# Between Cognitive Overload and Dehumanization: Exploring the Dimensions of Consumer Fatigue with Artificial Intelligence

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## ABSTRACT

Artificial intelligence (AI) is now a central player in interactions between brands and consumers, but its intensive use can generate cognitive, emotional, and relational fatigue, which has been little explored in marketing literature. This research aims to understand AI-fatigue and identify its constituent dimensions through consumers' experiences. An exploratory qualitative approach was adopted, based on 22 semi-structured interviews with regular users of AI, including chatbots, voice assistants, and recommendation systems. Thematic analysis revealed that AI fatigue unfolds along cognitive, emotional, relational, and ethical dimensions, leading in particular to information overload, feelings of dehumanization, and changes in strategies for interacting with technologies. This study makes a theoretical contribution by proposing an integrative conceptualization of AI fatigue and offers practical insights for designing more balanced and sustainable interactions between consumers and intelligent technologies.

**Keywords:** Artificial intelligence (AI); AI fatigue; Cognitive overload; Emotional dimension;

**Consumer behavior; Human**-machine interaction

## INTRODUCTION

Artificial intelligence (AI) is now a central player in interactions between brands and consumers, redefining behaviors, decision-making processes, and consumer experiences (Zarantonello et al., 2024). From voice assistants to recommendation systems, chatbots, and smart applications, AI is integrated into all spheres of daily life, professional, personal, and emotional, profoundly transforming the way individuals interact with their technological environment (Panetta, 2018; Shalu et al., 2025).

While these technologies promote increased personalization and unprecedented operational efficiency (Kotler et al., 2021; Sahebi et al., 2022; Gao and Liu., 2023), they also have a paradoxical effect: increased cognitive overload, anxiety, disengagement, and mental fatigue (Bright et al., 2018; Peake et al., 2018; Marsh et al., 2024). This phenomenon reflects a gradual shift in the scientific debate from a techno-optimistic view to an exploration of the "dark side" of technology adoption.

In this context, artificial intelligence fatigue (AI fatigue) is emerging as a new form of negative reaction to the intensive use of intelligent technologies (Marsh et al., 2024). It reflects a range of emotions and perceptions such as weariness, loss of control, perceived dehumanization, and moral and ethical fatigue in the face of the growing presence of algorithms in everyday decisions (Fan et al., 2024; Nguyen et al., 2024; Wang et al., 2024). However, despite the proliferation of AI devices in consumer environments, marketing literature remains primarily focused on their functional and emotional benefits, neglecting the psychological and social impacts of overexposure to smart technologies (Islam et al., 2020; da Silva et al., 2024; Fernandes and Oliveira, 2024).

To date, little research has sought to conceptualize the internal dimensions of AI fatigue or describe the diversity of forms it can take in consumers' lived experiences. However, understanding these dimensions, whether

cognitive, emotional, relational, or ethical, appears essential to proposing an integrative view of the phenomenon and to helping organizations design more balanced and sustainable interactions with their audiences (Hang, et al., 2022; da Silva et al., 2024; Zarantonello et al., 2024).

This research therefore aims to deepen our understanding of the concept of AI fatigue by adopting an exploratory qualitative approach based on semi-structured interviews with consumers who are regular users of AI. It has three main objectives: (1) to identify the different forms of negative experiences associated with AI use, (2) to explore the emotions, cognitions, and behaviors that reflect perceived fatigue, and (3) to propose an integrative conceptualization of the dimensions of AI fatigue.

On a theoretical level, this study draws on Cognitive Load Theory (Sweller, 1988) to explain the effects of information overload, as well as contributions from the Stress–Strain–Outcome Model (Tarafdar et al., 2019) and Conservation of Resources Theory (Hobfoll, 1989) to understand how repeated interaction with intelligent systems depletes users' cognitive, emotional, and ethical resources.

The central question guiding this research is: what are the constituent dimensions of artificial intelligence fatigue, and how do they manifest themselves in the emotions, cognitions, and behaviors of regular AI users?

This research is of dual interest. On a theoretical level, it enriches the literature on human-technology interactions by conceptualizing artificial intelligence fatigue as a multidimensional, cognitive, emotional, and relational experience that has been little explored in the field of marketing. It thus provides a better understanding of negative reactions to AI, beyond the already established concepts of technostress, technological anxiety, and information overload. In this sense, it contributes to the emergence of an original explanatory framework for the "dark side" of human-AI interaction, while promoting interdisciplinary dialogue between marketing, cognitive psychology, and information systems research. From a managerial and societal perspective, this study offers organizations avenues for designing more balanced and ethical technological experiences, preventing overload, disengagement, and user fatigue in the face of intelligent technologies.

## LITERATURE REVIEW

Artificial intelligence (AI) now plays a central role in transforming marketing practices and consumer experiences. By enabling brands to analyze data on a massive scale, anticipate behavior, and personalize interactions, AI has profoundly changed the relationship between businesses and consumers (Kotler et al., 2021; Gao et al., 2023). Voice assistants, chatbots, recommendation systems, and intelligent platforms promise a seamless, responsive, and individualized experience, helping to build a continuous and contextual relationship with the consumer (Sahebi et al., 2022; Zarantonello et al., 2024).

However, this hyper-personalization has ambivalent effects. The constant and intensive use of smart technologies generates cognitive overload and psychological fatigue linked to the proliferation of notifications, interactions, and digital solicitation (Bright et al., 2022; Lee et al., 2024; Marsh et al., 2024). This phenomenon is consistent with research on technostress (Tarafdar et al., 2019; Islam et al., 2020), which highlights the tensions and imbalances resulting from excessive use of digital technologies.

### From techno-fatigue to AI-related fatigue

Techno-fatigue refers to the state of mental, emotional, and cognitive exhaustion experienced by individuals due to prolonged exposure to digital technologies (Ayyagari et al., 2011; Lyu et al., 2022). This fatigue stems from information overload, feelings of intrusion, and a perceived loss of control in the use of technological devices (Peake et al., 2018; Bright et al., 2022).

However, AI fatigue is distinguished by its intelligent, adaptive, and algorithmic nature: it emerges not only from the quantity of interactions, but also from the quality of the human-machine relationship (Nguyen et al., 2024; Wang, 2025). AI fatigue reflects a set of negative reactions, frustration, mistrust, disengagement, to systems perceived as overly powerful, impersonal, or cognitively demanding (Ragolane and Patel, 2025).

While social media fatigue (Fernandes and Oliveira, 2024) and information fatigue (Borges et al., 2021) have been widely documented, AI fatigue remains an emerging field that still lacks a clear conceptual framework. Existing research often addresses cognitive overload or technological stress without distinguishing the specific effects of artificial intelligence: machine learning, decision-making autonomy, or non-human interactions (Litan, 2025).

## Theoretical foundations

Artificial intelligence fatigue (AI fatigue) can be understood as a multidimensional phenomenon affecting the cognitive, emotional, relational, and ethical spheres. The combination of the following theories allows for a rigorous analysis of these dimensions.

Cognitive Load Theory (Sweller, 1988)

Cognitive Load Theory posits that information overload and the complexity of interactions place excessive demands on individuals' cognitive capacities, leading to a decrease in processing capacity, attention, and mental fatigue. In the context of AI, this theory helps us understand how the design of systems (chatbots, voice assistants, recommendation systems) influences cognitive load and generates effects such as overload, frustration, or mental exhaustion. This theory thus specifically captures the cognitive mechanism of fatigue, where mental overload and continuous attentional effort lead to decreased cognitive efficiency and performance.

Recent studies confirm that the perceived complexity of interfaces and the amount of information processed simultaneously increase cognitive fatigue and decrease user performance (Logan et al., 2018; Lyu et al., 2022; Marsh, et al., 2024).

### Stress–Strain–Outcome Model (Tarafdar et al., 2019)

The Stress–Strain–Outcome Model proposes that technological demands create technological stress, which generates emotional responses (strain) and subsequently influences user behavior (outcome). This model is particularly relevant for explaining emotional fatigue, such as frustration, weariness, or anxiety, experienced during repetitive interactions with automated systems. It therefore highlights the emotional mechanism of fatigue, by linking exposure to AI-related stressors with negative affective states such as irritation, anxiety, or loss of motivation.

Research shows that frequent and intrusive interactions with AI systems can cause persistent negative emotions and impair the user experience (Tarafdar et al., 2019; Bright et al., 2022; Marsh et al., 2024; Litan, 2025).

### Conservation of Resources Theory (Hobfoll, 1989)

Conservation of Resources Theory argues that individuals seek to preserve their cognitive, emotional, and social resources. Intensive and prolonged use of AI can cause depletion of these resources, leading to mental fatigue, emotional stress, disengagement, and deterioration of social connection. This framework illuminates the ethical and relational mechanisms of fatigue, showing how the perceived dehumanization of interactions, loss of autonomy, and erosion of moral comfort deplete users' psychological and social resources.

Thus, this theory helps to understand not only cognitive and emotional overload, but also relational fatigue, resulting from a feeling of dehumanization or social distance induced by interactions with automated systems (Hobfoll, 1989; Nguyen et al., 2024; Ragolane and Patel, 2025).

This multidimensional approach paves the way for an integrative conceptualization of AI-related fatigue, articulating the contributions of cognitive psychology, the sociology of technology, and experiential marketing. Such a comprehensive understanding is essential for developing more sustainable, responsible, and human-centered strategies for the design and use of AI.

# METHODOLOGY

## Data collection method

In order to meet the objectives of this research, an exploratory qualitative approach was favored, based on semi-structured individual interviews. In accordance with the purposive sampling method (Marshall, 1996), participants were selected from among regular consumers of artificial intelligence, i.e., individuals who frequently use devices such as chatbots, voice assistants, recommendation platforms, or mobile applications. The challenge was to recruit participants with recent, frequent, and varied experience with AI.

Data collection continued until semantic saturation was reached ((Delacroix et al., 2021), ensuring the depth and redundancy necessary for analysis. The interviews, which lasted an average of 30 to 40 minutes, a duration corresponding to the minimum threshold generally recognized in qualitative marketing research (Evrard et al., 2009), were conducted face-to-face, recorded with the consent of the interviewees, then translated from Arabic dialect into French and transcribed in full. The final corpus consists of 198 pages of verbatim transcripts, offering rich and nuanced material.

A total of 22 Tunisian consumers were interviewed, which is above the standards recommended in the literature (Glaser and Strauss, 1967; Thompson and Haytko, 1997; Fournier, 1999; Bonsu and Belk, 2003). This sample, composed of 12 women and 10 men, was constructed to reflect a diversity of ages, profiles, and sociodemographic situations (see table 1).

Table 1 Profile Of Participants Recruited For Individual Interviews

| Participant number | Gender | Age | Occupation/Education | Type of AI mainly used |
|---|---|---|---|---|
| P1 | Female | 23 | Marketing student | Generative AI (ChatGPT) |
| P2 | Male | 34 | Computer developer | AI coding tools (Copilot) |
| P3 | Female | 29 | Graphic designer | Creative AI (Midjourney, Canva AI) |
| P4 | Male | 40 | Strategy Consultant | Analytical AI |
| P5 | Female | 31 | Journalist | Chatbots / article summarization |
| P6 | Man | 28 | Entrepreneur | Automated marketing AI |
| P7 | Woman | 36 | Computer engineer | Virtual assistants/chatbots |
| P8 | Male | 45 | Administrative officer | Administrative chatbots |
| P9 | Female | 27 | Engineering student | Voice assistants (Siri, Alexa) |
| P10 | Male | 52 | Doctor | Medical AI |
| P11 | Female | 33 | University professor | ChatGPT / Educational AI |
| P12 | Man | 30 | Software Engineer | Recommendation AI |
| P13 | Female | 48 | Architect | AI in architecture/3D simulation |
| P14 | Male | 39 | Sales | Sales AI / Predictive CRM |
| P15 | Female | 26 | UX/UI Designer | Design AI (Figma AI, DALL·E) |

| | | | | |
|---|---|---|---|---|
| P16 | Male | 42 | Financial Analyst | Financial AI |
| P17 | Woman | 35 | PhD student in Marketing | Conversational AI / Research |
| P18 | Male | 31 | Data scientist | Machine learning / data analysis |
| P19 | Female | 50 | Medical specialist | Medical AI |
| P20 | Male | 29 | Digital entrepreneur | E-commerce/advertising AI |
| P21 | Woman | 38 | Marketing Manager | AI marketing/segmentation |
| P22 | Female | 44 | Teacher | ChatGPT / educational tools |

The interview guide was developed in advance around six main themes in order to structure the discussions with participants. These themes focus on: (1) the general relationship with artificial intelligence, (2) positive experiences and perceived benefits, (3) manifestations of artificial intelligence fatigue, (4) cognitive and emotional reactions to artificial intelligence, (5) coping strategies and behaviors in response to fatigue, and (6) ethical perceptions and the relationship to dehumanization. This thematic organization allows for an in-depth and systematic exploration of the different dimensions of the experience of regular AI users.

**Data analysis method**

Data analysis followed a thematic approach (Giannelloni and Vernette, 2001), based on a grid inspired by *Grounded Theory* and implemented using QDA Miner. The coding was carried out jointly by the authors and a research assistant (Masmoudi and El Aoud, 2021), ensuring the robustness and reliability of the results. Adopting an inductive and comparative approach (Glaser and Strauss, 1967), we performed double coding of four randomly selected interviews, assessing consistency using the inter-rater agreement rate (Ronan and Latham, 1974) and Scott's Pi (Scott, 1955) and Krippendorff's Alpha coefficients (Krippendorff, 1980). The satisfactory results of these tests confirm the robustness of our analysis and allow us to interpret the data with complete reliability.

## RESULTS

The data analysis reveals a diversity of perceptions regarding artificial intelligence (See table 1). On the one hand, the coexistence of benefits and risks is clear: almost all participants recognize the practical advantages of artificial intelligence, while expressing growing mistrust of it. As one participant points out: "*AI saves me a lot of time sorting through my emails, but I'm still afraid of what happens to my data*" (P2, Male, 34). Another participant added: "*Even when I know it's supposed to help me, I can't shake the feeling that there's always something hidden behind it. It's like I'm being watched, even when I'm just using a simple app*" (P3, Female, 29).

On the other hand, individual variations emerge depending on age, usage habits, and the purpose of use (professional or personal). Contextual factors also play an important role. Fatigue is more pronounced when AI is used in sensitive areas such as health, finance, or parenting decisions. In this regard, one user said: "*When I consult medical recommendations generated by AI, I feel additional stress. I find it difficult to know if I can really trust them*" (P10, male, 52). He went on to explain: "*I start questioning everything — even things I would normally trust. It's like my own judgment is blurred because of all this automation. That's mentally draining*" (P10, male, 52).

Finally, a close link between cognitive overload and ethical concerns emerges: the more abundant and difficult to process the information is, the more individuals feel a loss of control, fueling their concerns about the ethics and reliability of these technologies. As one participant noted: "*Too many suggestions, too much data to analyze... I feel overwhelmed and I doubt the reliability of it all*" (P18, Male, 31).

The testimonials collected also highlight an ambivalent movement, oscillating between fascination with the practicality of artificial intelligence and a growing rejection of its coldness and omnipresence. This paradoxical relationship is expressed through three main dynamics.

First, there is a quest for rehumanization: users express a desire for more sensitive, less automated interactions, seeking to restore an emotional and authentic dimension to their relationship with technology. As one participant said: "*Even though AI can respond quickly, I still prefer face-to-face exchanges to feel that I am truly understood*" (P7, Female, 36). Another respondent elaborated: "*When I talk to a real person, there's empathy a tone, a look. With AI, I get efficiency but no soul. After a while, it's like everything feels empty*" (P22, Female, 44).

Secondly, a clear need for transparency emerges: understanding how AI systems work and how personal data is used is becoming essential for building trust. One respondent illustrates this point: "*I need to understand what these tools are doing with my personal information. Without that, I feel vulnerable*" (P11, Female, 33).

Finally, a desire to regain control is becoming apparent: faced with the growing power and influence of smart devices, individuals are developing a heightened critical awareness and adapting their usage in order to preserve their psychological, ethical, and identity balance. One participant- e explains: "*I disable automatic recommendations and filter notifications to stay in control of my choices*" (P15, Female, 26). She continued: "*It took me months to realize how much these systems were deciding for me. Now I've learned to slow down, to pause before clicking. That's the only way I can feel like my choices are mine again*" (P15, Female, 26)

Thus, the relationship with AI is built on a tension between efficiency and humanity, technical efficiency and the need for meaning, reflecting a collective effort to restore a more human place for technology in everyday life.

Faced with this tension, consumers are not content to simply accept it: they are experimenting with forms of resistance and adjustment, seeking to reaffirm their individuality in a world increasingly mediated by algorithms. Some choose to voluntarily limit their use, imposing regular digital breaks on themselves to reduce mental overload. Others favor increased control over settings, disabling notifications or restricting automatic recommendations to regain control of their digital environment.

At the same time, seeking human contact appears to be a preferred alternative: many users prefer to seek human advice or expertise when it comes to important decisions. Finally, external verification of information, particularly by cross-referencing different sources, is a way of restoring confidence in the face of the perceived limitations of AI systems. As one participant points out: "*Whenever possible, I always check information with several sources before relying on AI*" (P5, Female, 31).

***Dimensions of artificial intelligence fatigue:*** Qualitative analysis of the interviews highlights several new forms of artificial intelligence fatigue, reflecting a complex experience that intertwines psychological, ethical, and identity dimensions. Far from being simple cognitive exhaustion, this fatigue reflects a gradual erosion of meaning, relationships, and feelings of autonomy in the face of ubiquitous technologies.

Four main types of fatigue emerge: fatigue from loss of meaning, relational fatigue with the machine, moral and ethical fatigue, and identity and autonomy fatigue.

*Fatigue from loss of meaning: saturation with algorithmic logic:* The first form of weariness observed concerns the loss of meaning felt by users when faced with the predictive and standardized logic of AI devices. Automatic recommendations, although intended to simplify decision-making, paradoxically create a feeling of boredom and personal disconnection. As one participant put it: "*I feel like everything is already decided for me, that my choices are no longer really my own*" (P1, Female, 23).

This saturation with algorithmic repetition leads to existential fatigue: several participants say they no longer find the spontaneity and creativity that previously characterized their digital interactions. Some even say they deliberately limit their use of smart tools in order to reintroduce randomness and "feel like they are in control" of their decisions again.

*Relational fatigue: the erosion of the human-machine bond:* Another form of fatigue stems from the artificial relationship maintained with smart systems. Behind the efficiency and constant availability of chatbots and virtual assistants, users perceive a "soulless" form of communication. This feeling is summed up by one evocative testimony: "*Sometimes talking to a chatbot is like talking to a brick wall: it responds, but it doesn't understand*" (P5, Female, 31).

This observation reflects a gradual disillusionment: AI, initially perceived as a facilitating presence, is becoming a source of frustration and even irritation. The interviews reveal a growing emotional disengagement from these devices. To compensate for this perceived dehumanization, some participants develop coping strategies, such as reintroducing human contact into their interactions (preferring a real advisor, a phone call, or face-to-face interaction).

*Moral and ethical fatigue: the unease of invisible surveillance:* Moral fatigue stems from the feeling of constant technological presence and massive data collection perceived as intrusive. Participants mention a growing unease about digital surveillance and the commodification of their behavior, as well as the loss of privacy: "*I know that everything I do is recorded, analyzed, sold... It's exhausting to feel constantly watched*" (P12, male, 30).

This constant vigilance leads to psychological wear and tear fueled by mistrust and guilt about using tools that are known to have abuses. Several users therefore develop defensive strategies: restricting access permissions, creating multiple digital identities, or disabling certain smart features deemed too intrusive. These behaviors reflect a desire to regain control over a technological space that has become anxiety-provoking.

*Identity and autonomy fatigue: the dilution of the "digital self":* Finally, identity fatigue is rooted in the tension between autonomy and dependence. Individuals feel that algorithms are having a growing influence on the formation of their tastes, opinions, and behaviors. One of the quotes illustrates this loss of bearings: "*After a while, I no longer know if I like something because it's me, or because an algorithm suggested it to me*" (P20, Male, 29).

This feeling of losing oneself is accompanied by questions about freedom of choice and the development of personal judgment in the age of automation. Some participants, aware of this trend, adopt selective distancing strategies: temporarily uninstalling certain applications, diversifying their sources of information, or favoring "offline" experiences to preserve their cognitive and emotional autonomy.

These results show that fatigue associated with the use of artificial intelligence is a multidimensional phenomenon, situated at the intersection of the cognitive, emotional, and social spheres. It reflects not only exhaustion in the face of technological complexity, but also the search for identity balance in a world increasingly shaped and mediated by algorithms.

Table 2 Themes And Sub-Themes Emerging From The Qualitative Analysis

| **Themes** | **Sub-themes** |
|---|---|
| Perceptions of Artificial Intelligence | - Coexistence of benefits and risks<br>- Individual and contextual variations<br>- Cognitive overload and ethical concerns<br>- Ambivalent relationship with technology<br>- Quest for rehumanization<br>- Demand for transparency<br>- Desire to regain control |

| | |
|---|---|
| Adaptation Strategies for Coping with AI Fatigue | - Voluntary limitation of use<br>- Increased control over system parameters<br>- Seeking human contact<br>- External verification of information |
| Dimensions of AI-Related Fatigue | - Fatigue from loss of meaning<br>- Relational fatigue (erosion of the human–machine bond)<br>- Moral and ethical fatigue<br>- Identity and autonomy fatigue |

# DISCUSSION

The results of this research highlight a profound ambivalence in individuals' relationship with artificial intelligence (AI), oscillating between attraction and concern, efficiency and humanity. This tension, which has been widely documented in the literature (Cave and Dignum, 2019; Longoni and Cian, 2022), is particularly evident here, revealing the emotional, cognitive, and ethical complexity of interactions with intelligent technologies. Our results can be interpreted in light of several relevant theoretical frameworks, including Cognitive Load Theory (Sweller, 1988), the Stress–Strain–Outcome Model (Tarafdar et al., 2019), and Conservation of Resources Theory (Hobfoll, 1989).

**Benefit/risk ambivalence and cognitive overload: Duality and cognitive fatigue in the face of AI**

The coexistence of perceived benefits and risks confirms previous findings that AI arouses both fascination and fear (Granulo et al., 2019). Participants overwhelmingly recognize the practical and functional advantages of these technologies, such as time savings, accessibility, and decision support, while expressing growing mistrust of their autonomy and opacity. This duality illustrates what Cave and Dignum (2019) describe as an "ambivalent relationship of critical dependence" on AI.

Our results also highlight the cognitive and emotional fatigue associated with prolonged use of AI, particularly in sensitive contexts (health, parenting, finance). This cognitive overload can be interpreted in light of Cognitive Load Theory (Sweller, 1988): the abundance of information and the complexity of interactions increase cognitive load, limiting individuals' processing capacity and generating stress and frustration. The Stress–Strain–Outcome Model (Tarafdar et al., 2019) explains how this technological stress can cause psychological strain and adjustment behaviors. Furthermore, according to Conservation of Resources Theory (Hobfoll, 1989), the depletion of cognitive and emotional resources pushes individuals to adopt strategies aimed at protecting their well-being and autonomy.

**Contextual and individual sensitivity to AI fatigue**

The variations observed according to age, technological familiarity, or intended use confirm the classic models of technology adoption (Parasuraman, 2000; Venkatesh et al., 2003). However, our results nuance these approaches by emphasizing the importance of the context of use. AI is perceived as more intrusive and anxiety-n situations involving high moral or emotional responsibility. This contextual sensitivity illustrates the interaction between cognitive overload, technological stress, and resource availability, consistent with previous theories, and is in line with work on the ethical contextualization of AI (Floridi and Cowls, 2022).

**From mistrust to resistance: Critical agency and strategies for regulating AI fatigue**

Our findings reveal that individuals adopt strategies to regulate and protect resources: voluntarily limiting exposure time, disabling features, critically selecting sources, or resorting to human interlocutors. These

behaviors are consistent with Conservation of Resources Theory, which posits that individuals protect and restore their resources in the face of environmental pressures. The Stress–Strain–Outcome model also helps to understand how AIrelated fatigue and stress lead to these proactive adjustments, reflecting a form of digital empowerment and identity preservation. Users thus appear as reflective actors, capable of developing forms of symbolic and behavioral resistance to maintain their autonomy in an algorithmic environment.

**Transparency and rehumanization: Towards relational ethics and reduced AI fatigue**

The requirements for transparency and understanding of AI systems confirm the widely shared ethical concerns about "trustworthy AI" (Floridi and Cowls, 2019; European Commission, 2021). Our data show that the search for more human interactions is a strategy for reducing stress and protecting emotional resources, in line with Cognitive Load Theory: intuitive and emotionally rich interactions reduce cognitive load and improve the perception of control. This quest for rehumanization extends the work on social robotics (Flandorfer, 2012; Vlachos and Schärfe, 2014; Sundar et al., 2022) and introduces an affective dimension that is often overlooked in ethical debates focused on regulation. It invites us to conceive of AI ethics not only as a normative framework, but as a relational ethic, based on mutual recognition and the restoration of human connection.

Thus, the relationship with AI appears as a space of constant negotiation between technical efficiency and humanity, where users mobilize their cognitive, emotional, and social resources to maintain psychological and moral balance. Confrontation with Cognitive Load, Stress–Strain–Outcome, and Conservation of Resources theories helps us understand how cognitive overload and technological stress influence the perception of risks and benefits, motivating strategies of adjustment and resistance. AI thus becomes a trigger for adaptive learning and identity co-construction, highlighting that technological adoption is inseparable from emotional, ethical, and contextual dimensions.

**Fatigue and AI: Interactions between cognition, ethics, and identity**

The results of this study reveal that fatigue related to the use of artificial intelligence (AI) goes beyond the traditional framework of cognitive exhaustion to become a multidimensional experience involving psychological, ethical, and identity dimensions. This approach enriches the existing literature by offering an integrative and nuanced view of digital fatigue.

The fatigue of loss of meaning, as observed in participants, is consistent with the work of Susskind and Susskind (2015), who emphasize that the automation of decisions can reduce active engagement and generate a sense of alienation. However, our results extend this perspective by revealing an existential dimension: algorithmic repetition and the predictability of recommendations lead to a loss of creativity and subjective autonomy, which traditional models of cognitive overload (Sweller, 1988) do not fully capture. The proactive attitude of participants, who voluntarily limit their use of AI to restore a sense of control, echoes Garcia's (2012) observations on the quest for spontaneity and reappropriation in digital interactions.

Relational fatigue illustrates the gradual disillusionment with intelligent systems. While the literature on *the uncanny valley* and the humanization of interfaces (Reeves and Nass, 1996; Nass and Moon, 2000; Zhang et al., 2020) shows that human-machine interactions can generate emotional tension, our data specifies that this disillusionment is accompanied by lasting emotional disengagement and compensation through human interactions. This observation qualifies the idea that simply humanizing devices is sufficient to maintain a satisfactory emotional connection.

Moral and ethical fatigue, linked to constant surveillance and the commodification of behavior, is consistent with Zuboff's (2023) work on surveillance capitalism and with studies on "privacy fatigue" (Choi et al., 2018; Lyu et al., 2024; Wang et al., 2025). Nevertheless, our results highlight active defensive strategies employed by users, such as restricting permissions and diversifying digital identities, which demonstrate an attempt to reclaim and regulate the digital space, going beyond the simple passive resignation described in the literature.

Finally, identity and autonomy fatigue reveals the tension between algorithmic influence and self-construction. While the effects of filter bubbles on individuals' preferences and opinions have already been documented

(Pariser, 2011), our results highlight that this influence can lead to a dilution of digital identity and a questioning of personal choices. Strategies of selective distancing and seeking disconnected experiences illustrate a proactive reaffirmation of autonomy and freedom of judgment, extending Turkle's (2015) work on identity in the digital age.

The central contribution of this study lies in the multidimensionality and interdependence of fatigue. Unlike previous work that addresses cognitive, emotional, or moral fatigue separately (Kahneman, 1973; Dabbish and Kraut, 2006), our results suggest that these dimensions reinforce each other, forming a global phenomenon where loss of meaning, relational disillusionment, moral vigilance, and identity dilution combine to generate complex and lasting fatigue. This perspective invites us to consider AI-related fatigue not only as functional exhaustion, but also as a socio-technical and identity signal, revealing tensions between automation, autonomy, and self-construction in the digital age.

**Research Contributions**

This study makes several major contributions, both theoretical and methodological as well as managerial, helping to enrich our understanding of the phenomenon of fatigue linked to artificial intelligence.

On a theoretical level, this research makes a significant contribution to the literature on digital fatigue by extending the concept to the specific context of artificial intelligence. While previous work has dealt separately with cognitive overload, relational disillusionment, and ethical mistrust, it shows that AI fatigue is a multidimensional phenomenon resulting from the intertwining of the cognitive, emotional, ethical, and identity spheres.

She therefore introduces an original typology of AI fatigue, based on four dimensions:

- Fatigue from loss of meaning (algorithmic saturation and existential disengagement)
- Relational fatigue (weariness with human-machine connections),
- Moral and ethical fatigue (unease with surveillance and the commodification of data), - Identity and autonomy fatigue (dilution of the digital self).

This conceptualization enriches existing theoretical frameworks, such as Cognitive Load Theory, Stress–Strain–Outcome Model, and Conservation of Resources Theory, by integrating them into a holistic and sociotechnical perspective that takes into account subjectivity, meaning, and human values. It thus allows fatigue to be interpreted not simply as a consequence of technological complexity, but as an indicator of identity and ethical tension in the human-machine relationship.

Beyond marketing and cognitive psychology approaches, it offers a sociological and existential reading of the relationship with artificial intelligence, where fatigue appears as a sociotechnical warning signal, revealing tensions between automation, autonomy, and identity construction in hyperconnected societies. She thus invites us to rethink technological adoption not as a simple question of efficiency, but as a process of balancing humanity, meaning, and performance.

Methodologically, this study adopts an exploratory qualitative approach based on semi-structured interviews, which is innovative in a field still dominated by quantitative and instrumental approaches to digital fatigue. This approach gives voice to users and reveals the diversity of experiences and regulation strategies (limiting use, seeking human contact, increased control), paving the way for a phenomenological and embodied understanding of the relationship with AI.

Finally, from a managerial and practical standpoint, the research invites designers, companies, and institutions to integrate AI-related fatigue as a key indicator of digital well-being. It recommends promoting more human, transparent, and ethical interfaces that reduce cognitive overload and restore trust, while fostering a sustainable balance between technological efficiency, autonomy, and humanity.

**Limitations And Future Avenues Of Research**

Despite the significant contributions of this research, several limitations are worth highlighting, opening up prospects for future work.

First, the number of interviews (22 participants) corresponds to the methodological standards recommended for exploratory qualitative studies and allowed semantic saturation to be achieved. Nevertheless, to strengthen the robustness and generalizability of the results, it would be relevant to conduct complementary qualitative studies, for example, using focus groups or digital ethnography. Such approaches could allow for a more in-depth exploration of the diversity of experiences and enrich our understanding of the dimensions of AI fatigue in various contexts of use.

Moreover, this study was conducted within a specific cultural and geographical context, which, while allowing for in-depth exploration of meanings and experiences, limits the cross-cultural generalization of the findings. Future research should therefore extend the investigation to participants from diverse regions and cultural backgrounds to allow for cross-cultural validation of the proposed framework. Such comparative studies could explore how cultural orientations, such as individualism versus collectivism, uncertainty avoidance, or power distance, shape the cognitive, emotional, and ethical responses to AI. Broadening the cultural scope would enhance the robustness and generalizability of the findings and reveal potential cultural variations in how users perceive and cope with AI fatigue.

Second, although the qualitative approach adopted provides a rich and nuanced analysis, it does not allow for quantifying the extent or intensity of the different forms of fatigue. Future research could therefore be supplemented by quantitative or mixed studies, incorporating scales measuring cognitive, emotional, relational, and ethical fatigue, in order to test the validity of the identified dimensions and assess their prevalence within larger populations.

Furthermore, this study focused on regular AI users, neglecting the perspectives of occasional users or non-users. It would be relevant to examine these groups in future research to determine the extent to which the frequency and intensity of exposure to smart technologies influence fatigue and to identify the user profiles most likely to experience negative effects.

Finally, although this research highlights the psychological, emotional, and relational dimensions of AI-related fatigue, it does not address in depth the long-term impacts on consumer behavior, such as the abandonment of certain devices, changes in purchasing habits, or shifts in trust in technology. Future studies could adopt a longitudinal perspective to track the evolution of fatigue over time and assess its consequences on consumer behavior and decisions.

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