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# No App, No Entry: Conceptualizing Digital Technology Captivity in Service Access

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## ABSTRACT

We introduce Digital Technology Captivity (DTC), a form of consumer vulnerability that arises when digital technologies become the mandatory gateway to essential services. When access is tied to systems that feel unfamiliar, complex, or intimidating—and when preferred alternatives are limited—consumers may experience heightened vulnerability alongside feelings of stress and entrapment. In these situations, they must work out how to cope: adapt to the technology, often with emotional or cognitive strain, or abandon the service altogether. In this conceptual paper, we treat DTC as related to—but meaningfully distinct from—service captivity. Using Lazarus and Folkman's stress-and-coping framework, we outline how DTC develops and highlight the moderators that shape it. The resulting framework offers service providers a way to understand the unintended consequences of digital-only access and the challenges it creates for different consumer groups.

*What is food to one man may be fierce poison to others.*  
Lucretius, De Rerum Natura

## 1 | Introduction

Digital transformation is no longer a trend, but a structural force reshaping everyday life. From social groups organized exclusively through social media to cashier-free retail, self-service hospitality check-ins, automated passport control, and digital-only banking, digital technologies now underpin many of the routines and infrastructures that shape contemporary society. This ongoing shift toward digital-first or digital-only access to services is often positioned as a route to greater efficiency, economic productivity, and connectivity, while simultaneously reducing labor costs (Grewal et al. 2020). One illustrative example comes from the Forbidden City museum in Beijing, where, in 2017, senior leaders mandated that—aside from a single booth—tickets must be purchased online in advance. Although intended to reduce queuing, the policy

fundamentally changed how all visitors, new or returning, could access China's most visited cultural attraction (Wang 2017).

Despite such transitions being increasingly normalized, the effects on consumers are uneven. Many consumers benefit from speed, convenience, and streamlined service interactions. Others, however, face substantial barriers and constraints, including limited internet access, financial restrictions, or low digital self-efficacy with rapid technological change (Mende and Misra 2021). These challenges intensify when service transformation involves forced digital migration, the removal of analogue pathways, or tech-only access channels. Under such conditions, consumers lacking the necessary resources, skills, or situational readiness can find themselves forced to use technology to access a necessary service (Van Dijk 2020). We refer to this state of constraint and emotional strain (i.e., stress) as Digital Technology Captivity (DTC). Triggered by a shift in the access environment—rather than the service experience itself—DTC becomes especially problematic when consumers have an essential need for a service yet lack practical alternatives.

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To explain how DTC unfolds, we develop a framework grounded in Lazarus and Folkman's (1984) model of stress and coping. Specifically, we characterize DTC as arising through two cognitive appraisals—primary appraisal (perceiving the digital access requirement as threatening or demanding) and secondary appraisal (assessing one's ability to cope or find alternatives). Perceived vulnerability plays a central role in this process and gives rise to the feelings of entrapment and emotional pressure that define DTC. While the psychological mechanism draws directly from stress-and-coping theory, our conceptualization is informed by other research in areas such as digital exclusion (Lythreitis et al. 2022) and digital unengagement (Keeling et al. 2019).

Specifically, our conceptualization is positioned within the wider captivity literature, and particularly research on service captivity (Rayburn et al. 2020). We augment DTC within this broader family in the sense that both constructs involve elements of choicelessness and disadvantage in service use. However, we clarify that they originate from different sources and can operate independently or together. For instance, service captivity stems from constraints within the service or market environment (e.g., limited provider choice). In contrast, DTC arises when access to the service becomes digitally mediated in ways that restrict or complicate entry and, in some cases, alternatives technically exist but rely on the same digital gatekeeping. We also emphasize that susceptibility to DTC varies across consumers, making it appropriate to incorporate demographic, social, and contextual moderators into understanding the framework and the procession of entrapment and stress.

By introducing DTC as a distinct but related form of captivity, this paper makes two key contributions. Theoretically, we extend the captivity literature by identifying a psychological mechanism—rooted in stress appraisal—that explains a form of constraint not captured by the original construct. Practically, the framework highlights the unintended consequences of digital-only access and provides service designers with principles for mitigating DTC, including strategies that reduce cognitive load, preserve autonomy, and offer emotional or human support during transitions. Second, we outline a future research agenda to guide empirical work on DTC and digital transformation.

Following similar conceptual papers, we employ a case exemplar approach to examine DTC from a naturalistic vantage point (Kolyperas et al. 2019) (see Table 1).

## 2 | Theoretical Background: Defining DTC

It is helpful to frame this discussion using a broader foundation of *captivity*. Etymologically, *captivity* derives from the Latin *captivitas*, also meaning “to be taken prisoner” or “exiled” (Oxford University Press 2023). This aligns nicely with its modern-day deployment, which refers to captivity as a formal or informal state of being held or seized against one's will. Early captivity scholars such as Hediger (1950) and Crandall (1964) chose not to provide a formal definition, possibly because its association with physical containment was considered self-evident. Nonetheless, captivity deserves a comprehensive delineation nowadays, not least because of a recognition that individuals can be constrained in a myriad of ways—socially, economically, and psychologically. It is with this expanded view in mind that we present our perspective on DTC below.

Underpinning our framework is Lazarus and Folkman's (1984) model of stress and coping, which elucidates how individuals appraise stress and utilize coping strategies in response to threats within their environment (Folkman and Lazarus 1988). Captive environments, whether literal ones (e.g., prisons) or metaphorical (e.g., consumers locked into services), generate stress when consumers perceive demands that exceed their ability to cope. In this model, primary appraisals determine whether a situation poses harm, threat, or challenge, followed by a secondary appraisal of the individual's available coping options (Lazarus and Folkman 1984). Downstream, coping is then initiated, which involves either problem-focused (e.g., changing the stressor) or emotion-focused (e.g., managing emotions) strategies (Duhachek 2005; Folkman and Lazarus 1988). Their model has been previously used to understand consumer responses in environments where captivity may feature, such as crowded retail stores (Whiting 2009), nursing homes (Guillemot et al. 2022), and, more generally, poverty (Jayasundara et al. 2020), ultimately making it ideal for conceptualizing the psychological process underpinning a new or unpredicted shift in the environment (e.g., a change in service access).

Whilst we elaborate on this definition as a process further below, we begin by simply articulating the definition of DTC deployed in this paper, whereby it is considered as:

*...the condition in which consumers feel constrained when services move to digital access, and, after evaluating the situation through primary and secondary appraisal, perceive that they have few resources and options. This state produces stress through felt entrapment, as consumers are compelled to adopt adaptive or maladaptive coping strategies.*

Next, we provide a short review of the digital exclusion and unengagement literature before turning attention to how DTC operates differently, and alongside service captivity (Rayburn et al. 2020).

### 2.1 | Digital Exclusion and Unengagement

Digital exclusion refers to the combination of material, skill-based, and motivational barriers that prevent people from accessing the internet and deriving meaning from digital tools (House of Lords Communications and Digital Committee 2023). The existing literature distinguishes between the first-order digital divide, which pertains to physical access, and the second-order divide, which concerns actual use influenced by digital skills, confidence, and autonomy (Elena-Bucea et al. 2021; Rockmann et al. 2018). This exclusion is often connected to socioeconomic disparities, which disproportionately affect marginalized consumers such as older people and low-income groups (Lythreitis et al. 2022; Andrade and Doolin 2016). Exclusion is, therefore, often framed as resulting in unengagement, where consumers choose not to engage with digital interfaces, either by switching providers or forgoing the service (Fan and Zhang 2022). However, as more services shift abruptly to digital access, using technology becomes critical for consumption and access to essential services (e.g., financial and government). Indeed, in sectors such as healthcare, where access to service providers is vital, digital unengagement has significant implications, as previous work has explored, and shown (see Keeling et al. 2019 for a comprehensive overview of this).

TABLE 1 | Exemplar overview.

Examples	Overview
A. Mobile-only ticketing for entertainment events	For the 2025 Women's Champions League final, tickets are delivered exclusively through the "UEFA Mobile Tickets" app: fans must install it (minimum iOS 13 or Android 5), download a rotating barcode, keep Bluetooth on, and present the phone at the turnstile—PDFs or printouts are refused. The FAQ advises spectators with an incompatible handset to "use another smartphone," effectively tying stadium access to owning or borrowing an up-to-date device. UEFA's sales announcement confirms there is no alternative delivery format (UEFA 2025). TicketNews argues that such mobile-only roll-outs, presented as security upgrades, are "leaving a huge swath of consumers behind" because many potential attendees still lack smartphones or the confidence to use them (Clark 2021).
B. UK high-street banking goes "app-first"	<i>Branches vanish:</i> The number of UK bank branches has fallen from 14,689 in 1986 to just 5745 in 2023, a decline that the House of Lords Library warns is already disadvantaging older, disabled, and rural customers who depend on in-person services (Waitzman 2024). <i>Digital push exemplified by banks such as Santander</i> , which announced 95 further closures, stated that it was responding to "a rapid movement of customers choosing to do their banking digitally" (Espiner 2025). <i>App-only services spread:</i> 8% of UK adults—about 4.5 million people—still lack a smartphone, yet banks increasingly gate key functions behind apps; for example, HSBC's Global Money service, which lets customers convert, spend, and send multiple currencies with no bank fees, is available only in the HSBC app (Jones 2025). Campaigners dub the trend "the tyranny of apps," arguing that customers without up-to-date phones must buy new devices, borrow one, or forgo routine banking.
C. QR-code/app-only restaurant ordering and deals	Thousands of eateries that adopted QR menus during the Covid pandemic have retained the digital-only setup, eliminating printed menus altogether; diners must scan a table code to view, order, and pay (Biscotti 2023). App dependence now extends to discounts and loyalty: McDonald's "Deal Drop" offers a Big Mac for £1.49 and Happy Meal for £1.99 only through its app; Subway's points scheme and Sizzling Pubs' "40% off mains" promotions are likewise app-exclusive, while chains such as Harris + Hoole have scrapped physical loyalty cards in favor of app-only stamps (Jones 2025). Patrons without smartphones face barriers, such as multi-screen checkouts and missing the best prices, which can coerce them into adopting technology (Biscotti 2023).
D. "No App, No Entry"—Amazon Go stores and other cashless venues	Checkout-free Amazon Go/Fresh shops require either an Amazon-app QR code or a registered Amazon One palm print to open the barrier; traditional tills and card readers have been removed, and Amazon reports three million palms already enrolled (Dash 2023; BBC News 2020). The Guardian highlights how such "no-app, no-entry" policies marginalize older, poorer, and unbanked customers, noting that the cash-free, app-first shift is "failing the non-tech-savvy" and leaving those groups locked out of everyday services (Anthony 2023). Shoppers who lack smartphones, therefore, face outright exclusion or enforced adoption and subsequent data-harvesting lock-in.

We therefore shift the conversation from exclusion and unengagement to digital captivity by considering the stress and felt entrapment of forced digital technology adoption, where consumers do not have the option to "opt out." Where digital exclusion typically captures non-access and unengagement reflects withdrawal or resistance, DTC centers on coerced participation in systems that have become unavoidable. This coerced usage can occur both at the first-order level, where

consumers are pressured to obtain devices, applications, and operating systems beyond their means, and at the second-order level, when experiencing cognitive strain during navigating these digital interfaces without the required skills, experience, and support (Andrade and Doolin 2016; Keeling et al. 2019). DTC, therefore, has the potential to generate more stress and felt entrapment than exclusion or unengagement, a distinction we conceptualize further below.

## 2.2 | Service Captivity and DTC

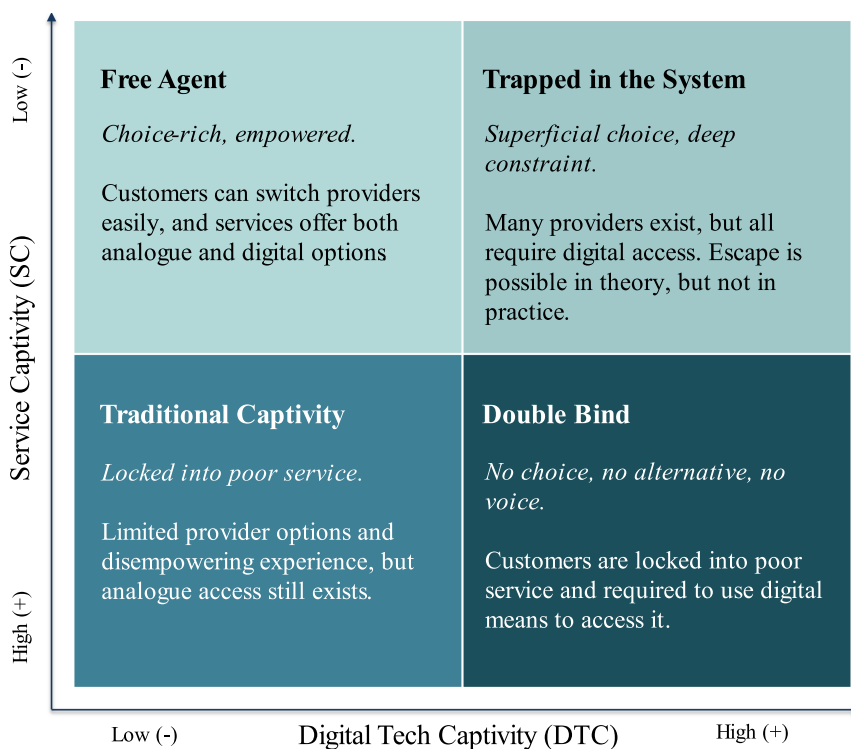
*Service captivity* is when consumers feel compelled to continue using a service they would prefer to leave because structural, systemic, or situational barriers (e.g., lack of alternative options) prevent them from exercising meaningful choice or exit, thereby heightening vulnerability (Conlon et al. 2004). People feel powerless, disconnected, and unable to disengage from a service arrangement, which reinforces perceptions of dependency (Rayburn et al. 2020). Captivity intensifies when customers “cannot easily exit [a] service setting once service delivery has begun, because [of a] loss of customer control or discretion over the execution of the service” (Conlon et al. 2004, 434). A typical example concerns passengers who are dissatisfied during a mid-voyage transatlantic cruise, beginning to feel captive because recourse (i.e., getting off mid-cruise) is not readily available (Rayburn 2015). In contrast, a consumer in a city feels less trapped after a poor coffee shop experience because of the sheer volume of available substitutes, thereby increasing their ability to switch.

DTC intersects with, but is conceptually distinct from, service captivity. Service captivity arises from restrictions within the service or from limited provider options (Rayburn et al. 2020), whilst DTC originates from changes in access routes (e.g., Example B, Table 1). It occurs when service providers shift to digital-only or digitally dominant access channels, leaving consumers without non-digital options (Durand et al. 2022). For instance, efforts to disengage from one provider often lead to comparable lock-in elsewhere, since competitors may depend on, or adopt the same platforms, standards, or digital gateways (Gasser 2015). Consumers are therefore not captive to a single service provider but are captive to a system that requires digital skills and/or devices to participate, shifting the landscape in which captivity occurs. Moreover, both can occur

separately or overlap to intensify feelings of captivity. To indicate the different forms of interaction, we present a 2 × 2 matrix (see Figure 1) that shows four scenarios: one of empowerment and three of captivity.

There are two scenarios where DTC is low. The first includes contexts with minimal service captivity, where consumers feel empowered as free agents. There are many available alternatives, providing choice, and services do not enforce lock-in. Equally, there is no forced digital access, as services are provided through multiple channels, including digital and analogue. For instance, in the urban restaurant scene, there are many options, and customers can walk in, phone ahead, or book online. Switching to a different restaurant is straightforward and does not carry unnecessary cost or inconvenience. The second is where service captivity is high, emulating the original service captivity theory: consumers are either locked in or face limited alternatives (Conlon et al. 2004; Rayburn 2015; Rayburn et al. 2020), but service access still provides choice through analogue and digital channels. For example, when there is only one GP practice in a rural area, consumers may experience service captivity. Yet, they can still book appointments and receive care through a variety of channels (e.g., telephone, in person, or online).

Where DTC is high, we see two different scenarios. First, if service captivity is low, consumers benefit from multiple competing providers, but all of which require digital engagement to access or use the service (Gasser 2015). In this situation, consumers are trapped within a system, as choice exists on a surface level (e.g., many providers), but the access barrier is the same. For example, app-only promotions in fast-food restaurants (example C, Table 1) allude to free choice but require possessing a mobile phone, downloading an app, and navigating



**FIGURE 1** | Matrix of service captivity and digital technology captivity.

digital verification. This creates a systemic form of captivity that endures irrespective of provider choice.

The final scenario, the double bind, occurs when service captivity and DTC are high, and consumers experience both forms simultaneously. In this configuration, they depend on services they cannot leave (e.g., essential utilities and healthcare) and accessing them requires digital engagement they may feel unequipped to manage. This occurs frequently within government and public services, such as the recent introduction of e-Visas and the proposal for mandatory digital IDs within the UK (Hagan 2025). Furthermore, in essential services such as banking (see Example B, Table 1), customers may feel tied to their existing provider due to mortgages, debt, or longstanding loyalty (Rayburn et al. 2024). When access shifts to digital-only, they are not only captive to the service provider but also to the technology they are required to use.

### 3 | The Antecedents and Consequences of DTC

By drawing upon the Lazarus and Folkman (1984) model of stress and coping, delineated through situational-specific appraisals, we outline four broad stages that underly how consumers experience and respond to the DTC context (see Figure 2). These end, or have consequences, that influence the experienced or real-world vulnerability DTC delivers. These stages are: (1) Environment Change, (2) Anticipated Coping, (3) Degree of Stress, and (4) Actual (or real-world) Coping.

#### 3.1 | Stage 1: Environment Change

DTC is triggered when technical changes in service access influence consumers' perceived ability to cope, prompting primary appraisals of harm, threat, or challenge (Lazarus and Folkman 1984). While service captivity may be initially triggered by feelings of dissatisfaction relating to service quality (Rayburn et al. 2020), digital captivity is triggered by shifts in how access to a service is organized. In Lazarus and Folkman's language, it is this environmental change (i.e., access) that causes the initial stressor. Pertinently, this environmental shift

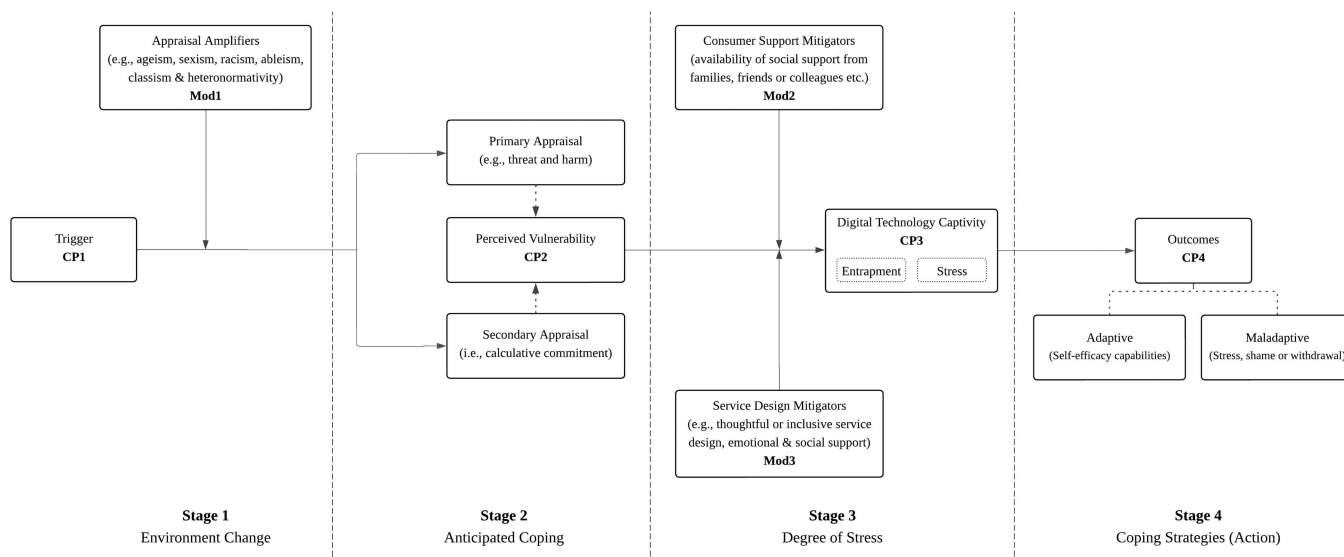
may occur in terms of substitution (analogue access replaced by digital), co-existence (analogue retained but downgraded and more difficult to access), liquid digital (constant updating), or a move to digital-only (systemic) access of the service (Durand et al. 2022). These all map closely to the service switching literature (Roos and Gustafsson 2011), with reactionary triggers reflecting sudden moves to digital-only access, situational triggers linked to changes in consumers' ability to cope with digital systems, and influential triggers tied to wider market shifts that make digital engagement unavoidable. However, instead of reactively switching to a different service provider, which may also be planning or underway with their own changes to the access, first the consumer appraises the threat levelled by the situation (i.e., stage two), which may also be conceived in terms of challenge (i.e., challenge emotion, Kirby et al. 2014).

As an illustration of stage 1, consider McDonald's introduction of a digital-only saver menu made accessible exclusively via its mobile app (see Example C, Table 1). Although the food (and price) remained unchanged, for some customers, notably those unable or unwilling to use the app, this trigger led to an initial appraisal of the innovation, especially for loyal McDonald's consumers who knew they would have to adopt the technology if they wanted to access the saver menu. As such, we propose:

**CP1:** DTC is initially triggered by changes in service access, such as when substitution, co-existence, liquid digital, or digital-only formats are introduced.

#### 3.2 | Stage 2: Anticipated Coping

Following Stage 1, the first stage of appraisal is *primary appraisal*, where consumers assess whether digital changes to service access pose harm, a threat, or a challenge (Lazarus and Folkman 1984). For some, a shift to digital-only access may be interpreted as a threat or harm, reducing autonomy and heightening feelings of vulnerability (e.g., Gallistl et al. 2021). For others, the change may be perceived as a challenge (Kirby et al. 2014), prompting efforts to acquire new skills or modify existing consumer behavior, leading to determination (e.g., Veresiu and Parmentier 2021). Whether the technology transformation is perceived as one or the other can be



**FIGURE 2** | Digital technology captivity framework.

empirically established by adapting instruments such as the Stress Appraisal Measure (Peacock and Wong 1990), which provides a direct way of operationalizing this primary appraisal in digital contexts.

After the primary appraisal, consumers engage in a *secondary appraisal*, asking themselves whether they have the necessary resources and options available to cope with the situation (Lazarus and Folkman 1984). In digital settings, this appraisal may involve evaluating physical and financial access to devices and the internet, as well as self-efficacy, specifically in terms of whether there is a belief they possess the skills, confidence, and knowledge necessary to deal with the new digital demands (Elena-Bucea et al. 2021; Rockmann et al. 2018). If there are adequate resources, consumers will be more likely to perceive the environmental change as manageable, ultimately reducing their vulnerability assessment toward it. Conversely, if the appraisal yields that existing resources are insufficient, consumers are most vulnerable to stress conforming to DTC. It is worth also noting that within this secondary appraisal, consumers evaluate their options in terms of their level of calculative commitment (Fullerton 2003)—mirroring a similar process to service captivity when it comes to switching possibilities. When calculative commitment is high (reflecting that other service providers use similar inhibiting access-based technologies), and resources for coping low, options are limited (Lazarus and Folkman 1984). This evaluation may also be influenced by switching costs, including the inconvenience of changing providers, the emotional cost of leaving a preferred supplier or brand, and the fact that competitors might also rely on the same technology underpinning the access (Colgate et al. 2007). As mentioned, in some cases (e.g., Example B, Table 1), overlapping forms of captivity, where both digital and service constraints limit the option to exit, may exist together (Rayburn et al. 2020). We conceptualize the combination of these appraisals as a *perceived vulnerability* which represents a gauge of measure or how problematic the change is in generating entrapment and stress—hallmarks of DTC.

We, therefore, present our second proposition:

**CP2:** *When digital service access is perceived as harmful or threatening during a primary appraisal, and a secondary appraisal identifies limited resources and high switching costs, consumers are more likely to experience calculative commitment, heightening their felt vulnerability in a service scenario.*

### 3.3 | Stage 3: Degree of Stress

In the third stage, the consumer moves from appraisal toward an affective response of being pushed into a digital system they cannot avoid—here being our conceptualization of DTC. Extant studies on enforced digital technology consumption indicate that when the change is sudden, unavoidable, or binding, feelings of stress, anxiety, and a loss of autonomy are heightened (e.g., Reinders et al. 2008; Singh et al. 2022). For instance, rapid digital interfaces introduced into frontline service settings can increase stress and uncertainty as people attempt to grapple with the innovation (Christ-Brendemühl and Schaarschmidt 2019). Moreover, in countries (e.g., Italy) where mandatory public services are delivered

exclusively through digital channels, vulnerability is heightened as consumers feel cornered or shut out when analogue routes vanish (Tangi et al. 2021). We therefore propose that, once the digital change is recognized as threatening or harmful (primary appraisal) and exit and anticipated coping options are perceived as limited (secondary appraisal), consumers experience stress and feelings of entrapment.

The Amazon Fresh stores provide a comparable example, requiring both a smartphone and an Amazon account to enter and shop, which, for some consumers, is a threat (see Example D, Table 1). In areas with limited alternatives, consumers may feel compelled to acquire a device, set up an account, and learn to use the technology to access their everyday essentials. This obligation can enhance feelings of entrapment, especially when under surveillance and with limited access to human-to-human interactions and support (Benoit et al. 2024). We, therefore, present the third proposition:

**CP3:** *Perceived or anticipated vulnerability reduces autonomy, creating a felt sense of entrapment and heightened stress.*

### 3.4 | Stage 4: Actual (Real World) Coping

Coping is the cognitive and behavioral effort that consumers make to manage digital technology demands that are perceived to exceed their resources (Lazarus and Folkman 1984). These coping strategies vary depending on whether consumers adapt to, or resist, the stresses of DTC. Adaptive coping involves developing greater self-efficacy and capabilities through determination to master new technologies, adjusting the technology to suit needs (e.g., setting up voice activation), setting achievable goals, seeking training or assistance, or experimenting with the device (Mick and Fournier 1998; Wilson-Nash and Tinson 2022). These strategies may also include problem-focused efforts, such as troubleshooting or seeking support through social networks (Pera et al. 2020). While adaptive coping may be interpreted as a positive offshoot, it often requires time, effort, and financial commitment in its pursuit, which may not be equally available to all consumers (Tsatsou 2022).

From an alternative perspective, other consumers may resort to maladaptive coping, where the strategies employed link concretely to felt entrapment and stress. This may include neglecting, abandoning, and distancing oneself from the service category altogether (Keeling et al. 2019), which may carry a personal cost and loss (e.g., avoiding GP surgery because bookings are mandated to be online). Moreover, whilst this may protect the individual by minimizing stress in the short term, it may enhance vulnerability by restricting access to essential services (Grech et al. 2025; Guillemot et al. 2022). Of course, escaping captivity by avoidance may have further emotional consequences, associated with feelings of shame, embarrassment, or frustration that compound feelings toward the predicament (Mick and Fournier 1998; Reinders et al. 2008).

**CP4:** *Consumers respond to DTC by more adaptive or maladaptive strategies of coping. Adaptive approaches involve continuation of the service usually increasing (decreasing) short term (long term) stress, whereas maladaptive strategies perpetuate disadvantage and exclusion, often reducing (increasing) short term (long term) stress.*

## 4 | Moderating Factors

Figure 2 outlines our conceptualization of DTC in its antecedents and consequences, but there are factors that can amplify and attenuate the different stages. We label these in the model as moderators, with some being situational, and contingent on the consumer (Mod 1), and their network (Mod 2), as well as how the service provider can implement design interventions to mitigate feelings of captivity felt through entrapment and stress.

### 4.1 | Moderator 1: Appraisal Amplifiers (Susceptibility Factors)

Crucially, captivity is not experienced uniformly. As Figure 2 shows, captivity will be felt differently depending on the person, their situation, and experiences. Specifically, these interact with the appraisals (primary and secondary) enacted in Stage 2. It is worth noting that a predisposition to feel captivity is not a consequence of an unwillingness or inability to learn about new technologies, but often due to systems of oppression and privilege that repress access and digital literacy. To augment this argument, we employ intersectionality as a lens, which Crenshaw originally coined in 1991 to describe oppressive drivers, including racism, sexism, and classism, that intersect to create unique experiences for people.

Within marketing, the concept of intersectionality is slowly gaining traction with scholars using it to explore further how overlapping systems of oppression relating to race, gender, immigration, culture, and ethnicity influence online and offline marketplace experiences (e.g., Crockett et al. 2011; Sobande et al. 2020). Instead of stating that all consumers will interpret and experience an environmental change (stage 1) as perceived vulnerability, we acknowledge that varying, overlapping social characteristics can influence privilege or oppression, resulting in different lived experiences (Uduehi et al. 2024). For example, older Black women encounter intersecting systems of oppression that differ from those faced by gay men, leading to distinct experiences of technology and consumption (Shinoda et al. 2021; Marciano and Nimrod 2021).

For this purpose, we consider that older consumers (aged 65 and above), in particular, provide a valuable case for showcasing how intersectionality explains the process. Many older consumers actively embrace digital platforms (Pera et al. 2020), which is evidenced by the fact that 60% of those aged 65–74 maintain social media accounts. Yet others report worrying levels of exclusion and loss of autonomy in the technological era (Gallistl et al. 2021). These experiences are not just due to limited access to devices, but manifest through notable structural barriers, such as ageist assumptions (Franco 2023), homophilic tech designed and benefitting younger users (Rosales and Fernández-Ardévol 2020), as well as a lack of educational support (Hwang and Nam 2017). Such conditions heighten concern and worry toward technology, particularly when stereotypes about older people being resistant to change or innovation are internalized, reinforcing patterns of low adoption and digital withdrawal (Bae et al. 2020; Birkland 2024).

From the literature on intersectionality and technology usage (see Appendix S1), it is clear how experiences of captivity among older consumers differ according to systems of privilege and oppression, sometimes in ways that are invisible but deeply ingrained. For example, privileged groups, such as White, male, affluent, and well-educated older people, report more access

and autonomy in digital spaces (see Fang et al. 2019; Marciano and Nimrod 2021; Suntai and Beltran 2023). However, those with further marginalized identities, such as low-income, Black, disabled, or LGBTQ+ older people, face additional barriers (see Romanelli et al. 2024; Tsatsou 2022). These barriers extend beyond just accessing the internet or devices, and impact factors such as skill development, confidence, and meaningful use (e.g., Fang et al. 2019; Romanelli et al. 2024; Suntai and Beltran 2023; Wang et al. 2024). The threat of access-based changes to services reflects and reproduces wider social inequalities.

These facets often create perceived psychological barriers, including shame and fear of failure, while also exacerbating structural inequalities by limiting participation (Breder et al. 2023; Seo et al. 2017). While digital technologies can be enabling and empowering for many consumers (Veresiu and Parmentier 2021), they can also intensify existing inequalities, leaving certain, more disadvantaged groups feeling threatened by technology, layered on top of existing limited options (calculative commitment), ultimately leaving them most vulnerable to changes in technology (seen in the primary appraisal) and with fewer options (as seen in the secondary appraisal). We, therefore, develop this proposition:

**MP1:** *Susceptibility to DTC is shaped by intersecting systems of oppression—such as ageism, sexism, racism, ableism, classism, and heteronormativity—which unevenly restrict consumers’ access, confidence, and autonomy in digital service environments and increases calculative commitment.*

### 4.2 | Moderator 2: Vulnerability Mitigators (Consumer Support)

The role of anticipated or perceived vulnerability in shaping DTC is contingent upon factors pertaining to the context surrounding Stage 1. For instance, captivity will be more pronounced when “warm experts,” such as family (especially grandchildren), friends, or colleagues, are not nearby or available. Research shows how these significant others can play a critical role in enabling marginalized consumers to use digital systems (Courtois and Verdegem 2016; Pera et al. 2020). When this support exists, consumers’ secondary appraisal changes as the presence of guidance, training, or shared resources increases the perceived capacity to cope, which makes the enforced technology consumption less burdensome. Equally, it is also likely that this social support has implications downstream since the likelihood of maladaptive coping strategies reduces (e.g., withdrawal, shame, and frustration), and is replaced with more adaptive strategies, such as skill development and problem-solving. We therefore construct the following proposition:

**MP2:** *DTC is contingent upon the availability of social support, which reduces feelings of captivity and encourages adaptive coping strategies.*

### 4.3 | Moderator 3: Vulnerability Mitigators (Service Design)

Thoughtful or inclusive service design can help to reduce feelings of captivity. For instance, when consumers are mastering

new technologies, reducing cognitive load through clear navigation, step-by-step onboarding, and predictable task flows can help them feel more comfortable when confronted with new interfaces (Christ-Brendemühl and Schaarschmidt 2019; Beltagui et al. 2016). Equally, as autonomous retail settings have shown (e.g., Example D, Table 1), lowering the complexity associated with the technology by making access or exit processes much simpler can improve the consumer's ability to cope and learn (Benoit et al. 2024).

Second, the emotional and social support provided by the service provider can play a central role in enhancing feelings of captivity and decision making in favor of adaptive coping strategies (e.g., digital technology experimentation) and against maladaptive equivalents (e.g., abandoning the service). For example, by having human front-line employees on hand to provide support, guidance, or reassurance about how to use (i.e., self-service) technologies, struggling consumers find the experience more manageable (Reinders et al. 2008). Finally, preserving autonomy, even in minor ways, can prevent DTC and then maladaptive coping strategies (e.g., neglect, distancing) by allowing consumers to choose modes of access (e.g., digital, analogue), control the pacing of adoption, and better understand the reasons for the change (Zeuge et al. 2023; Tangi et al. 2021). We, therefore, propose the following:

**MP3:** *Service design mitigators that (for instance) reduce cognitive load, offer social and emotional support, and preserve autonomy can reduce the degree of digital technology captivity felt, and (even) encourage consumers toward more (less) adaptive (maladaptive) coping strategies in their decision-making.*

## 5 | Discussion

The concepts of digital exclusion and digital unengagement are widely recognized in both academic literature and public discourse (Lythreathis et al. 2022; Keeling et al. 2019). However, what is less explored is what happens when “opting out” is not viable and consumers must engage with technology under conditions they did not choose. This paper shines a light on that specific condition. We argue that when digital technologies displace analogue service systems, such as when human-staffed supermarket checkouts are replaced with self-service kiosks (e.g., Reinders et al. 2008), consumers often must engage regardless of their technical experience and confidence. This absence of choice can generate feelings of *captivity* to either the service provider or the digital system itself.

While we are not the first to explore the concept of captivity in service contexts (see Conlon et al. 2004; Rayburn et al. 2020), we extend this literature by differentiating and synthesizing its traditional formulation—*service captivity*—with our focal construct of DTC. Service captivity often stems from restrictions within the service or a lack of provider alternatives, whilst DTC arises when access is re-organized around digital-only or digitally dominant channels. Although each can occur independently, they often intersect (see Figure 1) creating two different DTC scenarios: one in which consumers are free to switch providers but captive to systemic technology, and the other in which they are captive to both the service provider and the technology.

The DTC framework (Figure 2) articulates this process: an environmental change (e.g., substitution, co-existence, liquid digital, or

digital-only access) triggers a primary (e.g., challenge, threat or harm) and secondary (e.g., calculative commitment) appraisal of the perceived ability to cope with this change, which evolves into felt entrapment, stress, and (mal)adaptive coping strategies. Taking an *intersectional* perspective, we argue that captivity is not uniform but depends on how consumers' intersecting characteristics shape their access, confidence, and perceived autonomy in digital contexts. We illustrate how age, class, gender, sexuality, disability, and race come together to produce distinct trajectories of vulnerability (Uduehi et al. 2024). Equally important are the conditions under which captivity may be softened. We show that social support and service design can alleviate DTC. When service providers acknowledge consumers' affective responses, reduce cognitive load, preserve autonomy, and provide human or human-like assistance, the emotional force of captivity is weakened.

To the best of our knowledge, this is the first paper to conceptualize and articulate the implications of DTC. By doing so, we offer both a new theoretical framework and a call for service designers and marketers to consider the unintended consequences of digital transformation, particularly by proactively involving marginalized groups in this process. As a conceptual framework, however, it is subject to limitations, as it has yet to be empirically tested, and important questions remain regarding its measurement and generalizability. We therefore develop the following research agenda to address these limitations and guide empirical validation and refinement directly.

### 5.1 | A Research Agenda and Recommendations for Practice

The research agenda presented below (see Table 2) not only aims to advance our conceptual framework but also to provide a structured pathway for empirical testing and actionable insights for marketers and service providers. This agenda begins by emphasizing the importance of researching the lived experiences of consumers susceptible to DTC (RQ1). Most marketing literature on marginalized groups and technology consumption focuses on those already using digital devices, rather than those who remain excluded or engage reluctantly (Franco 2023; Wilson-Nash and Tinson 2022). In-depth qualitative research could therefore uncover insights into how age, race, gender, disability, sexuality, and/or social class interact to shape primary and secondary appraisals, emotional stress, and feelings of entrapment. This is essential for theory building and informing the development of measures for the antecedents, consequences, and moderators of DTC. The agenda then turns to testing the DTC framework across service contexts (RQ2). Essential services such as healthcare, financial services, and public transport could intensify captivity because exit is limited and digital access is increasingly mandatory, resulting in a double bind. Comparative surveys, field experiments, and secondary data could examine how each stage of the DTC process varies across sectors, helping to identify where analogue alternatives or updated regulations are required.

The agenda also highlights the critical role of digital intermediaries and “warm experts” as a vulnerability mitigator (RQ3). Future research could therefore draw on previous transformative service mediators and self-other literature (Johns and Davey 2019; Hamilton et al. 2021), to examine how caregivers, family members,

**TABLE 2** | Research agenda for DTC.

Focus	Research questions	Managerial implications
Lived experiences and social identity	RQ1: What are the lived experiences of consumers experiencing digital technology captivity, and how do these differ across intersecting social identities?	Developing metrics to test the stages of the DTC. Understanding and designing service design mitigators for consumers excluded from digital spaces, with attention to intersecting identities such as age, race, gender, class, disability, and sexuality.
Testing DTC across service settings	RQ2: Testing the antecedents, consequences, and moderators of the DTC. How does the process vary in different service contexts (e.g., healthcare, financial services, transport) and affect the stages of the DTC?	Identifying high-dependency sectors where digital captivity amplifies vulnerability, and advocating for analogue alternatives or inclusive regulation.
Role of “Warm Experts” as digital intermediaries	RQ3: How does the presence of “Warm Experts” as digital intermediaries (e.g., family, carers) influence the experience of DTC?	Supporting and empowering intermediaries to reduce digital harm, while promoting autonomy and dignity for the primary consumer.
Inclusive and participatory design	RQ4: How can marketers, service developers, and technology designers co-create services that mitigate captivity without reinforcing biased assumptions?	Implementing inclusive innovation and participatory design approaches that avoid top-down biases and reflect real lived experiences.
Paradox of constraint and empowerment	RQ5: Are there situations where perceived digital captivity enhances autonomy, creativity, or satisfaction?	Recognizing when constraints enhance autonomy or creativity, and designing with service design mitigators in mind, for example, cognitive simplicity.
Adaptive captivity and digital upskilling	RQ6: Can enforced digital adoption function as unintended upskilling over time? What are the emotional and social costs of that learning?	Encouraging adaptive coping strategies and balancing them with the emotional and psychological burdens placed on consumers, particularly vulnerable ones.

and frontline staff mitigate felt vulnerability, stress, and entrapment. Service designers could consequently use this knowledge to design for shared, supported, and relational technology use instead of merely individual adoption.

The final three questions transition the narrative from vulnerability to potential empowerment. They challenge assumptions that DTC is a negative experience by asking whether forced technology engagement could result in benefits such as digital upskilling, increased autonomy, or consumer creativity (RQ5 and RQ6). For instance, although the pandemic enforced technology consumption created stress and highlighted inequalities, it empowered marginalized groups such as older people to learn about digital technologies (e.g., social media) through peer-based support and community involvement (Veresiu and Parmentier 2021; Wilson-Nash et al. 2023). To achieve empowerment, participatory approaches in service design should be adopted, where consumers help co-create solutions rather than being subject to top-down innovation (RQ4). These strategies could draw on knowledge from inclusive innovation (Heeks et al. 2014; Mortazavi et al. 2021) and design thinking (Baldassarre et al. 2024) to involve consumers with intersecting social categories in creating services that reflect their lived experiences.

In summation, this research agenda addresses the framework's current empirical limitations by providing a roadmap to test DTC across populations, service environments, and design conditions. For service providers, it highlights that mitigating

captivity requires psychologically informed service design such as reducing cognitive load, providing emotional support, encouraging autonomy, and inclusive co-creation.

## 5.2 | Conclusion

No credible service provider sets out to exclude or entrap its customers, yet, through digital transformation, many inadvertently do. While exclusion might mean simply walking away and foregoing a service, captivity is different: the consumer cannot walk away. When opting out is not an option and digital interfaces are the only way in, feelings of stress and entrapment occur, generating adaptive and maladaptive coping strategies. This paper defines the contours of DTC and sets a research agenda to better understand its parameters and remedies. The onus is now on marketers to recognize that digital convenience for some can mean digital coercion for others, and that captivity, even when unintentional, still leads to harm in a multitude of forms.

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### Conflicts of Interest

The authors declare no conflicts of interest.

## Data Availability Statement

Data sharing is not applicable to this article as no data sets were generated or analyzed during the current study.

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### Supporting Information

Additional supporting information can be found online in the Supporting Information section.  
Appendix S1.