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# Conceptualizing social acceptability of technological innovation in frontline service experiences: a qualitative study

Julie Jammes, Gilles N'Goala, Pauline Folcher

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## Abstract

**Purpose** – The aim of this article is to propose a conceptualization of the social acceptability of technological innovation in frontline service experiences, highlighting the various dimensions of this process.

**Design/methodology/approach** – A literature review synthesizes perspectives on the concept of social acceptability of technological innovation in frontline service experiences from various disciplines in the humanities and social sciences (psychology, sociology, political science, education, etc.). This synthesis is enriched by an exploratory qualitative study conducted in various service sectors (e.g., IT and technology services, education, tourism, financial services). Semi-structured interviews were conducted with 30 participants, including 16 service providers and 14 consumers.

**Findings** – A bidimensional conceptualization of the social acceptability of technological innovation in frontline service experiences from the consumer's perspective is proposed. The first dimension, perceived social desirability, has been identified but has not yet undergone empirical validation in the literature. The second newly identified dimension is perceived accessibility.

**Research limitations/implications** – This article is primarily exploratory and conceptual and requires empirical testing. It is particularly important to operationalize the concept by developing a robust measurement scale to confirm the applicability of the proposed framework.

**Practical implications** – This study provides valuable guidance for practitioners in designing technologically innovative frontline service experiences that are more socially acceptable. The goal is to improve service design while understanding consumer behavioral responses (i.e., proactive acceptance, passive acceptance, indifference, or rejection) to a service delivery and consumption situation.

**Originality/value** – As the first attempt to conceptualize the social acceptability of technological innovation in frontline service experiences, this article enriches our current understanding of the subject, advocating for its broader relevance and paving the way for future development.

**Keywords** Social acceptability, Technological innovations, Service design, Qualitative study

**Paper type** Conceptual paper

## Introduction

The role of technological service innovation in creating customer experience value is increasingly recognized (Saunila *et al.*, 2017; Kristensson, 2019). In recent years, the advent and widespread integration of digital technologies (e.g., Chatbots, service robots, biometric devices, etc.) in the delivery and consumption of services have marked a turning point in the customer-service interaction. The democratization of digital servicization has profoundly altered how services are conceived, deployed, and perceived by consumers (Lee *et al.*, 2023). This rapid evolution has radically redefined traditional operational processes of service delivery (Wirtz *et al.*, 2018). While undoubtedly contributing to providing more qualitative services by offering greater convenience, speed, and accessibility for consumers (Shen and Dwayne Ball, 2009; Gonçalves *et al.*, 2020; Lu *et al.*, 2020), it also raises numerous concerns. Indeed, although consumers attach significant importance to the convenience and utility of a service, this is no longer sufficient to engage and retain them. Presently, simple micro considerations regarding the socio-technical performance of technology (i.e., practical acceptability of the technology) are surpassed, even transcended, by various macro considerations related to diverse socio-political issues (i.e., social acceptability of the technology) (Wirtz *et al.*, 2018). This shift from micro to macro considerations is justified, among other reasons, by the emergence of consumer self-reflexivity, acknowledging their latent vulnerability to technology (Del Bucchia *et al.*, 2021). This latent vulnerability allows consumers to recognize their dependence, manipulation, and even alienation associated with their use of technology (Del Bucchia *et al.*, 2021). The idea of potentially alienating technology finds its foundation in various studies demonstrating that some consumers associate technology use with a loss of their freedom to think, a decrease in their autonomy, an intrusion into their privacy, and even dehumanization (i.e., Feng and Xie, 2019; Bertrandias *et al.*, 2021; Deng and Lin, 2022). This sense of alienation, perceived as an admission of powerlessness in the face of technology, emerges as a key concern expressed by consumers. The state of powerlessness is psychologically aversive, leading to a decrease in self-esteem among consumers (Rucker *et al.*, 2011). To overcome this state, they strive to restore a positive psychological balance (Rucker and Galinsky, 2008). Thus, several coping mechanisms can be implemented in this quest for restoring equilibrium. Firstly, some consumers may choose to voluntarily limit or even avoid their use of technology. This is done with the aim of regaining a sense of control while reducing the sense of alienation associated with the consumption of technology, often compelled in certain use cases, such as the use of facial recognition technologies in airports. On the other hand, some consumers might develop adaptation strategies by deliberately disconnecting to restore social connections, which are essential elements for ensuring psychological well-being (Nguyen and Hargittai, 2024).

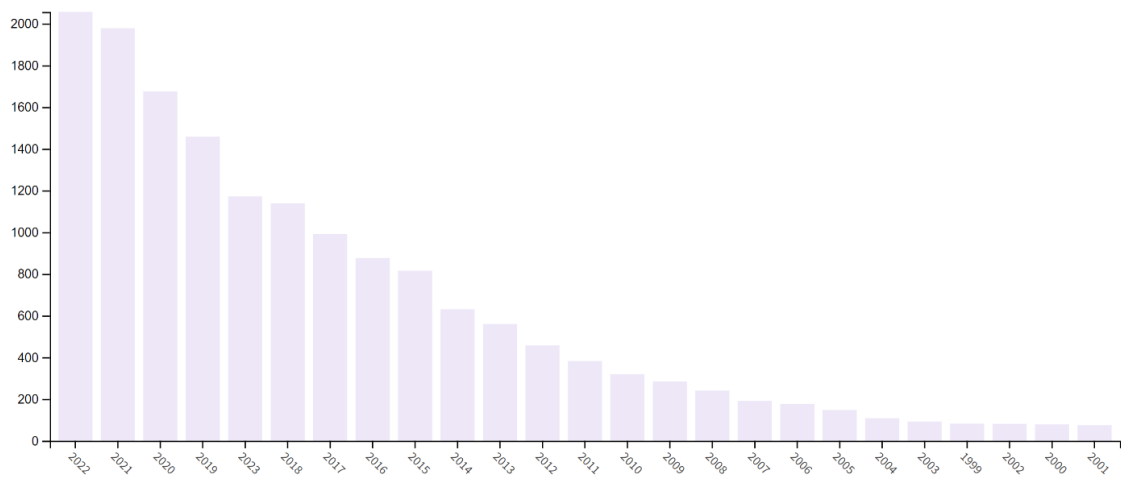
Ultimately, the duality between the practical benefits of technological innovation and societal concerns raises fundamental questions in the field of services. This paradigm prompts managers and decision-makers to rethink service experiences by finding a balance between operational efficiency and respect for human values and rights. Therefore, at the heart of this reflection, the social acceptability of technological innovation in frontline service experiences emerges as a crucial issue, accredited by the abundance of research dedicated to the subject over the past three decades. Despite the abundance of research on this topic, substantial gaps remain concerning its operationalization (Raufflet, 2014). Only a few theoretical and conceptual reflections have been published so far. Thus, the terminological, ontological, and theoretical foundations of studies in this field have rarely been deeply examined.

To address this gap, this article proposes a synthesis of the current state of studies on the social acceptability of technological innovation in frontline service experiences. It pursues a dual objective. Firstly, it seeks to examine and synthesize the contributions of publications to enrich the theoretical-conceptual understanding of the social acceptability of technological innovation in frontline service experiences, aiming to advance discussions in this field. Additionally, it aspires to develop a conceptualization of the concept from the consumer's perspective for subsequent operationalization.

## Social acceptability of technological innovation in frontline service experiments: a literature review

### Defining social acceptability

Over the past two decades, the use of the term "social acceptability" has experienced a notable rise in prominence in research, thereby reflecting its growing significance (Figure 1).



Notes: Source Web of Science. Coverage period = 2001 to 2022. Total number of publications (n: 16,504).

**Figure 1.**  
Publication trends on social acceptability

However, despite its importance, we note that only a minority of the examined studies have attempted to provide an explicit definition of social acceptability. Within the scientific community, this concept is often informally mentioned without sufficient conceptual clarity. As a result, the terminological, ontological, and theoretical foundations of these studies have been inadequately explored so far. This gap, combined with the lack of consensus surrounding its definition, despite multiple proposals in academic and practical literature (Table 1), highlights a pressing need for conceptual clarification to achieve a widespread and integrative understanding of the concept.

Authors/Year	Definitions
Brunson (1996)	"A condition that results from a judgment process in which individuals (1) compare the perceived reality with known alternatives, and (2) decide whether the 'actual' state is superior or sufficiently similar to the most favorable alternative condition." (p. 9)

Joyce and Thomson (2000)	<i>"Social acceptability is an approval that cannot be granted by civil authorities, political structures, or even the legal system. [...] Social acceptability can only come from the acceptance granted by the local community members. Therefore, such acceptability must be achieved at various levels, but it must begin with the social acceptance of resource exploitation by local communities." (p. 3)</i>
Slack (2008)	<i>"Social acceptability refers to a kind of approval that companies must obtain from local communities in the areas where they operate (in contrast to the legal approval they receive from governments). The concept has emerged particularly in extractive industries, which often have a direct impact on local communities as companies may need to flood their lands, use water, and other resources. These industries have recently sparked anger among local communities and have been the subject of widespread protests in developing countries." (p. 1)</i>
Kraisornsuthasinee and Swierczek (2009)	<i>"Social acceptability is universally acknowledged as the most immediate outcome of corporate strategic efforts in CSR. This 'social immunity' also affirms the emphasis companies place on CSR as a key objective of strategic management – to gain advantages or mitigate risks." (p. 562)</i>
Thomassin et al. (2010)	<i>"A measure of support for a set of regulations, management tools, or an organization by an individual or a group of individuals based on geographical, social, economic, or cultural criteria." (p. 170)</i>
Fortin and Fournies (2013)	<i>"A political evaluation process of a sociotechnical project involving a plurality of actors at various scales, from which gradually emerge recognized legitimate arrangements and institutional rules, consistent with the territorial vision and development model favored by the involved actors." (p. 13)</i>
Gendron (2014)	<i>"Public approval of a project or decision resulting from the collective judgment that this project or decision is superior to known alternatives, including the status quo." (p. 1)</i>
Lacey and Lamont (2014)	<i>"Social license refers to an informal social contract existing between an industry and the community in which it operates. The social license implies a level of acceptance or approval that a community grants to a specific project." (p. 2)</i>
Government of Quebec (2015)	<i>"The collective judgments based on societal values, regarding the merit of a policy or development project that may have an impact on natural and human environments."</i>

**Table 1.**  
Definitions of social acceptability used in the literature

*The result of an evaluation process.* The examination of various existing definitions reveals that social acceptability is frequently defined as the outcome of an evaluation process, during which a social unit, whether an individual, a population, or a community, forms a holistic and systematic judgment about a particular element, be it a situation, decision, product, service, or project, by comparing it to known alternatives. In other words, social acceptability is the result of an evaluation process that determines whether society is willing to embrace a particular element favorably or not (Thomassin, 2010). Among the definitions found in the examined publications, the one proposed by Brunson (1996, p. 9) emerges as the most cited, namely: *"A condition that results from a judgment process in which individuals (1) compare the perceived reality with known alternatives, and (2) decide whether the 'actual' state is superior or sufficiently similar to the most favorable alternative condition"*. This definition

emphasizes the cognitive and subjective nature, which depends on individual perceptions and past experiences to which individuals refer.

*A dynamic process.* Several studies highlight the dynamic nature of social acceptability (e.g., Shindler *et al.*, 2002; Fortin and Fournis, 2011; Baba and Raufflet, 2015; Gendron *et al.*, 2016; Batellier, 2016). Indeed, social acceptability necessarily involves an interaction between an actor, an artifact, and the context in which it is situated (Thomassin *et al.*, 2010; Ruano-Chamorro *et al.*, 2018). Due to the constant evolution of these factors, social acceptability may experience fluctuations over time (Baba and Raufflet, 2015).

*An individual vs. collective process.* Simultaneously, a conceptual debate culminates in research and revolves around the question of the scale at which social acceptability manifests (Pigeon, 2022). As indicated by Barbier and Nadaï (2015), this notion is ambiguous as it raises the question of acceptability by "whom?". The adjective "social" attached to "acceptability" can refer to a variety of actors (is it a consumer, a local resident, a community, associations, local officials, businesses, governments, etc.), making the definition complex. Some researchers favor an individualistic approach and reduce social acceptability to the sum of individual evaluations made by members of a society (Stankey *et al.*, 1985; Brunson, 1996; Batellier, 2012; Bonnotte, 2016). On the contrary, other researchers equate social acceptability with the result of a collective judgment on the integration of a given element (e.g., a situation, a decision, a product, a service, etc.) (Shindler *et al.*, 2002; Gendron, 2014; Canel-Depitre, 2017). However, we observe that many studies do not provide a definition of the "social" aspect of acceptability. Thus, the scope and boundaries of the social dimension of acceptability remain unclear.

#### *Theoretical and disciplinary foundations of research into the social acceptability of technological innovation in frontline service experiments*

The majority of existing research on innovation in frontline services has primarily relied on acceptance process-oriented theories (e.g., Davis, 1989; Venkatesh and Davis, 2000; Venkatesh and Bala, 2008). In this field, the social acceptability of technological innovation is explored across different disciplines or research domains, each offering its own perspectives and understandings of the subject. We observe that various theoretical frameworks are employed to define research parameters and explain phenomena related to the social acceptability of technological innovation. In the examined literature, the frameworks used for data generation and analysis predominantly rely on single theories. However, several studies also employ multi-theoretical research frameworks. Although, in general, a strong theoretical foundation is considered essential in research (Udo-Akang, 2012), we find that most articles in the field do not invoke a specific theory or concept to guide their work. Based on our own theoretical and conceptual observations, we contend that the social acceptability of technological innovation does not yet have a solid and unified theoretical foundation, limiting its discussion in the context of the service relationship between a customer and a company. Consequently, we highlight the difficulty of creating an interdisciplinary theoretical model for the social acceptability of technological innovation, given the complexity of variables and dynamics at play, with their interaction links often neglected in the field.

Generally, in the absence of an established theoretical foundation in a field, it is common, and even wise, to draw upon theories from related domains (Schnell *et al.*, 2013). Our theoretical and conceptual synthesis on the social acceptability of technological innovation supports this perspective, as among the listed theories, all are related to connected fields.

Table 2 outlines the main disciplines and research domains, along with the theories mobilized in studies addressing the subject.

Disciplines/Research domains	Theories or Research models	References
Psychology, Environmental psychology, and Behavioral studies	Place Theory (NIMBY) (Devine-Wright, 2009, 2013)	e.g. Cherry <i>et al.</i> (2022); Bourdin <i>et al.</i> (2019); Martínez-Espiñeira <i>et al.</i> (2019)
	Theory of Planned Behavior (TPB) (Ajzen, 1991)	e.g. Sagnier <i>et al.</i> (2019); Dupré <i>et al.</i> (2015); Bobillier-Chaumon and Dubois (2009)
	Theory of Reasoned Action (TRA) (Fishbein and Ajzen, 1975, 1980)	e.g. Granier (2015); Ford <i>et al.</i> (2014); Ford <i>et al.</i> (2009a)
	Value-Belief-Norm Theory (Stern, 2000)	e.g. Mendham and Curtis (2014); Ford <i>et al.</i> (2009b)
	Theory of Interpersonal Behavior (TIB) (Triandis, 1980)	e.g. Bobillier-Chaumon and Dubois (2009)
Business ethics	Social License to Operate (SLO) (Thomson and Boutilier, 2011)	e.g. Ford <i>et al.</i> (2022); Baumber <i>et al.</i> (2021); Billing <i>et al.</i> (2021)
Innovation Research	Technology Acceptance Model (TAM) (Davis, 1989); (TAM2) (Venkatesh and Davis, 2000); (TAM3) (Venkatesh and Bala, 2008)	e.g. Bakhshian and Lee (2022); Sagnier <i>et al.</i> (2019); Dupré <i>et al.</i> (2015)
	Diffusion of Innovation Theory (DOI) (Rogers, 1983)	e.g. Antwi and Ley (2021); Jan <i>et al.</i> (2020); Dupré <i>et al.</i> (2015)
	Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh <i>et al.</i> , 2003); (UTAUT2) (Venkatesh <i>et al.</i> , 2012)	e.g. Niknejad <i>et al.</i> (2020); Sagnier <i>et al.</i> (2019); Bobillier-Chaumon (2016)
	Framework for Public Acceptance of Controversial Technologies (PACT) (Wolfe <i>et al.</i> 2003)	e.g. Wolfe <i>et al.</i> (2003); Wolfe and Bjornstad (2002)

**Table 2.**

Theories and theoretical constructs in literature

Our synthesis reveals the use of a wide range of theories from psychology. Due to the crucial role of psychological processes in cognition and decision-making, it is not surprising that the discipline of psychology occupies a prominent place in the theoretical approach of this field. Individual values, attitudes, and behaviors, all stemming from psychological constructs, are at the core of the concerns of this discipline. Among the most commonly used theories in psychology, we find the Place Theory, also known as the "Not In My Back Yard" (NIMBY) syndrome (Devine-Wright, 2009, 2013). This theory seeks to capture a movement of opposition composed of a group of "selfish" individuals who, while acknowledging the necessity of a "particular type of unpleasant or dangerous facility," do not want to bear the consequences for the sake of their safety and well-being (Fischer, 1993, p. 173; Gendron, 2014). The main reasons motivating the oppositional stance of these individuals are the spatial dimension (proximity) and the aesthetic impact of an innovative project on the immediate environment (Batellier, 2016). The Place Theory is often invoked in the context of large-scale urban development projects (e.g., wind turbines, new housing) (e.g., Wolsink, 2000; Devine-Wright, 2014; Scally and Tighe, 2015). Additionally, the Theory of Reasoned Action (TRA) (Fishbein and Ajzen, 1975, 1980) and the Theory of Planned Behavior (TPB) (Ajzen, 1991) have been employed in the field. These models seek to elucidate the causal relationship between

individual cognitive factors and the adoption of certain behaviors. The Theory of Reasoned Action (TRA) (Fishbein and Ajzen, 1975, 1980) argues that individuals are more inclined to adopt certain behaviors when they themselves perceive them positively and believe that these behaviors are acceptable according to the subjective norms of their reference group. The Theory of Planned Behavior (TPB) (Ajzen, 1991) contends that intentions to adopt certain behaviors can be predictably influenced by attitudes toward the behavior, subjective norms, and perceived behavioral control (Ajzen, 1991).

Consequently, we observe that a significant number of studies rely on the Social License to Operate theory (SLO) (Thomson and Boutilier, 2011). Thomson and Boutilier (2011, p. 2) define SLO as "*community perceptions of the acceptability of a company and its local activities.*" Coined in the 1990s by the extractive resources industry, SLO is a response to the pressure exerted on the social community directly affected by the growing development of an activity. In other words, recognizing a social cost borne by local or stakeholder communities requires, in addition to formal legal compliance with state environmental regulations, a rebuilding of consumers' moral concerns in the industrial relationship through a social contract (Prno and Slocombe, 2012; Moffat and Zhang, 2014; Billing *et al.*, 2021). Thomson and Boutilier (2011), in their pyramidal modeling, present three normative components of SLO (i.e., legitimacy, credibility, and trust), each of which is assessed at four levels (i.e., withdrawal, acceptance, approval, and psychological identification).

Subsequently, most of the theories employed are based on theoretical foundations from innovation research. In order of importance, we find the Technology Acceptance Model (TAM) (Davis, 1989), TAM2 (Venkatesh and Davis, 2000), TAM3 (Venkatesh and Bala, 2008), the Diffusion of Innovation theory (DOI) (Rogers, 1983), and the Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh *et al.*, 2003), UTAUT2 (Venkatesh *et al.*, 2012). In the TAM model, two factors explain the intention to use technology, namely perceived usefulness and perceived ease of use (Davis, 1989). The Diffusion of Innovation theory studies the spread of new ideas or products in social fabric. This theory lists several factors that influence acceptance, namely relative advantage, compatibility, complexity, trialability, and observability (Rogers, 1983). Finally, the Unified Theory of Acceptance and Use of Technology attempts to bring together different explanatory variables of technology acceptance and use into a single integrative model. This theory suggests that the actual use of technology is conditioned by behavioral intention. Specifically, the perceived likelihood of technology adoption is influenced by the direct effect of four essential elements: performance expectancy, effort expectancy, social influence, and facilitating conditions (Venkatesh *et al.*, 2003). Lastly, and more marginally, the literature draws on theories from political philosophy (e.g., Theories of Social Justice), economics (e.g., Multi-Attribute Utility Theory, MAUT), marketing (e.g., Engagement-Trust Theory), and sociology (e.g., Social Exchange Theory).

Given the examined literature, it is evident that the theoretical foundations of studies on the social acceptance of technological innovation need further development. Despite the existence of a wide range of theories from various disciplines, there is still no solid and unified theoretical basis to comprehensively grasp this research domain. Studies have often relied on specific theories, limiting their applicability in broader contexts. It has also become apparent that many studies have eschewed the use of theories, suggesting a lack of conceptual framework in certain research. This situation highlights the pressing need to develop more integrative theories and seek multidisciplinary approaches to understand the social acceptance of technological innovation in a more holistic manner. This theoretical advancement could contribute to improving the understanding of underlying mechanisms,



thereby facilitating its operationalization, especially in advancing discussions on the subject in the context of the service relationship between customers and businesses.

### *S-D logic perspective on social acceptability of technological innovation*

The emergence of the Service-dominant (S-D) logic marked a rupture in the relationship and exchange value between managers and clients (Vargo and Lush, 2004). This gap has further intensified with the introduction of new technologies, particularly since the AI revolution. Indeed, the digitization of service offerings has profoundly disrupted the modes of delivery and consumption (Lee *et al.*, 2023). Now, services are smarter (e.g., AI can manage a large volume of algorithms), autonomous (i.e., a user does not necessarily need to intervene for an action to take place), and ubiquitous (i.e., the service can be provided and consumed anytime, anywhere, and from any device) (Mani and Chouk, 2018).

Technological innovation in services is generally associated with the creation of new uses and practices (Meuter *et al.*, 2005), altering the value proposition of the customer's lived experience (Skålén *et al.*, 2015). However, the emergence of technology-based services seems to more significantly influence the scope and magnitude of social acceptability issues. Indeed, new forms of "smart services" (e.g., smart mobility, smart healthcare, smart banking, etc.) expand the boundaries of the service experience, posing the challenge of customer acceptance with a view to increasing their usage (Biehl *et al.*, 2004; Wunderlich *et al.*, 2013). While the current pool of technologies offers a myriad of benefits for both managers and customers (e.g., anticipating needs, adjusting services, reducing time and labor intensity of manual tasks, etc.), it also implies various socio-political challenges. Neglecting these issues can be highly detrimental for managers who may encounter dissatisfied, skeptical, and sometimes resistant consumers, leading to refusal or even active resistance (Mani and Chouk, 2017, 2018). In fact, active consumer resistance inhibits or destroys the creation of value in the experience, particularly by fostering acts of sabotage, boycotts, negative word-of-mouth, violence, etc. (Ram and Sheth, 1989; Shindler *et al.*, 2004; Mani and Chouk, 2018). It is therefore important for managers to understand the perceptions and behavioral responses of end customers toward the deployed technologies, especially with a view to ensuring the success of their implementation and maintaining effective customer relationship management.

Today, the practical acceptability of a service technology (i.e., usefulness, ease of use, accessibility, convenience) (Davis, 1989) is neither sufficient nor a guarantee to increase its social acceptability (Terrade *et al.*, 2009). In other words, managers must, in addition to ensuring a socio-technical quality of technological innovation, take into account the social expectations of consumers, particularly by preserving their autonomy, freedom of thought, privacy, etc. (N'Goala, 2019).

### **Methodology**

A qualitative exploratory study was employed to propose a conceptualization of the social acceptability of technological innovation in frontline service experiences. In total, 30 semi-structured interviews were conducted, comprising 16 interviews with service providers and 14 interviews with consumers. This study meets the criterion of semantic saturation (Boutin, 2019). The sample of service providers is relatively diverse in terms of frontline service offerings (e.g., virtual tours of cultural sites using augmented reality glasses, creation of live chats and chatbots for websites, AI-based software tools, marketplace applications, rental services, etc.). All interviews took place between January 27 and March 27, 2023.

Similarly, the consumer sample is diverse, both in terms of age (22 to 68 years), education levels (high school to PhD), and professions. This series of interviews was conducted between June and July 2023.

On average, our interviews lasted 1 hour. Subsequently, all interviews were transcribed, subjected to thematic coding, and analyzed. For this study, two interview guides were used to collect data from our two samples. The first guide, dedicated to the service provider sample, focused on the genesis of the entrepreneurial project, the individuals who contributed to its development, perceived benefits for users and society, key validation moments for the project, and how the innovation is integrated into services, the company, or the industry.

The second interview guide, intended for consumers, aimed to explore representations related to technological innovation and its social acceptability. The photo-elicitation method was employed, visually presenting images of technological innovations (e.g., health sensor, delivery drone, autonomous car, facial recognition, ChatGPT, etc.) to prompt reflective discussions.

### **Results: proposed conceptualization of the social acceptability of technological innovation in frontline service experiments**

*Social desirability and accessibility: two dimensions of the social acceptability of technological innovation in frontline service experiences*

This study presents a two-dimensional conceptualization of the social acceptability of technological innovation in frontline service experiences. The two dimensions encompass perceived social desirability identified in previous studies (e.g., Brunson, 1996) and introduce a newly identified dimension, that of perceived accessibility.

With a predominantly cognitive perspective, perceived social desirability can be defined as the result of a subjective evaluation of the potential moral, social, and political benefits a service can bring compared to the costs it might entail when diffused within society. In this sense, the extent to which the technology aligns with the consumer's moral, social, and political considerations (e.g., freedom of thought, autonomy, privacy respect, maintenance of social connections, etc.) forms a basis on which they can judge whether it is socially desirable or not.

According to the results of our study, moral, social, and political considerations encompass how the service can preserve and ensure the respect for human values and rights (e.g., respecting freedom of thought, preserving autonomy, respecting privacy, maintaining social connections in service delivery, etc.). In other words, consumers are more inclined to perceive a service as socially desirable when it mitigates their perceived vulnerability to technology. Consequently, technologically designed services that respect the consumer's ability to maintain control, preserve physical and moral freedom, and ensure the protection of their privacy are more likely to be perceived as socially desirable.

Thus, by reversing the potential alienation dynamics of technology, managers can not only address consumer concerns but also enhance the perceived social value of their service offerings.

"The delivery drone that comes to your home, drops the package in your garden, well, it's at your place, you know. The delivery person will still ring your doorbell; you don't open if you're there. Then, they enter and leave. So, no." (Consumer\_Interview\_2)

"We are encouraged not to think anymore, and also the intrusion into your life, into your intimate life, I can't accept that." (Consumer\_Interview\_7)

In its contemporary sense, accessibility refers to the right or the possibility for a person to have access to something. Ribot and Peluso (2003, p. 153) define accessibility as “*the capacity to derive benefits from things*”, breaking with the traditional idea that accessibility corresponded to the “right to benefit from things”. In light of our inferences and the analysis of our verbatim, perceived accessibility encompasses four dimensions: 1) cognitive accessibility (i.e., the customer must have cognitive resources to understand the usage modes of a product and/or service), 2) financial accessibility (i.e., the customer must have the financial capacity to bear the costs associated with the service), 3) accessibility of the service (i.e., clear visibility of intrinsic characteristics and purposes, and possible modes of use), and 4) physical accessibility (i.e., market conditions must guarantee physical access to the service for the greatest number of potential consumers). In other words, accessibility has three orientations: a self-oriented (active and intrinsic orientation), a service-oriented (active and extrinsic orientation), and a market-oriented (reactive and intrinsic orientation).

	Active/Reactive Orientation	Intrinsic/Extrinsic Orientation
<b>Self-oriented (micro)</b> -Cognitive accessibility - Financial accessibility	Active	Intrinsic
<b>Service-oriented (meso)</b> -Service accessibility	Active	Extrinsic
<b>Market-oriented (macro)</b> -Physical accessibility	Reactive	Intrinsic

**Table 3.**

Dimensions and orientations of perceived accessibility

More specifically, *cognitive accessibility* represents the ease with which a consumer can understand and interact with the service based on their own cognitive abilities and resources.

"If they don't give us information, how can we understand why it's implemented, what it's for, and especially how to use it? We should be able to understand." (Consumer\_Interview\_29)

*Financial accessibility* represents the customer's willingness to pay. The socially acceptable price reflects the customer's ability to pay the costs associated with a service provision.

"So that we can afford the innovation, if you can't buy it, like Tesla, I don't see the point." (Consumer\_Interview\_21)

*Service accessibility* refers to the extent to which it possesses readable intrinsic features (external stimuli) so that the consumer can interpret its purposes and modes of use.

"Facial recognition [...] saves time for passengers. But they still need to understand how to use it." (Consumer\_Interview\_4)

"A well-designed product, as soon as you see it, you know what it's for, you know how to use it. And you want to use it." (Company\_Interview\_4)

*Physical accessibility* refers to the customer's perception of equal opportunities for access to the service. In this paradigm, market conditions must be favorable to ensure access for the largest number of customers to the service, while being attentive to the fact that it should not be reserved for an elite.

"Moreover, from a social perspective, it is about ensuring equity of access." (Consumer\_Interview\_9)

"Personally, I see more the aspect of access for all, not reserved for an elite. [...] it's about providing a service to society, so that everyone can benefit from it." (Consumer\_Interview\_13)

#### *Consumer behavioral responses to technological innovation in frontline service experiences*

In its managerial application, and because it is the result of an evaluation process, the social acceptability of technological innovation must necessarily be considered in the perspective of the behavioral responses it implies (cf. the taxonomy proposed by Batellier, 2015). Our qualitative study highlighted 4 forms of behavioral responses adopted by consumers:

*Proactive acceptance*, characterized by an individual's enthusiasm who recognizes the potential benefits that an innovation can bring to their daily life and/or to society.

"After acceptability, for it to be accepted, there must be a benefit, there must be a use, an advancement for the whole of a group or society." (Consumer\_Interview\_13)

*Pragmatic and passive acceptance*, in the sense of resignation or rational fatalism, is manifested by reservations or doubts in the individual, who chooses to accept the innovation due to external constraints, such as the absence of alternatives, or internal constraints such as the pursuit of immediate convenience.

"In general, I try to be careful not to accept all the clauses where they collect data, but sometimes out of habit or laziness, I will accept, and so I know that I will disclose data." (Consumer\_Interview\_3)

*Indifference or inertia* is characterized by emotional and mental disengagement of the individual towards technology.

"I don't care about facial recognition; I know I'm in the airport to travel, and in any case, I'm being watched." (Consumer\_Interview\_1)

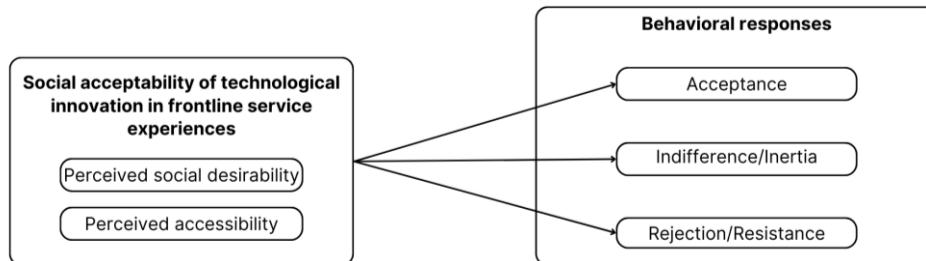
*Refusal and active resistance* manifest when the individual rejects and strongly opposes technology, leading to various actions (e.g., sabotage, boycott, violence, etc.).

"There are new technologies that are very advanced, very disruptive; we will be scared, we will ask ourselves many questions, and sometimes we will put on blinders, like 'no, I don't want to know anything, I don't like it, I will never adopt it, it's really impossible.'" (Consumer\_Interview\_3)

#### *Definition and modeling proposal*

Following a comprehensive and multidisciplinary literature review, this initial exploratory phase of our research allows us to propose a definition of the social acceptability of technological innovation in frontline service experiences from the consumer's perspective:

“The social acceptability of innovation is the result of a judgment process based on the ease of access to innovation (perceived accessibility) and the benefits it can bring compared to the costs it may incur during its implementation in society (perceived social desirability). This evaluation influences the individual's propensity to accept, reject, or remain indifferent to the diffusion of technological innovation”. This proposition can then be modeled as follows:



**Figure 2.**

Modeling the social acceptability of technological innovation and its behavioral consequences

### Conclusions, implications and further research

This document has sought to deepen the understanding of the social acceptability of technological innovations in frontline service experiences from the consumer's perspective. The resulting conceptualization highlights two key dimensions, namely perceived social desirability and perceived accessibility.

Implications of this study are manifold. Firstly, it underscores the importance of adopting a holistic approach in the design, delivery, and consumption of technological innovations in frontline service experiences, considering not only sociotechnical efficiency but also social and societal concerns. Managers and decision-makers are encouraged to integrate these imperatives into their overall strategy to ensure maximum social acceptability of the proposed service.

At the micro level, businesses can leverage the introduction of technological innovations in service delivery to enhance individual customer experience, thereby fostering satisfaction and engagement. This will require a deep understanding of consumer preferences, expectations, and needs. At the meso level, businesses must recognize that the successful integration of technological innovations can reshape competitive dynamics, offering significant competitive advantages in terms of efficiency and cost. However, they must also be aware of implications on market pricing and offer differentiation. On a macro level, societal implications emphasize the importance of managing challenges such as autonomy, respect for freedom of thought, digital confinement, and dehumanization. Companies are encouraged to co-create service experiences with their customers to better anticipate, understand, and effectively respond to moral, social, and societal concerns.

Despite the significant contributions of this study, gaps remain, particularly regarding the operationalization of the social acceptability of technological innovation in frontline service experiences. We encourage researchers to further investigate by focusing on developing a robust measurement scale to confirm the applicability of the proposed framework. Additionally, in-depth research on how sociopolitical concerns influence consumer behavioral responses could further enrich the understanding of the dynamic between social acceptability of technological innovation in frontline service experiences and consumer behavioral

responses. Furthermore, longitudinal studies may be relevant to track the evolution of social acceptability over time as technological innovations are introduced in service offerings.

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