recs). But part of me also kind of missed them? I think I'm used to them helping me finding other stuff"*.

Lack of Excitement: The absence of deals or visual stimulation made the shopping experience feel less engaging. *"This version is great for when I want to get something quickly, but it feels less exciting."*.

4.2 Prototype versions perception

Non-deceptive: Group A reported feeling more in control of their decisions. Transparency and no hidden information were welcomed. Confusion was rarely mentioned and the theme of **trust and transparency** was frequently touched upon, with users commenting on the absence of excessive promoting, the simple layout, in particular the product page, or the clear design language. A few participants noted that the platform's lack of visual clutter allowed them to concentrate more on the pricing details, therefore evaluating the prices more critically and intently.

However, two of five participants thought that the absence of prominent deals and constant product recommendations lowered visual stimulation, which made the shopping experience feel less engaging, even if trust was improved.*"Honestly, it's a bit more boring. It's clean and simple, but it lacks the dynamic, personalised*

features Amazon offers. Sometimes I like the recommendations, even though they're annoying. It's clean and simple, but it lacks the dynamic, personalised features Amazon offers.".

Deceptive enhanced: Consistently with remarks of **visual overload** and **confusion and frustration** mainly due to urgency strategies and disguised information, feelings of anxiety and **manipulation awareness** with the deceptive enhanced version were frequent. *"It gives me anxiety to the point that I'm starting to think how I'm gonna be trolled into perhaps spending more money.".* Group B participants reported feeling confused when making decisions, as focusing on their very first purchasing goal due was hard to the continual bombardment of discounts, recommendations, and messages.

However, a some participants admitted that they still found the convenience it provided to be appealing. The interviewees' responses, such as *"I felt rushed, but at least it was fast,"* demonstrates the **convenience vs ethics** conflict. *"I know it's pushing me to buy fast, but it's also really convenient when I'm in a hurry.".*

Interestingly, some participants could not differentiate enhanced deceptive patterns in the redesigned prototype from the original Amazon app. *"I know it's trying to push me to buy, but I'm so used to it that I just ignore most of it".* Aside from bold components like vividly coloured banners or wordings that evoke a sense of urgency or scarcity; minor tweaks like concealed fees, inflated social proof elements like "x people viewing this item right now!" or the added "popular searches" section in the search page were mostly ignored. *"I think it's quite informative. It's what I'd expect from any Amazon product page I guess. ".*

4.3 Satisfaction ratings

Participants rated their overall satisfaction with the interactive experience from 1 to 10 as an indicator across versions, as described in Table 1.

The original Amazon App received an average score of 6.7/10 (σ=1.57). When justifying the score, participants often pointed out their familiarity with the interface: *"It's still the easiest way to shop. Even with the countdowns and prompts, I just go with it because it's what I know."* Nonetheless, they also admitted some dissatisfaction over the deceptive patterns inherent in it: *"A little overwhelming, to be honest.".*

The non-deceptive prototype, received a slightly higher average rating of 8/10 (σ=0.71). This suggests that the majority of participants valued its simplicity and clarity and consistently viewed it to be transparent and user-friendly. The deceptive enhanced was rated an average of 2.8/10 (σ=1.52), suggesting a much inferior level of satisfaction when compared to the other versions. This indicates a generally negative experience, justified by expressed annoyance at deceptive elements and lack of transparency.

Table 1. Participants' satisfaction rating assigned to each prototype version and average

	Group A					Group B					Average
	P1	**P2**	**P3**	**P4**	**P5**	**P6**	**P7**	**P8**	**P9**	**P10**	
Original	9	6	5	7	7	5	8	9	5	6	7
Non-deceptive	8	8	8	7	9						8
Deceptive enhanced						2	5	1	3	3	2.8

5 Discussions

5.1 Awareness of deceptive patterns

The notably lower satisfaction rating for the deceptive enhanced prototype aligns with the thematic analysis results, which highlighted users' dissatisfaction with strategies like forced continuity and urgency. However, many of the enhanced deceptive strategies were not mentioned by some participants during interaction. This supports the argument by Bongard-Blanch et al. [3] that deceptive patterns often go undetected unless users are made explicitly aware of them. In this study, participants were not made aware of these patterns before providing satisfaction ratings, suggesting that the difference between the original app and the deceptive version may be attributed to the exaggerated manipulative elements in the latter. This underscores the potential risks posed by large platforms with an established user base, where incremental increases in deceptive tactics could go unnoticed, exploiting user trust without significant backlash.

Although participants declared they were not entirely okay with the deceptive design patterns used in the original application, the difference in the ratings of the original and non-deceptive version was remarkably small. This could be interpreted as that eliminating deceptive patterns alone may not be the best solution to significantly improve user perceptions and to influence user behaviour positively. Other factors such as familiarity, popularity, affordability, etc., play crucial roles. Such findings emphasise the complexity of people's behaviour, wherein convenience can sometimes overshadow concerns about manipulation, leading users to tolerate or overlook deceptive patterns in exchange for a more seamless experience.

5.2 Deception or convenience

As expected, participants reported not been satisfied with hidden costs and preselected options in the deceptive enhanced version. In line with the arguments in [12], clear pricing, combined with easy-to-understand options for delivery and payment, fosters trust and enhances the overall user experience. Consistently, individuals who interacted with the non-deceptive prototype declared feeling less manipulated and more in charge of their choices compared to the original version. However, it is possible that this transparency could decrease user excitement and

engagement. In earlier research [17, 7], the authors argue that ethical design may reduce short-term engagement by removing the psychological triggers that lead to impulsive purchases, even as it increases user trust and long-term loyalty.

Participants reported appreciation for elements that lessened the cognitive burden needed to complete an order, such as personalised product recommendations and pre-selected shipping alternatives. These same features were acknowledged as manipulative, though, as they were intended to influence users to take particular actions which might not be aligned with their actual preferences.

Convenience remains a powerful motivator even when users spot deception. Per Fogg's Behaviour Model [14] in Fig. 1, prompts like personalised recommendations or a one-tap "Buy Now" increases ability at the moment of choice, boosting motivation. It is important to harness this convenience without slipping into manipulation.

Familiarity is another factor of influence in increasing ability according to Fogg's Behaviour Model (Fig. 1) [14]. Even though participants reported to be more satisfied with the non-deceptive version, some reported feeling more comfortable using the original app, even though they were aware of the deceptive strategies incorporated into the design, suggesting that familiarity can override negative feelings from deception [19]. The tendency to stay loyal to a platform in spite of ethical hesitations highlights the apathy that many users experience in the presence of familiar interfaces. Supporting quotes for familiarity include *"I know it's trying to push me to buy, but I'm so used to it that I just ignore most of it." and "It's still the easiest way to shop. Even with the countdowns and prompts, I just go with it because it's what I know."*

While familiarity plays a crucial role in shopping on platforms like Amazon, new online shopping designs lack this advantage, requiring them to build trust from scratch. Users often overlook ethical dilemmas when interacting with familiar interfaces, highlighting a significant challenge for emerging platforms. These new entrants face an uneven playing field, competing against established giants like Amazon that may employ deceptive tactics to retain users. To address these dynamics, it is essential to promote transparent and balanced user experiences across the industry and raise awareness of deceptive practices.

6 Design recommendations

Aiming at informing design choices while guiding strategic discussion about ethical standards, this set of actionable recommendations is directed to product/service designers or stakeholders who establish design policies and success metrics for the wider organisation.

1. Balance between engagement and transparency. Online shopping platforms should aim for a balance between engaging sales strategies and transparency. While visual communication about deals or free delivery, for instance, are still useful, they should never be used to overwhelm or trick users into subscription traps or unwanted extra purchase.

2. Nudging mechanisms for convenience, not manipulation. Nudging strategies lead to convenience, but they should not compromise freedom of choice, as opposed to pushing users into decisions. This can entail giving users simple methods to change their selections or access to more thorough information regarding their decisions, such as an info icon and/or no default selections.

3. Avoid visual manipulation. Bright colours, large letters, and countdown timers to improve the sense of scarcity or urgency should be avoided. While visual indicators can improve user engagement, their overuse can damage trust. In line with [17], designers should strive to produce a visually balanced hierarchy that captures the users' attention without being overbearing.

4. Opt-in choices over defaults. Designers should prioritise offering opt-in choices instead of incorporating pre-selected options. As an example, the pre-selected "subscribe to the newsletter" option often seen to promote products via email. Pre-selected options are one of the most "effective" yet manipulative strategies, as they subtly pressure users into unintentional commitments. These features should be replaced with clearly stated, optional choices that empower users to make decisions, without feeling pressured.

7 Conclusion

Our study found that calm, non-manipulative visual communication, as applied in the non-deceptive prototype, was perceived by participants as a satisfactory experience. While this aligns with ethical online shopping design, it may conflict with short-term business goals. Additionally, users still expect some level of "excitement" and strategies that simplify decisions, likely due to familiarity with popular profit-driven platforms like Amazon, where deceptive patterns are tolerated for convenience.

New online shopping platforms cannot rely on such familiarity and must balance deception and convenience. Any new online shopping experience will likely have to compete directly with the Amazon experience, utilising the patterns outlined here to retain its users and keep them engaged in their shopping behaviour. Based on our findings, we offer recommendations for designers to shift from deception toward ethically providing convenience.

This study compared user interactions with original, deceptive enhanced, and non-deceptive prototypes, offering insights into awareness and tolerance of deceptive strategies. The analysis focuses on users' perceptions of the interactive experience, excluding factors like customer service and delivery reliability. A limited sample size may also affect the generalisability of results. Future research should involve larger, more diverse groups to explore the long-term effects of deceptive versus ethical design on user behaviour and business, contributing to more sustainable and ethical digital practices.

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