Exercising the "Right to Repair": A Customer's Perspective

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Abstract

Concerns over the carbon footprint resulting from the manufacturing, usage and disposal of hardware have been growing. The right-to-repair legislation was introduced to promote sustainable utilisation of hardware by encouraging stakeholders to prolong the lifetime of products, such as electronic devices. As there is little empirical evidence from a consumer perspective on exercising the right to repair, this study aims firstly to examine the factors that underpin consumers' intention to repair their hardware and secondly to investigate the perceived outcomes of repair practices. Based on 510 responses, the results showed that intention to repair is dependent on three groups of factors, namely the facilitators of pro-environmental behaviour, repair-related factors and beliefs about legislation. If consumers have a stronger intention to repair, they have a stronger feeling of emotional self-assurance, satisfaction with the repair decision and the technology manufacturer, an intention to engage with the manufacturer and a positive perception of a repaired device's performance. The findings contribute to the literature on sustainable behaviour and the right to repair, offering insight for policymakers and manufacturers about the strategies facilitating the wider adoption of repair practices.

Keywords Right to repair · Sustainability · Pro-environmental behaviour · Ethical consumption · Sustainable technology

Introduction

Responsible sustainable consumer behaviour, as a sub-stream of the ethical consumer behaviour literature, has garnered increasing interest in the academic and business communities (Hosta & Zabkar, 2021). This form of conscientious consumerism reflects consumers' concerns about "*environmental, social justice, human health, and animal welfare issues in choosing products and services encompassing, alongside with fair trade goods, 'sweat-free' clothes, 'cruelty-free' cosmetics, energy efficient appliances, and organic foods*" (Low & Davenport, 2005, p. 505). One of the driving factors behind the renewed focus on sustainable consumer practices is an overconsumption culture, attributed to the increasing accessibility of information and communication technology (ICT). In response to the detrimental environmental consequences of overconsumption, environmentalists, entrepreneurs, designers and users have been advocating changes in regulation and the market infrastructure to encourage electronic product maintenance and reuse (Manwaring et al., 2022). The transition towards a regenerative consumption culture has underpinned recent changes in the legislative framework in the USA and the European Union, namely with the introduction of legislation promoting consumers' right to repair their products. Such legislation sets out the conditions for manufacturers to make the required parts and information available to consumers and repair shops (Hernandez et al., 2020). These rules aim to incentivise the repair of devices to prolong their lifespan, rather than their replacement. The law has already attracted interest in different sectors. For instance, one of the early advocates of the right-to-repair movement has been the agricultural sector (Manwaring et al., 2022). In such a context, expert users, namely the farmers, who have an in-depth understanding of their hardware, aim to increase the lifetime and utilisation of their equipment by repairing it in a more effective and efficient manner. However, one needs to differentiate between expert users, such as farmers, who have an understanding of how equipment works (Crawford, 2023),

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and typical end-user consumers, who have little knowledge of the devices' technical side beyond their usage for the intended purposes (Bovea et al., 2017). As such, the factors that affect the implementation of the right to repair and the outcomes that follow such repairs could be different. The willingness of consumers to repair devices is important for switching to environmentally sustainable behaviour, incentivising manufacturers to develop future products accordingly and offer new services, thus creating a positive feedback loop. Considering the right-to-repair regulation represents a major shift towards fostering sustainable consumption practices, an understanding of consumers' motivations behind exercising the right to repair is needed.

The literature on the right to repair and sustainable consumer behaviour more broadly features limited empirical evidence about the consumer perspective on exercising the right to repair. Firstly, although the changes in the regulatory landscape have implications for manufacturers' practices, the repair service market and consumers' values (Hernandez et al., 2020), the role of the factors of the broader external environment in a product repair decision is under-researched. So far, scholars in the sustainable consumer behaviour field have mainly focused on the internal drivers of consumption (norms, values and the behavioural beliefs), while also acknowledging individual differences in explaining the predisposition towards responsible behaviour (e.g. Bowen et al., 2022; Dimitrova et al., 2022; Hartmann et al., 2018; Pauluzzo & Mason, 2022; Widayat et al., 2021). External influences were examined in the light of the social pressure and norms dictating consumer choices (Cheng et al., 2020; Eastman et al., 2021). The existing approach to studying sustainable behaviour does not take into account a wide set of motivational stimuli related to the complex environment of interrelated stakeholders where socially responsible and sustainable behaviour takes place. As such, there is no evidence of consumers' perceptions of the stimuli, such as the legal system and technology manufacturers' practices.

As far as the right-to-repair research is concerned, empirical evidence has covered the general perception of the regulation by consumers (Perzanowski, 2020), consumers' social relations and the material incentives driving repair practices (Bradley & Persson, 2022; van der Velden, 2021). However, the role of legal and market barriers, the social factors affecting the embeddedness of the repair practices in social structures and the market implications of legislation enforcement have been considered without empirical examination (Arora, 2021; Kahane, 2022; Manwaring et al., 2022; Rosborough, 2022; Svensson-Hoglund et al., 2021). Secondly, extant literature demonstrates that having devices repaired increases the feeling of accomplishment and empowerment (Bradley & Persson, 2022). Similarly, a broader research stream on sustainable behaviour focused mainly on the consequences for consumers (Acuti et al., 2022; Balderjahn et al., 2023; Ur

Rahman et al., 2023). As such, the perceived implications of technology repair in relation to the evaluation of technology and manufacturers' practices are still under-researched.

Based on the above gaps, this study pursues two objectives. The first objective is to explore the factors that stimulate consumers to repair their hardware. To address this, the study adopts as an overarching framework the stimulus–organism–response model, which makes it possible to conceptualise how environmental stimuli impact behaviour. To identify the list of stimuli underpinning repair intention, this study draws on relevant literature on pro-environmental behaviour, information systems management and relevant legislation and compares this with consumer views expressed on social media. As the research on the right to repair is in its infancy, the comparison of findings across two data sources enables us to validate the factors, before testing the predictive power of four groups of factors, namely the pro-environmental behaviour facilitators attributed to the social context, technology repair factors and legislation-related beliefs. The second objective of this research is to investigate how the intention to repair is associated with the perception of one's own decision and behaviour, the behaviour directed towards a manufacturer and product performance perceptions. Our findings contribute to the literature on environmentally sustainable information communication technology, but also provide useful insights for policymakers and manufacturers, among other stakeholders.

Literature Review and Theoretical Foundation

Right to Repair

The right to repair is a movement promoting the consumer's right to have electronic devices repaired or modified by consumers, manufacturers or third-party repair shops. The movement originated in the USA and spread across the European Union (Arora, 2021). Its agenda is to address social, economic and environmental issues, such as consumer rights protection, the cost of and access to repair services and product obsolescence, among other challenges (Manwaring et al., 2022). The broader goal of the right-to-repair regulation is to address the environmental challenges by ensuring social and economic growth without compromising on natural resources (Hernandez et al., 2020; MacArthur, 2013; Svensson-Hoglund et al., 2021). Sustainable practices can be encouraged through the participatory role of each stakeholder in the repair ecosystem, such as regulatory bodies, consumers, repair shops, manufacturers and the broader social community (Svensson-Hoglund et al., 2021). However, there are still many legal, social, infrastructural and market factors that need to be

considered (Arora, 2021; Hernandez et al., 2020; Manwaring et al., 2022; Rosborough, 2022; van der Velden, 2021). The movement has seen legislative responses, such as the enactment of the Eco-design regulation in the UK and the Right-to-Repair Bill in the USA. Such regulatory measures provide practical means for removing legal, market and infrastructural barriers to facilitate repair behaviour. Measures include, but are not limited to, obliging manufacturers to provide warranties, offering refunds for malfunctioning products, updating software and ensuring adequate labels featuring use conditions and product durability (Manwaring et al., 2022).

So far, the policy landscape stimulating product repair has been the main topic in the literature (Arora, 2021). Researchers have studied laws that may hinder the dissemination of knowledge, skills development and market infrastructure for undertaking repairs (Rosborough, 2022; Svensson-Hoglund et al., 2021). Another discourse in the literature revolves around social issues, such as individuals' relationship with technology and the pre-eminence of values (Hernandez et al., 2020; Manwaring et al., 2022). A lack of attachment to electronic devices, lack of personal incentives and poor awareness of repair opportunities and benefits may undermine the diffusion of repair practices (Hernandez et al., 2020). To generate consumer insights, studies have explored consumers' overall attitude to legislation and observed repair communities (Bradley & Persson, 2022; Perzanowski, 2020; van der Velden, 2021). A survey on consumers' perceptions of the law found that consumers are mainly supportive of the regulation, as they believe it can ensure the quality of repaired products (Perzanowski, 2020). Observing repair communities showed that there are social and material reasons for consumers to participate in repair practices. On the one hand, they want to reduce material consumption and prolong the lifetime of their products (Bradley & Persson, 2022; van der Velden, 2021). The majority of consumers try to repair old devices, due to attachment to their goods (van der Velden, 2021). On the other hand, the participation in repair communities manifests itself as a collective practice, enabling the development of relations, and the sharing of experience and skills (Bradley & Persson, 2022; van der Velden, 2021). Also, by repairing goods, consumers get a sense of control over personal items, a feeling of personal accomplishment and empowerment (Bradley & Persson, 2022).

As the above findings show, there are different underlying motivations that may impact repair motivations and practices. However, consumer-based empirical research does not delve into any factors beyond the material incentives and communal practices which may drive individuals' decision to repair technology. Therefore, to shed light on the factors stimulating consumers' intention to repair, this study develops a research framework that is then empirically tested.

Stimulus–Organism–Response Model

To investigate the role of those stimuli in shaping motivation to engage in behaviour and perceived responses to such behaviour, we build on the stimulus–organism–response (SOR) model proposed by Mehrabian and Russell (1974) and conceptualised by Jacoby (2002). The SOR model has been used to explain the relationships between environmental stimuli and individuals' behavioural responses (e.g. Bagozzi, 1986; Laato et al., 2020). *Stimulus* refers to the factors that affect an individual's internal state (Eroglu et al., 2001). They could be product or service-related factors and the factors related to the social-psychological context within which the purchase or consumption of the product takes place (Arora, 1982; Bagozzi, 1986; Houston & Rothschild, 1977). Stimuli in different domains can differ. They can be authentic experiences, perceptions of services, ambient characteristics of the retail environment, product design characteristics and situational factors in the social context, among other stimuli (Chang et al., 2011; Jang & Namkung, 2009). *Organism* is defined as the internal processes intervening between external stimuli and individuals' final actions, reactions, or responses (Chang et al., 2011). The organism can represent an affective and cognitive state associated with the behaviour of individuals after the perceived or actual exposure to the external or object-related stimuli (Houston & Rothschild, 1977; Kamboj et al., 2018). The affective state concerns emotions and feelings, which can be both negative and positive, such as anger, distress, fear, excitement, joy and happiness (Chang et al., 2011; Kamboj et al., 2018). The cognitive state refers to cognitive judgements about the situation and can take the form of behavioural intention, thinking processes or trust (Eroglu et al., 2001; Kamboj et al., 2018). The cognitive and affective state translates into cognitive, psychological and behavioural *responses* (Bagozzi, 1986; Chang et al., 2011; Houston & Rothschild, 1977). Behavioural and attitudinal reactions could include perceived decision quality, reuse behaviour, impulse buying, behavioural intentions and loyalty (Chang et al., 2011; Jang & Namkung, 2009). In this study, stimuli reflect the perceptions of the main external forces affecting the execution of the right to repair, namely, the legislation, repair services, a manufacturer practice and a social community (Svensson-Hoglund et al., 2021). Organism is the cognitive state reflecting the willingness to engage in repair practices. Responses are the cognitive and behavioural outcomes of repair practices that a consumer expects to form in relation to oneself, a manufacturer and a repaired product (Fig. 1).

The Stimuli of the Environment

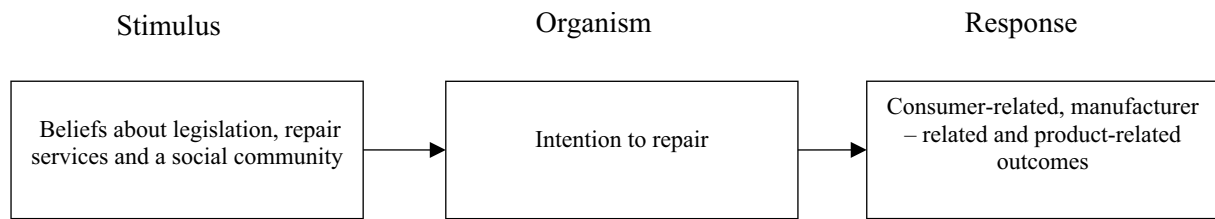To identify the stimuli of the environment that could impact the decision to repair hardware, this study draws on two

Stimulus   Organism   Response

Beliefs about legislation, repair services and a social community	→	Intention to repair	→	Consumer-related, manufacturer – related and product-related outcomes

Fig. 1 Overview of the research model

sources, namely user views as expressed on social media and relevant literature. The comparison of factors from two sources was undertaken for validation and comprehensiveness purposes. We used the Twitter API to download original posts (not retweets or comments) in English containing the "right to repair or righttorepair" posted in the period between October 2021 and October 2022. We then processed the posts (e.g. applying stopwords, removing links or user handles, identifying duplicates, filtering tweets etc.) resulting in a dataset of 16,272 records. Quantitative Content Analysis was used to classify parts of the text and draw inferences about the content (Krippendorff, 2004). QDA

Miner and its extension WordStat were used for the analysis. The analysis generated the top keywords and phrases. In turn, the analysis of these keywords and phrases resulted in their categorisation into five themes revolving around sustainability, social movement, the repair process, control and cost, positive sentiments about legislation and company-related keywords (Table 1).

The above themes were compared with the concepts independently derived from research on pro-environmental behaviour, information systems management and regulation. The comparison and synthesis of the themes resulted in three groups of factors (namely, pro-environmental behaviour

Table 1 Themes and related keywords derived from text mining

Theme	Example keywords	Example tweets
Sustainability-related keywords	"sustainability", "impact", "environment", "landfill", "waste", "recycle" and "climate"	"How big a problem is electronic waste? For many, the recent right to repair rulings provide some hope in the fightback against excessive consumption and waste. #zerowaste"
Social movement	"movement", "advocate" and "petition"	"Climate Crisis: Activist Shareholder Group Forces Microsoft To Commit Support For Right To Repair" "According to the #RightToRepair advocacy group, electronics are the fastest-growing waste stream in the world […] Allowing customers to repair their own electronics (extending their usage lifespan) would reduce overall mining & pollution."
Technology repair processes, control and cost	"cost", "effort", "regain control" and "money"	"A recent report from @uspirg found that American families could save $330/year by repairing rather than replacing #electronics and appliances every year. Learn more about what #RightToRepair savings could mean for you."
Legislation-related sentiments	"law", "legislation", "great news", "love right to repair", "repairable", "right to repair become non issue", "major victory", "easy fix", "easy repair" and "fair act"	"Following pressure from its shareholders, Microsoft is making it easier to get access to spare parts and repair documents for their products." "Apple Store vs. Repair Shop: What the Right to Repair Is All About be"
Company-related keywords	"monopoly", "maker", "brand" and "planned obsolescence"	"How can we end built-in obsolescence of mobile phones and household appliances? Get your questions answered in our next online Critical Conversations event." "Kudos: "Microsoft Just Committed to Right to Repair"" "Manufacturers should make spare parts available to everyone using their products. You should have the #RightToRepair the devices you own"

facilitators, technology repair factors and beliefs about legislation) and their operationalisation by 11 concepts (Table 2). *Pro-environmental behaviour facilitators* include subjective norms, herd behaviour, social image, pro-environmental concern and environmental activism. They capture concerns about climate change and the facilitators stemming from the social environment. Subjective norms, herd behaviour and social image reflect the beliefs shaped by the close social circle and wider society in which individuals interact, as well as individuals' desired image of themselves formed by the social standards (Bursztyn & Jensen, 2017; Keynes, 1937; Scharfstein & Stein, 1990). In contrast, pro-environmental concern and environmental activism are internal stimuli that ensure that a behaviour is in line with personal values and beliefs (Stern, 2000). *Technology repair factors* are represented by perceived behavioural control, repair cost, planned obsolescence and attachment to electronic devices. These factors capture rational considerations about the effort, capabilities and resources required to repair devices, perceived barriers, as well as an irrational tendency to develop a bond with objects that may determine behaviour (Ajzen, 1991; Kim et al., 2022; Manwaring et al., 2022; Rogers & Prentice-Dunn, 1997). The last group, *beliefs about legislation,* reflects one's assessment of the legislation and manifests itself as the attitude towards the right-to-repair legislation and the beliefs about its efficacy.

Hypothesis Development

Pro-environmental Behaviour Facilitators

A subjective norm is an individual's perception of a social pressure to perform a certain behaviour (Ajzen, 1991). Subjective norms have long been confirmed to be a significant predictor of behavioural intention (Chueh & Huang, 2023; Wang et al., 2022). Individuals are more likely to act if they think that their actions will be approved of by their referent group (Ajzen, 1991). For instance, researchers have found that the perception that a social group encourages the use of digital assessment systems and engagement in technology-enabled shopping increases behaviour adoption intention (Chueh & Huang, 2023; Wang et al., 2022). Similarly, subjective norms determine pro-environmental behaviour, such as reuse and recycling, waste reduction and mindful consumption (Budovska et al., 2020; Carfora et al., 2017). Therefore, this paper proposes that individuals will have a higher intention to exercise their right to repair if they believe that a referent social group encourages such practices.

Hypothesis 1a Subjective norms are positively related to intention to repair.

Banerjee (1992, p. 798) explains a herd behaviour phenomenon as "*everyone does what everyone else is doing, even when their private information suggests doing something quite different.*" The role of herd behaviour in driving intention is drawn from research on behavioural economics (Choijil et al., 2022; Scharfstein & Stein, 1990; Tian et al., 2021). The research postulates that when it comes to choices, people often follow collective thinking rather than their judgement about optimal outcomes for themselves (Keynes, 1937). Herd behaviour differs from subjective and descriptive norms by the source of influence and the type of belief that individuals use to adjust their behaviour (Sun, 2013). Firstly, while subjective norms encompass the influencing power of a close social circle, herd behaviour is the phenomenon that explains the influences of the wider public (Sun, 2013). Herd behaviour is pervasive when individuals think their actions will be judged by others (Keynes, 1937; Scharfstein & Stein, 1990) and want to conform to norms established in society (Cialdini & James, 2009). For example, consumers tend to follow trends when it comes to mobile product choices (Pavlović-Höck, 2022), which may

Table 2 Comparison of stimuli factors deriving from Twitter and the literature

Group	Factor	Twitter	Literature	Indicative studies
Pro-environmental behaviour facilitators	Subjective norm		X	Kim and Kim (2018), Mackay et al. (2021), Molla et al. (2014)
	Herd behaviour		X	
	Social influence		X	Budovska et al. (2020), Carfora et al. (2017), Frederiks et al. (2015)
	Pro-environmental concern	X	X	
	Environmental activism	X	X	
Technology repair factors	Perceived behavioural control	X	X	Jensen (1982), Kim et al. (2022), Lee and Larsen (2009), Levinthal and Purohit (1989), McBride et al. (2020)
	Repair cost	X	X	
	Attachment to electronic devices		X	
	Planned obsolescence	X	X	
Beliefs about legislation	Law efficacy	X	X	Dhir et al. (2021), Perzanowski (2020)
	Attitude to the law	X	X	

lead to more frequent renewal of electronic goods. Secondly, the regulatory role of subjective norms in one's own behaviour stems from the belief that certain behaviour is socially desirable and hence would increase the chances for social approval (Rivis & Sheeran, 2003). Herd behaviour, in turn, results from the alignment of one's own behaviour with the actual behaviour (rather than expectations) of other people (Raafat et al., 2009). Thirdly, although descriptive norms concern the perception of what other people actually do, such norms typically influence individuals if they capture the beliefs of significant others (Rivis & Sheeran, 2003). In contrast, in the context of herd behaviour, there is no differentiation in the beliefs between people in close and distant social environments.

In this study, we assume that growing public sentiments about the impact of frequent product replacements on the environment may motivate consumers to be more conscious about the choices that they make. Pro-environmental behaviour is a typical example of when individuals may follow the herd, rather than their own cost–benefit judgement (Frederiks et al., 2015). When one's own behaviour has broader implications for society, individuals try to align their behaviour with the expectations of the social group (Frederiks et al., 2015; Smith et al., 2012). As repair practices can be perceived positively by environmentalists and have positive implications, herd behaviour is likely to play a positive role when considering repairing devices instead of buying new ones:

Hypothesis 1b Herd behaviour is positively related to intention to repair.

Social image is the extent to which certain behaviour helps achieve respect and admiration in social groups (Lin & Bhattacherjee, 2010). Social image helps individuals develop social networks, facilitate communication and strengthen their sense of belonging (Zhou et al., 2019). In order to gain a favourable perception from people, individuals may alter their behaviour (Bursztyn & Jensen, 2017). A typical behaviour contributing to social image formation is product consumption (Nie et al., 2020; Tsai, 2005). An adjustment of consumption is more likely when the meaning attached to brands or the behaviour itself is consistent with a self-concept (Escalas & Bettman, 2005; Khalifa & Shukla, 2017; Rosendo-Rios & Shukla, 2023). Altruistic behaviour is another example of when social image can play a significant role, as it determines the quality and duration of involvement in voluntary labour (Linardi & McConnell, 2011). In this paper, social image is associated with an individual's desire to be perceived as environmentally friendly. Given ample evidence that social image drives intention (Escalas & Bettman, 2005; Khalifa & Shukla, 2017; Rosendo-Rios & Shukla, 2023), this study postulates that the self-image

of being environmentally friendly enhances the intention to repair electronic products.

Hypothesis 1c Social image is positively related to intention to repair.

Pro-environmental concerns refer to individuals' beliefs that their specific actions might have an impact on the environment (Dono et al., 2010; Kullman et al., 2016). The significant role of pro-environmental concern in behaviour draws on research postulating that pro-environmental behaviour is determined by personal norms, which are shaped by the belief that one's actions can have adverse ecological consequences (Stern, 2000). Hardware repairs represent an action that has positive ecological implications. Therefore, it is expected that consumers concerned about the environment will not consider the purchase of new technology to be necessary, because it will contribute to electronic waste. A hardware repair could be part of the solution to promoting sustainable practices. Prior research supports the argument that concerns about the environment translate into actual behaviour carried out to improve sustainability (Kim & Kim, 2018; Molla et al., 2014). The awareness of one's contribution to carbon emissions and ecological concerns triggers motivation and personal responsibility for environmental protection (Kim & Kim, 2018). Similarly, an awareness of the role of information technology in causing climate change positively correlates with pro-environmental practices (Molla et al., 2014). Given the above evidence, this study postulates:

Hypothesis 2a Pro-environmental concerns are positively related to intention to repair.

Environmental activism is a manifestation of specific behaviour that positively contributes to the environment (Seguin et al. 1998). It is a function of the two forms of identification—i.e. with nature and collective politicised actions (Mackay et al., 2021). Identification with nature concerns the psychological connection to the ecological world and considering oneself an integral part of it. Identification with politicised actions reflects the consideration of one's own involvement in a collective struggle caused by climate change and the movement to protect the environment (Mackay et al., 2021). Environmental activism has been conceptualised as different types of behaviour, including engagement in political movements (Stern et al., 1995) and environmental organisations (Stern, 2000), policy-making favouring environmental protection (McFarlane & Hunt, 2006) and collective pro-environmental actions (Lubell, 2002). In this study, environmental activism refers to individuals' active participation in causes directed at environmental protection. It is logical to assume that a tendency to be involved in

activities to fight ecological degradation will correlate with the willingness of a person to repair technology, as this practice is more sustainable than the purchase of a new device. The significant correlation between activism and behaviour can be explained by the individual's self-identification with other environmental activists. Therefore, engagement in sustainable practices is crucial for individuals' self-concept (Dono et al., 2010). In line with the above findings, this study suggests that:

Hypothesis 2b Environmental activism is positively related to intention to repair.

Technology Repair Factors

Perceived behavioural control reflects a belief that concerns two aspects of behaviour. The first one is an individual's perceived ability to engage with the target behaviour and the second is the degree of control that individuals perceive that they have over that behaviour (Ajzen, 1991; Odou & Schill, 2020; Perugini & Bagozzi, 2001). In this study, behavioural control is the perception that individuals have control over repair practices. The belief in personal abilities to perform certain actions stimulates the intention to carry out those actions, thus increasing the likelihood of the behaviour taking place (Ajzen, 1991). The relationship between perceived behavioural control and intention has been empirically confirmed in prior research (Foth, 2016; Katyal et al., 2022; Odou & Schill, 2020). For example, it was found that confidence in oneself to perform practices against climate change significantly contributes to the intention to fight climate change (Odou & Schill, 2020). Also, the perception of control over one's own behaviour is an important behavioural stimulus in scenarios when individuals' actions may have dangerous consequences, such as texting while driving (McBride et al., 2020) or using counterfeit products (Katyal et al., 2022). We propose:

Hypothesis 3a Perceived behavioural control is positively related to intention to repair.

Attachment to electronic devices is a psychological bond that has been developed over the course of prior interaction with the devices (Li, 2014). Attachment to old technology has been found to motivate consumers to repair them, instead of purchasing new ones (van der Velden, 2021). The link between attachment and behavioural intention stems from research postulating that individuals are born with innate behaviours that help them to control and nurture a tendency to get attached (Bretherton, 1992). Individuals form attachments in infancy and develop them further throughout their life (Bowlby & Ainsworth, 2013; Bretherton, 1992). Originally, attachment was mainly explored in relationships

between humans (e.g. mother and child) (Bretherton, 1992; Cassidy & Shaver, 2002). Later, the concept was examined in broader contexts involving humans developing bonds with places and objects (Apaolaza et al., 2022; Kim et al., 2022; Li, 2014). Attachment is also important in technology use and adoption (Tzou & Lu, 2009). For example, individuals who are attached to technology based on artificial intelligence (AI), such as AI speakers, have a stronger intention to complete purchases using such technology (Kim et al., 2022). We propose that individuals who have developed an attachment to their devices will prefer to repair them to extend their utility:

Hypothesis 3b Attachment to electronic devices is positively related to intention to repair.

Response cost is the cost that individuals have to sacrifice to engage in a given behaviour (Marikyan et al., 2022; Papagiannidis et al., 2022; Rogers & Prentice-Dunn, 1997). In this study, response costs refer to the financial and non-financial input associated with repairing a device. Higher response costs usually inhibit the intention to engage in behaviour (Menard et al., 2017). The negative impact of response costs has been documented in multiple studies on technology use (Lee & Larsen, 2009; Marikyan et al., 2022). For instance, research has confirmed that individuals' expectations of financial investment and the mental effort required to use technology lower the intention of its adoption (Marikyan et al., 2022; Truelove & Gillis, 2018). When it comes to pro-environmental behaviour, financial and behavioural costs are salient beliefs that inhibit practices, such as recycling, reducing water and energy consumption and the use of environmentally friendly materials among other everyday habits, which can help reach sustainable development goals (Truelove & Gillis, 2018). Financial and behavioural costs may refer to monetary losses, inconvenience and the time spent engaging in behaviour (Huang et al., 2020). Given the above evidence, we hypothesise:

Hypothesis 3c Perceived repair cost is negatively related to intention to repair.

Obsolescence is defined "*as the relative loss in value due to styling changes (style obsolescence) or quality improvement (functional obsolescence) in subsequent versions of the product*" (Levinthal & Purohit, 1989, p. 35). Individuals form an intention to purchase products after assessing their future value. The perceived value is undermined by the belief that a product will become obsolete in a short time span (Levinthal & Purohit, 1989). Consequently, concerns about a product's short longevity result in behaviour avoidance (Jensen, 1982; Levinthal & Purohit, 1989). Despite the inhibiting role of the perceived product obsolescence in

purchasing decisions, it has become a frequent practice for organisations to produce technology that cannot be repaired or to use material with inferior quality (Guiltinan, 2009; Packard & McKibben, 1963). Specifically, the practices include, but are not limited to, shortening the functional life, producing technology with limited repair possibilities and design aesthetics that lower individuals' satisfaction (Guiltinan, 2009). When the perception of planned obsolescence is strong, devices will not be perceived as durable, irrespective of the effort to extend their utility after repair. When consumers have a salient belief that the product lifecycle is intentionally reduced, device repair can be seen as time and effort spent pointlessly. Therefore, we hypothesise:

Hypothesis 3d A belief in planned product obsolescence is negatively related to intention to repair.

Beliefs About Legislation

Beliefs about legislation driving motivations to exercise the right-to-repair electronic products include perceived law efficacy and a positive attitude towards the right to repair. Law efficacy is rooted in the self-efficacy concept, defined as an individual's belief in their capability to perform a goal-oriented behaviour (Bandura, 1997). In this paper, law efficacy refers to individuals' beliefs about the capability or effectiveness of the right-to-repair bill. The efficacy of oneself and one's actions is the main motivational driver of adaptive behaviour (Rogers & Prentice-Dunn, 1997). Prior literature shows that efficacy has a direct and significant impact on individuals' intentions and behaviour (Balapour et al., 2019; Cermin et al., 2019; Marikyan et al., 2022). For instance, it was found that the confidence of people in institutional efficacy increases trust in a government and citizens' participation in activities to improve the life of their community (Hu et al., 2015; McDonnell, 2020). The higher an individual's confidence that behavioural goals can be achieved, the higher is their intention to engage in behaviour (Rogers & Prentice-Dunn, 1997). As far as the right-to-repair regulation is concerned, it was found that the general public believes that the law helps ensure the repairability of old devices (Perzanowski, 2020). Given the above evidence, we suggest that the perceived effectiveness of the right-to-repair bill will drive the intention to exercise such a right by repairing electronic products.

Hypothesis 4a *Perceived law efficacy is positively related to intention to repair.*

Attitude is a fundamental construct when it comes to determining intention (Dhir et al., 2021; Mullins & Cronan, 2021). Attitude has been integral to many theories in informational system management and consumer behaviour as it

has been used as a proxy for behaviour (Dwivedi et al., 2019; Zwicker et al., 2020). For example, individuals holding a positive attitude towards the environment tend to favour environmentally friendly products (Chen et al., 2018; Dhir et al., 2021). A positive attitude towards recycling is a significant predictor of recycling behaviour (Ramayah et al., 2012). Similarly, it was found that individuals develop positive attitudes to reuse practices as they reduce consumption. Such attitudes tend to translate into reuse behaviour (Rafiq et al., 2022). When it comes to the right-to-repair legislation, a consumer survey showed that people have a positive attitude towards it, as it is believed to help increase the utility of electronic products that otherwise could not be used (Perzanowski, 2020). Therefore, we propose that a positive attitude towards the right-to-repair bill is correlated with an increase in individuals' intention to repair their devices.

Hypothesis 4b Attitude towards the right-to-repair bill is positively related to intention to repair.

The Outcomes of the Repair Intention

Consumer-related outcomes of repair practices include perceived satisfaction with the decision to repair and emotional self-assurance, which fall into the psychological group of reactions (Bagozzi, 1986). Intention to repair technology represents the cognitive acceptance of the behaviour (Bhattacherjee & Sanford, 2009). Consumers' disposition to engage in repair practices is associated with the belief that the repair will yield positive outcomes and satisfaction. This assumption is supported by extant literature confirming the correlation between consumers' confidence in a product choice and satisfaction (Heitmann et al., 2007; Wang & Shukla, 2013). When certainty about behaviour is high, individuals do not feel the trade-off associated with the choice (Schwartz, 2000; Wang & Shukla, 2013). Similarly, a perception of attaining the goal increases the feeling of self-assurance (Gray et al., 2020; Sheldon & Houser-Marko, 2001), which refers to positive feelings of personal effectiveness in dealing with problems (Leonard & Weitz, 1971). As a repair aims to revive malfunctioning technology and prolong its lifetime, the decision to repair devices is likely to be associated with the achievement of such goals, hence the increased feeling of self-assurance.

Hypothesis 5 Intention to repair is positively related to a) perceived satisfaction with the repair decision and b) emotional self-assurance.

Manufacturer-related outcomes embrace two factors relating to consumers' perceived satisfaction with a company producing devices and the intention to engage with the company in the future. A successful repair of electronic

devices represents an expected outcome of the decision to repair them. When expectations underpinning decisions are on a par with performance, individuals feel satisfaction (Oliver, 2014). The literature offers evidence of the effect of confirmed expectations about product or service performance on brand satisfaction (Guo et al., 2018). Also, satisfaction increases when confidence in one's own decision is high (Heitmann et al., 2007; Wang & Shukla, 2013). In addition, it is likely that the decision to repair a device is explained by a rational choice whereby the trade-off of switching to another company would be higher. Therefore, once an individual reaches a decision to repair a device, the ability to fix it is likely to result in higher commitment to the manufacturing company/brand. In this regard, prior literature showed a significant relationship between high perceived performance and continuous intention to use services and loyalty to a company (Lee et al., 2019; Woo et al., 2021). Hence, the next hypothesis states:

Hypothesis 6 Intention to repair is positively related to a) perceived satisfaction with the manufacturer and b) intention to engage with the company in the future.

A product-related outcome is performance expectancy, which is defined "*as the degree to which an individual believes that using the system will help him or her to attain gains in job performance*" (Venkatesh et al., 2003, p. 447). In our study, it captures the state of mind when consumers feel that the repair of technology will maintain or even improve its performance. As the right-to-repair legislation comes into force, it is likely that individuals will be more confident in repaired devices as manufacturers, legislation bodies and suppliers provide more favourable conditions for repairing devices. This assumption is based on studies observing repair communities and measuring the perception of the general public of the right-to-repair bill (Perzanowski, 2020; van der Velden, 2021). More specifically, a consumer survey found that users expect repaired devices to perform well and have a prolonged lifespan (Perzanowski, 2020). Similarly, an ethnographic observation of repair communities found that in the majority of cases, the repair is successful (van der Velden, 2021). Although the expected quality of the final result is a concern (Sabbaghi et al., 2017), the success ratio is highly dependent on the availability and cost of spare parts, and the complexity of the process (van der Velden, 2021). Given that the legislation is aimed at removing the above barriers to repair practices, this study hypothesises that the expectation of technology performance after repair will be high.

Hypothesis 7 Intention to repair is positively related to performance expectancy after repair.

The mediating role of repair intention

In line with the SOR model and prior research using the model, the effect of stimuli on responses is mediated by organism factors, which capture individuals' cognitive and/or affective reactions to stimuli (Jacoby, 2002; Kim et al., 2020; Pop et al., 2023). Jacoby (2002) argues that such reactions manifest themselves as conscious and unconscious processes, including experiences, knowledge, beliefs, intentions, attitudes and predispositions. In a similar fashion, intention to repair represents an internal predisposition to adopt the behaviour, which it is necessary to experience before evaluating the potential outcomes of the decision to repair technology. As prior literature demonstrates, intention is an intervening variable in the relationship between behavioural beliefs and behaviour (Chakraborty, 2022; Donald et al., 2014; Kaiser & Scheuthle, 2003). For example, the selection of pro-environment transport choices was found to be indirectly influenced by attitudes, norms, environmental concerns and perceived behavioural control through intention (Donald et al., 2014). Moral norms and traits predict conservation behaviour, if behaviour intention is observed to be strong (Kaiser & Scheuthle, 2003). Also, a study adopting the SOR model showed that purchase intention mediates the impact of stimuli, namely beliefs about behavioural risks, value and word of mouth, on purchase behaviour (Chakraborty, 2022). In line with the above evidence, we posit that intention to repair mediates the effects of the beliefs about the external environment on the outcomes of the decision to repair. Hence, the final hypothesis states that:

Hypothesis 8 Intention to repair mediates the effects of the beliefs about legislation, repair services and a social community on consumer-related, manufacturer-related and product-related outcomes.

Figure 2 presents the hypothesised relationships between the four groups of stimuli, intention to repair and perceived repair implications.

Methodology

Data collection

A cross-sectional research design was employed to collect data. First, we conducted a pilot study that made it possible to assess whether the adapted measurement items were comprehensive and whether the statements were clear for the participants. After taking into account feedback provided by the respondents during the pilot study, we embarked on the development of the final questionnaire. The first part of the questionnaire included measurement items for 17
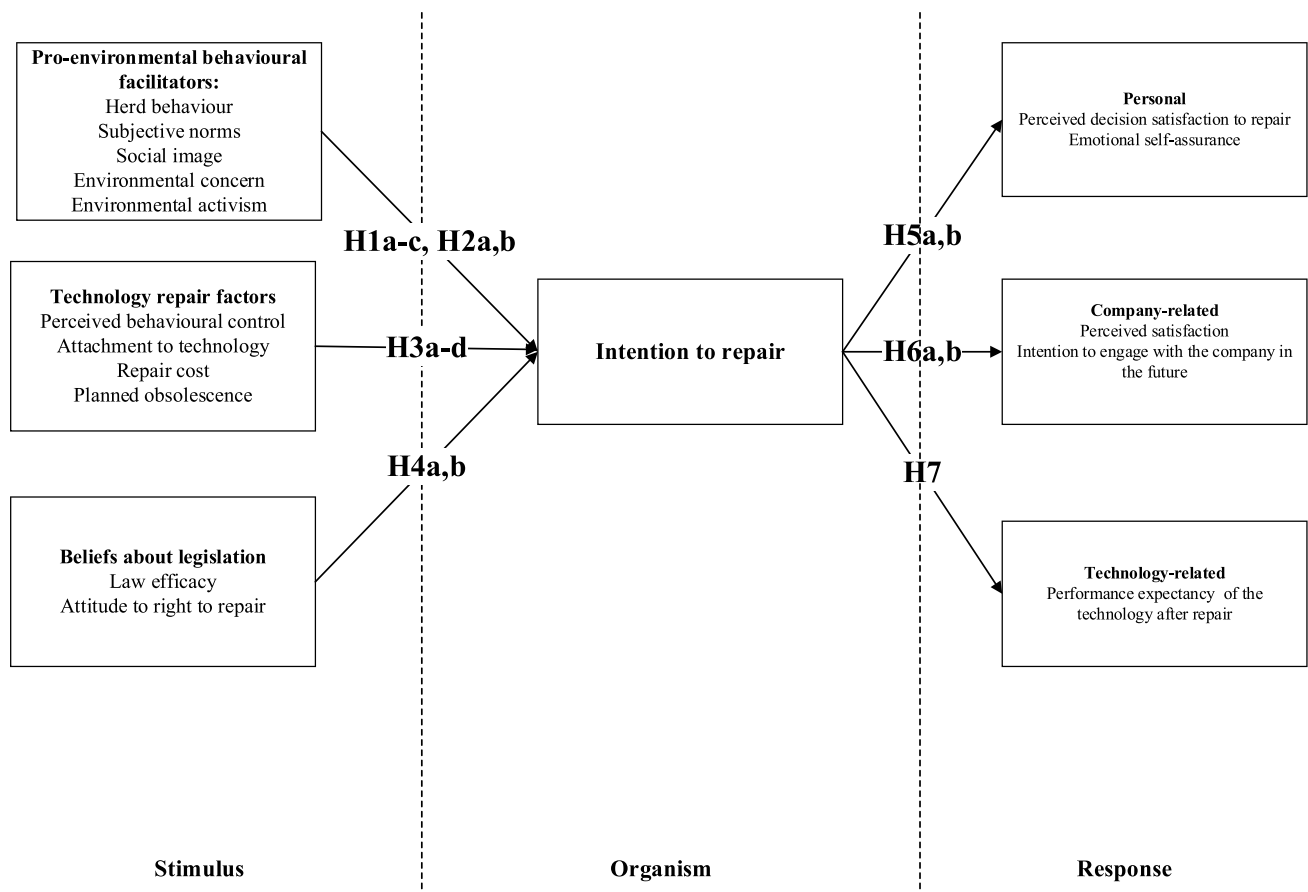
Fig. 2 Research model

latent variables, while the second part of the questionnaire included items related to the socio-demographic characteristics of the respondents. The questionnaire was distributed to a consumer panel located in the USA, since the Right to Repair Bill was introduced in the USA in 2018 and by 2022 most of the states were either considering it or had approved it (Manwaring et al., 2022). Access to the consumer panel within the selected geographical location was provided by an independent research company. Therefore, the sampling strategy was purposive. To ensure that all respondents provided informed answers to the questions, they were first presented with an explanation of when and where the Right-to-Repair Bill was introduced, the reason behind the law's introduction, the obligations that the law enforces upon manufacturers and the types of products that the law covers. To avoid the possibility of individuals giving answers that are socially desirable, a few procedural measures were followed. Specifically, we maintained the anonymity of responses, randomised questions, collected data online, thus eliminating the influence of a researcher on respondents, and used validated scales to ensure that item measurements were theoretically accurate (Podsakoff et al.,

2003). The data collection resulted in 510 valid responses. The socio-demographic profile of the respondents is provided in Table 3.

Measurements

Validated scales were borrowed from prior literature and adapted to the context of this study (Table 4). When answering the questions, the participants were asked to think about their own experience of repairing their devices, such as tablets, laptops and mobile phones. All latent variables except for environmental activism were measured with multiple reflective items with anchors where 1 is "*strongly disagree*" and 7 is "*strongly agree*". Environmental activism was measured on a scale between 1—"*not very often*" and 7—"*very often*".

Mediation Analysis

To account for the limitations of SEM in providing accurate estimates of the mediation analysis, we followed the procedures suggested by Zhao et al. (2010). Zhao et al. (2010)

Table 3 The profile of the respondents

Demographic characteristics	Type	Frequency (n = 510)	Percentage (%)
Age			
	18–24	66	12.94
	25–34	161	31.57
	35–44	129	25.29
	45–54	73	14.31
	55–64	52	10.20
	65–74	24	4.71
	75–84	5	0.98
Employment status			
	Employed full time	296	58.04
	Employed part time	85	16.67
	Unemployed looking for work	47	9.22
	Unemployed not looking for work	23	4.51
	Retired	32	6.27
	Student	18	3.53
	Disabled	9	1.76
Income			
	Less than $10,000	75	14.70
	$10,000—$19,999	52	10.20
	$20,000—$29,999	55	10.78
	$30,000—$39,999	53	10.39
	$40,000—$49,999	39	7.65
	$50,000—$59,999	68	13.33
	$60,000—$69,999	39	7.65
	$70,000—$79,999	36	7.06
	$80,000—$89,999	16	3.14
	$90,000—$99,999	12	2.35
	$100,000—$149,999	41	8.04
	More than $150,000	24	4.71
Education			
	Less than high school	5	0.98
	High school graduate	90	17.65
	Some college	105	20.59
	2-year degree	56	10.98
	3–4-year degree	174	34.12
	Professional degree	24	4.70
	Master's degree	46	9.02
	Doctorate	10	1.96
Gender			
	Male	280	54.90
	Female	212	41.57
	Non-binary/third gender	14	2.74
	Prefer not to say	4	0.78

distinguish between three types of mediation effects—complementary, competitive and indirect-only—and two types of non-mediation effects—direct-only non-mediation and complete non-mediation. To identify the type of mediation, researchers are recommended to carry out the analyses of a) the indirect paths between independent (stimulus) variables and a mediating variable (intention to repair); b) the direct effects of the independent variables on dependent variables; and c) the paths between independent and dependent variables by taking into account the mediator. Complementary

Table 4 Measurement items

Measurement item	Loading	Cronbach's A
Environmental concern (Kilbourne & Pickett, 2008)		0.95
I am very concerned about the environment	0.77	
Humans are severely abusing the environment	0.86	
I would be willing to reduce my consumption to help protect the environment	0.74	
Major political change is necessary to protect the natural environment	0.81	
Major social changes are necessary to protect the natural environment	0.84	
Anti-pollution laws should be enforced more strongly	0.83	
Environmental activism (Dono et al., 2010)		0.90
I participate in events organised by environmental groups	0.79	
I give financial support to an environmental group	0.67	
I circulate petitions demanding an improvement of government policies regarding the environment	0.79	
I participate in protests against current environmental conditions	0.78	
I write letters to firms that manufacture harmful products	0.68	
Herd behaviour (Sun, 2013; Vedadi & Warkentin, 2020)		0.85
It seems that repairing a device instead of buying a new one is a common practice, therefore I would like to do the same	0.61	
I follow others when it comes to the decision to repair a device instead of buying a new one	0.74	
I would choose to repair a device instead of buying a new one because many other people around me do that	0.75	
Subjective norm (Ajzen, 1991; Venkatesh et al., 2003)		0.89
People who influence my behaviour think that I should repair a device rather than buy a new one	0.76	
People who are important to me think that I should repair a device rather than buy a new one	0.74	
Social image (Moore & Benbasat, 1991; Venkatesh et al., 2003)		0.85
People who repair devices have more respect than those who buy new ones instead	0.76	
People who repair devices have a social image of environmental supporters	0.81	
Repairing devices instead of buying new ones is a symbol of sustainable behaviour in our society	0.75	
Perceived behavioural control (Ajzen, 1991; Taylor & Todd, 1995; Venkatesh et al., 2003)		0.87
I have the resources or I can refer this to a repairman with the necessary resources to repair the device	0.86	
I have the knowledge or I can refer this to a repairman with the necessary knowledge to repair the device	0.86	
Repair cost (Woon et al., 2005)		0.82
The cost of repairing a device instead of buying a new one undermines the convenience of this practice	0.72	
There are too many overheads associated with trying to repair a device instead of buying a new one	0.78	
Repairing a device instead of buying a new one would require a considerable investment of effort other than time	0.68	
Attachment to electronic devices (Jiménez & Voss, 2014)		0.98
I favour repairing a device instead of purchasing a new one, because I have…		
Strong emotional bonds with the device	0.94	
Emotionally connected to the device	0.96	
Feelings linked to the device	0.95	
Feelings of attachment to the device	0.95	
Law efficacy (Woon et al., 2005)		0.89
The right-to-repair law would enable me to fix a device instead of buying a new one	0.75	
If I exercise my right to repair, I will be able to have a device fixed without buying a new one	0.74	
The right-to-repair law would help fix issues with my device	0.77	
The right-to-repair law provides an effective solution to the issues with my device	0.77	
Repairing a device is an effective way to extend the usage of my old device	0.58	
Attitude toward right to repair (Davis, 1993; Elliott et al., 2007)		0.96
My attitude toward the right-to-repair law is …		
Good	0.91	
Favourable	0.89	
Positive	0.90	

Table 4 (continued)

Measurement item	Loading	Cronbach's A
That it is wise	0.83	
That it is beneficial	0.85	
Perception of planned obsolescence. Developed based on Guiltinan (2009)		0.90
I think that technology companies …		
Make design fragile	0.79	
Use unnecessary fragile materials for the final product	0.76	
Design for limited repair	0.74	
Make it time-consuming to repair a device	0.71	
Make spare parts limited	0.70	
Intention to repair (Vedadi & Warkentin, 2020)		0.98
In the future …		
I intend to repair a device instead of buying a new one	0.92	
I plan to repair a device instead of buying a new one	0.93	
I predict that I will repair a device instead of buying a new one	0.93	
I expect that I will repair a device instead of buying a new one	0.94	
Decision satisfaction to repair (Holmes-Rovner et al., 1996; McKinney et al., 2002; Sainfort & Booske, 2000)		0.95
I expect that after repairing my device I would feel…		
Very satisfied with my decision	0.78	
Very pleased with my decision	0.79	
Contented with my decision	0.76	
Delighted with my decision	0.73	
Emotional self-assurance (Bagozzi et al., 2020)		0.95
I believe that repairing a device would …		
Make me feel good	0.82	
Make me feel happy	0.84	
Make me feel joyful	0.79	
Make me feel proud	0.78	
Will be emotionally rewarding	0.78	
Intention to engage with the manufacturer of the device in the future (Venkatesh et al., 2003)		0.96
I believe that after repairing a device instead of buying a new one …		
I will intend to engage with the manufacturer of the device in the future	0.91	
I plan that I will engage with the manufacturer of the device in the future	0.91	
I predict that I will engage with the manufacturer of the device in the future	0.91	
I expect that I will purchase more products offered by the manufacturer of the device in the future	0.84	
Perceived satisfaction (McKinney et al., 2002)		0.97
I believe that after repairing a device instead of buying a new one I will be …		
Very dissatisfied—very satisfied with the manufacturer of the device	0.92	
Very displeased—very pleased with the manufacturer of the device	0.91	
Frustrated—contented with the manufacturer of the device	0.92	
Disappointed—delighted with the manufacturer of the device	0.89	
Performance expectancy (Venkatesh et al., 2003)		0.94
I believe that the repaired device …		
Will be as useful for accomplishing my tasks as it was before it needed to be repaired	0.86	
Will be as instrumental for accomplishing my tasks as it was before it needed to be repaired	0.84	
Will be as helpful for increasing my productivity as it was before it needed to be repaired	0.85	
Will be as useful for increasing the chances of my task completion as it was before it needed to be repaired	0.79	

or competitive mediation can be established, if all three tests show significant results. In contrast to complementary mediation, competitive mediation is present when indirect and mediation effects point in different directions. Although such mediation results are considered to be consistent with the theoretical model, they also point to the possibility of an omitted mediator. Indirect-only mediation is confirmed when only indirect effects are established. In such a scenario, the mediator is consistent with the adopted theory, suggesting the absence of other potential mediators. Direct-only non-mediation is established when direct effects between independent variables and outcomes are significant, while indirect effects are not present. Such results show the high likelihood of an undiscovered mediator. Finally, insignificant results of all tests indicate failure to establish any type of mediation and the possibility of an alternative mediator (Zhao et al., 2010). The chosen analysis method accommodates for the possible inconsistencies in the mediation effects in the research model and provides an opportunity for comprehensive interpretation of the mediation effects, resulting in richer insights (Hayes, 2009; Zhao et al., 2010).

Results

Measurement Model Analysis

SPSS v.27 was employed to explore the socio-demographic profile of the respondents and provide descriptive statistics. A two-step Structural Equation Modelling approach was utilised to test the reliability and the validity of the proposed model and estimate the hypothesised paths (Hair et al., 2014). The first step was a confirmatory factor analysis conducted to ensure the reliability and validity of the proposed model. Measurement model fit indices were estimated, which, according to the recommendations of Hair et al. (2014), were satisfactory: χ^2 (2074) = 4845.17, CMIN/DF = 2.34, CFI = 0.92, RMSEA = 0.05. Reliability was confirmed for all scales and showed that Cronbach alpha values were above the acceptable cut-off point (> 0.7), and the factor loadings of all measurement items were > 0.6 (Santos, 1999). Also, in line with the guidelines proposed by Hair et al. (2014) and Tabachnick et al. (2007), the construct reliability (C.R. > 0.7) and average variance extracted (AVE > 0.5) values were satisfactory. Table 3 presents the C.R. and AVE coefficients, and the convergent and discriminant validity results. The correlation between the constructs was lower than the square root of the average variance extracted represented by the bold diagonal figures, showing that there was no issue with discriminant validity (Table 5) (Fornell & Larcker, 1981). Finally, as the responses were collected from a single source, common method bias was checked using Harman's one-factor test. The total variance extracted by a single factor was 27.8%, which is significantly lower than the cut-off point of 50%.

Structural Model Analysis

We tested the structural model, using a covariance-based structural equation modelling approach. Such an approach makes it possible to estimate multiple relationships in a single model, which is not possible with other types of analysis, such as multivariate analysis of variance and multiple regressions (Hair et al., 2014). Before embarking on the analysis of the relationships, we estimated the structural model fit indices: χ^2 (2139) = 5818.59, CMIN/DF = 2.72, CFI = 0.90, RMSEA = 0.06 (Hair et al., 2014). The results of the analysis of the research model are presented in Table 6. 14 out of 17 hypotheses were significant, while H2a-b and H3b were found to be non-significant. The model explained 50% of the variance for intention to repair, 41% for satisfaction with the decision to repair, 35% for emotional self-assurance, 11% for intention to engage with the company in the future, 12% for perceived satisfaction and 30% for performance expectancy. To test the possibility of socio-demographic variables causing the variability in the results, we controlled for the role of age, gender, education and income. However, neither the direction of the effects nor the effect size in the relationships has changed, as the control variables' impact was not significant.

Mediation Analysis

The analysis of the direct, indirect and mediated paths presented in Table 7 enabled us to find 35 mediation effects, 17 of which were indirect-only, 16 were complementary and 2 were competitive. In terms of non-mediation effects, 11 paths were direct-only. The remaining 9 paths between environmental concern, environmental activism, law efficacy, attachment to electronic devices and outcomes had neither direct nor mediated effects.

Discussion

Antecedent of the Intention to Repair

Considering the wider context set by the introduction of the Right to Repair Bill, this work aimed to address gaps in the literature related to the influences on and the implications of sustainable consumer behaviour (e.g. Bowen et al., 2022; Hartmann et al., 2018; Pauluzzo & Mason, 2022; Widayat et al., 2021). The first objective was to explore the determinants of repair intention among the consumers of personal electronic devices (e.g. phones, tablets, laptops). Considering that most consumers have less control over technology

Table 5 Convergent and discriminant validity

	CR	AVE	INM	SOI	HEB	ATT	ENA	REC	ATC	PBC	SUN	PPO	ENC	ERP	DSR	PES	ESA	INR	PEE
INM	0.96	0.87	**0.93**																
SOI	0.85	0.66	0.36	**0.81**															
HEB	0.85	0.66	0.25	0.36	**0.81**														
ATT	0.96	0.84	0.32	0.31	0.08	**0.92**													
ENA	0.90	0.65	0.22	0.32	0.37	0.05	**0.81**												
REC	0.82	0.61	−0.05	−0.03	−0.03	−0.24	0.05	**0.78**											
ATC	0.98	0.93	0.22	0.32	0.24	0.13	0.20	0.02	**0.96**										
PBC	0.87	0.78	0.23	0.17	0.06	0.22	−0.05	−0.31	0.05	**0.88**									
SUN	0.89	0.81	0.29	0.43	0.56	0.20	0.29	−0.14	0.24	0.19	**0.90**								
PPO	0.90	0.65	−0.05	0.00	−0.14	0.22	0.04	0.14	−0.04	0.01	−0.07	**0.80**							
ENC	0.95	0.75	0.18	0.31	0.01	0.38	0.32	−0.03	0.13	−0.02	0.10	0.26	**0.87**						
ERP	0.90	0.63	0.33	0.25	0.05	0.69	−0.01	−0.22	0.17	0.42	0.22	0.29	0.32	**0.80**					
DSR	0.95	0.82	0.38	0.35	0.20	0.59	0.05	−0.24	0.23	0.26	0.27	0.11	0.29	0.55	**0.91**				
PES	0.97	0.90	0.63	0.31	0.35	0.32	0.18	−0.20	0.23	0.18	0.26	−0.13	0.09	0.27	0.44	**0.95**			
ESA	0.95	0.78	0.47	0.48	0.30	0.46	0.18	−0.15	0.32	0.18	0.37	0.09	0.32	0.38	0.74	0.47	**0.88**		
INR	0.98	0.92	0.31	0.38	0.28	0.48	0.16	−0.40	0.20	0.33	0.41	0.18	0.27	0.48	0.62	0.32	0.57	**0.96**	
PEE	0.94	0.79	0.35	0.24	0.06	0.55	−0.01	−0.25	0.14	0.32	0.27	0.08	0.28	0.51	0.67	0.37	0.53	0.53	**0.89**

Diagonal figures represent the square root of the average variance extracted (AVE), and the figures below represent the between-constructs correlations

INM intention to engage with the manufacturer; *SOI* social image; *HEB* herd behaviour; *ATT* attitude to the right-to-repair bill; *DSR* satisfaction with the decision to repair; *PES* perceived satisfaction with the manufacturer; *ENA* environmental activism; *REC* repair cost; *ATC* attachment to electronic devices; *PBC* perceived behavioural control; *ERP* law efficacy; *SUN* subjective norms; *ESA* emotional self-assurance; *INR* intention to exercise their right to repair; *PEE* performance expectancy of technology after repair; *PPO* planned obsolescence; *ENC* environmental concern

Table 6 The results of hypothesis testing

H	Path	Coef	t-test, sig.
H1a	Subjective norms → Intention to repair	0.15	(3.25***)
H1b	Herd behaviour → Intention to repair	0.13	(2.63**)
H1c	Social image → Intention to repair	0.13	(2.94**)
H2a	Environmental concern → Intention to repair	0.05	(1.24 ns)
H2b	Environmental activism → Intention to repair	0.01	(0.16 ns)
H3a	Perceived behavioural control → Intention to repair	0.09	(2.02*)
H3b	Attachment to electronic devices → Intention to repair	0.05	(1.41 ns)
H3c	Repair cost → Intention to repair	−0.29	(−6.97***)
H3d	Planned obsolescence → Intention to repair	0.16	(4.06***)
H4a	Law efficacy → Intention to repair	0.12	(1.99*)
H4b	Attitude to the right-to-repair bill → Intention to repair	0.18	(3.53**)
H5a	Intention to repair → Perceived decision satisfaction to repair	0.64	(16.95***)
H5b	Intention to repair → Emotional assurance	0.59	(14.74***)
H6a	Intention to repair → Perceived satisfaction with the manufacturer	0.34	(7.97***)
H6b	Intention to repair → Intention to engage with the manufacturer in the future	0.33	(7.61***)
H7	Intention to repair → Performance expectancy of the technology after repair	0.55	(13.49***)

Significance level at *** < 0.001, ** < 0.01, * < 0.05, ns ≥ 0.05

repair than expert users, we examined the contingency of the motivation to exercise the right to repair. We studied the role of three sets of beliefs about the regulatory landscape, the social context and the environmental consequences of consumption, and technology repair practices driving motivation to repair devices. The findings of this paper extend the knowledge about the motivational stimuli of the wider external environment facilitators, anti-consumption and sustainable behaviour (Koch et al., 2022; Scott & Weaver, 2018; Zollo, 2021), and the consumers' perspective on the right-to-repair legislation (Manwaring et al., 2022; Svensson-Hoglund et al., 2021).

We found that the decision to repair is stimulated by the beliefs shaped by social groups, the resources and costs required for repair, and the beliefs about the right-to-repair regulation. Specifically, the positive and significant role of subjective norms, herd behaviour and social image (H1a-b) suggest that the repair practices are socially induced. Individuals are dependent on the opinions and views of people in a close social circle and the broader environment, who may shape behaviour by raising expectations about consumption practices. Individuals choose repair over the purchase of electronic devices because of the tendency to mimic the social conduct of a group of people and create an image of environmentally conscious consumers through an affiliation with that group. These findings are consistent with prior findings that individuals tend to follow commonly accepted norms (Chueh & Huang, 2023; Sharma et al., 2021) and the herd to conform to popular behaviour (Frederiks et al., 2015; Smith et al., 2012). The finding is also consistent with research that found that the congruence between one's own image and potential behaviour drives intention to engage in

it (Khalifa & Shukla, 2017; Rosendo-Rios & Shukla, 2023). Although sustainability has been the driver of the right-to-repair movement (Hernandez et al., 2020; MacArthur, 2013; Svensson-Hoglund et al., 2021), the paper found that environmental concerns (H2a) and environmental activism (H2b) do not influence consumers' decisions. A possible interpretation of the non-significant effects is that repair is construed as a means of improving the functional performance of technology, while the understanding of how such practices can contribute to sustainability is low. Considering the positive effects of social image, subjective norm and herd behaviour, the findings show that consumers adopt repair practices because their social circle obliges them to act in a sustainable way and consumers want to be seen as environmentally conscious. However, the potential benefit that such a behaviour may bring to the environment does not drive their motivation.

The analysis of the technology repair factors sheds light on the significant role of beliefs about repair costs and resources that determine the practices of sustainable technology utilisation. Particularly, the decision to repair is related to perceived behavioural control (H3a) and the perceived obsolescence of technology being planned (H3d) and impeded by repair costs (H3c). As suggested by prior research (Odou & Schill, 2020; Wang et al., 2022), individuals are likely to believe that the Right to Repair Bill provides the means for practising repair should they wish to fix their old devices, instead of buying new ones. However, the intention to repair gets weaker as the perception of the costs required for repair rises. This is because decision-making often takes the form of rational cost–benefit analysis. The more time and effort required to engage in a

Table 7 The results of the indirect path, direct and mediated path analyses

Path	S→O Coef.	S→O t-test, sig.	S→O CI	S→R Coef.	S→R t-test, sig.	S→R CI	S→O→R Coef	S→O→R t-test, sig.	S→O→R CI	Type of mediation/Non-mediation
Subjective norms → intention to repair	0.15	3.21 **	0.05 to 0.24							
Subjective norms → emotional assurance				0.07	1.39 ns	−0.22 to 0.24	0.06	1.12 ns	−0.37 to 1.06	Indirect-only
Subjective norms → decision satisfaction				0.00	0.03 ns	−0.24 to 0.17	−0.01	−0.24 ns	−0.43 to 1.05	Indirect-only
Subjective norms → perceived satisfaction with a manufacturer				−0.07	−1.37 ns	−0.30 to 0.10	−0.08	−1.50 ns	−0.35 to 0.57	Indirect-only
Subjective norms → intention to engage with a manufacturer				0.02	0.31 ns	−0.18 to 0.18	0.01	0.20 ns	−0.24 to 0.46	Indirect-only
Subjective norms → performance expectancy				0.14	2.62 **	−0.05 to 0.28	0.13	2.45 *	−0.18 to 0.89	Complementary
Herd behaviour → intention to repair	0.12	2.57 *	0.05 to 0.19							
Herd behaviour → emotional assurance				0.15	2.94 **	−0.08 to 0.34	0.16	3.17 **	−0.24 to 2.01	Complementary
Herd behaviour → decision satisfaction				0.13	2.72 **	−0.05 to 0.33	0.14	2.98 **	−0.22 to 2.06	Complementary
Herd behaviour → perceived satisfaction with a manufacturer				0.26	4.62 ***	0.04 to 0.44	0.26	4.68 ***	−0.01 to 1.26	Complementary
Herd behaviour → intention to engage with a manufacturer				0.11	1.93 ns	−0.07 to 0.28	0.11	1.99 *	−0.12 to 1.03	Indirect-only
Herd behaviour → performance expectancy				−0.03	−0.56 ns	−0.20 to 0.13	−0.02	−0.40 ns	−0.29 to 1.40	Indirect-only
Social image → intention to repair	0.13	2.83 **	0.04 to 0.22							
Social image → emotional assurance				0.29	5.59 ***	0.09 to 1.15	0.32	6.27 ***	−0.14 to 1.61	Complementary
Social image → decision satisfaction				0.16	3.44 ***	−0.00 to 0.94	0.20	4.19 ***	−0.254 to 1.42	Complementary
Social image → perceived satisfaction with a manufacturer				0.17	3.06 **	−0.02 to 0.71	0.18	3.38 ***	−0.12 to 0.96	Complementary
Social image → intention to engage with a manufacturer				0.188	3.42 ***	0.03 to 0.48	0.20	3.63 ***	−0.10 to 0.81	Complementary
Social image → performance expectancy				0.057	1.12 ns	−0.12 to 0.34	0.08	1.66 ns	−0.30 to 0.95	Indirect-only
Environmental concern → intention to repair	0.05	1.15 ns	0.25 to −0.02							
Environmental concern → emotional assurance				0.11	2.46 *	−0.21 to 0.27				Direct-only non-mediation
Environmental concern → decision satisfaction				0.06	1.45 ns	−0.26 to 0.22				Neither effect
Environmental concern → perceived satisfaction with a manufacturer				−0.06	−1.20 ns	−0.28 to 0.08				Neither effect
Environmental concern → intention to engage with a manufacturer				0.01	0.17 ns	−0.16 to 0.15				Neither effect
Environmental concern → performance expectancy				0.12	2.66 **	−0.05 to 0.28				Direct-only non-mediation
Environmental activism → intention to repair	0.01	0.20 ns	−0.06 to 0.08							
Environmental activism → emotional assurance				−0.07	−1.47 ns	−0.18 to 0.07				Neither effect
Environmental activism → decision satisfaction				−0.10	−2.36 *	−0.240 to 0.02				Direct-only non-mediation

Table 7 (continued)

Path	S→O Coef.	S→O t-test, sig.	S→O CI	S→R Coef.	S→R t-test, sig.	S→R CI	S→O→R Coef	S→O→R t-test, sig.	S→O→R CI	Type of mediation/ Non-mediation
Environmental activism → perceived satisfaction with a manufacturer				0.07	1.35 ns	−0.06 to 0.20				Neither effect
Environmental activism → intention to engage with a manufacturer				0.10	2.10 *	−0.02 to 0.21				Direct-only non-mediation
Environmental activism → performance expectancy				−0.10	−2.26 *	−0.28 to 0.00				Direct-only non-mediation
Perceived behavioural control → intention to repair	0.07	1.98 *	0.01 to 0.17							
Perceived behavioural control → emotional assurance				0.01	0.16 ns	−0.33 to 0.17	−0.01	−0.19 ns	−0.50 to 0.40	Indirect-only
Perceived behavioural control → decision satisfaction				0.02	0.54 ns	−0.20 to 0.20	0.01	0.16 ns	−0.423 to 0.61	Indirect-only
Perceived behavioural control → perceived satisfaction with a manufacturer				0.03	0.54 ns	−0.19 to 0.20	0.02	0.35 ns	−0.28 to 0.30	Indirect-only
Perceived behavioural control → intention to engage with a manufacturer				0.10	1.93 ns	−0.08 to 0.26	0.09	1.79 ns	−0.16 to 0.35	Indirect-only
Perceived behavioural control → performance expectancy				0.12	2.47*	−0.15 to 0.27	0.10	2.20 *	−0.26 to 0.42	Complementary
Attachment to electronic devices → intention to repair	0.05	1.27 ns	−0.02 to 0.10							
Attachment to electronic devices → emotional assurance				0.13	3.37 ***	−0.02 to 0.22				Direct-only non-mediation
Attachment to electronic devices → decision satisfaction				0.08	2.16 *	−0.047 to 0.17				Direct-only non-mediation
Attachment to electronic devices → perceived satisfaction with a manufacturer				0.07	1.85 ns	−0.05 to 0.18				Neither effect
Attachment to electronic devices → intention to engage with a manufacturer				0.04	1.03 ns	−0.06 to 0.14				Neither effect
Attachment to electronic devices → performance expectancy				0.02	0.51 ns	−0.10 to 0.11				Neither effect
Repair cost → intention to repair	−0.30	−7.01 ***	−0.36 to −0.23							
Repair cost → emotional assurance				−0.07	−1.71 ns	−0.26 to 0.05	−0.11	−2.47 *	−0.41 to 0.16	Indirect-only
Repair cost → decision satisfaction				−0.10	−2.54 *	−0.33 to 0.01	−0.14	−3.40 ***	−0.46 to 0.10	Complementary
Repair cost → perceived satisfaction with a manufacturer				−0.10	−2.22 *	−0.26 to 0.04	−0.11	−2.47 *	−0.32 to 0.10	Complementary
Repair cost → intention to engage with a manufacturer				0.06	1.38 ns	−0.09 to 0.19	0.05	1.16 ns	−0.14 to 0.22	Indirect-only
Repair cost → performance expectancy				−0.08	−1.90 ns	−0.23 to 0.03	−0.11	−2.53 *	−0.36 to 0.10	Indirect-only

Table 7 (continued)

Path	S→O			S→R			S→O→R			Type of mediation/ Non-mediation
	Coef.	t-test, sig.	CI	Coef.	t-test, sig.	CI	Coef	t-test, sig.	CI	
Planned obsolescence → intention to repair	0.17	4.18 ***	0.10 to 0.24							
Planned obsolescence → emotional assurance				0.02	0.50 ns	−0.09 to 0.18	0.03	0.84 ns	−0.33 to 0.30	Indirect-only
Planned obsolescence → decision satisfaction				−0.01	−0.17 ns	−0.13 to 0.13	0.01	0.22 ns	−0.41 to 0.24	Indirect-only
Planned obsolescence → perceived satisfaction with a manufacturer				−0.16	−3.46 ***	−0.28 to −0.02	−0.15	−3.36 ***	−0.37 to 0.02	Competitive
Planned obsolescence → intention to engage with a manufacturer				−0.14	−3.09 **	−0.26 to −0.02	−0.14	−3.00 **	−0.31 to 0.03	Competitive
Planned obsolescence → performance expectancy				−0.05	−1.19 ns	−0.17 to 0.07	−0.04	−0.92 ns	−0.36 to 0.15	Indirect-only
Law efficacy → intention to repair	0.11	1.89 ns	0.06 to −0.00							
Law efficacy → emotional assurance				0.08	1.31 ns	−0.15 to 0.46				Neither effect
Law efficacy → decision satisfaction				0.25	4.01 ***	0.02 to 0.59				Direct-only non-mediation
Law efficacy → perceived satisfaction with a manufacturer				0.17	2.38 *	−0.05 to 0.45				Direct-only non-mediation
Law efficacy → intention to engage with a manufacturer				0.21	2.98 **	0.01 to 0.46				Direct-only non-mediation
Law efficacy → performance expectancy				0.18	2.71 **	−0.04 to 0.51				Direct-only non-mediation
Attitude to the right-to-repair bill → intention to repair	0.17	3.25 **	0.06 to 0.27							
Attitude to the right-to-repair bill → emotional assurance				0.21	3.73 ***	−0.13 to 0.36	0.19	3.33 ***	−0.34 to 0.48	Complementary
Attitude to the right-to-repair bill → decision satisfaction				0.30	5.61 ***	0.02 to 0.46	0.28	5.20 ***	−0.22 to 0.61	Complementary
Attitude to the right-to-repair bill → perceived satisfaction with a manufacturer				0.16	2.67 **	−0.02 to 0.32	0.15	2.47 *	−0.10 to 0.44	Complementary
Attitude to the right-to-repair bill → intention to engage with a manufacturer				0.12	1.99 *	−0.08 to 0.27	0.11	1.83 ns	−0.14 to 0.35	Complementary
Attitude to the right-to-repair bill→performance expectancy				0.31	5.35 ***	0.07 to 0.46	0.29	5.02 ***	−0.06 to 0.56	Complementary

Significance level at *** <0.001, ** <0.01, * <0.05, ns ≥0.05

recommended behaviour the lower the individual's intention to act upon it (Marikyan et al., 2022; Menard et al., 2017; Rogers & Prentice-Dunn, 1997). Although the perception of product obsolescence being planned was considered to be a barrier to normalising repair practices among consumers (Svensson-Hoglund et al., 2021), the effect of the belief was found to be significant and positive. From a rational point of view, even though the repaired device could become obsolete too, it will work longer, while costing less than a new one. Finally, the non-supported role of attachment in driving intention to repair (H3b) is also against existing discussion in the research (Hernandez et al., 2020; Kim et al., 2022; Tzou & Lu, 2009). A possible interpretation is that users do not develop a sufficient bond with their devices to put extra effort into repairing them. Individuals need time and dedication to develop psychological bonds with objects (Bretherton, 1992; Cassidy & Shaver, 2002). Given the pace at which technology advances and is phased out from the market, individuals might not have sufficient time to develop an attachment to their electronic devices. Also, since the repair culture is not so common for US consumers as for consumers in other countries, such as Japan (Crosby & Stein, 2020), attachment may be insignificant for the respondents of this study in particular. Overall, the findings demonstrate that rational considerations about the effort and abilities/resources required to repair technology are more important than irrational psychological bonds with objects in determining decisions to repair technology.

The intention to repair is also dependent on an external stimulus pertaining to legislation, which is a positive attitude to the right-to-repair legislation (H4b). The importance of a positive attitude towards the regulation is congruent with a study that found overall positive perceptions of the Right to Repair law among consumers (Perzanowski, 2020). The analysis of the structural model showed the significant effect of the law efficacy belief on intention. However, the analysis of indirect effects demonstrated that the belief does not play any role in driving repair intention. Consumers may understand the advantages of the law being enforced, but it is not a sufficient precondition for exercising their right.

Outcomes of the Repair Intention

The second objective addressed the lack of knowledge about the outcomes of exercising the right to repair, which extends evidence in research on the implications of sustainable consumption. This study went beyond the focus on consumer-related implications dominant in the literature so far (Acuti et al., 2022; Balderjahn et al., 2023; Ur Rahman et al., 2023) and explored the consequences of repair decisions in relation to manufacturers and products. This study found that the decision to repair devices is associated with manufacturer-related outcomes (satisfaction with the manufacturer and

intention to engage with the manufacturer), product-related outcomes (performance expectancy) and personal outcomes (decision satisfaction and emotional self-assurance). When it comes to consumer-related outcomes, the analysis shows that if consumers have a stronger intention to repair a device, they will more likely become satisfied with the decision after the repair (H5a) and emotionally self-assured (H5b). As the literature suggests (Schwartz, 2000; Wang & Shukla, 2013), certainty about one's own behaviour lowers the perceived trade-off associated with the choice, which may undermine satisfaction with the decision. In addition, repairs can be perceived as an attainment of the goal of reviving malfunctioning technology and prolonging its usability. Perceived goal attainment, in turn, leads to self-assurance (Gray et al., 2020; Sheldon & Houser-Marko, 2001). Therefore, the stronger one's own resolution to repair an electronic device, the stronger will be the feelings of personal effectiveness in dealing with problems. The analysis of manufacturer-related outcomes shows that the reactions can take an affective and behavioural form. First, when the intention to repair is higher, the feeling of satisfaction with the manufacturer after a repair also increases (H6a). This finding is consistent with the evidence that the likelihood of satisfaction increases when the perception of the goal achievement by carrying out the behaviour is also high (Guo et al., 2018; Schwartz, 2000). Second, the intention to repair is likely to lead to intention to engage with the same manufacturer in the future. That could mean that the perception of the trade-off of switching to another company is higher. As far as the product-related outcome is concerned, the findings suggest that the enhanced motivation to repair devices strengthens the perception of the performance of the repaired device (H7). Such a result is logical considering that consumers favour the opportunity to exercise the right to repair, because it enables them to prolong the lifespan of technology (Perzanowski, 2020; van der Velden, 2021).

The Mediating Role of Repair Intention

Mediation analysis was conducted to provide a more refined picture of the interplay between the stimuli, repair intention and its implications. The results show that there is a difference among the external stimuli. We found that some factors indirectly lead to outcomes through repair intention as they are likely to be internalised, triggering motivation (i.e. cognitive internalisation). There are also stimuli that are not cognitively processed and lead directly to outcomes. In particular, the consumer, manufacturer and product-related outcomes were found to be mediated when analysing the role of behavioural facilitators (subjective norm, herd behaviour and social image), technology repair factors (response cost, perceived behavioural control and perceived planned obsolescence) and attitude to the right to repair. These are

the beliefs that are more directly associated with the repair intention, as people tend to mull over the costs/resources required for the behaviour and the social desirability of such behaviour (Choijil et al., 2022; Chueh & Huang, 2023; Foth, 2016; Marikyan et al., 2022; Wang et al., 2022). Hence, behavioural facilitators, technology repair factors and attitude to the right to repair increase the chances of the behaviour taking place. The effects of attachment, law efficacy, environmental concern and environmental activism are either non-significant or are directly related to outcomes without being mediated by repair intention. The interpretation of the findings can be made through the lenses of the categorisation of stimuli into conscious and subconscious ones (Jacoby, 2002). Attachment is a subconscious processing of stimulus, which does not necessarily lead to a cognitive and emotional reaction—i.e. motivation to exercise the right to repair. Environmental activism, environmental concern and law efficacy, in turn, involve conscious processing of the environmental conditions and their consequences. They may raise thoughts about the positive implications of the repair decision as the repair is a course of action to counteract ecological pollution and uphold consumers' rights. However, they are not sufficient prerequisites for individuals to normalise behaviour that would lead to such implications.

Theoretical Contributions and Practical Implications

The results of the study offer several contributions to the literature. First, the study contributes to the right-to-repair literature by providing a consumer's perspective on the antecedents and the implications of the decision to exercise such a right. In contrast to prior research that focused on the characteristics of consumers and their internal motivations to adopt the behaviour promoted by policies (Sommerfeld et al., 2017; Wang et al., 2018; Yang et al., 2019; Zhang et al., 2018), this study explored the factors beyond consumers and their personal motives. We examined repair practices as behaviour dependent on the beliefs about other stakeholders, such as the legal system and technology manufacturers, which have been underexplored so far. Such a perspective is important as it sheds light on the perspective on the repair practices of a typical consumer, who may have little knowledge of the technology beyond using it for its intended function (Bovea et al., 2017; Hernandez et al., 2020), and whose repair decision could be heavily reliant on the different factors of the external environment. This study brings much-needed insight into the role of the three groups of factors, namely the pro-environmental behaviour facilitators attributed to the social context, technology repair factors and legislation-related beliefs. These findings set new directions in the research on consumer behaviour around policies by drawing attention to the market-related, social

and regulatory forces that should be explored to facilitate the wider adoption of laws being introduced.

The second contribution of this study is to the literature on sustainable consumer behaviour, which has mainly revolved around the internal drivers of consumption or the social pressure forcing behaviour (e.g. Culiberg et al., 2022; Scott & Weaver, 2018; Zollo, 2021). Contrary to prior research (e.g. Culiberg et al., 2022; Scott & Weaver, 2018; Zollo, 2021), this paper examined repair intention as a form of sustainable behaviour influenced by the factors of the environment in which the behaviour is practised. As far as the implications are concerned, this study broadens the understanding of the implications of sustainable behaviour, given that researchers till now have paid attention mainly to the consequences for consumers (Acuti et al., 2022; Balderjahn et al., 2023; Ur Rahman et al., 2023). A comprehensive view of the interplay of the drivers of consumers' intention is important to holistically understand the reasons behind the normalisation of practices directed at environmental sustainability, upon which the perception of product performance and its manufacturer depends.

By applying the SOR framework, this study stands out from the existing research, which adopted the SOR perspective to focus on relatively homogenous factors of the external environment (e.g. promotion-related cues, technology characteristics, product and service attributes and socio-environmental forces) (Bhardwaj et al., 2023; Fang et al., 2023; Gupta et al., 2023; Hsieh, 2023; Kuo & Chen, 2023; Türkdemir et al., 2023). This research extends our understanding of the importance of the heterogeneous forces and the variance in the psychological dynamics among conscious and subconscious beliefs fuelling sustainable behaviour. Specifically, the results of the mediation analysis provided the grounds for differentiating the stimuli arousing internal reactions within the organism and the stimuli directly triggering responses. Mediation was confirmed when the tested factors were associated with the decision-making (e.g. cost analysis, social desirability) rather than its outcomes (e.g. environmental importance). The findings extend our understanding of the interrelation between the stimulus, organisation and response factors, which has received little validation in the literature so far (Bigne et al., 2020; Jacoby, 2002). This discovery points to the importance of categorising the types of stimuli to better understand the dynamics in the conscious and subconscious processes and reactions to stimuli underpinning sustainable behaviour.

The study offers practical implications to policymakers and hardware manufacturers. First, for the right to repair to become widely exercised, policymakers and manufacturers need to increase the public awareness that the law lowers the barriers to repair services (e.g. the lack of availability of hardware and software parts, lack of instructions on how to repair technology by oneself or third-party shops, the high

costs of spare parts). Policymakers should also have closer engagement with technology manufacturers to ensure more effective integration of information about consumers' right to repair in the technology packaging and distribution channels. These measures are important to lower the perception of repair costs and increase the perception of behavioural control over repair practices and law efficacy, which can drive repair intention. Secondly, the findings about the associations between intention to repair, perceived product performance, satisfaction and intention to engage with the manufacturer in the future offer recommendations to technology producers. During pre-purchase and post-purchase services, technology producers need to communicate to their customers about the repair services that they provide and the opportunities available to individuals to repair devices at third-party repair shops.

Conclusion, Limitations and Future Research Suggestions

This paper responds to the call in prior research to investigate the role of users in facilitating the sustainability implications of technology utilisation (Dwivedi et al., 2022; Papagiannidis & Marikyan, 2022) and brings comprehensive insights into the motives of green behaviour (Wallace & Buil, 2023). The paper addresses the gap in the current literature by exploring the factors that could motivate individuals to exercise their right-to-repair electronic devices and the perceived implications of repair practices. Firstly, the study tested a number of factors and their impact on the intention to repair devices instead of purchasing new ones. Secondly, the study found the following perceived implications of repair practices to be significant: decision satisfaction, emotional self-assurance, and perceived satisfaction with the manufacturer, intention to engage with the manufacturer in the future and performance expectancy after repair.

Such findings could be extended in a number of different ways. First, to test the conceptual model a cross-sectional research design was employed. To understand the causal relationships between the examined constructs, researchers could adopt a longitudinal or experimental research design. A longitudinal approach will also help address the limitation association with the measurement of the expected technology performance as an outcome variable. An evaluation of the actual performance after the repair of the device will help validate the findings of this study. Second, future studies could test the role of other variables, such as emotions or cognitive processes, which may mediate the impact environmental factors on repair intention. To move forward the understanding of the more complex relationships between the antecedents, repair intention and outcomes, scholars could use a fuzzy-set qualitative comparative analysis to

establish the configurations of factors and their relative importance in relation to repair intention and outcomes. Third, this study did not account for the effect of the difference in electronic devices on the motivation to repair them. Experimental research with different user groups would make it possible to understand whether the outcome is consistent for all manipulation settings or whether the variance could be attributed to the types of devices that users own. Also, when testing the relationships, it is worth controlling for the friendliness of device designs to upgrades and repairs, as this condition may be a facilitating factor in repair practices. Fourth, the decision to use repair services might be dependent on the time required to repair a device. In principle, right to repair will not just make repairs possible but also expedite the process as spare parts and instructions will be more readily available. Still, this cannot be granted and, hence, future research could address the limitation and test the moderating effect of time on the relationships in the model. Fifth, given that the USA was one of the few countries that has proposed the right-to-repair legislation in most of the states, the data for this study was collected from a US-based sample. Since similar policies have recently been introduced in other countries, such as the UK and EU, future studies could test the research model in other geographical areas (especially in countries that already have a repair culture, e.g. Japan).

Declarations

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