

Consumer acceptance barriers of access-based PSS from literature

Authors	Title	Year	Barrier
Cherry, C. E., Pidgeon, N. F.	Why Is Ownership an Issue? Exploring Factors That Determine Public Acceptance of Product-Service Systems	2018	<p>Hypothetical washing machine, car and other pay-per-use:</p> <ul style="list-style-type: none"> <li>• Product category with strong connection to personal identity, status and enjoyment (e.g. car)</li> <li>• Sense of insecurity, what happens to the product in case of illness or redundancy?</li> <li>• Intrinsic desire for ownership</li> <li>• Potential lack of trust in service provider</li> <li>• Worry about decreased use experience because one doesn't own the product and worries more about consequences (e.g. red wine spills on leasing couch)</li> </ul>
Chamberlin, L., Boks, C.,	Marketing approaches for a circular economy: Using design frameworks to interpret online communications	2018	<p>Consumer concerns in CE:</p> <ul style="list-style-type: none"> <li>• Contamination, disgust, lack of newness (-)</li> <li>• Convenience/ availability (+/-)</li> <li>• Ownership (+/-)</li> <li>• Cost/ financial incentive (+/-)</li> <li>• Environmental impact (+/-)</li> <li>• Brand image/ design/ intangible value (+/-)</li> <li>• Quality performance (+/-)</li> </ul>
Poppelaars, F., Bakker, C. and van Engelen, J.	Does Access Trump Ownership? Exploring Consumer Acceptance of Access-Based Consumption in the Case of Smartphones	2018	<p>3 categories of adoption/acceptance factors for access-based PSS:</p> <p>Importance of trust</p> <ul style="list-style-type: none"> <li>• Awareness and familiarity with concept</li> <li>• Understanding the service</li> <li>• Reliability and trust in service</li> <li>• Relationship with service provider</li> <li>• Image of service provider</li> </ul> <p>Unburdening</p> <ul style="list-style-type: none"> <li>• Financial aspects (price, cost, payment method and scheme)</li> <li>• Ease and convenience</li> <li>• Commitment and flexibility of service</li> <li>• Confirmation or excess of expectations</li> <li>• Value from consumption (importance, worth, usefulness)</li> </ul> <p>Habits and necessity</p> <ul style="list-style-type: none"> <li>• Product characteristics</li> <li>• Affinity and necessity</li> </ul>

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			<ul style="list-style-type: none"> <li>• Sustainability</li> <li>• Similar use of product as before</li> <li>• Product, service or brand attachment</li> <li>• Market mediation (e.g. existence of alternatives)</li> <li>• Image of access-based consumption</li> </ul>
Baxter W., Childs P.,	Designing circular possessions	2017	<ul style="list-style-type: none"> <li>• Contamination from previous use</li> <li>• Frequent dispossessing prevents psychological ownership and product care</li> </ul>
Camacho-Otero, J.C.; Pettersen, I.N.; Boks, C.	Consumer and user acceptance in the circular economy: What are researchers missing?	2017	<p>Acceptance barriers reviewed:</p> <ul style="list-style-type: none"> <li>• Consumers expect lower performance compared with new products</li> <li>• Contamination &amp; lack of hygiene</li> <li>• Risk aversion of consumers</li> <li>• Lack of ownership</li> <li>• Unidimensional value offering</li> <li>• Problems to access offering</li> <li>• Practice is tightly connected to other offerings</li> <li>• Inertia, path-dependency and lock-in</li> </ul>
Catulli, M., Cook, M., Potter, S.	Consuming use orientated product service systems: A consumer culture theory perspective	2017a	<p>Real baby car seat rental for 6-9 months:</p> <ul style="list-style-type: none"> <li>• Fear of liability towards PSS supplier prevented consumers from personalizing the car seat</li> <li>• Some consumers disliked the feeling of having to take better care of the product</li> <li>• Fear of contagion</li> <li>• Distrust in previous users (e.g. involvement of seat in accident?)</li> </ul>
Catulli, M., Cook, M., Potter, S.	Product Service Systems Users and Harley Davidson Riders: The Importance of Consumer Identity in the Diffusion of Sustainable Consumption Solutions	2017b	<ul style="list-style-type: none"> <li>• PSS do currently not function as extension of self</li> <li>• No emotional attachment or brand loyalty</li> <li>• Negative image of PSS user (distressed purchaser) → prefers anonymity</li> <li>• PSS compete with traditional products in the market</li> <li>• Often no personalisation allowed in PSS</li> <li>• No brand identification</li> <li>• Low level of trust in user users &amp; fear of contagion</li> </ul>
Edbring E., Lehner M., Mont O.,	Exploring consumer attitudes to alternative models of consumption: Motivations and barriers	2016	<ul style="list-style-type: none"> <li>• Desire to own</li> <li>• Concern for hygiene</li> <li>• Unfamiliarity with the concept</li> <li>• Economic obstacles</li> </ul>

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Källman, M.	Opportunities and barriers for circular economy-business models Comparing conditions for rental in markets dominated by sales	2016	<p>Access offerings for sports, outdoor equipment, jewellery:</p> <ul style="list-style-type: none"> <li>• Many consumers are unaware of rental offerings</li> <li>• Consumers lack understanding of the concept and its benefits</li> <li>• Consumers perceive some products as too personal to rent</li> <li>• Consumers are reluctant to try clothes rentals until they build trust and confidence in provider</li> </ul>
Santamaria L., Escobar-Tello C., Ross T.,	Switch the channel: Using cultural codes for designing and positioning sustainable products and services for mainstream audiences	2016	<ul style="list-style-type: none"> <li>• Lack of allure or symbolic value that competing alternatives offer</li> <li>• Cultural shift needed to value ownerless consumption (ownership currently satisfies social, psychological and emotional needs)</li> </ul>
Antikainen, M.; Lammi, M.; Rüppel, H.P.T.; Valkokari, K.	Towards Circular Economy Business Models: Consumer Acceptance of Novel Services	2015	<ul style="list-style-type: none"> <li>• Consumers are less willing to rent lower-priced items</li> <li>• Major change in consumption practices</li> <li>• Not willing to rent personal items (e.g. clothing)</li> <li>• Unfamiliar business models are likely to meet resistance</li> </ul>
Armstrong C.M., Niinimäki K., Kujala S., Karell E., Lang C.,	Sustainable product-service systems for clothing: Exploring consumer perceptions of consumption alternatives in Finland	2015	<p>Barriers for different hypothetical, access-based clothing PSS:</p> <ul style="list-style-type: none"> <li>• Concern that PSS might not sufficiently enable expression of one's identity</li> <li>• Lack of intangible benefits (e.g. memories from special occasion)</li> <li>• Lack of the 'hunting' experience of shopping</li> <li>• Scepticism regarding potentially high prices</li> <li>• Advantages of using PSS are not clear to consumers</li> <li>• Lack of trust in provider (hygiene, continuation of business)</li> <li>• Consumers may doubt motives of service provider</li> </ul>
Lidenhammar, R.	Hopping on the Service Bandwagon Towards a Circular Economy-Consumer Acceptance of	2015	<p>Consumer concerns regarding hypothetical leasing of furniture:</p> <ul style="list-style-type: none"> <li>• Lower income participants disliked monthly payments as they'd have to worry every month about being able to afford it with the risk of losing their furniture</li> <li>• Quality concerns regarding pre-used goods</li> </ul>

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	Product-Service Systems for Home Furniture		<ul style="list-style-type: none"> <li>• Hygiene concerns (bed bugs, allergies etc.)</li> <li>• Participants couldn't envision leasing of furniture in practice</li> <li>• Concerns regarding consequences of breaking furniture and wear and tear</li> <li>• Consumers saw it as less realistic for longer periods than for shorter rentals</li> </ul>
Möhlmann M.,	Collaborative consumption: Determinants of satisfaction and the likelihood of using a sharing economy option again	2015	<p>Factors determining satisfaction with PSS:</p> <ul style="list-style-type: none"> <li>• Cost savings</li> <li>• Familiarity (little behaviour change required)</li> <li>• Service quality</li> <li>• Trust</li> <li>• Utility</li> </ul> <p>→ lack of any of these represents a barrier</p>
Pedersen E.R.G., Netter S.,	Collaborative consumption: Business model opportunities and barriers for fashion libraries	2015	<p>Challenges for fashion libraries:</p> <ul style="list-style-type: none"> <li>• Shop location is 'far' from most consumers → additional effort</li> </ul> <p>(Focus on drivers: variety, relatively lower cost, social interaction)</p>
Schotman H., Ludden G.D.S.,	A model of lost habits: Towards a strategy to improve the acceptance of product service systems	2015	<ul style="list-style-type: none"> <li>• Habits inhibit behaviour change</li> </ul>
Tukker, A.	Product services for a resource-efficient and circular economy: A review	2015	<ul style="list-style-type: none"> <li>• Lack of control over things and artefacts (<i>planning</i>)</li> <li>• Less behavioural freedom (<i>use risk</i>)</li> <li>• PSS often score lower on intangible value than ownership (experience, brand value, sense of control, ease of access)</li> <li>• Products are quickly out of fashion</li> </ul>
Vezzoli C., Ceschin F., Diehl J.C., Kohtala C.,	New design challenges to widely implement 'Sustainable Product-Service Systems'	2015	<p>Reviewed barriers:</p> <ul style="list-style-type: none"> <li>• Lack of knowledge and understanding of PSS</li> <li>• Uncertainties regarding risks, costs and responsibilities</li> <li>• Challenge to understand potential economic benefits (lifecycle costs) and therefore PSS are sometimes perceived as an expensive option</li> <li>• Cultural shift towards ownerless need fulfilment</li> <li>• Meaning of owned products → success in life and representing identity</li> </ul>

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			<ul style="list-style-type: none"> <li>• Challenge of independence, hygiene and intimacy</li> </ul>
Baumeister, C. and Wangenheim, F. V.	Access vs. Ownership: Understanding Consumers' Consumption Mode Preference	2014	<p>Comparison of attitudes towards ownership and access:</p> <ul style="list-style-type: none"> <li>• More positive attitude towards ownership than access</li> <li>• Perception of high costs for some accessed products (bikes, handbags)</li> <li>• High pre- and post-purchase effort for some accessed products, frequent interaction with provider</li> <li>• Perception of less flexibility and more use limitations</li> <li>• Risk of non-availability</li> <li>• Some access options are not perceived environmentally friendly (bikes, handbags)</li> <li>• Having to handle the accessed product carefully</li> <li>• Access is expected to allow less fun than ownership</li> <li>• Less signalling of personality, personal attachment and impressing others</li> </ul>
Mylan, J. Examples not relevant	Understanding the diffusion of sustainable product-service systems: insights from the sociology of consumption and practice theory	2014	<ul style="list-style-type: none"> <li>• Links between different practices prevent change</li> <li>• PSS often imply new practices and require new skills</li> <li>• The underlying meaning of practices prevents change (e.g. higher temperature = cleanliness)</li> <li>• PSS might not be aligned with ongoing dynamic of practices (continuous change)</li> </ul>
Schotman H., Ludden G.D.S.,	User acceptance in a changing context: Why some product-service systems do not suffer acceptance problems	2014	<ul style="list-style-type: none"> <li>• Major behaviour change required</li> <li>• Implications of PSS for everyday life</li> </ul>
Catulli M., Lindley J.K., Reed N.B., Green A., Hyseni H., Kiri S.,	What is mine is not yours: Further insight on what access-based consumption says about consumers	2013	<p>Hypothetical access to baby and nursery equipment:</p> <ul style="list-style-type: none"> <li>• Stigma of using access when logo is visible (pre-used=negative)</li> <li>• Anticipation of attachment to product and not wanting to return it</li> <li>• Some people dislike regular payments (compared to one-time purchase)</li> <li>• Concerns about hygiene (especially for intimate products like breast-pumps)</li> </ul>
Bardhi, F.; Eckhardt, G.M.	Access-Based Consumption: The Case of Car Sharing	2012	<p>Barriers car sharing:</p> <ul style="list-style-type: none"> <li>• Contagion</li> <li>• User do not identify with the cars</li> <li>• No hedonic aspects derived from using Zipcar</li> </ul>

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Catulli M.,	What uncertainty? Further insight into why consumers might be distrustful of product service systems	2012	<p>Barriers car-sharing and nursery equipment renting/leasing:</p> <ul style="list-style-type: none"> <li>• Uncertainty regarding the performance of the PSS</li> <li>• Concerns about hygiene, health and safety</li> <li>• Distrust in previous users</li> <li>• Concerns regarding availability and accessibility of products when needed</li> <li>• Insufficient information about the state and the reprocessing of products</li> <li>• Reliability of service (e.g. vehicle is available at booked time)</li> <li>• Unsure about service-level of provider</li> <li>• Desire for 'shiny and new' products → only the best for the baby</li> <li>• Social stigma of renting and leasing → solution for poorer customers</li> <li>• Distance between home and car pick-up spot</li> <li>• In cost comparisons consumers do not factor in the value of additional service components</li> </ul>
Lamberton, C. P., Rose R.	When is ours better than mine? A Framework for Understanding and Altering Participation in Commercial Sharing Systems	2012	<ul style="list-style-type: none"> <li>• Perceived product scarcity-risk – the likelihood that a product is unavailable when a consumer desires access</li> <li>• Dependence on other users to return product on time for own need satisfaction</li> <li>• Effort of learning how to use new product, might happen repeatedly if different cars are included in one car-sharing scheme</li> <li>• Effort required to find a provider and select the appropriate bundle</li> </ul>
Rexfelt O., Hiort Af Ornäs V.,	Consumer acceptance of product-service systems: Designing for relative advantages and uncertainty reductions	2009	<p>Barriers hypothetical indoor climate, car-lease, pay-per-view TV and clothing rental PSS:</p> <ul style="list-style-type: none"> <li>• Consumers felt that added services were rarely relevant and often used to 'scam' the customers for money</li> <li>• Consumers value the practical consequences of ownership</li> <li>• Adoption might require activities by consumers that they find undesirable</li> <li>• Distrust in PSS suppliers' competency</li> <li>• Perceived relative advantage of owning the product is higher</li> <li>• Availability and accessibility of PSS</li> </ul>

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Mont O.,	Institutionalisation of sustainable consumption patterns based on shared use	2004	<ul style="list-style-type: none"> <li>• If culture is based on possessive individualism (as opposed to collectivism) participants are less willing to share</li> <li>• Dissatisfaction if high quality tools are unavailable (<i>product quality &amp; availability</i>)</li> <li>• Renting and sharing are often associated with low socio-economic status</li> <li>• Low perception of service quality</li> <li>• Seen as personal sacrifice in freedom and excessive effort of organizing private life</li> </ul>
Tukker, A	Eight Types of Product—Service System: Eight Ways to Sustainability?	2004	<ul style="list-style-type: none"> <li>• Time and effort required from consumer to get access</li> <li>• PSS potentially deliver low intangible value (e.g. contribution to experience, self-esteem)</li> </ul>
Mont, O.	Drivers and barriers for shifting towards more service-oriented businesses: analysis of the PSS field and contribution from Sweden	2002b	<ul style="list-style-type: none"> <li>• The PSS concept is difficult to explain to consumers</li> <li>• Difficulty for consumers to understand the payment structures (e.g. payment for functions in rental flats)</li> <li>• Consumers might have problems accepting refurbished products</li> </ul>
Mont, O. K.	Clarifying the concept of product service system	2002a	<ul style="list-style-type: none"> <li>• Consumers might not be enthusiastic about ownerless consumption</li> </ul>
Littig, B.	Eco-efficient services for private households: looking at the consumer's side	2000	<ul style="list-style-type: none"> <li>• Desire to own</li> <li>• Perceived lack of flexibility to use product whenever desired</li> <li>• Additional planning required for use of some PSS (e.g. collective laundry facility)</li> </ul>
Schrader, U.	Consumer acceptance of eco-efficient services: A German perspective.	1999	<ul style="list-style-type: none"> <li>• High transaction costs for low value products (e.g. leasing of €10 hair dryer)</li> <li>• “one can only substitute those goods with which consumers have a functional rather than an emotional relationship.”</li> <li>• Lack of relative advantage (financial, functional and socio-psychological aspects) compared to ownership of the product</li> </ul>

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Meijkamp, R.	Meijkamp, R. Changing Consumer Behaviour Through Eco-Efficient Services—An Empirical Study on Car Sharing in The Netherlands. Ph.D. Thesis, TU Delft, Delft, The Netherlands, 2000.	1998	<ul style="list-style-type: none"> <li>• Use of shared car requires planning (e.g. booking)</li> <li>• Additional effort to get to the shared car</li> </ul>
Durgee, J. F., O'Connor, G. C.	An exploration into renting as consumption behavior	1995	<ul style="list-style-type: none"> <li>• Consumers do not perceive renting as valid solution for products used long-term (only for short-term or infrequent use of products)</li> <li>• Perception of higher price for long-term renting than buying the product</li> <li>• At times consumer described lower quality of rental goods (because of wear &amp; tear or abuse by other users)</li> <li>• Consumers do not want to get attached to rental goods</li> <li>• Consumers don't perceive the same thrill when renting luxury goods as when they own them</li> </ul>