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The 'Average' Consumer in the Dark Pattern Age – A qualitative exploration into vulnerability and coping strategies exhibited by consumers to inform the Digital Fairness Act

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The ‘Average’ Consumer in the Dark Pattern Age –

A qualitative exploration into vulnerability and coping strategies exhibited by consumers to inform the Digital Fairness Act

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Abstract

Digital-choice architectures are increasingly engineered to exploit cognitive bias, calling into question the European Union’s long-standing “average consumer” benchmark. While the forthcoming Digital Fairness Act (DFA) promises stricter limits on manipulative design, the empirical basis for calibrating those limits remains patchy. This study supplies a consumer-centric evidence base. A total of 95 German shoppers were interviewed. As part of the interviews, they completed real online-purchase journeys while thinking aloud; their verbalizations were analyzed following qualitative thematic coding principles.

Two cross-cutting themes emerged. (1) Context is King: the same countdown timer or scarcity claim was either ignored or decisive depending on task urgency, fulfilment trust and device constraints, revealing vulnerability as episodic rather than categorical. (2) The Opportunistic Consumer: far from helpless, participants deployed a previously under-reported coping repertoire comprising aggressive filter pruning, platform loyalty, strategic delay and voucher recycling to realign interfaces with their own goals. These tactics typically neutralized low-stakes nudges but broke down against post-purchase “roach motels” that thwart cancellation of newsletters or unwanted user accounts.

The findings advance theory and policy in three ways. First, they map dual-process psychology onto concrete shopping stages, showing that System-1 heuristics can insulate as well as expose users to dark patterns. Second, they complicate the binary average versus vulnerable consumer doctrine by documenting situational autonomy and deliberate rule-bending. Third, they outline a risk-tiered regulatory template for the DFA: benign, reversible nudges may remain permissible, whereas lock-ins and high-stakes, irreversible manipulations warrant heightened duty-of-care and streamlined redress.

By grounding legal benchmarks in the lived realities of digital commerce, the study provides actionable guidance for legislators, competent authorities and platform designers seeking a proportionate path to genuinely fair online markets.

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Keywords

Dark Patterns, Digital Fairness Act, Digital Services Act, Consumer Behavior, Cognitive Bias

1. Introduction

Pervasive digitalization, granular data capture and analysis combined with personalization equip businesses to exploit human biases. The concept of dark patterns introduced by Brignull (2010) has developed into a broad notion of deceptive patterns capturing manipulative interface design strategies aimed at steering user behavior to advantageous outcomes for service providers (Brignull, 2023).

With mounting evidence of the prevalence and effectiveness of a broad and wide range of dark patterns identified systematically (Lupiáñez-Villanueva et al., 2022; Mertens et al., 2022; Nie et al., 2024) the premise of the ‘average consumer’, i.e., “a person who is reasonably well informed and reasonably observant and circumspect” as the bedrock of consumer protection legislation wavers (Busch & Fletcher, 2024; Helberger et al., 2022). The European Commission and the OECD echo these concerns in their recent reports (European Commission, 2024; OECD, 2023) surrounding the development of the Digital Fairness Act (DFA). Specifically, the European Commission finds “that the legal definition of the ‘average consumer’ is not in tune with the realities of the disengaged consumer behaviour in the digital environment and that the ‘vulnerable consumer’ definition remains too rigid and narrow.” (p. 46)

Our study answers this challenge with a consumer-centric lens. Drawing on 95 semi-structured, think-aloud interviews, we observed German shoppers as they completed authentic online-purchase journeys on both familiar and unfamiliar platforms. Our approach relies on think-aloud verbal protocol analysis to enrich the interviews with the flow of a real transactions. Thus, we move beyond the fragmentary experimental screenshot or post-hoc survey that dominates much of the existing evidence base.

The data make three contributions. First, they reveal that vulnerability is episodic rather than categorical, i.e., the same individual shifts between peripheral “fast” heuristics and deliberative “slow” scrutiny depending on task urgency, trust in fulfilment, and perceived or actual value. Second, they uncover a largely overlooked coping repertoire that comprises filter pruning, platform loyalty, strategic delay, and even rule-bending, all of which consumers deploy to re-align choice architectures with their own goals. Third, by mapping when these tactics succeed and where they fail (notably in post-purchase lock-ins), the study provides an autonomy-oriented evidence base that can guide the risk-tiered obligations envisaged for the DFA.

The article proceeds as follows. Section 2 traces the historical arc from early manipulative advertising to today’s digital choice architectures and distils the doctrinal tensions around the average and vulnerable consumer. Section 3 details our methodology, including sampling, interview protocol, and thematic analysis. Section 4 presents the empirical findings, organized around two integrative themes: (1) “Context is King” and (2) “The Opportunistic Consumer.” Section 5 discusses how these insights recalibrate legal benchmarks and inform proportional regulation, while Section 6 distils concrete recommendations for the forthcoming DFA. Section 7 closes with limitations and future research avenues.

2. Literature Review and Research Questions

The scholarship on dark patterns – interface design choices that exploit cognitive biases to steer users toward decisions they would otherwise resist – is now well established. Recent state-of-the-art syntheses chart the terrain in detail (e.g. Gray et al., 2023; Kollmer & Eckhardt, 2023; Nie et al., 2024; Singh et al., 2024). Most recent work extends the concept of deceptive designs into augmented and virtual reality applications (Chatterjee & Malgieri, 2024; Ramirez et al., 2024; Wang et al., 2024) as well as the potential to develop haptic dark patterns (Tang et al., 2025) Instead of revisiting these reviews, this article focuses

on consumers' lived experience, asking how individuals recognize, interpret, and negotiate dark patterns in their everyday online routines.

The commercial exploitation of cognitive bias is hardly novel. Edward Bernays, drawing on psychoanalytic insights, promoted the deliberate shaping of public opinion for private and public clients (Bernays, 1923), and Walter Lippmann popularized the "manufacture of consent" along similar lines (Lippmann, 1922). In 1957, James Vicary even claimed falsely, as he later confessed to have boosted concession-stand sales by flashing subliminal prompts such as "eat popcorn" during a film (Sutherland, 2008).

Behavioral economics supplied a systematic framework for those intuitions. Foundational work by Kahneman, Tversky, and colleagues (Kahneman et al., 1982; Tversky & Kahneman, 1971, 1981) inspired a behavioral turn in legal and economic scholarship around 2000. Hanson and Kysar's (1999a, 1999b) twin articles "Taking Behavioralism Seriously" mark the point at which legal doctrine acknowledged systematic departures from rationality, later deepened in digital contexts by (Calo, 2014) and (Spencer, 2020).

This recognition troubles traditional consumer-protection doctrine, which still relies on the fiction of the "average consumer" as someone "reasonably well informed, reasonably observant and circumspect." That standard was articulated in the landmark case "C-210/96 Gut Springenheide and Tusky v Oberkreisdirektor des Kreises Steinfurt" (1998) and codified in the Unfair Commercial Practices Directive (UCPD) (European Parliament and of the Council, 2005).

If the concept of the average consumer was fragile in the dial-up era, it is even less plausible in today's data-rich economy. Ubiquitous tracking, granular profiling, and real-time personalization equip firms with unprecedented tools for crafting dark patterns at scale. A study for the European Commission found such patterns on virtually every major for-profit website and app (Lupiáñez-Villanueva et al., 2022) and several scholars reach similar conclusions (Di Geronimo et al., 2020; Mathur et al., 2019).

Regulatory responses have emerged but remain fragmented. European legislation now references vulnerability, exploitation, bias, and dark patterns across multiple instruments, yet these provisions often overlap or conflict (Brenncke, 2024; Graef, 2023). Underpinning recent reforms is the growing sense that all consumers are vulnerable online. This is a view shared by scholars (Busch & Fletcher, 2024; Helberger et al., 2022) and echoed by both the European Commission and the OECD (European Commission, 2024; OECD, 2023).

Experimental evidence underscores the point, consistently showing that dark patterns can sway consumer decisions in controlled settings (Gunawan et al., 2021; Luguri & Strahilevitz, 2021; Zac et al., 2025)

Although the experimental literature persuasively documents that dark patterns can shift behavior, its evidentiary base remains narrow. Most studies rely on tightly controlled tasks that isolate a single interface element and remove it from the rich motivational and situational context in which real-world decisions unfold. This limitation echoes an older debate on subliminal priming. Early laboratory work showed that primes can bias behavior; yet only when the primed object matches an existing goal. For instance, gamers seeking an energy boost proved susceptible to subliminal cues for dextrose tablets (Bermeitinger et al., 2009), and thirsty participants preferentially selected a primed soft-drink brand (Karremans et al., 2006; Strahan et al., 2002). Crucially, when participants were alerted to the possibility of subliminal influence and instructed to resist, the effect vanished (Verwijmeren et al., 2013). Awareness, it seems, allows individuals to re-attribute the source of their desire and neutralize the prime.

A parallel caution applies to dark-pattern research. Domain audits reveal that not every catalogue item is even present, let alone potent, in every service. Expert reviewers found only 45 % of the 69 documented patterns in leading social-media apps (Mildner et al., 2023), prompting the authors to warn that ever-expanding taxonomies risk overwhelming regulators while remaining only partially relevant in practice.

Complementary user studies indicate a persistent recognition gap: when confronted with canonical examples, many consumers do not label them as manipulative or harmful. In one interface-recognition experiment, 59 % of participants identified at least five of nine dark patterns, yet only one-quarter spotted seven or more; elements such as trick questions, pre-selections, hidden information, and bundled consent were missed by roughly half the sample (Bongard-Blanchy et al., 2021). Habituation, heuristic processing, or simple contextual benignity may all play a part in which dark patterns become salient for consumers, and which of them reach their intended effect.

Recent work has begun to explore temporality and aggregation of dark patterns. Gray et al. (2025) show that dark patterns often cluster along a single user journey, producing amplified effects through interaction rather than in isolation. Similarly, Bogliacino et al. (2023) propose a transaction test that benchmarks manipulation not against sheer effectiveness but against the consumer's ex-ante intention, thereby distinguishing designs that facilitate informed choice from those that derail it.

Yet surprisingly few studies engage directly with consumers' own meaning-making across the full purchasing process. Addressing this gap, we adopt an exploratory, consumer-centric perspective and pose our first research question:

RQ1: How are dark patterns recognized and experienced by consumers during online shopping?

By tracing these encounters in situ, we seek to complement experimental findings with a grounded account of how users notice, interpret, resist, or accommodate deceptive design in contemporary digital marketplaces.

The second strand of our inquiry revisits the twin benchmarks of EU consumer law – the “average” and the “vulnerable” consumer – to ask whether they still illuminate market realities. A systematic reading of post-UCPD case law finds that courts apply the average-consumer test unevenly, often citing the Directive's recital language rather than the *Gut Springenheide* definition and turning to ad-hoc surveys or expert opinion to fill the gaps (Schebesta & Purnhagen, 2020). Earlier doctrinal analysis had already warned that a single benchmark cannot capture heterogeneous audiences and variable persuasive power, and that the auxiliary label vulnerable consumer is too indeterminate to cure the defect (Incardona & Poncibò, 2007).

More fundamentally, the dichotomy clashes with dual-process psychology. The seminal work conducted in this field shows that System 1 (peripheral) processing dominates everyday choice: it is fast, automatic, and susceptible to bias. System 2 (central) processing, by contrast, is slow, resource-intensive, and deployed only when motivation and cognitive capacity permit deliberate analysis (Kahneman, 2011; Petty & Cacioppo, 1996). The UCPD nevertheless treats System 2 competence as the norm and relegates System 1 reliance to the periphery. The misalignment matters because, as Brenncke (2024) argues, the crucial policy issue is not which consumer archetype is deceived but whether a design exploits cognitive frailty in a way that erodes personal autonomy. His autonomy-based account reframes regulation as the prevention of behavioral exploitation, not the protection of a hypothetically rational standard.

This lens also clarifies why persuasive interfaces can be benign or even welcome. Zac et al. (2025) distinguish welfare-enhancing nudges from dark patterns by asking “who benefits” the user or the trader. The answer to this question may differ markedly depending on one's perspective. Therefore, it opens space for two neglected roles: (1) shoppers who embrace seemingly manipulative shortcuts because they advance their own goals, and (2) “super-consumers” who consciously game interface quirks. Neither fits the average/vulnerable binary, yet both are central to an autonomy-centered view of online choice.

Taken together, these insights indicate that consumer competence is situational rather than categorical, shifting across the purchase journey and across individuals. To the best of our knowledge, the is an empirical terrain still largely unmapped.

RQ2: Under what circumstances do online shoppers align with, deviate from, or transcend the average-consumer benchmark during routine purchasing, and what does this reveal about their autonomy when confronting dark patterns?

By tracing moments of deliberation, vulnerability, opportunism and resistance within real shopping episodes, RQ2 complements RQ1's focus on pattern recognition, advancing a richer, autonomy-oriented foundation for dark-pattern regulation.

The discussion of situational competence naturally leads to the question of how consumers cope with the choice architectures they encounter online more broadly. Design is never neutral: every interface steers behavior, whether the choice architect intends it or not.

Thaler and Sunstein's inevitability argument already pointed out that some choice architecture must be chosen; there is no neutral baseline (Sunstein & Thaler, 2003; Thaler & Sunstein, 2008). Ivanković and Moles (2025) extend the point: because every layout predictably shapes behavior, leaving a screen "as is" is morally indistinguishable from adding an overt nudge. What therefore matters is not the mere fact of design intervention but the fit between the resulting architecture and the user's goals. In commercial settings that fit is frequently loose: firms optimize interfaces for conversion rather than consumer welfare. Thus, autonomy, if it is to survive, must often be asserted by the user rather than conferred by the designer.

Emerging research hints at what such self-assertion looks like. Ye et al. (2025) show that brief trainings raise awareness of dark patterns, yet the coping repertoire they elicit is thin. It comprises abandoning the site or, where exit is impossible, grudging acquiescence. Lu et al. (2024) prototype a browser extension that augments this toolkit. It enables users to mask visual salience, inject friction, prompt reflection as possible coping strategies, but its efficacy remains speculative. Qualitative work reinforces the need for deeper inquiry: users often sense that "something is off" without being able to name or counteract the manipulation (Gray et al., 2021), and their acceptance of a pattern depends on an ad-hoc weighing of convenience, suspicion, and necessity (Maier & Harr, 2020).

These gaps matter for theory and policy alike. If, as Graef (2023) contends, markets cannot self-correct against dark patterns, we need robust evidence on the limits of consumer agency; conversely, Brennncke's (2024) autonomy-based framework requires a precise view of when and how that agency is in fact exercised. Mapping real-world coping strategies therefore offers a critical bridge between autonomy theory and the regulatory ambitions of the forthcoming Digital Fairness Act.

RQ3: Which strategies do consumers deploy to realign online choice architectures with their own goals, and under what conditions are these strategies effective?

Answering RQ3 will illuminate the practical boundaries of consumer self-determination, test assumptions about market self-correction, and ground autonomy-oriented regulation in the lived realities of digital commerce.

The following section details the data and methodology relied upon to answer these research questions.

3. Methodology

In line with the exploratory nature of the research questions for the present contribution, we followed a qualitative methodology. Specifically, we adopted a semi-structured individual interview format, allowing for both guided inquiry and flexible, participant-driven elaboration (Kallio et al., 2016). As part of the interviews, we situated the interviewees in online shopping tasks in a think-aloud setting to explore the design choices they encountered, their recognition of these design choices, and apparent reactions. The

interviews were closed by a joint reflection of the interviewer and interviewee about the design choices just seen as well as specific references to dark patterns they had experienced in other circumstances. Notably, the shopping task stopped short of actually purchasing any product. It ended with a look at the shopping cart holding the selected item(s). The following paragraphs will detail the research design and approach, the interview guide development and intended flow of the interviews, the data collected as well as our approach to analyzing the data.

3.1 Research Design and Approach

The recruitment and implementation of the interviews were conducted by students from Macromedia University Cologne and Trier University of Applied Sciences. The authors of this study closely supervised the entire research process. Great emphasis was placed on preparing the students thoroughly. This included targeted coaching, iterative feedback, particularly regarding the development of screeners and interview guides, as well as comprehensive training sessions. These trainings focused on interview techniques and strategies for dealing with interview-specific challenges.

3.2 Interview Guide Development

By combining two hands-on qualitative methods courses we amassed an unusually large corpus of interviews (N = 95). To avoid simple redundancy while preserving comparability, we drafted four semi-structured interview guides that shared a common backbone consisting of rapport building, task-based observation, think-aloud prompts, and reflective debrief; yet allowed each student team to fine-tune wording, sequencing, and the specific shopping scenario. Such “tailored-but-aligned” designs are well established in qualitative research. Wilhelm et al. (2016) employed seven stakeholder-specific guides in a health-financing study, but each probed the same constructs of acceptability and adoption. Similarly, Curtin et al. (2023) customized guides for staff and service users, while ensuring that every version addressed shared themes such as prior experience, suitability, and preference. Following this logic, the next subsection details our guide architecture so that readers can clearly see where the four versions converge and where they deliberately diverge. and allow for both structure and flexibility.

The guides were designed to balance systematic data collection with openness to emergent insights. A fully standardized questionnaire was deliberately avoided in favor of a semi-structured format, which allowed participants to introduce unexpected topics or interpretations. This openness was further supported by a funnel-shaped structure, starting with broad, open-ended questions and gradually narrowing to more specific prompts (Mariampolski, 2001).

In addition to conventional questions, the interviews incorporated realistic task scenarios, such as asking participants to purchase a gift (e.g., a sweater for their mother) on specific e-commerce platforms. These tasks were intended to simulate authentic shopping behavior and ensure that participants engaged with typical online purchase processes. Most interview guides featured a fashion shopping task. Two interview guides featured open online shopping tasks. We choose an online shopping task in line with the prominence of dark patterns in this domain (Lupiáñez-Villanueva et al., 2022).

To access participants’ thought processes during these tasks, the Think-Aloud method (Charters, 2003) was used. Participants verbalized their thoughts in real time, providing insight into decision-making rationales and emotional reactions. Following the task, a Process Exploration phase invited participants to reflect on their experience in detail. This phase gave them the opportunity of discussing choices, usability impressions, and moments of uncertainty. These methods, combined with non-intrusive behavioral observation, contributed to the ecological validity of the study and supported a grounded theoretical analysis of both action and reflection.

3.3 Structure and Content of the Interviews

At the outset of each interview, participants were thoroughly briefed about the structure and scope of the session. They were informed that participation was entirely voluntary and that they could withdraw from the interview at any time without providing a reason. Furthermore, it was clearly emphasized that the study was concerned solely with their personal experiences, and that there were no right or wrong answers. They were assured that all findings would be presented in an anonymized format, and that no information would be published or analyzed in a manner that could lead to the identification of any individual.

Participants were informed about the approximate duration of the interview and were asked to provide explicit consent for the audio recording of the session for analytical purposes. They were also told that the study focused on their experiences and behaviors related to online shopping. However, no specific information regarding the research questions or objectives was disclosed prior to the interview. This approach was deliberately chosen to avoid priming effects and to ensure that participants provided authentic, unfiltered accounts of their perceptions, thoughts and behavior. Only after confirming that all questions had been addressed and the participant felt fully informed did the interviewer begin the recording and commence the interview (Swain, 2016).

The typical progression of an interview was as follows: First, participants were asked to briefly introduce themselves. This was followed by ice-breaker questions, such as prompts about their most recent online shopping experience and the general role of online shopping in their daily lives. These opening questions helped to ease participants into the interview and establish a comfortable conversational tone.

Subsequently, the main task phase began. Participants were presented with a typical online shopping scenario (e.g., purchasing a fashion item or a gift) and asked to perform an actual purchase on predefined e-commerce platforms, including Amazon, Temu, Zalando, and Shein, which are among the ones featuring many dark patterns (Lupiáñez-Villanueva et al., 2022) as well as among the highest-grossing e-commerce outlets in the German market (EHI Retail Institute, 2024). These platforms were selected to ensure a broad coverage of different online shopping environments and user experiences. Typically, the interviewers would have interviewees go through the same task twice, once on an e-commerce platform they are familiar with, and once on a platform (largely) unfamiliar to them.

During the shopping phase, participants were explicitly instructed to verbalize their thoughts continuously using the think-aloud method, a technique designed to make cognitive processes accessible for qualitative analysis. This approach enabled the researchers to gain deep insights into participants' expectations, hesitations, decision-making rationales, and immediate reactions to elements of the shopping interface, including design choices that could later be interpreted as manipulative or misleading.

Following the completion of the shopping task, the interview entered a reflective-exploratory phase, in which participants were asked to articulate their impressions of the experience in an open-ended manner. Particular attention was paid to whether participants had already, either intuitively or explicitly, noticed or named potentially manipulative design choices, and whether such elements had influenced or disrupted their shopping process. This segment aimed to capture unprompted observations that might indicate early awareness or sensitivity to dark patterns prior to the formal introduction of the concept.

Subsequently, participants were thanked for their engagement and gently transitioned to the core thematic focus of the study: dark patterns. This transition was initiated through a sequence of increasingly specific questions. First, participants were asked to reflect on the factors that had influenced their purchase decision, followed by the more targeted question of whether they had felt influenced or manipulated in any way during the task. Finally, they were asked whether they were familiar with the term "dark patterns".

Only after this exploratory entry did the interview proceed to a brief informational segment, in which participants were provided with concise definitions of dark patterns, including common forms such as misleading button designs, disguised advertisements, forced continuity, or confirmshaming. This ensured a shared conceptual understanding across participants and allowed for meaningful engagement in the subsequent questions.

Following this, participants were invited to reflect on their broader consumer experiences in light of the newly introduced concept. They were asked whether they had encountered dark patterns in the past, either during the current task or in other online shopping contexts. Participants were encouraged to discuss how they had reacted or would hypothetically respond to such experiences. With this we wanted to get a deeper understanding of the rich accounts of coping strategies, emotional responses, and trust dynamics, to contributing significantly to the study's aim of understanding the lived realities of consumers in digital commerce environments.

In a subset of interviews, participants were given the opportunity to engage in a second online shopping task following the introduction and discussion of dark patterns. The purpose of this follow-up task was to explore whether and how the newly acquired awareness of manipulative design strategies influenced participants' subsequent shopping behavior and subjective experience. This element of the study was designed to provide insight into potential shifts in perception, attentional focus, and decision-making after participants had been sensitized to the existence and mechanisms of dark patterns.

Following the second shopping task, participants were invited to reflect on their experience once more. This time, the emphasis was placed on exploring any changes in awareness, emotional response, or shopping strategy that may have resulted from the informational segment on dark patterns. The open-ended nature of the follow-up questions allowed participants to articulate new insights, critical reflections, or persistent uncertainties about manipulative design in digital commerce settings.

The interviews concluded with a final question inviting participants to summarize their overall impression of the study, share a brief concluding statement or personal takeaway, and offer any additional comments or reflections they wished to express. Participants were once again thanked for their time, openness, and valuable contributions. This concluding step marked the formal end of the interview process and helped bring closure to what was often perceived by participants as a thought-provoking and eye-opening session.

3.4 Sampling and Data Collection

In qualitative research, the value and validity of findings are closely tied to the sampling procedures and the recruitment of participants (Mason, 2002). This is particularly true when utilizing semi-structured interviews, as in the present study. Rather than seeking statistical representativeness, the sampling approach pursued here was designed to achieve psychological-functional representativeness. This concept emphasizes the inclusion of a diverse range of psychological perceptions and experiential structures, ensuring that various perspectives and lived realities are captured and reflected in the data.

Specifically, it was essential to ensure that all participants possessed thematically relevant experiences and were capable of articulating these experiences in detail. As such, the sample was constructed purposively, with a focus on theoretical saturation whilst representing a broad of voices. In alignment with the aims of the study, specific criteria were established for participant selection:

- **Gender balance:** An approximately equal representation of male and female participants was sought.

- **Age variation:** The sample included individuals across a broad range of age groups to ensure generational perspectives were represented.
- **Online shopping experience:** All participants had prior experience with online shopping. Importantly, both frequent and infrequent online shoppers were included to encompass a spectrum of user behaviors and attitudes.
- **Occupational exclusion:** Individuals currently employed in market research, retail, or e-commerce were excluded to avoid potential biases related to professional familiarity with the topic.
- **Study participation history:** Participants who had recently taken part in other studies on similar topics were also excluded to minimize the risk of study fatigue or influenced responses.

Potential interview partners were screened in advance using a structured set of eligibility questions. This ensured that only suitable candidates who met all inclusion criteria proceeded to the interview scheduling phase. Individuals who did not qualify were politely informed that they did not meet the requirements for participation and were thanked for their willingness to contribute.

This careful and purposeful sampling process was integral to ensuring that the interview data generated meaningful and analytically rich insights, while also maintaining methodological rigor in line with qualitative research standards.

Data were collected over a period spanning from May 9, 2025, to June 2, 2025. During this time, 101 qualitative, semi-structured interviews were conducted with consumers in Germany to address the research questions.

3.5 Data Analysis

All interviews were transcribed and diarized by the student groups using software packages based on OpenAI's Whisper package. The resulting transcripts were thoroughly reviewed by the authors to assess their methodological quality, particularly with regard to in-depth reflection and non-directiveness. As six of the interviews did not meet the expected analytical richness, they were excluded from further analysis.

The remaining pool (N=95 in total) of participants consisted of n = 55 women and n = 40 men, offering a reasonably balanced gender distribution. The average age of participants was 32.28 years, with the youngest participant being 18 years old and the oldest 73 years old. The interviews duration ranged from 26 to 148 minutes, with an average length of 47.32 minutes (SD = 16.24). This variability reflects the exploratory nature of the study and the flexibility afforded to participants to elaborate on their experiences in depth.

For the development of the codes and themes, we followed Braun and Clarke (2006). The two authors conducted the thematic analysis of the transcripts in close cooperation, both with each other, but also based on in-depth discussions with the student interviewers who coded their respective interview transcripts in parallel. A total for three rounds of iterative labelling took place after an initial familiarization with the texts as recommended by Braun and Clarke (2006). The iterative rounds benefitted greatly from the constant exchange of thoughts among the researchers and led to descriptive labels being grouped and integrated into higher-level themes. The constant exchanges as well as joint sessions clarified any apparent coding disparities. Consequently, there was no necessity for inter-rater reliability due to the aim of discovering emergent themes (McDonald et al., 2019).

4. Results

The 95 think-aloud interviews offer a granular view of online shopping as it unfolds from the first flicker of desire to the after-sales inbox. Rather than parceling the findings into three separate boxes corresponding to RQ1, RQ2 and RQ3, the material coalesces around two wider themes that permeate the five stages of the purchase journey (Kotler & Armstrong, 2008).

The first broad theme, which we label “Context is king,” shows that the impact of a design tactic hinges less on the graphical trickery itself than on the circumstances in which it is encountered. Need recognition whether it sparks while scrolling TikTok for fashion inspiration or while buying batteries in a hurry interacts with device type, prior platform loyalty and fulfilment expectations to determine both the salience of dark patterns and the coping repertoire they call forth.

The second theme, “The opportunistic consumer,” captures the fluid ways in which shoppers shift between low-effort heuristics and high-effort optimization. The pivot is almost always perceived value. Free-shipping thresholds, steep discounts or loyalty perks entice users to invest extra search time, waive privacy qualms or even game the interface in return. Consumers emerge not as uniformly helpless victims and not as uniformly vigilant experts, but as adaptive bargain hunters whose autonomy expresses itself situationally.

Taken together, these two themes address our research questions in an integrated fashion. “Context is king” illuminates how dark patterns are recognized and experienced in situ (RQ1) and why competence fluctuates over the course of a single journey (RQ2). “The opportunistic consumer” surfaces the concrete tactics ranging from heavy reliance on filters to the strategic recycling of introductory vouchers by which users attempt to realign choice architectures with their own goals (RQ3).

The following subsections elaborate each theme in turn, grounding the analysis in participants’ own words. A systematic mapping of the findings back onto the three research questions, and a reflection on their implications for theory, law and policy, are provided in the subsequent Discussion.

4.1 Theme 1: Context is King

The first theme we identified in response to this research question is “Context is king” highlighting the shortcoming isolated experimental consumer behavior research. This theme unfolds across the five purchase phases proposed by Kotler and Armstrong (2008).

Accordingly, we begin with *need recognition*, because it frames every subsequent contact with potentially manipulative design. The interviews underscore that shopping context, rather than interface design, primes consumers for later susceptibility. When respondents decided to shop online their motivation was predominantly utilitarian. They emphasized speed, convenience, and the desire to “get it done” without hassle, selecting platforms on the basis of minimizing perceived friction. In contrast, decisions to buy offline were intertwined with experiential motives: participants spoke of tactile inspection, socializing with friends, and the sheer enjoyment of browsing as integral to an in-store trip.

Among younger interviewees a hybrid pathway emerged. Inspiration was often generated while scrolling TikTok, Instagram, Pinterest, or Vinted; these social feeds stimulated a desire to purchase, yet did so through curated content streams rather than through classical dark-pattern triggers such as retargeting banners or email sign-ups. Older participants occasionally mentioned such marketing nudges, but only as background noise rather than as catalysts for entering the purchase funnel. Remarkably, no respondent attributed the **onset** of shopping motivation to recognisable dark-pattern mechanisms.

"Well, when I go to a store, I feel like it should actually be the opposite of online shopping. I'd like it to be more of an inspiring experience. I know some people don't like sales staff in stores, but I actually appreciate it when you get proper advice or, more importantly, competent advice. That really matters. I think it helps when the shopping experience itself is enjoyable, like when there's a nice atmosphere. You know, in modern stores, it's becoming more common that you're offered a drink, there's good music, cool interior design just something you can experience. I think if more of that happened, it would definitely make me feel like just getting a package at home doesn't offer the same kind of experience." (Simon, 26)

"When I shop online, I usually do it in a very focused way. I know what I want, I know what I need, and I usually don't buy more than that." (L.M., 19)

"My shopping usually starts spontaneously. For example, when I'm scrolling through my feeds on social media, especially Instagram or Pinterest. I then see an outfit or a particular item of clothing that I like. If I really like it, I sometimes click directly on the link or search for similar pieces on TikTok." (Mia, 23)

As participants moved from need recognition into the information-search and comparison phases, dark patterns began to surface without prompting. Two interface choices stood out as particularly salient. First, many interviewees described dense product grids rendered in small fonts on large screens or limitless scrolling on mobile devices as mentally taxing and time-consuming. The cognitive strain translated into feelings of being "overwhelmed" or "sucked in," prompting the first notable coping response documented in our interviews. Almost everyone resorted (virtually by default) to vigorous use of filters, sort functions, and category shortcuts to prune the choice set before genuine evaluation began.

"I expect the site to be clearly structured so I can quickly find what I'm looking for. There should be filter options like filtering by price, color, size, or maybe even brand. And there should definitely be a search function." (Emily, 21)

"It's just a habit. Using all the filters helps me save time, otherwise, you can spend ages trying to find something. That's why I narrow everything down until I only get results that actually interest me." (Christin, 26)

A second, complementary strategy was habitual platform loyalty. Shoppers typically confined searches to two or three outlets they "know and trust," thereby reproducing the heuristic of store and brand familiarity long documented in offline behavior. Participants were aware that this convenience could carry a price premium yet accepted the trade-off for lower cognitive load and higher confidence in delivery, returns, and customer service. In fact, e-commerce platform trust was anchored less in front-end design than in fulfilment experience.

"Definitely on Amazon. I've known them for a long time, and I trust them both in terms of quality and how they handle returns and refunds. Even if something arrives damaged, they always issue a refund. Always. (Goswin, 60)

The exception arose when products first encountered in social-media feeds had to be sourced. Here respondents recounted more pronounced dark patterns including, but not limited to pop-ups touting implausible discounts, forced data entry under the guise of rewards, and newsletter gates requesting e-mail addresses or mobile numbers. Most admitted they had been caught out "once or twice" in the past but now approached such sites with heightened suspicion, often abandoning the cart or searching for the item on their preferred platforms. Those who nevertheless completed the purchase did so in spite of, not because of, the apparent deceptive designs.

"I think I would just stop buying from sites like that because it really bothered me how they put you under pressure in such a weird way. Some of these websites just have too much going on. I found myself thinking I just want to buy something, but there are so many distractions. It kind of overwhelms you. I remember once I even accidentally bought the same item twice, just because I didn't notice I had already added it. Sometimes it happens so fast you click twice without realizing, and then suddenly it's ordered. I didn't even notice it during checkout; I only realized when the package arrived. That was confusing, and that's why I'd probably just avoid shopping on that kind of site again." (Sarah, 22)

"Women's. No, men's. (...) 'Happy Birthday.' It's overcrowded far too much all at once, in my opinion. Tacky. (...) As for Temu, I don't know; it looks like leftover stock to me. A watch for €13.44? That can't be any good. ... It's difficult I find this site much harder to navigate than the other one. Everything seems randomly jumbled together." (Goswin, 60)

Across interviews, the cookie-consent banner emerged as the ubiquitous dark pattern of this stage, yet reactions varied widely: some clicked "accept all" reflexively, others rejected every optional cookie by default, and a sizeable middle group toggled preferences only occasionally. No consistent rationale linked these positions, illustrating that even highly standardized patterns elicit heterogeneous responses conditioned by task urgency, personal privacy norms, and trust-level into the website requesting cookies to be accepted.

"Right, down here it's now directly asking me whether I want to accept the cookies. I never click 'accept all' I always go to 'manage cookies,' even if that option is a bit less noticeable here. I pretty much always choose 'manage cookies.'" (Lilly, 24)

"If you have to accept it, then you just have to accept it my goodness, that's just how it is. But if you can click it away, then yeah, I'd just click it away." (Leona, 18)

"Here we just see the usual cookie consent banner, like you always get when visiting any website online. I would actually only accept the necessary cookies and reject all the others. I learned at university that you're not really supposed to accept all cookies that it's not a good idea. I used to accept them by default, but then I was told it's not great. Since then, I always reject them, so I would click 'reject all' here." (Lea-Sophie, 20)

"Oh God, all those cookie pop-ups. Accepting is always the easiest saves you from dealing with the whole message." (Max, 26)

*"Cookies again (laughs). I usually click 'reject all'. Often it takes me to another page where it says something like 'only accept essential cookies' or similar. I really only accept what's absolutely necessary, if that's possible. Sometimes I click 'accept all' by mistake and then I'm like, 'oh ****'." (Jana, 24)*

Once participants had narrowed their option set, the purchase and basket stage revealed a distinct cluster of dark patterns. Foremost was the free-shipping threshold. Nearly all interviewees recognized that many retailers set standard minimum order values beyond their initial spend; most acknowledged that they often raised the basket total to avoid a delivery fee, reasoning that an extra item felt preferable to "paying for nothing." The tactic thus expanded baskets reliably, yet it receives scant attention in mainstream dark-pattern catalogues because it exploits cost aversion rather than overt visual manipulation.

Traditional dark pattern cues like count-down timers, artificial scarcity flags, and flash-sale banners were also detected, particularly during the think-aloud tasks. Participants claimed routine indifference, explaining they had learned to ignore such prompts due to their widespread use on almost every online shopping site. Subsequent reflection, however, nuanced this stance. When the product was high-priced and users had already invested effort comparing offers, time-pressure messages frequently accelerated purchase. Respondents portrayed this as hastening a decision they would probably have made anyway, not as coercing an unwanted buy. Regretted purchases triggered solely by scarcity cues were rare and typically resolved through returns; true harm arose chiefly when the site proved fraudulent or extra-EU, making returns costly or impossible.

In the basket view itself, add-on recommendations were ubiquitous. Their influence again hinged on relevance: if suggested items matched an existing need such as completing an outfit, adding compatible accessories participants described the prompt as helpful and occasionally accepted it. Where relevance was low, recommendations were ignored with little conscious effort.

Taken together, the purchase phase confirms that dark patterns are most effective when they dovetail with pre-existing motives such as saving on shipping or securing a perceived bargain. Across interviews, no instance emerged in which a pattern single-handedly created a purchase intention from scratch.

"Um, yeah, so I ordered everything together because on Amazon you get free shipping once you reach a certain amount. So you kind of try to add more or wait a bit until it's actually worth it. And, yeah, I guess the reason was just that I recently moved, and I needed a few things, like a smoke detector, for example, because the one in the bedroom was blinking and I wanted to replace it." (Simon, 26)

"Yes, exactly. I've done that again recently, just adding products to the shopping cart until I reach the threshold for free shipping. But I do try to make sure that I only add items I know I'll actually use. So I tend to add consumable goods, like green tea, for example. I know I'll drink it eventually, as long as it doesn't go bad, which I don't expect it to. That way, I'm not just adding random stuff that might end up forgotten in some corner." (Simon B., 26)

"Not so much anymore, really. I guess it depends on how much I believe that something is actually in high demand, like with concert tickets, maybe. But most of the time I think, yeah, it's just a tactic. People are aware of that by now."

(Interviewer: And if you know it's a tactic, then you try not to fall for it on purpose?)

"Yeah, it depends. If I already plan to buy the product anyway, then maybe I do complete the purchase a bit faster, especially with things like plane tickets, where prices keep changing. But otherwise, not really." (Elisabeth, 23)

"When I'm buying a tennis racket, for example, and a pop-up says, 'Don't you also need grip tape?' then I think, 'Right, I totally forgot about that.' So in a way, I was manipulated but it was also convenient." (Lilly, 24)

The only dark pattern that participants condemned without qualification emerged after the transaction was ostensibly complete. In the reflective portion of the interviews many recounted "roach motel" experiences such as newsletter subscriptions and user accounts that were easy to enter yet unexpectedly arduous to cancel. Unlike earlier phase-specific tactics, this lock-in mechanism provoked uniform irritation: it was judged "annoying" regardless of product category, purchase motive, or shopping context, and no respondent described a workable in-situ coping strategy beyond prolonged trial-and-error or, ultimately, abandonment of the offending retailer.

"Yes, an example comes to mind: With one shop, I wanted to delete my customer account because I didn't want to shop there anymore. But it turned into a real odyssey. The option was deeply hidden, I had to click through several pages, and I kept being redirected to other offers. In the end, I had the feeling they were trying to stop me. I found that very frustrating. (...): I then searched through the FAQ section for a long time and eventually contacted customer support. It took weeks until my account was finally deleted. That kind of thing can really put you off." (Markus, 19)

"Yeah, I honestly think that's a bit unfair. On some sites you can't even create an account unless you agree to get their newsletter." (Thomas, 20)

"Yeah, that's funny. I only recently learned how to cancel those. It works about 80 % of the time, but sometimes you just can't find the button. They really do make it harder." (Tarek, 24)

"I thought I'd have to log in to About You before I could unsubscribe from their newsletter, but nope, it worked right away. The link is tiny, though, so with big fingers you have to zoom in and tap it carefully, but it does the trick." (Juliane, 57)

Across the five purchase phases the salience and impact of dark patterns proved highly situational. Need-recognition channels shaped expectations long before any interface was encountered; dense catalogues and endless scroll overloaded search and comparison, prompting users to impose their own structure; in the basket, patterns that chimed with pre-existing goals such as avoiding shipping fees, capitalizing on apparent bargains nudged behavior, whereas irrelevant cues were ignored. Only the post-purchase "roach motel" produced a consistently negative reaction independent of context.

4.2 Theme 2: The Opportunistic Consumer

The second theme concerns the flexible, often opportunistic ways in which interviewees allocated cognitive effort across purchases. Consistent with dual-process theories (Kahneman, 2011; Petty & Cacioppo, 1996), participants shifted between swift, heuristic decisions and labor-intensive analysis, with the switch largely governed by perceived purchase relevance. Low-stakes items elicited habitual choices on trusted platforms; high-stakes or identity-laden products, by contrast, motivated painstaking searches, specification checks, and cross-site price comparisons.

A shared impulse to "get the best deal" underpinned these shifts. Discounts, be it permanent reductions, one-day flash sales, or first-order coupons proved the most dependable catalyst for deeper engagement and eventual purchases. Looking for a substantial potential saving, participants willingly abandoned habitual routines, scouring search engines or dedicated comparison sites, tracking historical prices, and even tolerating unfamiliar retailers. Several interviewees described the internet as a tool furnishing information advantages that let them outperform their offline selves.

Yet the same price focus sometimes truncated deliberation. For instance, when a marked-down offer unlocked an otherwise unaffordable wish-list item, participants acknowledged sidelining fraud warnings, country-of-origin clues, or implausibly steep percentage cuts. Those who had previously been stung by counterfeit or non-delivered goods reported adopting simple heuristics. Most commonly they would check the imprint for a verifiable address as a personal risk screen.

Opportunism also surfaced in active rule-bending. A subset of participants maintained multiple disposable e-mail addresses to recycle "new customer" vouchers or stacked introductory codes across family accounts. Others postponed checkout deliberately, parking items in the basket to trigger reminder discounts or to grant themselves a self-imposed cooling-off period for further reflection, in-store inspection,

or renewed price checks. In each case, interviewees framed these tactics not as dishonesty but as their own ingenuity.

Across narratives, then, consumers emerged as situational strategists: quick to exploit informational advantages, occasionally blind to red flags when desire and discount aligned, and perfectly willing to turn retailers' own incentives to their benefit. These patterns illustrate how autonomy can manifest as adaptive pragmatism rather than consistent rational scrutiny.

"Okay, I'm now typing in Adidas sneakers green... There's one I like... discounted I obviously like that... Now I'm selecting my size... it really is cheaper... I'm happy about that, of course... and yeah, I'd now add this one to the cart... I keep seeing the sale offers the whole time..." (Nina, 21)

"When I buy things that I know are available from multiple retailers, I of course check where I can get the best price like with shoes, for example. If I have a 15% discount code for a particular site, then I'll order from the one offering that discount." (Lena, 21)

"So let's say, on Amazon for example, I go to the page and it says, this Nike ball uh only two left in stock, or the offer ends in twelve hours, and you get 20% off, then of course I'm going to buy it. Yeah, but that's not the main reason why I'd buy it it's because I already wanted it anyway. And then I think, okay, since those things apply, I'll just go ahead and buy it now." (Veton, 28)

"Yes, that's my Amazon page, I know it well. There's a lightning deal, free delivery by Friday, May 2nd. Cordless vacuum cleaner. It says the regular price is €249 and now it's €199. In this case, I would double-check. I usually copy the page, go to Google, enter the model number, and do a price comparison. What's the actual regular price? It might normally be only €199, and here they're just pretending it's a big deal with a so-called 33% discount." (Thomas, 60)

"Yes, if I want to buy something there, I'll do it. But like I said, I use a different email address, so I get the 10% discount and don't get spam in my main inbox." (Eduard, 46)

5. Discussion

The following discussion weaves together the two empirical themes - (1) context is king and (2) the opportunistic consumer - we outlined based on the interviews in the preceding section with the apparent dark patterns literature, current policy debates, and broader theoretical underpinnings. It proceeds in three steps. Section 5.1 re-examines dark-pattern recognition (RQ 1) through the dual lenses of priming theory and dual-process theory. Section 5.2 explores what our findings imply for the embattled average-versus-vulnerable consumer benchmark (RQ 2). Section 5.3 turns to coping repertoires (RQ 3) and their relevance for an autonomy-centered regulatory strategy. A final subsection draws out calibrated policy implications for the forthcoming Digital Fairness Act (DFA).

5.1 Dark-pattern recognition in context (RQ 1)

Laboratory work leaves little doubt that biased processing is a robust feature of human cognition, and meta-analyses spanning hundreds of experiments confirm its susceptibility to interface cues (Hummel & Maedche, 2019; Mertens et al., 2022). Yet by following complete shopping episodes our interviews disclose a more situation-sensitive picture. Participants noticed many typical dark patterns such as count-down timers, strategic color contrast, drip pricing even if they lacked a specialist lexicon. Recognition, however, hinged on motivational fit. When a task was routinised (e.g. replenishing detergent), peripheral

cues rarely crossed the attentional threshold; habitual heuristics simply closed the episode. Conversely, during high-stakes purchases peripheral cues either triggered skepticism or (occasionally) supplied the final nudge when they echoed a pre-existing goal such as meeting a budget cap for wedding attire. This aligns with priming research showing that subliminal or supraliminal cues alter behavior only when they dovetail with active goals (Karremans et al., 2006; Strahan et al., 2002).

The qualitative nuance also helps reconcile earlier recognition surveys that reported sizeable miss-rates concerning consumers' recognition of dark patterns (Bongard-Blanchy et al., 2021). Static screenshots detach the cue from the motivational and temporal frame in which real shoppers operate. Our findings therefore caution against equating laboratory salience with field salience and invite future process-tracing to specify when System 1 filtering neutralizes, rather than amplifies, interface sleights.

Finally, our contextual perspective complements Bogliacino et al.'s (2024) and Gray et al.'s (2025) temporal journey-level approach to dark patterns' influence by showing why sequential patterns gain or lose traction: interface salience alone is insufficient unless the situational "receptivity window" is open. Conversely, the lone tactic that provoked unanimous condemnation (the roach-motel cancellation maze) operates after motivational defenses wane. Its potency vindicates Calo's (2014) warning that manipulation flourishes when attentional resources are depleted yet narrows the threat to specific post-purchase stages rather than casting the entire journey as hostile terrain.

5.2 From archetypes to situations: revisiting the average consumer (RQ 2)

Case law still pivots on the fiction of an "average consumer" who remains invariably observant, well-informed and circumspect. Our data complicate that assumption. The same individual drifted from distracted to analytical to opportunistic within a single session, governed less by socio-demographics than by perceived stakes, time pressure and trust in fulfilment. Such fluidity vindicates dual-process psychology (Kahneman, 2011; Petty & Cacioppo, 1996), but clashes with static legal categories.

Situational vulnerability surfaced most clearly when interface prompts aligned with a latent intention. Buying a tennis racquet primed receptivity to grip-tape recommendations; choosing a bridesmaid dress legitimized color-matched shoes. Here participants framed the prompt as service, not manipulation, echoing Bogliacino et al.'s (2023) proposal to benchmark influence against the shopper's ex-ante goal set.

At the opposite end we met expedient consumers, i.e., users who deliberately reverse-engineer promotions, rotate e-mail addresses for "new customer" codes, or park items in the cart to trigger reminder discounts. Their ingenuity challenges blanket portrayals of helplessness and supports the view that autonomy is episodic, not eclipsed. Ahuja and Kumar's (2022) autonomy matrix consisting of agency, freedom of choice, control, and independence helps to parse these episodes: expedient consumers sacrifice independence from the retailer's ecosystem but strengthen control over price and timing.

5.3 Coping in practice: autonomy as adaptive pragmatism (RQ 3)

Our third research question probed the behavioral repertoire with which consumers try to bend choice architectures back toward their own ends or avoid them entirely. Ye et al.'s (2025) training studies lament that participants fall back on site abandonment, but our evidence indicates a richer toolbox that regulators might amplify rather than replicate. The interviews surfaced three broad families of tactics.

First, user-driven complexity reduction. Filters, sort tools and brand shortcuts were marshalled to tame overwhelming catalogues. Far from being passive victims of information overload, shoppers co-opted embedded features to approximate a choice set they could oversee. This observation suggests that information abundance need not per se constitute a dark pattern; its impact depends on whether the interface affords agile pruning.

Second, trust anchoring in fulfilment attributes. Participants weighted delivery reliability, returns convenience and transparent shipping cost above visual polish. These criteria mirror the “core disclosures” already codified in Article 7 UCPD, yet have received scant attention in the dark-pattern literature. Regulatory focus on fulfilment variables, rather than an ever-longer list of micro-design bans, would therefore address what consumers monitor most closely while preserving space for benign interface innovation.

Third, strategic delay and rule-bending. Parking items, provoking coupon e-mails, or leveraging burner accounts were recurrent. Lu et al.’s (2024) co-design work shows that when a browser extension purposefully adds friction like grey-scaling purchase buttons, inserting reflection prompts users appropriate the delay to re-evaluate impulse buys. Our field evidence demonstrates that similar “frictions for good” already emerge organically, without technological scaffolding, underscoring their ecological validity. Notably, participants viewed such self-imposed pauses as legitimate self-help, not as cumbersome hurdles, provided they retained agency to bypass them once deliberation felt sufficient.

Taken together, these strategies map neatly onto Ahuja and Kumar’s (2022) four autonomy dimensions: self-devised heuristics bolster agency (the ability to act), trust anchors fortify freedom of choice by ensuring exit remains realistic, and strategic delay restores control over pacing, thereby sustaining overall independence from unwanted commitments.

5.4 Implications for the Digital Fairness Act

Our findings invite a calibrated regulatory response. Where coping repertoires prove robust, e.g., bypassing scarcity timers or exploiting shipping thresholds heavy-handed bans risk outlawing interactions that many consumers appropriate to their own ends. By contrast, patterns that systematically block counter-moves (e.g. lock-ins, labyrinthine un-subscribe flows) merit stricter scrutiny. This approach aligns with Brenncke’s (2024) autonomy-based theory of exploitation, which locates the legal wrong not in influence per se but in practices that deprive individuals of a reasonable opportunity to decide otherwise.

Article 25 DSA already prohibits platform dark patterns that materially impede autonomy. The DFA could build on this by tiering obligations: practices that couple high stakes with irreversible consequences (subscription traps, covert data brokerage) should trigger enhanced duty-of-care and simplified redress, while low-stakes, easily reversible nudges remain permissible subject to transparency. Such proportionality would meet Brenncke’s (2024) call to “regulate for autonomy” without stifling beneficial experimentation and reflect our findings.

A second implication concerns innovation horizons. Voice assistants, AI shopping agents and immersive environments will reorder attentional landscapes; users may no longer see the cue that tries to influence them. Rather than chasing each new modality, legislators could mandate functional safeguards such as easy renegotiation, one-click exit, machine-readable disclosure leaving design freedom intact for traders who respect those guardrails.

Finally, fulfilment variables should enter the dark-pattern risk calculus. Delivery failure, opaque return routes and cross-border redress deficits eroded trust more powerfully than any on-screen tactic in our corpus. Extending DFA guidance to cover these offline-online touchpoints would address harms that participants fear, while complementing existing sectoral law on logistics and consumer guarantees.

6. Conclusion and Recommendations

This study set out to relocate the dark pattern debate from the laboratory to the messy realities of everyday shopping. A uniquely large body of 95 semi-structured interviews including think-aloud online shopping exercises reveal two governing themes. The first theme “Context is King” shows that the same countdown timer or scarcity claim is either shrugged off or scrutinized depending on task urgency, platform trust and fulfilment expectations. Second, the opportunistic often expedient consumer is very much alive. Far from being uniformly vulnerable, participants toggled between low-effort heuristics and high-effort optimization, sometimes gaming the very interfaces that try to game them. Together, these findings depict autonomy not as a stable trait but as an episodic capacity that waxes and wanes along the purchase journey.

These nuances matter because European consumer law still leans on an all-purpose “average consumer” benchmark while the policy narrative drifts toward treating everyone as perpetually vulnerable. Our evidence endorses neither pole. Vulnerability emerged, but episodically and case-specifically. Notably, this is the very contingency the Court of Justice hinted at when, in landmark *Gut Springenheide* case (“C-210/96 *Gut Springenheide and Tusky v Oberkreisdirektor des Kreises Steinfurt*,” 1998), it delegated empirical substantiation to national courts. The implication is plain: regulation that aspires to protect real people must be underpinned by ongoing, case-specific empirical inquiry rather than static archetypes.

For the forthcoming Digital Fairness Act this translates into a calibrated, risk-tiered approach. Heavy regulatory artillery should target designs that block consumer counter-moves such as subscription traps, post-purchase lock-ins, opaque cancellation paths, while leaving room for benign nudges that users tend to either ignore and some already appropriate to their own ends. Parallel attention should shift to the service features that consumers actually monitor: delivery reliability, returns friction and cross-border redress. Embedding these fulfilment variables in the Act’s assessment framework would address the harms interviewees feared most, without suffocating interface innovation that may prove essential as commerce migrates toward voice assistants, AI agents and immersive environments.

Finally, the public research agenda itself deserves calibration. If a competitive edge in the digital economy is indeed gained through systematic A/B-testing of persuasive interfaces, then independent, case-specific evidence should form a parallel knowledge base for regulators and civil society. Targeted public funding for longitudinal, consumer-centric studies could clarify which design practices consistently undermine autonomy, which are neutral or even welfare-enhancing, and how users’ own repertoire of coping strategies evolve over time. Such an evidence pipeline would complement rather than replace rulemaking, ensuring that future interventions remain proportionate to demonstrable harm while recognizing that the very technologies enabling behavioral targeting also enhance consumers’ ability to compare prices, switch providers and source goods across borders. Supporting this adaptive capacity through transparent information, interoperable data and accessible redress offers a pragmatic route toward a more resilient and genuinely fair digital marketplace.

7. Limitations and Future Research

Our evidence rests on 95 think-aloud interviews with shoppers in Germany. While unusually large for a qualitative study, the corpus is still a purposive snapshot. Participants enacted one or two predefined tasks, in a fixed temporal window, on a handful of mainstream e-commerce sites. Cultural factors, platform ecologies and enforcement climates differ across jurisdictions; so, too, might the situational choreography of autonomy. Comparative work, both cross-national and cross-sectoral, would therefore help to test whether the two themes (1) Context is King and (2) The Opportunistic Consumer travel beyond the

German online retail sphere and whether they echo in adjacent domains such as travel, gaming or social media.

A second limitation concerns behavioral resolution. Verbal protocols reveal what participants notice and report but only indirectly what they see and ignore. Our finding that peripheral, System-1 processing sometimes insulated users from deceptive cues, whereas deliberate System-2 scrutiny occasionally heightened susceptibility, calls for more granular process-tracing. Eye-tracking and mouse-flow telemetry during realistic shopping journeys could map attention gradients in real time, identify when dark patterns cross the visibility threshold, and clarify how attention interacts with prior goals. Such research would equally inform the autonomy-based yardstick now embedded in Article 25 DSA and could provide guidance on the road to the DFA.

Third, the study could not follow users beyond the checkout screen. We therefore remain agnostic about the long-term interplay between data capture, algorithmic personalization and evolving coping repertoires. Two research fronts appear promising: (1) longitudinal panel studies that track individual journeys over months to observe how repeated exposure shapes trust, habituation or resistance in relation to dark patterns, and (2) economic modelling on the cost and granularity of personalization (which keep falling with generative-AI tooling) to establish when bespoke manipulation becomes both technically and economically viable. Linking such outcomes to traders' willingness-to-pay for a successful transaction would illuminate whether and under which conditions extreme tailoring tilts market power decisively toward certain market actors.

Finally, fulfilment attributes like delivery reliability, return friction, cross-border redress emerged as pivotal in users' risk calculus yet remain peripheral in most dark-pattern taxonomies. Future work should integrate these offline–online touchpoints into deception research, perhaps through mixed-methods designs that pair journey analytics with supply-chain audits. Clarifying where interface manipulation ends and service-quality harm begins would equip regulators to calibrate remedies more precisely.

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