Extended Abstract
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Dealing with barriers to repair from the repairers' perspective

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Abstract
Repair is a key component of the circular economy paradigm and holds great environmental potential. Our current linear economies, which rely on constantly expanding markets, are not conceived to be restorative and hence create structural barriers to repair. Through semi-structured interviews and questionnaires we explore the commercial repairers' perspective on barriers to repair, as well as their agency and the strategies they employ to overcome those barriers. Our research has shown that repairers tend to bypass barriers by means of specific repair techniques and cooperation networks.

Introduction
Repair is gaining attention in the academia due to its fundamental role in the circular economy paradigm. Repair is an activity which prolongs the useful lifespan of objects while using less resources and preventing waste (Stahel, 2013; Gharfalkar et al., 2016; Ellen MacArthur Foundation, 2015; Blomsma & Tennant, 2020). This makes repair a key strategy for better managing societal stocks, which is necessary for more sustainable economies (Victor, 2008; Daly 1996).
Despite its sustainability potential, modern economies are not conceived to be restorative. The current accumulation paradigm requires constantly expanding markets, which in turn creates incentives for replacing products rather than extending their use (Vence, 2023; Vence et al., 2024). Repair is faced with structural barriers to repair that either make it more difficult, less attractive or, in extreme cases, even impossible (Packard, 1960; Cooper, 2004 & 2010).
From the literature review we distinguish several categories of barriers to repair (Dalhammar et al., 2020; Svensson-Hoglund et al., 2021 & 2023), some of which may affect consumers (deter them from repairing) others may affect the repairers' ability to perform a repair. Nonetheless, repair studies show that repairers tend to be proactive in overcoming obstacles for which they use their creativity and ingenuity (Jackson, 2014; Graham & Thrift, 2007). The aim of our paper is to identify the strategies that repairers employ to overcome barriers to repair.

Methodology
To answer our research question we employ a questionnaire-based survey directed to independent repairers in the field of IT repair. Our respondents come exclusively from the European region of Galiza (ES11 in NUTS classification). This questionnaire was informed by several previous semi-structured interviews which helped identify some of the key aspects in overcoming barriers and the way to approach its research through questionnaires.
Questionnaires are a popular method when researching repair and have been used to approach the subject from varied perspectives (Dalhammar et al., 2020; Charter & Keiller, 2014; Türkeli et al., 2019; Andersson et al., 2018). Our research involves some novel aspects, particularly those regarding tools for overcoming obsolescence from a technical and a collaborative point of view.

Results and Discussion
Our results show that repairers tend to consider price related obstacles as the main ones: this include prices of new products, prices of repair and availability and prices of spare parts; all of them are key aspects in determining the relative price of repair. Promoting repair could imply improving the relative price of repair via taxation (Stahel, 2013; Vence & López Pérez, 2022). Unfortunately, the recent European policy mix

regarding repair did not make an attempt to improve the relative prices of repair, leaving them for the market to determine (López-Bermúdez & Vence, 2024 & 2025)

When inquired about barriers to repair most respondents agreed that repairs have increased in difficulty and that manufacturers do not design for repair: they do not provide enough information nor do they provide spare parts. This leads to a situation in which repairers must use alternative sources and methods to overcome obstacles. Collaboration is a fundamental tool in community repair (Graziano & Trogal, 2017) and even commercial repair (Orr, 1996).

Our results have shown that more than half of our respondents engage in collaboration networks with other repairers, particularly at the local level. This involves exchanging information, knowledge and even establishing informal commercial arrangements. This contrasts with the notion of the isolated repairer or the notion that competition harms repairers (Türkeli et al., 2019), when in fact they may benefit from it in line with what often occurs in other sectors.

Related to collaboration we also encountered the techniques of repair as fundamental strategies to overcome obsolescence. We find that independent repairers often engage in component level repair (rather than module level repair; modules being entire parts and components pieces of the modules). Component level repair requires additional knowledge, abilities and tools. Some design features greatly increase its difficulty, like miniaturization and microelectronics, which explains why repairers have also placed them as some of the main barriers. Despite this, component repair allows repairers to avoid the spare parts market controlled by manufacturers.

Conclusions

Our research has focused on barriers to repair from the perspective of independent repairers, specifically those working in the IT repair sector. Our questionnaires, informed by semi-structured interviews, offered interesting insights into the way commercial repairers deal with structural barriers to repair. Price related barriers have been noted as key obstacles, yet no efforts have been made at the European regulatory level to shift the price equilibrium in favor of repair. Regarding how to overcome barriers, our research showed that collaboration networks play a key role. Commercial repairers tend to engage in collaborative networks quite often. Collaboration often takes the form of knowledge and information sharing but also informal commercial arrangements. Besides collaboration, repairers tend to also engage in repair at the component level as a way to avoid a market of spare parts controlled by manufacturers themselves. This form of repair is more demanding in terms of knowledge and experience, but it is extremely cheap material wise. Our research shows that commercial repairers are indeed proactive in overcoming barriers, even moving around the margins and wrestling control from manufacturers in a fashion similar to community and activist repairers.

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References

Andersson, A., Carlestam, J., Gunnarsson, J., Henriksson, T., Kristoffersson, P., Mattsson, F., . . . Wessberg, N. (2018). *Circular Economy: Research into the availability and willingness to repair consumer electronic products.* Lund University.

Blomsma, F., & Tennant, M. (2020). Circular economy: Preserving materials or products? Introducing the Resource States framework. *Resources, Conservation and Recycling, 156*. https://doi.org/10.1016/j.resconrec.2020.104698

Charter, M., & Keiller, S. (2014). *Grassroots Innovation and the Circular Economy. A Global Survey of Repair Cafés and Hackerspaces.* The Centre for Sustainable Design.

Cooper, T. (2004). Inadequate Life? Evidence of Consumer Attitudes to Product Obsolescence. *Journal of Consumer Policy, 27*, 421-449. https://doi.org/10.1007/s10603-004-2284-6

Cooper, T. (2010). *Longer Lasting Products. Anternatives to the Throwaway Society.* Gower Publishing. https://doi.org/10.4324/9781315592930t

Dalhammar, C., Richter, J., Almén, J., Anehagen, M., Enstrom, E., Hartman, C., . . . Ohlsson, J.

(2020). *Promoting the repair sector in Sweden.* IIIEE.

Daly, H. (1996). *Beyond Growth.* Beacon Press.

Ellen MacArthur Foundation. (2015). *Towards a circular economy: business rationale for an accelarated transition.* Cowes: Ellen Macarthur Foundation.

Gharfalkar, M., Ali, Z., & Hillier, G. (2016). Clarifying the disagreements on various reuse options: repair, recondition, refurbish and remanufacture. *Waste Management & Research, 34*(10), 995-1005. https://doi.org/10.1177/0734242X16628981

Graham, S., & Thrift, N. (2007). Out of Order. Undestanding Repair and Maintenance. *Theory, Culture & Society 24 (3)*, 1-25. https://doi.org/10.1177/0263276407075954

Graziano, V., & Trogal, K. (2017). The politics of collective repair. Examining object-relations in a postwork society. *Cultural Studies 31*, 634-658. https://doi.org/10.1080/09502386.2017.1298638

Jackson, S. (2014). Rethinking Repair. Em T. Gillespie, P. Boczkowski, & K. Foot, *Media Technologies: Essays on Communication, Materiality and Society* (pp. 221-240). MIT Press.

López-Bermúdez, F., & Vence, X. (2024). The European Directive on Common Rules Promoting the Repair of Goods. A Critical Assessment of its Drafting Process. *Revista Galega de Economía, 33*(2), 1-24. https://doi.org/10.15304/rge.33.2.9429

López-Bermúdez, F., & Vence, X. (2025). A critical assessment of the European Directive proposal promoting the repair of goods . *Resources, Conservation and Recycling, 212*(107996). https://doi.org/10.1016/j.resconrec.2024.107996

Orr, J. (1996). *Talking about machines. An Ethnography of a Modern Job.* Cornell University Press.

Packard, V. (1960). *The Waste Makers.* Longmans.

Stahel, W. (2013). Policy for material efficiency-sutainable taxation as a departure from the throwaway society. *Philosophical Transactions of the Royal Society A*. https://doi.org/10.1098/rsta.2011.0567

Svensson-Hoglund, S., Richter, J., Maitre-Ekern, E., Russell, J., Pihlajarinne, T., & Dalhammar, C. (2021). Barriers, enablers and market governance: A review of the policy landscape for repair of consumer electronics in the EU and the U.S. *Journal of Cleaner Production, 288*. https://doi.org/10.1016/j.jclepro.2020.125488

Svensson-Hoglund, S., Russell, J., & Richter, J. (2023). A Process Approach to Product Repair from the Perspective of the Individual. *Circular Economy and Sustainability, 3*, 1327-1359. https://doi.org/10.1007/s43615-022-00226-1

Türkeli, S., Huang, B., Stasik, A., & Kemp, R. (2019). Circular Economy as a Global Business Activity: Mobile Phone Repair in the Netherlands, Poland and China. *Energies, 12*(498), 1-22. https://doi.org/10.3390/en12030498

Vence, X. (2023). Bases conceptuales para una economía circular transformadora y un cambio sistémico. Em X. (. Vence, *Economía circular transformadora y cambio sistémico* (pp. 55-108). Fondo de Cultura Económica.

Vence, X., & López Pérez, S. d. (2022). Reforming VAT to boost repair services and the circular economy. *Contaduría y Administración, 67*(2), 1-25. https://doi.org/10.22201/fca.24488410e.2022.3233

Vence, X., Pereira, Á., Laperche, B., & Pansera, M. (2024). Circular Economy, Sustainability and Degrowth. *Revista Galega de Economía, 33*(2), 1-6. https://doi.org/10.15304/rge.33.2.10036

Victor, P. (2008). *Managing Without Growth. Slower by Design, Not Disaster.* Cheltenham: Edward Elgar.