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The Influence of Sustainability on Psychological Ownership in Services Based on Temporary Access

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Abstract: The search for solutions that address the issues related to sustainability and overconsumption seeks to create social and ecological value while also creating economic value for companies. The sharing economy has emerged as a viable solution. Nonetheless, it also has side effects that need to be addressed, namely, the loss of perceived ownership. This study seeks to respond to the question, “What is the role of sustainability in the relationship between psychological ownership and its antecedents?” By addressing it, the outcome of our research expands the literature on psychological ownership by employing variables related to sustainability (self-perception as a sustainable consumer, community, and personal connection to the sustainable positioning of the company) as moderators between psychological ownership and its precedent variables. Our paper contributes to knowledge of access-based services and consumer goods that have, until this moment, been limitedly investigated. Drawing upon prior research results about psychological ownership and variables related to sustainability, we employed a scenario-based self-report and evaluated the variables’ moderating effect on psychological ownership. We used SEM and smartPLS software. Our findings demonstrate the moderating effect of the (1) degree of intermediation of the platform, especially in the (2) low-intermediation scenario, and the (3) communal connection stemming from the sustainable position of the company. This paper contributes to the literature regarding intermediation and company positioning as variables with potential use in studies of psychological ownership, services, and, mainly, sustainability. Additionally, presents managers and marketers the means to prevent the loss of perceived ownership while providing ways to leverage the sharing economy.

Keywords: access-based services; sustainability; psychological ownership; platform intermediation; sustainable consumer

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1. Introduction

Sustainability is currently a central issue in society, particularly the inefficiency in resource use and management associated with their production and disposal. In the last decade, significant surges in consumption patterns have contributed to the depletion of natural resources (Ahmad and Zhang [1]), making this issue imminent. In this context, numerous studies have warned of the need to adopt new and more sustainable economic models [2,3].

In order to respond to this scenario, companies are seeking solutions that go beyond just economic benefits [4] and also create ecological and social value. At the same time, this paradigm shift also meets consumers’ demand for the “green” and “responsible” positioning of companies [2,5]. Such positioning can facilitate the relationship between brands and consumers [6], along with meeting certain emotional demands from consumers who consider themselves sustainable [5,7] and are concerned about their impact on the planet.

The sharing economy, which aims to combat overconsumption [2,8], emerged in this context, facilitated by platform-mediated business models, where users share and exchange goods and services [9]. The sharing economy model attaches importance to both the role played by the platform's intermediation and the involved actors [10]. The role played by the platform and its degree of intermediation can, according to Costello and Reczek [11], be a major motivator for the adoption of more sustainable consumption models. Such motivation can arise from the socialisation between actors (suppliers and consumers), since when paying a person (vs. a company) for a service, feelings such as "helping someone" can emerge. In addition to the intermediation of the platform, temporary access to goods and services may be another major feature of the sharing economy, which is particularly present in the context of service activities [2,12]. Sharing allows access to a good, differentiating it from a service, which in turn is the result of an economic transaction [5]. Thus, the loss of ownership is one of the consequences of temporary access, which has an impact on the consumer's psychological formation [13–15] and behaviour [16].

The concept of psychological ownership was recently investigated and highlighted as an alternative to, or substitute for, material ownership by Fritze, Marchand, Eisingerich and Benkenstein [17]. This research theorised that psychological ownership is based on two theories: the extended self and symbolic self-completion. Such theories provided the means for Fritze et al. [17] to create and validate a model where certain preceding variables of psychological ownership impact, positively or negatively, this feeling.

Thus, our research presented here intends to continue the work of Fritze et al. [17] by analysing and measuring the impact that variables related to sustainability (degree of platform intermediation, self-perception as a sustainable consumer, and the sustainable positioning of the company) may have on the relationship between psychological ownership and its preceding variables.

To attain this objective, this research investigated the moderating impact of variables related to sustainability that have previously been tested in other studies related to the topic [11,18–20]. Such studies presented correlations between the effect that intermediation platforms have on social relations, consumers' sustainable behaviour, and their quest to reduce environmental impacts, as well as the use of brands positioned as sustainable as symbols of self-image (both for themselves and for social groups). It is theorised that the appeal of these may have a moderating impact on the feeling of psychological ownership proposed by Fritze et al. [17].

Hence, this research intends to analyse how to facilitate the adoption of shared services that fulfil the sense of material or psychological ownership desired by the consumer while engaging in more sustainable business models. Our research aims to answer the following question:

"What is the role of sustainability in the relationship between psychological ownership and its antecedents?"

This question is supported by a bibliometric analysis, further discussed in the methodology section, which reinforces the existing gap in the literature of studies that bridge the concepts of psychological ownership and variables related to sustainability, notably regarding consumer goods.

In addition to addressing the literature gap, our study heeds the call from several research suggestions to analyse consumer behaviour towards sustainability, consumer-goods-based services, and psychological ownership [1,2,16,21], consequently providing further support for the significance of our question. Moreover, this paper aims to broaden the psychological ownership model towards other sectors of management by testing and establishing variables that can be used theoretically and managerially in sustainability efforts.

First, we present a comprehensive review of the literature and the aims of this study. We subsequently detail the methodology, describing the survey utilised in the data collection by means of the platform MTurk. This section also presents our hypotheses, our conceptual research model, and further information on the data collection process.

Thereafter, we analyse the impact of sustainability on psychological ownership using structural equation models with partial least squares through smartPLS version 3.3.3.

The final sections present our results and analyse the validity and reliability of the proposed model, as well as the adequacy and validation of the conceptual model. The results are then discussed based on the hypotheses raised and the literature.

Lastly, we present our conclusions, underlining this study's contribution to the literature and to management, the limitations encountered, and suggestions for future research.

2. Literature Review

2.1. Sustainability, Overconsumption, and Sharing Economy

Several terms have been used to name environmentally acceptable products and segments: social, biodegradable, etc. [16]. According to White et al. [2], beyond directing efforts to a segment, marketers can “expand their market for the mutual benefit of the company and planet”. Thus, companies are using marketing actions and sustainable business proposals in an attempt to respond to social needs as well as to position themselves in this segment [1,21]. By communicating the ways in which they deal with sustainability issues, companies create a favourable positioning in the market [22]. Furthermore, consumers look for ways to assume responsibility for the consequences of their consumption and, in some ways, reduce the guilt felt by unsustainable consumption behaviours [5]. Additionally, consumers also make use of symbols related to sustainability [23] in order to shape their image positively and, ultimately, transmit it to society.

The sharing economy has the potential to contribute to sustainability by diminishing overconsumption [24] due to the sharing of a single item by several consumers [9]. The sharing economy is also considered a socio-economic trend of great importance since it has the potential to contribute to individual and collective sustainable development [25]. It is also aligned with the Sustainable Development Goals from the United Nations, which propose alternative approaches to consumption (e.g., the circular economy) as a “way towards sustainable development” [26]. In addition, it also presents an opportunity for consumers and businesses to innovate, create value, and engage in a myriad of sustainable practises [9].

Moreover, there is a need for consistency between marketing actions, the company's positioning, and the actions effectively carried out by organisations [27]. Regarding sustainability, Boons and Lüdeke-Freund [28] pointed out some elements that are necessary to achieve a sustainable business model. They are (1) a value proposition that provides “ecological and/or social value alongside economic value”, (2) the Supply Chain, in which those involved take responsibility for themselves and are in favour of the company's proposal, (3) an interface with the client, encouraging them to take responsibility for the consequences of their consumption, and, finally, (4) a financial model that appropriately distributes its results among the actors involved [28]. These elements are reinforced by communication, which must promote knowledge of the cause, be relevant and significant, and be able to transmit it to the consumer [27].

Studies regarding overconsumption are abundant in the fields of marketing and sustainability [4,29]. The report to the Sustainable Development Commission (Sustainable Development Commission [30]) demonstrates the failure of the current consumption model since the established limits have already been exceeded (climate change, loss of biosphere integrity, etc.). The report stimulates a transition to a more sustainable economic model based on a decrease in consumption [31]. It is possible for marketing, through its involvement in pro-sustainability behaviours and programmes designed for this purpose, to increase the sustainability and responsibility of its products [32], with the sharing economy being one of the suggested models [2,9,25]. In addition to this change, there is also an active pursuit by consumers for more sustainable models [1,16]. The call for conscious consumption emerges as a social demand, and companies have increasingly

become aware of this [1]. A deeper analysis of consumer behaviour is therefore important. The following section explores which concepts related to sustainability—on the consumer side—are relevant.

2.1.1. Sustainable Consumer

Recent studies indicate changes in consumer behaviour [21], indicating the existence of a relationship between sustainable behaviour and buying behaviour [1,2,16]. Thus, this section addresses the motivational effects that sustainability can have on consumption [2,16] and triggering feelings [5,7], in addition to analysing the use of symbols for self-image [33,34]. In their work, White et al. [2] defined sustainable behaviour as:

“(consumers) actions that result in decreases in adverse environmental impacts as well as decreased utilization of natural resources across the lifecycle of the product” (p. 24).

In contrast, several previous studies prove that sustainable attitude and environmental awareness are major predictors of consumption behaviour and influence the intention of sustainable consumption, especially when there is concern about “consumer health,..., causing significant damage to the environment, ..., consuming a disproportionate amount of energy, unnecessary waste, etc.” (p. 46) [8]. Such concerns can even increase the amount willingly paid [16]. For instance, Farmer, Breazeale, Stevens and Waites [35] demonstrated that products distinguished as sustainable increased the prosocial perception of consumers, influencing their consumption. Consumers have adopted a more sustainable profile as a mechanism to mitigate the effects that their behaviour may have on others and the environment [1]. This change is observed in studies that have analysed the role of marketing in sustainability and in the mitigation of the environmental impacts of consumption [16,21,36]. Changes in consumer behaviour should stimulate marketing to see them as opportunities to develop and implement new approaches [37]. Elements of this “pro-environmental” behaviour, argue Iacobucci et al. [37], arise from consumers’ desire to blame a person responsible for the current environmental situation, in addition to reducing the blame for their own environmental impact [5,7]. By understanding that their choices can positively impact the environment, a feeling of self-efficacy emerges in the consumer, diminishing the feeling of guilt and becoming a major factor in decision making [7].

Other effects perceived through sustainable behaviour refer to self-image (as a sustainable consumer) and integration into social norms [38]. Regarding self-image, this characteristic relates to the search for symbols that transmit to themselves and others an “ideal version” of themselves [17,33]. The same authors mentioned that the absence of symbols intrinsic to a person can stimulate the search for external symbols (such as titles and self-definitions), while McCracken [34] related these to consumer goods. In this matter, McCracken [34] mentions that consumer goods outperform their utilitarian role—i.e., consumers use the meaningfulness of the “object” by transferring its concept to themselves. Similarly, Kimura et al. [23] also mentioned that, in addition to intrinsic buying motivations, consumers use sustainable products as symbols to enhance their reputation. Emotional effects are also observed in the study by Hoeffler and Keller [27], which concludes that consumers can use sustainable values to evoke feelings of generosity and good deeds.

2.1.2. Sharing Economy, Intermediation Platforms, and Degree of Intermediation

As previously mentioned, the sharing economy is one of the promising models in the field of sustainability [25,39]. Given its current growth as a business model [9,24] and its ability to meet sustainable demands [9], this model can help companies increase their businesses’ sustainability [40] while achieving economic value. Sharing gained academic relevance from work by Rifkin [41], who initially analysed the subject in the B2B area [39], where the use of digital platforms serves merely as a means of service aggregation. However, uncertainties remain about its implications in other spheres since the potential of the sharing economy is still minimised and has been analysed only in traditional markets [24].

Despite many studies on the economics of sharing [9,10,24], its definition is not yet unique. Its main features, particularly the use of intermediation platforms [10,24] between suppliers and consumers [9] with temporary access [24,42], will be discussed in the following sections.

An intermediation platform can be defined as a basic system that, enhanced by technology, allows the creation of multiple functions and adaptive solutions, aggregating services, promoting the exchange of value, and articulating the relationship between demand and supply [43]. Bardhi and Eckhardt [39] add the role of “managing and coordinating the exchange between network actors” to the definition, introducing the possibility of bringing consumers and suppliers closer or making them more distant. The use of platforms also contributes to reliable behaviour, encouraging the consumer’s attitude while providing reliability to the operation [10]. On intermediation platforms, common in the sharing economy, the consumer deals with two entities: (1) the platform itself—which is usually a profit-focused company—and (2) an entity or individual that offers a good or service to the market [11].

This section presents the concepts used for the intermediation platform (types and coverage), as well as differentiates between degrees of intermediation based on different studies [10,11,44]. The analysis intends to demonstrate the impact of intermediation platforms on consumers, as well as their perception of sustainability. In this work, the term platform will be applied to systems that allow the creation of multiple functions and solutions [43] while being “a mediator of the flow of goods and services between suppliers and consumers” [10,11,43]. It is important to differentiate the instrument “intermediation platform” from the concept “degree of intermediation”. According to Costello and Reczek [11], the degree of intermediation corresponds to the operational role played by the platform (how much it participates in the transaction) and the level of consociality, which is the presence of social interaction between the consumer and supplier. Arcidiacono et al. [43] also argued that, without considering such interactions, studies on platforms cannot occur. Perren and Kozinets [10] analysed the degree of intermediation of platforms under these same aspects: (1) the operational role played by the platform and (2) the level of social interaction allowed between the consumer and supplier (consociety). The authors understand (1) the operational role of the platform and the set of all transactions that occurred through it (payment, order processing, order shipping, evaluation systems, troubleshooting, etc.) and (2) the level of social interaction, which is the frequency and quantity of social interaction between suppliers and consumers (price negotiation, pick-up and delivery locations, time, sharing of means of contact, etc. [10]). As a result of these two dimensions, the authors proposed the Matrix Lateral Exchange Market Types, exemplifying four possible degrees of platform intermediation, with different operational levels performed by it and different measures of interaction allowed between the consumer and supplier:

1. Platform with Small Operational Role and High Social Interaction:
 - The service flows between the consumer and supplier outside the platform.
 - The platform only facilitates contact.
2. Platform with Small Operational Role and Low Social Interaction:
 - The platform only equips the suppliers.
 - There is low involvement between consumers and suppliers.
3. Platform with Large Operational Role and High Social Interaction:
 - The service flows between the consumer and supplier through the platform.
4. Platform with Large Operational Role and Low Social Interaction:
 - The service flows from the provider to the platform and, from there, to the consumer.
 - All transactions and contacts are handled by the platform.

The role of platform intermediation is also highlighted in the studies by Borg et al. [5] and Bardhi and Eckhardt [39], demonstrating that these platforms can inhibit the connection between the object and the individual due to their role as agents who manage and coordinate the exchange between network actors. Arcidiacono et al. [43] also stated that, in addition to social exchanges, the company's strategic values are also transmitted to the consumer, transforming them into prosumers. Another emerging effect is the community sensation, once feelings of affinity or affiliation between users emerge [27].

Other studies and authors have also analysed the service provided by the platform from other aspects, such as the work by Srnicek [44]. This author discussed the ownership of goods or services and highlighted that, while some platforms mainly intermediate products (advertising intermediation, data storage, and industrial optimisation), others, such as lean platforms, focus on minimising ownership. This effect happens because lean platforms own only data and analytics, while the supplier is the owner of the good or service provided.

Moreover, interaction can become a differentiating element when the feeling of helping others, stemming from the interactions between actors, develops as an influencing element of the purchasing decision, since it can arouse the hedonic benefits of a warm glow [11]. The feeling of a warm glow can be described by emotions such as generosity, honesty, or kindness, among others [45,46]. For the consumer, the feeling of helping others causes a confluence of individual desire and the needs of others. The study by Andrews et al. [32] demonstrated higher likeness of purchase when this feeling is present. Costello and Reczek [11] refer to this perception of helping someone as "adopting empathy lenses". When this sensation is related to the service provider (vs. an intermediary company), it makes its promotion and adoption more favourable if compared to other models observed in the sharing economy [11,13]. In contrast, Arcidiacono et al. [43] pointed out the political bias that platforms can present, since they usually incur precariousness because of the labour employed, which is another possible impact on consumer empathy. In relation to the sharing economy, in summary, these authors mention decreases in consumption, the degree of intermediation of the platform, and temporary access, which will later be related to psychological ownership.

2.2. Temporary Access to Goods and Services

Intending to focus efforts on an important characteristic of the consumption process, where there is no possession, we included the subject of temporary access to goods and services in this research. Temporary access is associated with sharing, as it does not involve the exchange of ownership [39]. Lovelock and Gummesson [12] define temporary access as:

"... marketing exchanges that do not result in a transfer of ownership from seller to buyer,... It posits that services offer benefits through access or temporary possession, instead of ownership, with payments taking the form of rentals or access fees." (p. 20)

Thus, temporary access to goods and services can contribute to sustainability through a decrease in consumption [17,24], since it provides access to a part of the life cycle of a good to many people [10].

Temporary access is also seen as one of the differentiating elements between services and consumer goods. For further information, see the seminal work of Lovelock and Gummesson [12], which added this feature to the traditional paradigm of service characteristics (IHIP—Intangibility, Heterogeneity, Inseparability, and Perishability). Considering this paradigm, Borg et al. [5] differentiated services from temporary access (i.e., rental of lawnmowers for customers vs. gardening services provided by the company). Access has some characteristics of its own when compared to material ownership. Bardhi and Eckhardt [39] list six: (1) temporality (short term), (2) anonymity (personal or public use), and (3) the type of object being accessed (experimental vs. functional and materiality).

Three other additional characteristics are more related to the topics identified above. The fourth item is (4) market intermediation, which, as mentioned before, may affect the relationship between the user and object, as well as the rules governing the intermediation. The fifth item addresses (5) consumer involvement and can also be related to the intermediation platform once it describes the relationship with the service. This characteristic impacts the level of co-creation with the consumer, thus affecting their experience with the company and the suppliers involved [39]. Finally, the sixth item mentioned by Bardhi and Eckhardt [39] is (6) political consumption. In this case, the consumer uses access (vs. ownership) as a personal positioning tool, with an impact on its usage and its adoption as a symbol (for themselves and for reference groups). Material ownership also has psychological impacts since it can generate a mitigating effect on individual insecurity [19]. The study by Rindfleisch et al. [19] suggests that materialistic individuals may be more insecure and have lower self-esteem, using goods as a way to supply the lack of safety.

Other associations between ownership and psychological conditions can be seen in the work of Hennig-Thurau, Sattler and Henning [47], where the consumption of access-based services is inversely related to material ownership or by enabling a way to establish social connections with other users of the service.

Temporary Access and the Sharing Economy

The definitions of the sharing economy presented above are anchored (mainly) in the concept of temporary access as an alternative to the material possession of goods or services [9]. The analysis presented here is important because it deepens the knowledge about temporary access to goods and services by including the sustainability dimension, represented here by the sharing economy. In addition, other authors have also highlighted the importance of studying consumer behaviour in relation to the sharing economy and its consequences [13,14,39,48,49].

Belk [13], one of the authors who has investigated the implications and psychological interactions associated with sharing, exemplifies that sharing can take different forms, such as gifting, sharing, or exchanging commodities. This distinction is important because the concepts of gifting and sharing have related roots, differentiating them from commodity exchanges, which are perceived as trade. Another perceived effect on sharing is the potential to increase the sense of belonging and community [13]. Thus, it is perceived that sharing demonstrates a greater range of social impacts as it emerges as a form of alternative consumption [17], which encourages further research. In addition, the behaviour of users in accessing goods and services without material ownership [50] deserves to be investigated at the behaviour level—emotional, relational, sustainable, etc. [9,13,39]. Authors in this field claim that material ownership is linked to the emotional constitution of an individual and, in a way, can also constitute a barrier to consumption based on temporary access [14,17,39].

In their work, Fritze et al. [17] stated that, more than combating the reduction in material ownership, the service manager's goal must change and redirect efforts towards access-based offerings that outpace material ownership through psychological ownership.

2.3. Psychological Ownership

For the definition of psychological ownership, Pierce, Kostova and Dirks [51] "... conceptually define psychological ownership as the state in which individuals feel as though the target of ownership or a piece of that target is "theirs" (i.e., "It is mine!")" [15,51].

Pierce et al. [15] cite three main characteristics of psychological ownership. First, psychological ownership is based on the meaning and emotions commonly associated with what is considered "mine-ness" or "ours-ness", answering the question, "What do I feel is mine?" Second, it reflects the relationship between an individual and an object (material or not), in which the individual experiences a close connection between the object and the self. Finally, psychological ownership is complex and composed of a cognitive and

affective core, which reflects the intellectual awareness, thoughts, and beliefs about the target of ownership.

By relying on the concepts described above, Fritze et al. [17] presented the findings that the psychological ownership (P.O.) of a service with temporary access has the potential to mitigate the loss of material ownership. Due to the decrease in the perception of material ownership from services based on temporary access, the premise of companies that offer goods and services is the need to increase—or create—feelings of ownership in consumers. This is due to the importance attributed to ownership by humans since it influences their attitudes, motivations, and behaviour [52]. Its importance results from the psychological effects associated with objects perceived “more attractive and rated more favourably than objects that are not owned” [15].

The feeling of owning lies at the centre of psychological ownership [53] being an omnipresent feeling, referring to tangible items or not, based on material and legal ownership or not [52].

Thus, the next section outlines the basis of the model developed by these authors, who claim that it is possible to replace, or stimulate, the sensation of material ownership through P.O. This notion is important because, according to Belk [14], consumer behaviour can be explained by the meanings attributed to goods. It then allows us to recreate the sense of perceived ownership through access [15,39,48].

Psychological Ownership Model

The concept of P.O. is based on the theory of the extended self due to the sense of ownership granted to a tangible or intangible object (even those of which the observer is not the owner), by which it expresses, confirms, or establishes a feeling of “being” through “having” [17]. Belk [48] summarises four ways of incorporating possessions into the extended self: (1) by controlling an object for its own use; (2) by creating it ourselves; (3) by having knowledge of an object; or (4) through proximity and habituation—be it a person, place, or item. This assertion synthesises the relevance of this connection [17] by theorising that “people seek to acquire and display symbols, to themselves or others, and in physical and nonphysical form, that relate strongly to their ideal self” [17]. It is also possible that this extended-self sphere may have its perception increased through sharing [13].

Then, in association with the theory of the extended self, Fritze et al. [17] used the theory of symbolic self-completion, or SSC, to explain the transfer of services and goods to the extended self. SSC postulates that individuals seek ways to bestow definitions on themselves and that, in their absence, they will seek alternative symbols that supersede these faults [33].

In view of such a theory, Fritze et al. [17] stated that such objects can facilitate a favourable self-perception, and it is possible to exchange them if they fail to achieve the goal. Through the juxtaposition of such studies, Fritze et al. [17] theorised:

“By synthesizing current work on the extended self and symbolic self-completion as an overarching theoretical framework, we theorize that, despite the general importance of ownership for humans, people do not simply hold onto all physical possessions. Rather, they may be willing to dispose of them if a non-physical entity, as a symbolic substitute, is available and salient due to psychological ownership.” (pg. 23)

To validate their theory, Fritze et al. [17] created a model composed of two stages: (1) a test of the predictive effect of the antecedents on psychological ownership and (2) a test of the consequences of P.O. in relation to the decrease in material ownership resulting from temporary access.

In the first test, three characteristics of services were identified as antecedents of P.O.: intimacy, identity, and communal identification. These antecedents were based on the work of Pierce et al. [51]. These will be featured in detail later, as they constitute the fundamental basis of our research model.

In the second test, the impact of P.O. on the reduction in material ownership was analysed through the substitutive value of psychological ownership and continuous use. The goal of the model provided by Fritze et al. [17] was to determine the effects of P.O. as a substitute for the reduction in material ownership.

The author summarised the study as intending to “... determine whether the access-based service can meet the need for ownership...” [17], with positive results in both stages. Figure 1 illustrates the author’s model:

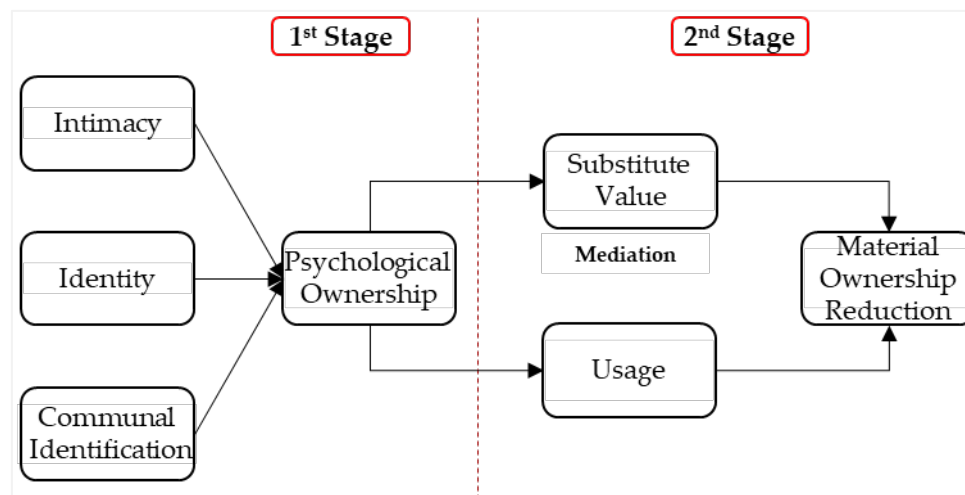


Figure 1. Adapted from Fritze et al. [17] to illustrate the author’s framework. Source: Fritze et al. [17].

2.4. Antecedents of the Psychological Ownership Model

This section demonstrates how the antecedents of intimacy, identity, and communal identification were established. The model of psychological ownership by Fritze et al. [17] was based on the definition of the antecedents of psychological ownership by Pierce et al. [51]. Pierce et al. [51] argue that P.O. emerges from three factors: (1) efficacy, (2) self-identification, and (3) “having a place”.

2.4.1. Intimacy

The definition utilised by Fritze et al. [17] for intimacy is that of “a feeling of connection with the service stemming from the perceived expertise to use it, [17]” from which P.O. must emerge. This definition derives from the concept of Pierce et al. [51] on efficacy, which is described as the effect that “allows individuals to explore and alter their environment, thus satisfying their innate need to be efficacious” [17]. It is thus stipulated that the origin of this antecedent comes from the individual’s search to obtain sufficient intimacy with an object to acquire the necessary knowledge to influence the environment when desired.

This characteristic was similarly evidenced by Aaker, Fournier and Brasel [54], who related intimacy to the depth of the consumer’s understanding of a brand or service. The authors also noted that the degree of enthusiasm in the relationship increases the perception of intimacy and connection with the service. This idea is related to P.O. since, being the owner, the individual regulates access to the object and, consequently, its effect on the environment [15].

This effect provokes a feeling of power, as it creates a “fusion” between the target of possession and the “self” [15]. Fritze et al. [17] extended this effect to the scope of services. In contrast to the material ownership of objects, access-based services are temporary and elusive [17]. Thus, there is an impairment in the perception of the individual’s intimacy with the service, affecting the individual–service relationship.

Stern [55] defined intimacy and highlighted five attributes related to the scope of marketing: (1) communication, (2) commitment, (3) caring, (4) comfort, and (5) trust. For communication (1) to occur, it is necessary for consumers to share information about themselves (cognitively and emotionally) with the service provider. The encounter between the consumer, who is willing to divide, and the supplier, who is willing to listen, can evoke feelings of competence, mastery, and well-being [55]. Commitment (2) is closely linked to communication. This originates in the “we” created between those who speak and those who listen, where a bond arises due to the perception of care for the well-being of others, generating positive feelings [55]. Caring (3) is related to altruism rather than the requirement for reciprocity; that is, it is more important to treat those who need more than to demand equity in the relationship. Comfort (4), or compatibility, is related to mutual engagement in an action between consumer and supplier. Finally, (5) trust, or conflict resolution, involves listening, negotiation, and conciliation skills.

Thus, when intimacy is perceived in access-based services, bonds of well-being stem from the service, and an intimacy connection may emerge [17].

2.4.2. Identity

The definition of identity adopted is “any category with which a consumer is associated, being favourable to what a person in this category seems, thinks, feels, and does” [56]. In a simplified way, identity is the “interface between the individual and society” [15], and according to the authors, P.O., in association with an external object, can help people define themselves and express their self-identity to third parties. This interface refers to the sum of “categories” that are pleasant to the consumer and that convey an image of how he or she looks, thinks, and feels—whether they are consciously chosen or not [56]. This categorisation is important because, from the moment the individual begins to incorporate it into his or her perception of who he or she is, a process starts whereby the individual becomes this type of person [56].

For identification to be significant, it is necessary for the individual to choose categories that represent a clear picture of the type of person intended. It can be an ideal, an idea coming from a group or individual, or even something abstract [56]. To that end, Reed et al. [56] state that people use various associations ($A_1, A_2, \dots, A_x$) that, once assimilated, form one or more identities ($I_\alpha, I_\beta, I_\theta, \dots$). These “identities” are then used as indicators that allow the individual to evaluate his progress towards this representation.

It is important to highlight that these associations may overlap in one or more identities [56]. For example, the aggressive category can be associated with a professional identity (e.g., Wall Street trader) as well as an athlete’s identity. According to the same authors, these associations can change over time due to cultural and social factors. Bardhi and Eckhardt [57] indicated that the search for access-based services can be motivated by the desire to identify them with an “environmentally sustainable” category.

Identity is also related to the readiness with which individuals make decisions and have behaviours consistent with the idea they have of themselves [58], making it a motivator for decision making and behaviour. This process is also detailed in the identity association principle from Reed et al. [56], where the authors affirm that the self-concept of an individual is associated with behaviours related to identity. These principles, according to Reed et al. [56], are (1) identity salience, the strength of the relationship between identity and the self; then, (2) identity association, where, unconsciously, there is an association of a stimulus with a salient identity; (3) identity relevance, a deliberate evaluation of the relevance of the stimulus to identity; and (4) identity verification, where individuals manage behaviours aimed at strengthening identity. Finally, the authors also refer to (5) identity conflict, which allows individuals to manage multiple identities. The need for self-expression through objects as a symbols that relate to identity can create a feeling of psychological ownership [51].

Fritze et al. [17] reached a similar conclusion when verifying that, when relevant to identity, access-based services have a positive relationship with the development of

psychological ownership. Based on the social perception of objects or services, people instrumentalise their performance according to their intended identity [17].

2.4.3. Communal Identification

The definition of communal identification by Fritze et al. [17] is a “sense that they “have a place” when they perceive their affiliation with an environment” [17]. Fritze et al. [17] inferred that communal identification is important because “communal consumption relationships create value because they make an individual customer feel like part of a like-minded group” [17].

Communal identification is based on the need for “having a place” [51], which is highly intertwined with the human need to have a home, territorial space, or neighbourhood (something collectively possessed) [15]. According to Porteous [59], territoriality arises from the satisfaction of three main elements: security, identity, and stimulation [59]. This personal space, “yours”, helps to transmit a certain sense of security, thus motivating the need for ownership [15,59].

The study by Kirk, Peck and Swain [60] demonstrates that even objects can evoke the feeling of “home” or territoriality. This concept can also be extended to something intangible, such as a socially constructed environment [17].

The interaction between individuals with similar interests and knowledge can also generate this sense of community [47,61], whether motivated by the survival of the community [62] or by sharing among members of a group [61]. Sharing may foster communal feelings, as it creates bonds with others [13,47].

Sharing is relevant because, in addition to being a characteristic of services based on temporary access, it is linked to socialisation [47]. This is noteworthy since the adoption of certain brands and services encourages communal relations, as well as a connection with a collective identity [54].

In summary, Fritze et al. [17] proposed and tested that P.O. has the potential to serve as a substitute for material ownership once feelings of intimacy, identity, and communal identification exist.

Our literature review found evidence that relates the degree of intermediation and characteristics of intimacy [10,11,44] by allowing, among others, the creation of bonds between individuals [13,47,61]. Evidence also shows that the self-perception of a “Sustainable Consumer” may relate to identity [56,58], as they might make use of it to communicate a desired identity [39] whilst using the sustainable positioning of a company to reinforce their identity [20,46,54,63]. Lastly, several works, including that of Aaker [54], relate the use of brands to communal feelings.

3. Research Methodology and Design

3.1. Bibliometric Research

In order to identify the current state of the literature on the topics relevant to this work, to define the main concepts and authors of each topic, and to prove their relevance, innovation, and originality [64], a bibliometric analysis was performed. To conduct this analysis, we used the strategy suggested by Okoli [65], which is divided into three stages. (1) In the first stage, the term “Sustainable Marketing” was searched in the repository of the Web of Science platform, considered the “gold standard” for bibliometric use [66], to identify the articles with the highest number of citations [67]. The search term “Sustainable Marketing” is in line with the composition used by Jan et al. [67] (i.e., “Sustainable Development”), with the terms having a close connection [8,22], recognising its importance in sustainability research and managerial practises [67,68].

The 10 best-positioned articles were read with the intention of identifying research suggestions and knowledge gaps. This first step allowed us to determine the main authors (e.g., [2,4,8,9,24,37]) and to identify suggestions for future studies that related the theme of marketing to sustainability. From the suggestions for future research given by these

authors emerged the theme of temporary access related to psychological ownership. A query on this topic presented in free research resulted in a low number of publications. This result corroborates the definition of the main research topic and the term to be researched in a systematic literature review (SLR).

The second stage of the analysis (2) was conducted on 7 January 2021, in the Web of Science repository, using the keyword “psychological ownership”. We researched articles published in the last 7 years (i.e., between 2015 and 2021), the period selected to carry out the research in Tidström [69]. The research included only articles (Article filter), excluding Proceedings Papers, Review Articles, Book Reviews, Editorial Materials, Conference Papers, opinion articles, or articles where keywords only appeared in the references. Then, theme filters were also applied to exclude publications not relevant to the subject of this research, and articles with subjects associated with medicine, engineering, organisational processes, zootechny, and computer sciences were excluded. Finally, the filter was also applied to select only publications in the English language. The search results for the keyword “psychological ownership” listed 810 papers after the mentioned exclusions.

In the third step, (3) theoretical screening was carried out through the analysis of the title, abstract, and keywords, aiming to identify the works pertinent to the subject [58] and thus identify studies related to consuming goods and services. As a result, 14 categories were created (Figure 2: of these, 13 were classified as not relevant to the topic (organisational/HR, social studies, urban/forest, animals, health, other, family business, technology, brand, investment/banking, product features, charity, social media), totalling 734 articles. The 14th category contains the remaining 76 articles considered relevant for this consumption-related research.

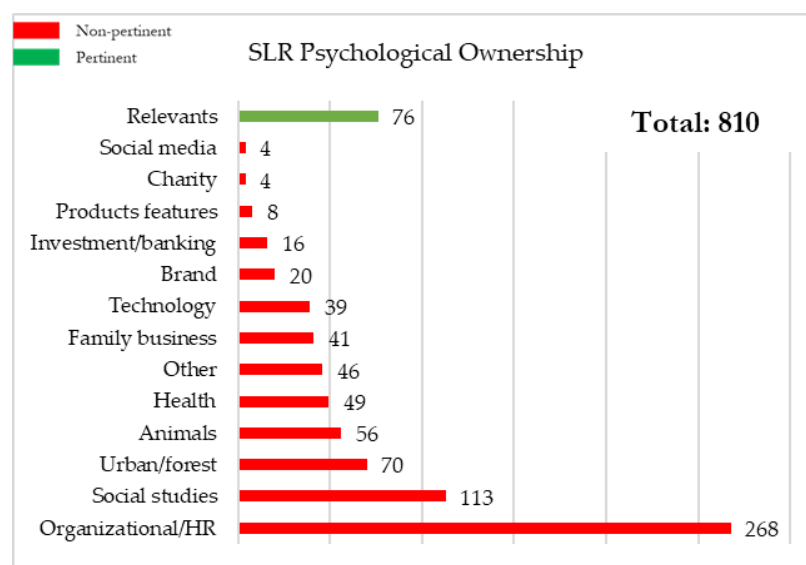


Figure 2. Theoretical screening and categorisation. Source: Own work.

The 76 relevant articles on psychological ownership, services, and sustainability were subcategorized after an in-depth reading of them. Figure 3 shows the subcategories created. Among these results, the article “Access-Based Services as Substitutes for Material Possessions: The Role of Psychological Ownership” by Fritze et al. [17] suggests that research be developed to continue the study of its P.O. model, also suggesting that future projects deepen the knowledge of psychological ownership, especially with research related to services with access to consumer goods.

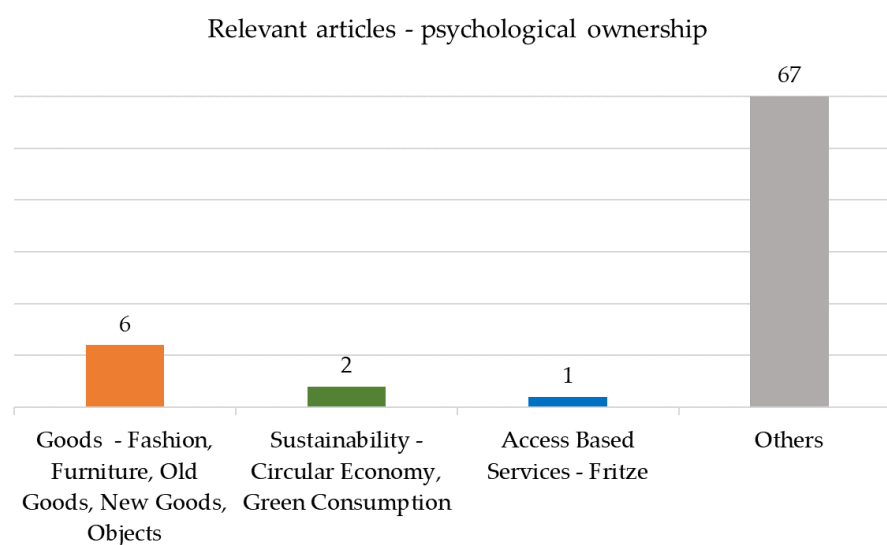


Figure 3. Relevant articles—psychological ownership. Source: own elaboration.

Of the articles classified as relevant, in addition to the work of Fritze et al. [17], only eight are related to consumer goods (6) and/or sustainability (2). This differentiation is important because, in line with the suggestion of continuity in the research of Fritze et al. [17], it is advised to analyse P.O. regarding products (i.e., clothing sharing) since other studies have already smoothed the level of services (i.e., Carsharing: Uber).

Based on the studies analysed during the literature review and following the model of Fritze et al. [17], the following section presents the conceptual model and formulates the hypotheses to be tested. It also presents how the research was conducted and operationalised and the results that it obtained in order to answer the research question.

The methodology applicable to this section includes a bibliometric analysis of the main topics discussed for the subsequent formulation of the hypotheses to be tested and the description of data collection and analysis.

3.2. Hypotheses and Conceptual Model

The work of Fritze et al. [17] verified that the feeling of psychological ownership may arise from services based on temporary access when antecedent intimacy is perceived, that is, a connection with such services. This connection may be greater or lower, depending on the degree of intermediation allowed by the platform [10,11,44]. This condition is relevant since intermediation is one of the main characteristics of the sharing economy [2,24].

Borg et al. [5] stated that, based on the degree of platform intermediation, the relationship between the feeling of intimacy and ownership may be affected. Hence, the degree of intermediation is high when there is little social interaction—and the platform assumes all the negotiation, and low when there is greater social interaction between the consumer and supplier. Similarly, Stern [55] cites the possibility of intimacy emerging or being strengthened when certain attributes are stimulated (communication, commitment, caring, comfort, and trust). Depending on the format adopted by the platform and the interactions between authors, the feeling of intimacy can be modified [11].

Thus, we hypothesise the following:

H1. *The degree of intermediation by the platform moderates the relationship between intimacy and psychological ownership.*

High degrees of intermediation have the potential to inhibit social interaction [5,39], risking the emergence of a sense of utilitarianism [39,57]—similar to that of many other services (e.g., Hotel). It is theorised that with low degrees of interaction on the platform,

combined with high social interaction, the feeling of a “warm glow” may arise. Such a feeling can arise when the consumer has the feeling of helping someone [10,11,45,46].

This idea becomes relevant to antecedent intimacy since the feeling of helping others is also a motivator in the purchase decision [11,32], thus becoming a stimulus to strengthen social bonds.

To complement hypothesis 1, it is estimated that when faced with a situation of low intermediation by the platform, feelings of a “warm glow” and of helping others can emerge, strengthening and positively moderating the relationship between intimacy and psychological ownership. Therefore, we theorised that:

H1.a. *The degree of intermediation of the platform positively moderates the relationship between intimacy and psychological ownership when there is low intermediation by the platform.*

Because of consumers’ need to use symbols to convey their own ideas [56,58], it is possible that their self-identification as “sustainable consumers” may influence psychological ownership.

White et al. [2] stated that sustainable behaviour indicates a willingness to improve the quality of life and expresses concerns for future generations. Similarly, Bardhi and Eckhardt [39] theorised that consumers use their power of choice over the manner of consumption as a “strategy to articulate and promote their ideological interests for society, companies, and government” (p. 885). This self-identification related to “sustainable” consumption also has the purpose of reducing guilt for the impact on the environment caused by the consumer [7].

The importance of congruence between the information transmitted by the consumer and the desired identity is evident [56]. This coherence makes it possible to appropriate symbols that help define and communicate it efficiently [15,17].

It is speculated that, by giving up material ownership for access, consumers seek to self-identify and signal their sustainable behaviour [39] in order to self-assign missing symbols to themselves [33]. The second hypothesis is then formulated:

H2. *Self-perception as a “Sustainable Consumer” positively moderates the relationship between identity and the sense of psychological ownership.*

According to Fritze et al. [17], the sense of belonging to a family-like environment evokes a sense of communal identification. Perren and Kozinets [10] mentioned that the mere fact of sharing a room can invoke communal feelings (e.g., Hotel).

Sharing generates a sense of community by enabling the creation of bonds with others [13,47,61] and may even increase the probability of a purchase [21].

Acceptance in groups may also be moderated by the adoption of certain brands [20], a characteristic also evident in studies on brand communities [63,70], since it has social, cognitive, and emotional components [70,71].

It is then articulated that by positioning itself as a sustainable company and by making use of service models based on access, such positioning can positively influence the relationship between communal identification and P.O. Thus, we hypothesised that:

H3. *The communal connection stems from the company’s “sustainable” positioning, which positively moderates the relationship between communal identification and psychological ownership.*

It is also expected that, given the sustainable positioning and business model—employed by the company in its communication—consumers will use such information to reinforce their identities [20,46,54,63].

It is possible that companies that offer certain “symbols” facilitate the saliency of the identity desired by the consumer, allowing products and brands to be used to present an

image to others. The acceptance of such symbols would also serve as feedback from others to verify and maintain their identities [27].

Thus, it is expected that there will be some degree of moderation between identity and P.O. through the sustainable positioning communicated and practised by the company. Hence, we hypothesise that:

H4. *The personal connection to the “sustainable” positioning of the company positively moderates the relationship between identity and psychological ownership.*

Based on the literature review of the previously tested model of P.O. and its antecedents and the hypotheses formulated, our conceptual model is shown Figure 4.

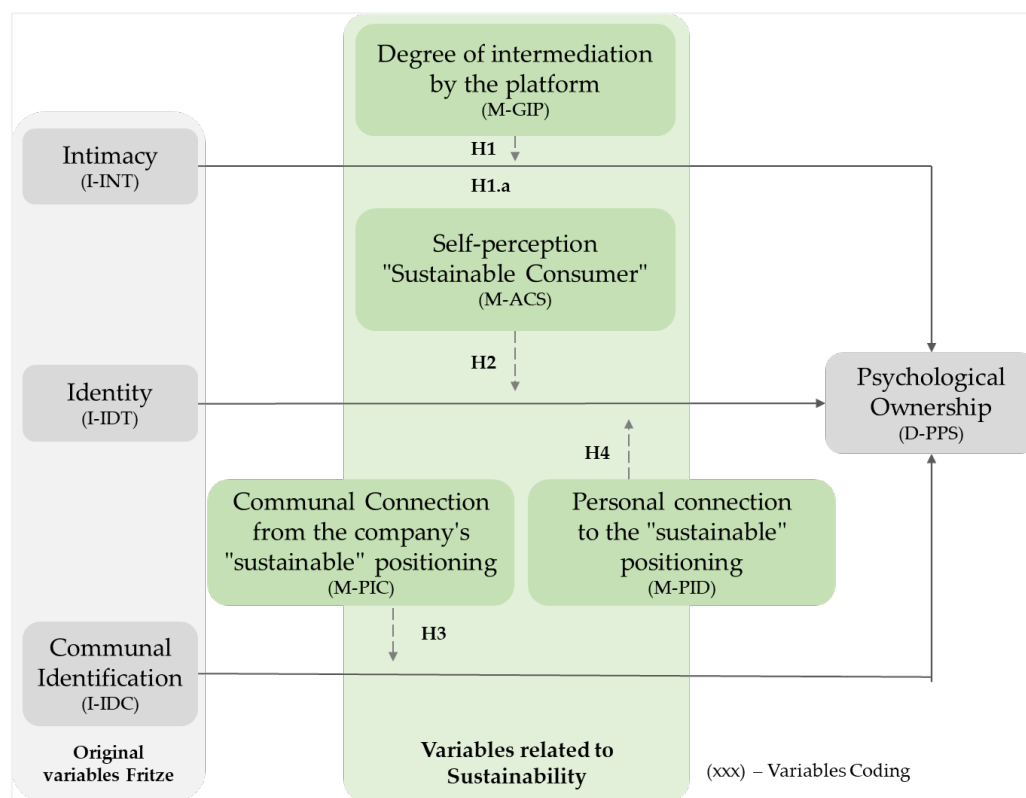


Figure 4. Illustration of the conceptual model. Source: own work.

The conceptual model allows us to understand how the antecedent variables of psychological ownership can be affected by variables derived from sustainability. This process, according to Nitzl, Roldan and Cepeda [72], features a moderating effect. This effect occurs when an M variable influences the relationship between variables X and Y. Thus, we seek to analyse whether the moderating effect predicted by the hypotheses exists (and to what extent), hence exerting influence on the perception of psychological ownership, as verified by Fritze et al. [17]. Table 1 summarises our hypotheses.

Table 1. Hypotheses of investigation and references.

	Hypothesis	Authors
H1	The degree of intermediation by the platform moderates the relationship between intimacy and P.O.	Perren et al., Borg et al. [5,10]
H1.a	The degree of intermediation of the platform positively moderates the relationship between intimacy and P.O. when there is low intermediation by the platform.	Costello, J., and Reczek, R. [11]
H2	Self-perception as a “Sustainable Consumer” positively moderates the relationship between identity and the sense of P.O.	Bardhi et al. [39]
H3	The communal connection stems from the company’s “sustainable” positioning, which positively moderates the relationship between communal identification and psychological ownership.	Hennig-Thurau et al., Huang, C. [47,61]
H4	The personal connection to the “sustainable” positioning of the company positively moderates the relationship between identity and psychological ownership.	Aaker et al., Escalas et al. [20,54]

Source: own work.

3.3. Data Collection and Analysis

With the objective of validating the hypotheses formulated, we conducted quantitative research, subsequently analysed them through a model of structural equations, and then statistically validated them.

This section presents the survey and the tools used for the data collection (scenarios, MTurk), the definition and control of the sample, and the identification and selection of the scales used in the research.

3.3.1. Survey

To answer the research question, as well as validate the hypotheses formulated, a survey (Appendix A) was developed and applied to be answered after reading a scenario about an access-based service. The interviewees were asked to imagine themselves as clients.

The research methodology of using surveys preceded by scenarios has been used in previous studies. Not only was it the method used in the initial model of Fritze et al. [17], but it was also used in studies that verified the moderating effect between identity variables [18], the mediation of platforms [11], and business proposals oriented to sustainability [73].

Wason, Polonsky and Hyman [74] suggest that when the user has no experience with the service, or when the use of moderating variables is important, scenarios are used to capture perceptions. The use of scenarios also helps to overcome the bias of availability, in which people underestimate what is difficult to imagine or remember [75].

3.3.2. Scenario

Scenarios are used to describe situations [74], and for this research, the scenarios created for this study give a brief description of a service to be provided: a platform that offers temporary access (through rental) to clothing and fashion accessories. This proposal for clothes and accessory sharing was chosen based on previous studies that showed acceptance for this type of service [5,76].

The scenarios are structured in four paragraphs, with the first, third, and fourth being the same in both cases. The first paragraph provides a brief description of the platform. The text used for the scenario is based on the example used in the original research on

P.O. [17]. To provide realism, we adapted a text from the Rent the Runway clothing rental service, mentioned by Bardhi and Eckhardt [39] for its access-based business model.

The second paragraph briefly mentions the platform's intermediation model. To ensure the clarity of the service, two scenarios were created, where only the second paragraph varies, and each was applied to one-half of the sample with random assignment.

The scenarios were created to measure the impact of platform intermediation, aiming to better analyse the feeling of helping others. It is expected that this distinction will have an effect mainly on the variable "Degree of platform intermediation" (M-GIP).

Scenario 1 (see Appendix B) states that the platform owns all rented goods. This platform model is situated in the position of extreme intermediation and minimal social interaction, according to the classification of Perren and Kozinets [10]. In this model, the platform unilaterally negotiates with the consumer.

In scenario 2 (see Appendix B), the consumer negotiates directly with the supplier, and the platform is a mere facilitator of the business. This model (Enablers), according to the classification of Perren and Kozinets [10], represents the minimum level of platform intermediation and maximum social interaction.

The third paragraph mentions the prices charged. This statement serves to control possible variations in price perceptions between the two proposed scenarios [11]. Finally, the fourth paragraph has a description of the company's sustainable positioning. In order to highlight the theme of sustainability, the statement on the sustainability of the service MQ (MarQet) [5] was used in combination with the concepts in Tukker's [77] study on sustainable business. To highlight these characteristics, we cited the main benefits and estimated the magnitude of the reduction in the environmental impact of this type of service (up to 50% reduction in resources [77]).

In order to ensure that the research is in accordance with the subject of consumption based on access, the sharing economy, and sustainability, the scenarios [77] for PSS—product–service system—were adopted. It states that for use-based business models, the differential remains in the product and not in the sale of it. Within PSS, in the use-oriented service archetype, the product remains in the possession of the supplier, being "made available in different ways and sometimes shared by a large number of consumers" [77]. More specifically, within the use-oriented service archetype, the compatibility of the scenario with the classification of "Product renting or sharing" was verified, where the biggest differences are in (1) maintenance, control, and repair, while continuing to belong to the supplier, and (2) access. In the second case, the difference is its limited access, i.e., other customers can use the products at different times.

3.3.3. Control

To ensure the realism of the scenario, the control questions "This situation is very real" and "This situation could happen to me or someone I know" [78] were included. The question is classified based on a Likert scale with seven points ($r = 0.77$). There is also a verification question for attention in the reading of the scenario ("If you read this statement, tick the box 'Strongly Agree'"), aiming to ensure the quality of the data collected [79] and demographic data (age, educational level, country of residence) in order to better characterise the sample as to its distribution and composition [80].

3.3.4. Variables

The variables were measured using scales already used and validated in other studies (see Appendix C) to seek greater reliability. The survey used seven-point Likert scales, according to the original studies. The studies on which the scale selection was based are presented in Table 2, which indicates the name of the variable measured and its code, the objective of each study, and its authors. Appendix C shows the original questions, reliability index, measured variable, and construct measured.

Table 2. Sources of the variables used.

Context		
Variable and Coding	Construct of Psychological Ownership	Author
Intimacy (I-INT)	It addresses the relationship between consumers and brands. Its construct addresses indicators of commitment, intimacy, etc. Used by Fritze to measure intimacy.	Aaker et al. [54]
Identity (I-IDT)	It analyses the incorporation of objects by the individual into the extended self. Used by Fritze to measure identity.	Sivadas, E. et al. [81]
Community identification (I-IDC)	It analyses the consequences and determinants of sharing movie files over the Internet. Used by Fritze to measure communal identification.	Hennig-Thurau et al. [47]
Psychological ownership (D-PPS)	It analyses the psychological ownership of employees in relation to organisations, especially regarding behaviour and attitude. Used by Fritze to measure psychological ownership.	Van Dyne, L. et al. [52]
Variable and Coding	Sustainability Moderator Variables	Author
Degree of platform intermediation (M-GIP)	This paper identifies the level of platform intermediation between suppliers and consumers and its impacts on consumer behaviour. Used to measure the moderating effect of the platform's degree of intermediation as a variable.	Costello et al. [11]
Self-perception as "Sustainable Consumer" (M-ACS)	It analyses the drivers of behaviour between self-identity and social categorisation. Used to measure the moderating effect of the self-perception variable as a sustainable consumer.	Leung, at al. [18]
Community connection to the "Sustainable positioning" of the company (M-PIC)	This paper analyses the relationship between consumers and brands in the field of materialism. Used to measure the moderating effect of the variable community connection to the company's "Sustainable" positioning.	Rindfleisch, A. et al. [19]
Personal connection to the "Sustainable positioning" of the company (M-PID)	The study analyses how consumers incorporate brands as an aid to the definition of self-concept. Used to measure the moderating effect of the variable personal connection to the company's "Sustainable" positioning.	Escalas, J. [20]

Source: own work.

3.3.5. Procedure

The survey was prepared in English, maintaining the original scales, except for the necessary adaptation: the inclusion of the fictitious name given to the company in the scenarios (CloseIt), respecting the authors' indication of the correct position for the description of the service or company (e.g., if original is "It feels as if [company] is my [service] service", then modified statement is "It feels as if CloseIt is my clothes renting service").

Then, the Amazon Mechanical Turk (MTurk) platform was chosen for data collection, which allows the collection of a large amount of quality data [82].

Structural equation modelling (SEM) was used for the analysis of the collected data using the PLS (partial least squares) method. This technique is suitable for validating the conceptual model and testing hypotheses, especially when models with complex paths are involved [72]. It is also noted that PLS can also handle "...many independent variables, even when predictors display multicollinearity," while SEM is the preferred technique when the research aim is a confirmatory path [83]. Other benefits include its user-friendly interface, the ability to model multiple independent and dependable variables, the robustness to deal with noise and missing data, and the provision of overall stronger predictions [83].

The smartPLS 3.3.3 software was used for the statistical analysis of the model. It presents the benefit of having a free-trial period, with this software being the most prevalent implementation for path models [83]. The authors also mention that, when faced with more

complex path models, the use of PLS software is paramount, with smartPLS being the most popular software. The same software and methodology were used by Fritze et al. [17] to confirm their model.

3.3.6. Data Collection

The survey was made available on the MTurk platform. A pre-test was performed on two occasions: first, the survey was sent to a convenience sample of ten individuals of the researchers, where orthography and duplicated questions were fixed, and a second round was responded to by a hundred individuals on MTurk, resulting in layout changes due to MTurk specificities. Some surveys were discarded: the ones that did not meet the attention test and did not provide the MTurk user code, incomplete surveys, surveys with the same answers (possibly answered by bots [82]) or 30 or more equal values (90% of questions (excluding demographics and control questions)) [84], and finally, surveys answered in less than 150 s [85]. The HITs (human intelligence tasks) were made available at five time points: (1) on 27 March 2021, obtaining 395 total answers with 233 valid surveys, and (2) on 31 March 2021, when 273 surveys were obtained with 174 valid surveys. In the following month (3) on 7 April 2021, 180 surveys with 154 valid respondents were collected; on (4) 14 April 2021, 278 surveys with 179 valid answers were obtained; and lastly, (5) on 1 July 2021, 53 surveys with 53 valid responses were collected.

The surveys were available on the platform for seven days, waiting for respondents. Users were only able to respond once, with control implemented by means of the platform's unique identification number. Thus, the suggested number of 10 times the number of questions [86] was reached for valid surveys. A final round was conducted, for convenience, via general mailing of the University of Porto, sent out on 14 April 2021, obtaining 148 answers with 106 valid surveys. A total of 1327 surveys were collected. After filtering, following the guidelines mentioned for quality control of the answers, the sample had 899 surveys. The surveys rejected due to lack of quality represent a rate of 32%, a lower rate than found in studies for the quality analysis of data collected via MTurk [82].

4. Results

This section describes the sample and its subsequent data analysis. The control and validity of the scenarios, as well as the validity, reliability, and adjustment of the proposed structural model, are also described. At the end, hypothesis testing is presented using the PLS model and the theorised moderating effects.

4.1. Sample Characterisation

The majority of the sample was aged between 24 and 35 years (inclusive), making up 51.5% of the respondents. Regarding the educational level, 84% had a university degree (bachelor's degree, master's degree, or doctorate), 15% had high school education (10 to 13 years of education), and only 0.7% had only basic education (between 1 and 9 years of education).

Due to the scope of the MTurk crowdsourcing platform, it was possible to collect responses from residents from 26 different countries, with the distribution presented in Appendix E. Most of the answers came from three countries: the United States of America with 306 responses (30%), India with 203 responses (20%), and Brazil with 109 responses (11%).

4.2. Scenario Control and Validation

Table 3 shows the data obtained for the validation of the two proposed scenarios, where the questions for reality control (RL1 and RL2) presented great acquiescence as to the possibility of these scenarios occurring in actual situations.

Table 3. Descriptive statistics (scenario control).

	Scenarios											
	Hubs						Enablers					
	Avg.	Mdn.	Md.	SD	Min.	Max.	Avg.	Mdn.	Md.	SD	Min.	Max.
This situation is very real.	5.500	6.000	6	1.266	1	7	5.380	6.000	6	1.339	1	7
This situation could happen to me or someone I know.	5.374	6.000	6	1.369	1	7	5.203	5.000	6	1.511	1	7

Source: own work.

For the question “this situation is very real”, for scenario 1, we obtained a mean of 5.5 and a median of 6 on a Likert scale of 7 points, with a standard deviation of 1.27, and for scenario 2, we obtained a mean of 5.4 with a standard deviation of 1.34, thus establishing the possibility of the scenario in normal situations. In the second question (“This situation could happen to me or someone I know”), the average was slightly lower, with a value of 5.37 in scenario 1 and 5.23 in scenario 2, attesting to the possibility of the scenario occurring with the interviewee or with people from their social circle. The standard deviations were also slightly higher, at 1.34 and 1.51, for scenarios 1 and 2, respectively.

Hence, we attest to the acceptance of the proposed scenarios in describing a service based on access focused on sustainability.

4.3. Reliability, Validity, and Model Adjustment

To analyse the results of the external model (relationship between latent variables and their indicators) of the reflective models, validation tests of reliability and validity (convergent and discriminant) were conducted [87].

To analyse reliability, the tests suggested by Hair et al. [87] were performed, including the composite reliability test, which verifies the internal consistency of the construct indicators, and Cronbach’s Alpha analysis.

For composite reliability, items must have values greater than 0.8, while Cronbach’s Alpha must have indexes greater than 0.7 [86].

Regarding the convergent validity of the construct, the criterion AVE (average variance extracted) was adopted, which must present values higher than 0.5 [86].

The measurement of discriminant validity aims to determine how much a construct is “empirically different from another” [87], i.e., whether it measures the desired effect.

For the measurement of discriminant validity, three tests were used: (1) the Fornell–Larcker criterion (of lesser importance, which demonstrates whether an indicator shares more variance with its construct than with any other), (2) the cross-load indicator, and finally, (3) HTMT [86].

For these three indicators, the following criteria were used: (1) the load of a construct indicator cannot be less than the load of an indicator in any other construct [88], (2) the square root of the AVE of each construct must be greater than its highest correlation with any other construct [86], and finally, (3) the value must be less than 0.9 [89]. Table 4 lists the main indicators, approval criteria, and sources used.

Table 4. Parameters used.

Indicator		Parameter	Source
Reliability	(AC) Cronbach's Alpha	>0.7	
	(FC) Composite reliability	>0.8	
Convergent validity	AVE	>0.5	[87]
Discriminant validity	Fornell–Larcker	The square root of the BIRD of each construct must be greater than its highest correlation with any other construct	
	Cross-loads	The cross-load of an indicator in the associated construct must be greater than any of the cross-loads (i.e., its correlation) in other constructs	
	HTMT	<0.9	[89]

Source: own work.

The analysis of the model was performed through smartPLS software using the criteria mentioned (Fornell–Larcker, cross-loads, and HTMT), where the construct “Sustainable positioning of the company” —towards the variable identity—did not present discriminant validity. This problem occurred in both Fornell–Larcker and HTMT, precisely in the relationship with the variable “Sustainable positioning of the company” —towards community identification.

Due to the similarity between these constructs, the problem regarding the difference in discriminant validity makes sense. Thus, the construct was eliminated, allowing the model to be approved for these two items.

Regarding cross-loads, the construct “Intimacy” presented low values in the I-INT1 and I-INT2 indicators. After its elimination, the model presented values compatible with the parameters already mentioned.

After this adjustment of the model, the reliability and validity of the adjusted model were analysed, as indicated in Table 5:

Table 5. Adjusted model: reliability and validity.

	AC	FC	AVE
D-PPS	0.939	0.956	0.846
I-IDC	0.885	0.946	0.897
I-IDT	0.954	0.963	0.812
I-INT	0.864	0.907	0.711
M-ACS	0.885	0.929	0.813
M-GIP	0.881	0.927	0.808
M-GID	0.926	0.948	0.819

Source: own work.

All constructs related to reliability and validity presented indexes compatible with the reference values, and no other adjustments were necessary.

Regarding the analysis of discriminant validity, the results shown below represent values after the adjustment of the model. After the elimination of the M-PIDE construct, the Fornell–Larcker (Table 6) and HTMT tests presented values compatible with those stipulated, and, after the exclusion of the I-INT1 and I-INT2 indicators, the cross-load analysis was also within the parameters.

Table 6. Fornell–Larcker criterion.

	D-PPS	I-IDC	I-IDT	I-INT	M-ACS	M-GIP	M-PIC
D-PPS	0.92						
I-IDC	0.805	0.947					
I-IDT	0.833	0.724	0.901				
I-INT	0.814	0.767	0.754	0.843			
M-ACS	0.525	0.52	0.455	0.543	0.902		
M-GIP	0.598	0.602	0.512	0.548	0.536	0.899	
M-PIC	0.821	0.753	0.758	0.711	0.622	0.663	0.905

Source: own work.

For cross-loads, it can be seen in Table 7 (in bold) that values are above the other constructs (columns).

Table 7. Cross-loads.

	D-PPS	I-IDC	I-IDT	I-INT	M-ACS	M-GIP	M-PIC
DPPS1	0.893	0.759	0.728	0.717	0.494	0.56	0.734
DPPS2	0.93	0.734	0.751	0.711	0.493	0.546	0.748
DPP2	0.923	0.717	0.781	0.692	0.461	0.526	0.754
DPPS4	0.932	0.749	0.801	0.732	0.484	0.565	0.784
IIDC1	0.747	0.945	0.68	0.663	0.485	0.559	0.703
IIDC2	0.776	0.949	0.692	0.66	0.5	0.581	0.724
IIDT1	0.74	0.68	0.89	0.624	0.433	0.464	0.687
IIDT2	0.755	0.696	0.906	0.634	0.424	0.477	0.689
IIDT3	0.75	0.638	0.902	0.623	0.415	0.479	0.683
IIDT4	0.779	0.658	0.921	0.624	0.401	0.457	0.701
IIDT5	0.715	0.598	0.874	0.585	0.374	0.436	0.658
IIDT6	0.764	0.647	0.914	0.636	0.414	0.457	0.683
IINT3	0.713	0.64	0.643	0.943	0.452	0.442	0.606
IINT4	0.754	0.682	0.661	0.95	0.468	0.473	0.646
MACAS1	0.475	0.474	0.405	0.423	0.906	0.484	0.567
MACAS2	0.484	0.481	0.419	0.456	0.88	0.506	0.573
MACAS3	0.46	0.449	0.405	0.433	0.919	0.459	0.54
MGIP1	0.564	0.541	0.479	0.425	0.454	0.902	0.608
MGIP2	0.546	0.552	0.468	0.441	0.496	0.909	0.591
MGIP3	0.499	0.531	0.431	0.441	0.5	0.885	0.587
MPIC2	0.734	0.701	0.665	0.607	0.614	0.631	0.898
MPIC2	0.692	0.634	0.633	0.568	0.58	0.589	0.878
MPIC2	0.768	0.705	0.706	0.618	0.536	0.603	0.928
MPIC4	0.775	0.686	0.735	0.603	0.526	0.577	0.915

Source: own work.

The constructs of the model also presented discriminant validity, according to the HTMT criteria, as shown in Table 8.

Table 8. HTMT.

	D-PPS	I-IDC	I-IDT	I-INT	M-ACS	M-GIP	M-PIC
D-PPS							
I-IDC	0.882						
I-IDT	0.879	0.788					
I-INT	0.894	0.874	0.821				
M-ACS	0.576	0.587	0.495	0.624			
M-GIP	0.656	0.681	0.558	0.631	0.608		
M-PIC	0.879	0.831	0.805	0.787	0.688	0.734	

Source: own work.

The correlation matrix between variables, their means, and their standard deviations are provided in Appendix D. Finally, after the adaptations of the model, Hair et al. [87] indicate that it is necessary to test the adjustment of the model since certain limitations in smartPLS prevent an automatic adjustment for testing and confirmation. To this end, the SRMR and NFI measures were investigated and presented acceptable values, as indicated in Table 9.

Table 9. Model adjustment.

	MRSR	NFI
Model Result	0.041	0.897
Parameter	<0.08	>0.8
Reference	Hu and Bentler [90]	Bentler and Bonett [91]

Source: own work.

4.4. Evaluation of the Structural Model

After confirming the indicators used to measure latent variables (analysis of the external model), an analysis was performed to verify whether the parameters of the internal model met the reference parameters.

For such an analysis, Hair et al. [87] indicate the verification of three measures: R^2 , f^2 , and Q^2 . The measure R^2 (correlation coefficient) measures the predictive power of the model; the parameter varies from 0 to 1, with a minimum expected value of 0.75 [87]. The measure f^2 (effect size) verifies whether the exclusion of a construct has an impact on the model, with values of 0.02, 0.15, and 0.35 considered small, medium, and large effects, respectively [92]. Finally, the Q^2 parameter (predictive relevance) must be greater than 0 [88,93], indicating the predictive relevance of a construct within the model in relation to the dependent variable [87].

Table 10 presents the indexes mentioned and their classification according to the parameters reported.

Table 10. Structural model.

	R^2	Q^2	f^2
D-PPS	0.836	Substantial	
I-IDC		0.566	0.07
I-IDT		0.731	0.169
I-INT		0.516	0.121
M-ACS		0.589	0.002
M-GIP		0.582	0.005
M-PIC		0.68	0.065

Source: own work.

The calculated values show that the model has substantial predictive power (R^2), higher than expected in psychosocial research [87]; in this case, the dependent variable D-PPS may have 83.6% (R^2 0.836) of its behaviour due to the analysed model.

Regarding the importance (f^2 —*effect size*) of each exogenous variable compared to the dependent variable D-PPS, it is noted that the predecessors of psychological ownership (I-IDC, I-IDT, and I-INT) pointed out by Fritze et al. [17] have significantly greater effects than the effects of sustainability (M-ACS, M-GIP, and M-PIC). The moderator effects M-ACS and M-GIP present a weak index, according to the parameters, while M-PIC presents moderate strength. Finally, the predictive relevance (Q^2) of all items is much higher than the minimum stipulated.

4.5. Hypothesis Testing

Table 11 shows the results of the hypotheses formulated. To be accepted, they must have a t coefficient above 1.96 and significance (p) at the level of 5% ($\alpha \leq 0.05$; two-tailed test) [87]. The results for t were verified in the MGA, Welch, and parametric tests, as suggested by Cheah et al. [84], in order to ensure heterogeneity between groups. We also analysed the coefficients, which present values between -1 and 1, demonstrating the direction of the relationship (negative vs. positive) and the strength of the relationship (values closer to the extremes). It is important to highlight that in all hypotheses (except H1.a), the tests were performed considering scenarios 1 and 2, with no statistically significant differences in these hypotheses when the multigroup analysis was performed.

Table 11. Results.

Hypotheses	Path	Moderation	Scenario	Coefficient (β)	Std.	Confidence Interval		t -Value	p Value	Result
						2.5%	98%			
H1	I-INT→D-PPS	M-GIP	1 and 2	0.064	0.031	0.021	0.156	2.069	0.032	Accept
H1.a	I-INT→D-PPS	M-GIP	2	0.122	0.052	0.026	0.028	2.338	0.008	Accept
H2	I-IDT→D-PPS	M-ACS	1 and 2	0.029	0.035	−0.032	0.112	0.838	0.402	Reject
H3	I-IDT→D-PPS	M-PIC	1 and 2	0.079	0.037	−0.002	0.009	2.161	0.031	Accept
H4	I-IDC→D-PPS	M-PID	1 and 2	n/a						Reject

Source: own work.

The H4 hypothesis was rejected due to the exclusion of its construct (as explained earlier). The H1 hypothesis was accepted for presenting statistical significance ($\beta = 0.064$, $t = 2.069$, $p = 0.039$), as were hypotheses H1.a ($\beta = 0.122$, $t = 2.338$, $p = 0.008$) and H3 ($\beta = 0.079$, $t = 2.161$, $p = 0.031$) with a confidence level of 5% ($p < 0.05$). Regarding hypothesis H1.a, it was also accepted in the three tests for the suggested t -value for multigroup analyses (Welch, MGA, and parametric). Hypothesis H2 ($\beta = 0.029$, $t = 0.838$, $p = 0.402$) was rejected because it had a statistically insignificant impact.

4.6. Evaluation of the Structural Model

A moderation analysis was performed to measure the impact of the variables derived from sustainability in the original model of psychological ownership [17]. The results revealed that M-GIP has a positive impact ($\beta = 0.064$) on the moderating role in the relationship between I-INT and D-PPS. This effect is enhanced when the scenario of low market intermediation occurs ($\beta = 0.122$). The effect also occurs with the variable M-PIC ($\beta = 0.079$) in the role of moderation between the variables I-IDC and D-PPS.

It is important to highlight that coefficients in the structural model can be significant but have low values, mainly due to the fact that large samples [87] are used, as is the case in this study, which has almost twice as many surveys as the 10-fold rule for the number of questions.

Figure 5 shows the relationship between the moderating variables and the relationship between dependent and independent variables from hypotheses H1 (Figure 5A), H1.a (Figure 5B), and H3 (Figure 5C):

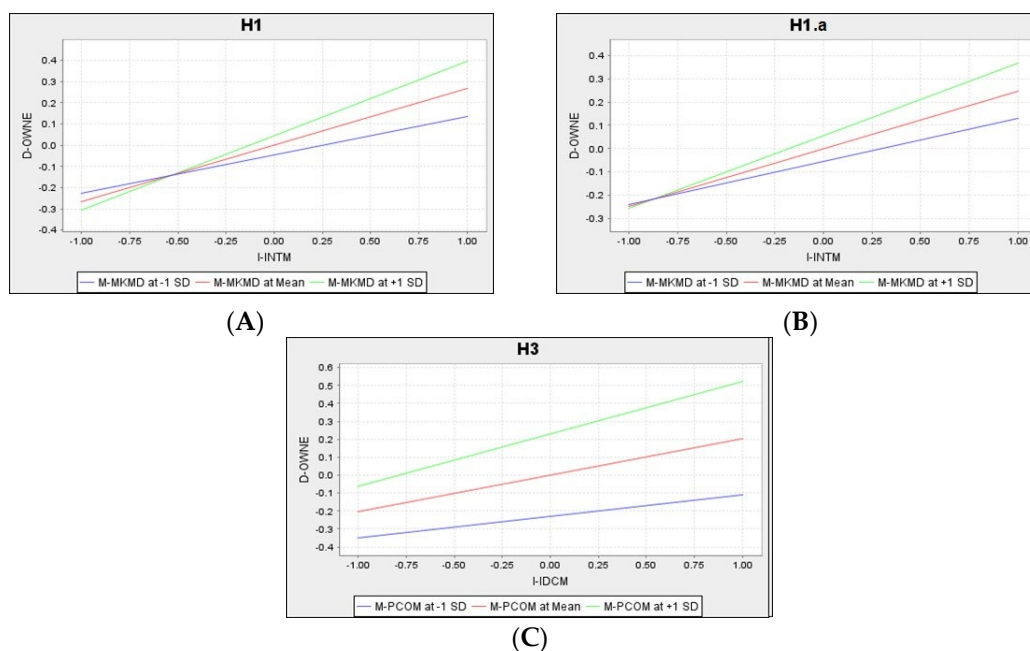


Figure 5. List of moderating variables: (A) relationship between variables from hypothesis 1 (H1); (B) relationship between variables from hypothesis 1a (H1.a); (C) relationship between variables from hypothesis 3 (H3). Source: own work.

It is noticed in H3 (Figure 5C) that, with low market mediation (high rates of M-GIP), intimacy exerts an increase in psychological ownership. It is also seen that in scenario 2 (low market intermediation, feeling of helping others), the moderating effect of the variable M-GIP is relatively strong in the relationship between the independent and dependent variables.

A similar effect can be observed in relation to the impact of the sustainable positioning of the company, which, when at higher values, positions the result between communal identification (I-IDC) and psychological ownership at a significantly higher level.

4.7. Findings

First, this study shows, in an unprecedented way, the moderating effect of the degree of intermediation of platforms between intimacy and P.O. The results can be perceived from the point of view of the two components of the degree of intermediation [10]: first, through the operational role of the platforms, and second, through the level of social interaction between consumers and suppliers (consociety [10]).

Regarding the operational role played by the platforms, the results converge with the literature. Previous studies show that high degrees of intermediation can inhibit the connection of the consumer with the object of the service [5], thus limiting the feeling of intimacy. For this reason, it is inferable that, at low levels of operationalisation, the component of intimacy “effectiveness” is satisfied. It is possible that effectiveness (the ability to control actions in the environment [51]) can be achieved when transactions are carried out with greater interaction between consumers and suppliers. It is believed that, in these situations, a feeling of effectiveness emerges since the consumer has the perception of “learning and performing” operations that would otherwise be carried out by the platform.

Thus, the intermediation variable has a positive moderating effect on the relationship between intimacy and P.O. The study by Bardhi and Eckhardt [39] corroborates this relationship by pointing out that the high operationalisation of platforms (dominant role in transactions) decreases or eliminates the relationship between intimacy and P.O. This effect can occur since the feeling of utilitarianism does not allow us to differentiate it from other commercial models.

Regarding social interaction, our results show its relevance on the platforms associated with the sharing economy [11], especially in a low-degree-of-intermediation scenario. This result is based on the importance of the feeling of helping others [11,13,32] and the feeling of “warmth” [6] present in (more) sustainable behaviours [61]. It is believed that greater social proximity (present with a low degree of intermediation of the platform) is related to attributes of intimacy, such as communication and commitment, derived from more personal exchanges and greater proximity between the provider and the consumer of the service [55].

These findings demonstrate with novelty that there is a moderating role for the degree of intermediation of the platform (which is a variable and dimension associated with sustainability), which partly answers our research question. It is thus concluded that, in this relationship, sustainability, measured through the degree of intermediation of the platform, plays a moderating role that positively reinforces the relationship between intimacy and P.O.

Regarding the variables related to the company’s positioning, it is first necessary to clearly differentiate the possible uses that consumers make of the symbols offered by companies. This differentiation is relevant since different studies show that the emotional bond between companies and consumers occurs in different contexts [6,27,46,54]. These studies demonstrate that consumers can use such symbols as psychological reference models [33], embodiments of brands [6], or even as facilitators of community relationships [20], among others. In this context and in a pioneering way, this research analysed the moderating effect of community connection (in view of the sustainable positioning of the company) on the relationship between community identification and P.O. This occurs once communal identification can be stimulated through the adoption of symbols that favour the acceptance of reference groups [20,63]. This effect occurs given the facilitation enabled by brands as mediators of social acceptance [27,63].

Thus, our results suggest that this relationship arouses the feeling of “having a place”, since it meets the human need to have a neighbourhood, or something collectively possessed (as described by Pierce et al. [15]). It is thus concluded that sharing has the power to also create social ties [47,94] relevant to P.O. due to the fact that it is an important characteristic of the sharing economy highly related to socialisation [47].

As supported by the literature and the additional results of this investigation, which demonstrate the existence of the moderating effect of communal connection on the sustainable positioning of the company, the research question is answered through this analysis in a more complete way. Our research shows that sustainability, as a symbol, plays a positive role in creating the feeling of P.O. since it positively moderates the relationship between communal identification and P.O. Plus, our findings highlight the importance of service providers offering consistent and relevant symbols to consumers, which facilitates the feeling of psychological ownership.

Regarding the variable personal connection to the sustainable positioning of the company, it was not possible to demonstrate its impact on moderation in the relationship between identity and P.O. This hypothesis was formulated based on evidence that symbols linked to sustainability can be used to improve self-perception [17,34,48]. This conception derives from other studies that showed positive results in the scope of branding [20,54,63].

Therefore, our research not only confirmed the first stage of the model proposed by Fritze et al. [17] but also revealed outcomes that demonstrate that dimensions and variables related to sustainability have the potential to reinforce the feeling of P.O. since they influence the relationship with its antecedents.

Finally, it should be emphasised that this investigation generated new possibilities for the implementation of strategies that reinforce the perception of psychological ownership in place of material ownership [17], particularly in relation to sustainability, which is new and innovative.

5. Discussion

We show that dimensions and variables related to sustainability reinforce the feeling of P.O. since they influence the relationship with its antecedents. In view of these discoveries, service providers, such as those investigated here, play an important role.

The results of this research suggest that platforms can be planned by service providers to compensate for the loss of material ownership and, in this way, allow a reduction in consumer overconsumption.

These provide companies and managers with new ways to offer and design services and instruments that enable the feeling of intimacy and stimulate communal identification through correct positioning. The role of the relationship between the service provider and the consumer was also attributed to being a facilitator between communal identification and P.O.

This investigation is also innovative by demonstrating that the involvement of the consumer in the activities related to the service platform fosters a feeling of intimacy, hence expanding on the findings of Costello and Reczek [11]. It also relates to the research by Arcidiacono et al. [43], showing that corporate values not only are transmitted but may also foster intimacy, thus reinforcing the relationship between this antecedent and P.O.

Regarding brand positioning, although other studies already showed that the adoption of a brand or company as a symbol of sustainability can facilitate entry into groups with the same interest [20], this is the first time that a study demonstrates the effect of this phenomenon as an enhancer of the sensation of P.O. This allows the positioning in previous works on brand and brand community [63,70,71] to be explored in ways that can also foster P.O. It also empowers brands to better position themselves regarding sustainability, avoiding greenwashing and reputational damage [1,6,54].

Even though the hypothesis relating personal connection to the brand could not be proved in our model, it is also believed that, due to the large number of positive results of the association between positioning and identity in the branding field [6,20,46,54], this moderating effect should not be overlooked without further studies.

The results indicate that by emphasising, or developing, components of the service provision related to sustainability, the services offered may offset the loss of material ownership. The result thus excuses the consumer from material ownership, which allows a reduction in overconsumption. These results have the potential to benefit researchers across multiple fields (e.g., branding, service distribution, community, shared economy), providing tested variables that increase the feeling of P.O. while stimulating the adoption of services based on access focused on sustainability.

6. Conclusions

Our results answer the main research question and hence realize the main objective of the study since they demonstrate the positive moderating effect of some sustainability variables on the relationship between P.O. and its antecedents. To obtain this finding, we presented and discussed the original model of Fritze et al. [17], used as the research starting point. In an innovative way, our study questioned and obtained proof of the existence of variables related to sustainability with the ability to moderate such relationships, facilitating their perception.

The reasons for choosing our model were the common characteristics between the sharing economy and access-based services, where psychological ownership can favour their acceptance and adoption. In addition, we sought solutions that would allow economic success to be achieved concurrently with the generation of environmental and

social value [4,28]. Also, as an innovation, this research focused on services specialised in consumer goods.

Our research statistically confirmed the previous research developed by Fritze et al. [17], confirming the predictive role of psychological ownership antecedents. Thus, our results reinforce the P.O. theory. More importantly, we built on et al. the model presented by Fritze et al. [17] with dimensions and variables related to sustainability capable of impacting the relationship between P.O. and its antecedents.

We addressed the growing environmental issues faced today, particularly those related to overconsumption, and discussed the potential of service marketing (which, through the theory of access vs. property and material ownership, can add tools that help address environmental issues).

Finally, our research added a new layer to the model of psychological ownership, creating the possibility of its use as a framework in other contexts. This discovery highlights marketing and service studies while demonstrating the possibility of using attributes—i.e., sustainability, to encourage the offering of business models with lower environmental impacts.

6.1. Research and Management Contributions

This research contributes to the literature to the extent that it continues the work of Fritze et al. [17] on P.O. Moreover, our research demonstrates the potential of using this theory as a framework for other studies. This contribution is due to the addition of the moderating dimension of the variables related to sustainability, particularly the degree of intermediation of the platform and the community connection to the sustainable positioning of the company. Thus, the findings of this research contribute to the literature by demonstrating the potential of sustainability to generate economic, social, and ecological value. Our findings provide new tools that facilitate the adoption of the sharing economy and access-based services, with the aim of fighting excessive consumption and meeting today's ecological and social needs [30]. Additionally, our research expands the academic knowledge of P.O. by investigating other service models (i.e., consumer goods), since few studies to date have focused on this [17]. Our contributions also include the moderating relationship between the dimensions associated with sustainability and P.O. and its antecedents. It also contributes to the literature by adding new discoveries in the fields of sustainability and marketing [2,16,21,37], including variables that stimulate the feeling of psychological ownership. This contribution stems mainly from the discoveries related to the promotion and adoption of the sharing economy [9,17,40,95], with the in-depth analysis of the role of mediation platforms in the perception of psychological ownership, and the deepening of the P.O. study related to sustainability issues.

Regarding the contribution to management and the activities of managers, this research contributes to the extent that it presents new discoveries that facilitate the creation and adaptation of access-based services [10] that decrease *overconsumption*, which replaces the loss of material ownership and thus contributes to sustainability. The findings facilitate the achievement of these objectives since they provide new information and tools to managers and companies that deal with the reduction in material ownership perceived by their consumers.

6.2. Limitations and Future Investigation

Future studies can analyse the impact of new and different sustainability variables than the ones considered in this research. Also, new studies should explore their impact on the sustainability variables considered in this research for different modalities of services. Furthermore, our research model did not consider or explore the factors that stimulate empathy as an antecedent and predictor of psychological ownership. All these suggestions should be considered and explored in the near future. Also, our research did not consider several studies that suggested the degradation of working conditions caused by intermediation platforms [43]. Depending on the type of service provided or the welfare

condition of a country or category of services, it becomes possible that the “lenses of empathy” [11] may, in some scenarios, generate effects opposite to those found in this work. Thus, it is suggested that future research analyse the social impacts perceived by consumers regarding the precariousness of work that is stimulated by companies present in the sharing economy [43,96]. Finally, this study used structural equation analysis and the PLS software tool. However, other researchers may choose other methods and approaches to explore and analyse the phenomenon.

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Appendix A

Survey

Please read the scenario below and imagine you are a customer. After careful reading, please respond to all the questions. The total survey takes about 8 min to be fully responded (only full submissions were computed).

CloseIt Survey								
ID	Question	Allowed answer format						
AGE	What is your age?	0–100						
EDU	How many years of education you have?	0–30						
CTY	What is your current country of residence?	Open						
CLT	Do you currently use clothing rental yourself?	Y	N					
ID	Question	Strongly Agree		Neutral			Strongly Agree	
VL1	If you read this statement, tick the box ‘Strongly Agree.’	1	2	3	4	5	6	7
RL1	This situation is very real.	1	2	3	4	5	6	7
RL2	This situation could happen to me or someone I know.	1	2	3	4	5	6	7
ID1	Clothing rental helps me to achieve the identity I want to have.	1	2	3	4	5	6	7
ID2	Clothing rental helps me narrow the gap between who I am and who I try to be.	1	2	3	4	5	6	7
ID3	Clothing rental is central to my identity.	1	2	3	4	5	6	7
ID4	Clothing rental is part of who I am.	1	2	3	4	5	6	7
ID5	If I could no longer clothing rental, I would feel as though part of my identity had been taken away.	1	2	3	4	5	6	7
ID6	I derive some of my identity from clothing rental.	1	2	3	4	5	6	7

IT1	CloseIt really understands my needs in this service category.	1	2	3	4	5	6	7
IT2	I would feel comfortable describing CloseIt to someone who was not familiar with it.	1	2	3	4	5	6	7
IT3	I am familiar with the range of products and services CloseIt offers.	1	2	3	4	5	6	7
IT4	I have become knowledgeable about CloseIt.	1	2	3	4	5	6	7
IC1	Using CloseIt allows me to be part of a group of like-minded people.	1	2	3	4	5	6	7
IC2	Using CloseIt allows me to belong to a group of people with similar interests.	1	2	3	4	5	6	7
PP1	It feels as if CloseIt is my clothes renting service.	1	2	3	4	5	6	7
PP2	Using CloseIt feels like something that is mine.	1	2	3	4	5	6	7
PP3	I feel that CloseIt belongs to me.	1	2	3	4	5	6	7
PP4	I feel a personal connection to CloseIt.	1	2	3	4	5	6	7
MM1	I would feel like I helped someone if I spent money on a CloseIt rental.	1	2	3	4	5	6	7
MM2	If I chose to make a CloseIt purchase, I would feel like I supported a member of the local community.	1	2	3	4	5	6	7
MM3	I would feel good about who got the profits from a CloseIt purchase.	1	2	3	4	5	6	7
CS1	I identify myself as a sustainable consumer.	1	2	3	4	5	6	7
CS2	I like to be considered by others as a sustainable consumer.	1	2	3	4	5	6	7
CS3	I think of myself as someone who is a sustainable consumer.	1	2	3	4	5	6	7
PC1	I really identify with other people who use CloseIt.	1	2	3	4	5	6	7
PC2	CloseIt is used by people like me.	1	2	3	4	5	6	7
PC3	I really feel like I almost belong to a club with other CloseIt users.	1	2	3	4	5	6	7
PC4	I feel a deep connection with others who use CloseIt.	1	2	3	4	5	6	7
PI1	I (can) use CloseIt to communicate who I am to other people.	1	2	3	4	5	6	7
PI2	I consider CloseIt to be “me” (it reflects who I consider myself to be or the way that I want to present myself to others).	1	2	3	4	5	6	7
PI3	CloseIt reflects who I am.	1	2	3	4	5	6	7
PI4	I can identify with CloseIt.	1	2	3	4	5	6	7
PI5	I feel a personal connection to CloseIt.	1	2	3	4	5	6	7
PI6	I think CloseIt (could) help(s) me become the type of person I want to be.	1	2	3	4	5	6	7
PI7	CloseIt suits me well.	1	2	3	4	5	6	7

Source: own work.

Appendix B

Scenario 1

CloseIt is a fashion rental service where items come to you clean and ready-to-wear. There is zero commitment, you can single rent, bundle rent or choose a subscription. Our platform offers thousands of members reviews for each product.

The items are rented directly from CloseIt, no intermediaries.

The costs are shown prior to rental, and there are no hidden fees. Know exactly what is paid.

We want to take greater responsibility for our common future. By renting and sharing, CloseIt allows a high reduction of the impact from manufacture. This allows lower consumption, quicker replacement of goods by newer and more efficient models, and less waste. If you read this statement, tick the box 'Strongly Agree.'

Scenario 2

CloseIt is a fashion rental service where items come to you clean and ready-to-wear. There is zero commitment, you can single rent, bundle rent or choose a subscription. Our platform offers thousands of members reviews for each product.

You rent the clothes from other members. You will deal directly with the owner through our platform.

The costs are shown prior to rental, and there are no hidden fees. Know exactly what is paid to CloseIt and what goes to the lender.

We want to take greater responsibility for our common future. By renting and sharing, CloseIt allows a high reduction of the impact from manufacture. This allows lower consumption, quicker replacement of goods by newer and more efficient models, and less waste. If you read this statement, tick the box 'Strongly Agree.'

Figure A1. Proposed Scenarios.

Appendix C

Table A1. Original Scales.

Original Measured Title	Variable	Code	Question(s)	C.A.* Original	C.A.* Fritze	Source	Scale
Independent Variables							
Identity (relevance of ABS)	Identity	I-IDT1	[Clothing rental] helps me to achieve the identity I want to have.	0.91–0.96 **	0.915–0.926	[81]	Likert 7 points
		I-IDT2	[Clothing rental] helps me narrow the gap between who I am and who I try to be.				
		I-IDT3	[Clothing rental] is central to my identity.				
		I-IDT4	[Clothing rental] is part of who I am.				
		I-IDT5	If I could no longer [clothing rental], I would feel as though part of my identity had been taken away.				
		I-IDT6	I derive some of my identity from [clothing rental].				
Intimacy (towards Intimacy ABS)		I-INT1	[CloseIt] really understands my needs in this service category.	0.83–0.87	0.782–0.830	[54]	Likert 7 points
		I-INT2	I would feel comfortable describing [CloseIt] to someone who was not familiar with it.				
		I-INT3	I am familiar with the range of products and services [CloseIt] offers.				
		I-INT4	I have become very knowledgeable about [CloseIt].				
Communal identification	Communal identification	I-IDC1	Using [CloseIt] allows me to be part of a group of like-minded people.	0.87	0.921–0.963	[47]	Likert 7 points
		I-IDC2	Using [CloseIt] allows me to belong to a group of people with similar interests.				
Dependent Variable							
Psychological	Psychological Ownership	D-PPS1	It feels as if [CloseIt] is my [clothes renting] service.	0.87–0.93	0.865–0.867	[52]	Likert 7 points

owner-ship (toward ABS)		D-PPS2	Using [CloseIt] feels like something that is mine.				
		D-PPS3	I feel that [CloseIt] belongs to me.				
		D-PPS4	I feel a personal connection to [CloseIt].				
Moderating Variables							
Pro- vider-fo- cused	Degree of platform in- termediation	M-GIP1	I would feel like I helped someone if I spent money on a [CloseIt] ride				
		M-GIP2	If I chose to make a [CloseIt] purchase, I would feel like I supported a member of the local community.	0.9	na	[11]	Likert 7 points
		M-GIP3	I would feel good about who got the profits from a [CloseIt] purchase.				
Strength of identi- fication	Sustainable Consumer	M-ACS1	I identify myself as a [sustainable con-sumer].				
		M-ACS2	I like to be considered by others as a [sus-tainable consumer].	0.88	na	[18]	Likert 7 points
		M-ACS3	I think of myself as someone who [is a sus-tainable consumer].				
Communi- nal brand connec- tion	Community connection to the Company’s “Sustainable” positioning	M-PIC1	I really identify with other people who use [CloseIt]				
		M-PIC2	[CloseIt] is used by people like me				
		M-PIC3	I really feel like I almost belong to a club with other [CloseIt] users	0.83–0.95	na	[19]	Likert 7 points
		M-PIC4	I feel a deep connection with others who use [CloseIt]				
Self- Brand Conne- ction	Personal con- nection to the Company’s “Sustainable” positioning	M-PID1	I (can) use [CloseIt] to communicate who I am to other people				
		M-PID2	I consider [CloseIt] to be “me” (it reflects who I consider myself to be or the way that I want to present myself to others)				
		M-PID3	[CloseIt] reflects who I am.	0.9	na	[20]	Likert 7 points
		M-PID4	I can identify with [CloseIt].				
		M-PID5	I feel a personal connection to [CloseIt].				
		M-PID6	I think [CloseIt] (could) help(s) me become the type of person I want to be.				
		M-PID7	[CloseIt]suits me well.				
Control variable							
Scenario realism	Realism of the scenario	1.	This situation is very real.	0.77 **	na		Likert 7 points
		2.	This situation could happen to me or some-one I know.			[78]	
Basic at- tention check	MTurk vali- dation	1.	If you read this statement, tick the box ‘Strongly Agree.’	na	na	[79]	Likert 7 points
Distribu- tion & Compo- sition	De- mographics	1.	Age				0–100
		2.	Years of Education	na	na	[80]	0–20
		3.	Country of residence				Open
Control variable	Cliente de Aluguer	1.	Do you currently use [Clothes Rental] your-self?	na	na	[17]	0–1

na: not available. * Cronbach's Alpha. ** Pearson's correlation coefficient.

Appendix D

Table A2. Descriptive Analysis.

Variables	Avg.	Std. Dev.	IID	IIT	IIC	DPP	MMM	MSC	MPCOM
IID	3.636	1.797	1						
IIT	4.276	1.800	0.689 **	1					
IIC	4.398	1.749	0.724 **	0.698 **	1				
DPP	4.001	1.841	0.833 **	0.775 **	0.804 **	1			
MMM	3.162	1.465	−0.512 **	−0.484 **	−0.602 **	−0.597 **	1		
MSC	5.022	1.374	0.455 **	0.485 **	0.519 **	0.525 **	−0.537 **	1	
MPCOM	4.253	1.676	0.758 **	0.661 **	0.753 **	0.821 **	−0.662 **	0.621 **	1

n = 899

** Correlation is significant at the 0.01 level (2-tailed). Source: own work.

Appendix E

Table A3. Demographic Analysis.

Continent	Country	Responses	Share
Africa	Nigeria	1	0.1%
Total Africa		1	0.1%
Asia	Bangladesh	1	0%
	India	203	23%
	Indonesia	1	0%
	Philippines	1	0%
	Singapore	1	0%
	Turkey	1	0%
	UAE	1	0%
	Vietnam	1	0%
Total Asia		210	23%
Europe	Austria	1	0%
	France	4	0%
	Germany	3	0%
	Greece	2	0%
	Ireland	2	0%
	Italy	71	8%
	North Macedonia	3	0%
	Portugal	81	9%
	Spain	13	1%
	Sweden	1	0%
	UK	39	4%
Total Europe		220	24%
N. America	Canada	37	4%
	Mexico	1	0%
	USA	306	34%
Total N. America		344	38%
Oceania	Australia	2	0.2%
Total Oceania		2	0.2%
S. America	Brazil	109	12%

	Venezuela	3	0%
Total S. America		114	13%
No Response		8	0.9%
Total		899	100%

Source: own work.

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