societies

Challenges of Post-COVID-19 for a Sustainable Development Society

Edited by
Sandro Serpa and Carlos Miguel Ferreira

Printed Edition of the Special Issue Published in *Societies*

www.mdpi.com/journal/societies

MDPI

Challenges of Post-COVID-19 for a Sustainable Development Society

Challenges of Post-COVID-19 for a Sustainable Development Society

Editors

Sandro Serpa
Carlos Miguel Ferreira

MDPI • Basel • Beijing • Wuhan • Barcelona • Belgrade • Manchester • Tokyo • Cluj • Tianjin

Editors

Sandro Serpa
Sociology
University of the Azores
Ponta Delgada
Portugal

Carlos Miguel Ferreira
ESTE
ESTE
Estoril
Portugal

Editorial Office
MDPI
St. Alban-Anlage 66
4052 Basel, Switzerland

This is a reprint of articles from the Special Issue published online in the open access journal *Societies* (ISSN 2075-4698) (available at: www.mdpi.com/journal/societies/special_issues/Post_COVID-19).

For citation purposes, cite each article independently as indicated on the article page online and as indicated below:

LastName, A.A.; LastName, B.B.; LastName, C.C. Article Title. *Journal Name* **Year**, *Volume Number*, Page Range.

ISBN 978-3-0365-3838-9 (Hbk)
ISBN 978-3-0365-3837-2 (PDF)

Contents

societies

Editorial

Challenges of Post-COVID-19 for a Sustainably Developed Society

Sandro Serpa [1,2,3,*] and Carlos Miguel Ferreira [4]

[1] Department of Sociology, Faculty of Social and Human Sciences, University of The Azores, 9500-321 Ponta Delgada, Portugal
[2] Interdisciplinary Centre of Social Sciences—CICS.UAc/CICS.NOVA.UAc, 9500-321 Ponta Delgada, Portugal
[3] Interdisciplinary Centre for Childhood and Adolescence—NICA—UAc, 9500-321 Ponta Delgada, Portugal
[4] Interdisciplinary Centre of Social Sciences—CICS.NOVA, Estoril Higher Institute for Tourism and Hotel Studies, 2765-273 Estoril, Portugal; carlos.ferreira@eshte.pt
* Correspondence: sandro.nf.serpa@uac.pt

Citation: Serpa, S.; Ferreira, C.M. Challenges of Post-COVID-19 for a Sustainably Developed Society. *Societies* **2022**, *12*, 66. https://doi.org/10.3390/soc12020066

Received: 30 March 2022
Accepted: 1 April 2022
Published: 6 April 2022

Publisher's Note: MDPI stays neutral with regard to jurisdictional claims in published maps and institutional affiliations.

The COVID-19 pandemic has prompted both preventive and reactive disease control measures, such as lockdown, physical distancing, and mask use, among others [1–11]. These measures have exerted influence in virtually all domains of social life [12,13], acting as a "cultural break point" [14] (p. 1) in the physical but also in the virtual world. According to Echegaray [15] (p. 568), "These measures caused a 'social recession' as it brought face-to-face inter-personal interaction to its minimum expression except among other household members, with social connections eventually migrating to the internet-mediated online sphere".

This Special Issue gathers contributions on the analysis of the "Challenges of post-COVID-19 for a sustainable development society", which are varied, multiple and interdependent of an interdisciplinary nature in various areas, such as health, social, economic, ecological, political, educational, and moral areas, among others, towards increasing sustainability [16]. The fulfilment of the 2030 UN Sustainable Development Goals (SDGs) [17] is, undoubtedly, a complex process involving various actors, powers, and interests, to which the fact that human beings are generally averse to changes in socio-cultural patterns must be added [11,18].

In addition to being unexpected and unplanned, the COVID-19 pandemic was, as a result, a generator of high uncertainty about the present but also about the future [19], demonstrating that unpredictability cannot be disregarded in any social process [1,5,14]. Still, and without over extrapolating or falling into the error of continuity or "new normal vs old normal" dichotomy [15], it is possible to consider the opening of potential futures and sustainable development opportunities to (re)discover if we do not stick to "business as usual" [2,6,7,9,15,20–24]. In the words of Zinn [18] (p. 613), "To what extent the opportunity for global learning is taken up remains to be seen. There is little doubt, however, that pandemics will contribute to long-term changes in human attitudes and behavior towards the environment and the technologically shaped lifeworld".

We are pleased to acknowledge all the professional collaborations provided by the Editorial Office of *Societies* journal, as well as the trust placed in us by the Editor-in-Chief, Prof. Dr. Gregor Wolbring, and a group of reviewers, which resulted in very rigorous but, at the same time, constructive evaluations, and contributed greatly to maintaining a high level of scientific demand for this Special Issue. This resulted in a very interesting and heuristically pertinent contribution.

To summarize the main characteristics of the manuscripts published in this Special Issue of *Societies* journal, "Challenges of Post-COVID-19 for a Sustainable Development Society": 18 manuscripts were submitted, nine were accepted and published (five articles—as original empirical research—and four concept papers—contributing with new insights but

without mobilizing new empirical information). Table 1 summarizes some characteristics of the published manuscripts [25–33].

Table 1. Some characteristics of the published manuscripts.

Type of Publication	Title	Purpose	Authors	Country
Article	Accessibility in Inclusive Tourism? Hotels Distributed through Online Channels	Analyze the tourist accommodation sector through the online distribution channel in terms of accessibility for people with disabilities for a more inclusive tourism in the post-COVID-19 crisis	Eva Martin-Fuentes Sara Mostafa-Shaalan Juan Pedro Mellinas	Spain Spain Spain
Article	COVID-ized Ethnography: Challenges and Opportunities for Young Environmental Activists and Researchers	Examine the impact of the enforced 2020/21 COVID-19 lockdown on ethnographic fieldwork conducted with UK-based young environmental activists	Dena Arya Matt Henn	UK UK
Article	The Impact of the COVID-19 Pandemic on the Working Conditions, Employment, Career Development and Well-Being of Refugee Researchers	Explore how the COVID-19 pandemic has affected the working conditions, employment, career development and well-being of refugee researchers	Ourania Tzoraki Svetlana Dimitrova Marin Barzakov Saad Yaseen Vasilis Gavalas Hani Harb Abas Haidari Brian P. Cahill Alexandra Ćulibrk Ekaterini Nikolarea Eleni Andrianopulu Miroslav Trajanovic	Greece Bulgaria Bulgaria Germany Greece Germany Greece Germany Greece Greece Germany Serbia
Article	Male Sex Workers Selling Physical Sex during the COVID-19 Pandemic in Portugal: Motives, Safer Sex Practices, and Social Vulnerabilities	Analyze the motives, safer sex practices, and vulnerabilities of male sex workers who sold physical sex during the COVID-19 pandemic	Henrique Pereira	Portugal
Article	Jogging during the Lockdown: Changes in the Regimes of Kinesthetic Morality and Urban Emotional Geography in NW Italy	Study how the urban emotional geography through how lockdown caused by COVID-19 affected practices and meaning of cultural physical practices among joggers in an urban environment	Michele Filippo Fontefrancesco	Italy and UK
Concept Paper	COVID-19 Stigma and Charismatic Social Relationship: A Legitimization Narrative of President Trump's Status as a Charismatic Leader following a SARS-CoV-2 Infection Reported by the Portuguese Media	Understand how stigma in the context of a pandemic threat such as COVID-19 has structured a charismatic social and political relationship	Carlos Miguel Ferreira Sandro Serpa	Portugal Portugal
Concept Paper	Digitalization and Artificial Intelligence in Migration and Mobility: Transnational Implications of the COVID-19 Pandemic	Examine the implications of intensifying digitalization and Artificial Intelligence for migration and mobility systems in a post-COVID transnational context	Marie McAuliffe Jenna Blower Ana Beduschi	Australia Canada UK
Concept Paper	Filtering Facepiece Respirator Supply Chain Management Framework in a Disaster Such as COVID-19	Suggest a conceptual model to build a supply chain management framework for future emergencies	Kihyung Kim Li Zhao	USA USA
Concept Paper	Learning for the Future beyond COVID-19: A Critical Alternative to the Neoliberal Model of Development	Analize COVID-19 pandemic, framing in critical political economy perspectives the tension between the model of neoliberal capitalism development and COVID-19 suppression	David Neilson	New Zealand

Source: Table prepared by the authors.

In any case, and whatever the developments in the post-COVID 19 world, it is critical to consider individual and/or collective inequalities of various kinds, and materialized in numerous ways [1,7,34–36]. According to Leach et al. [5] (p. 4), "Epidemics are often said to be mirrors to society and COVID-19 has revealed a highly unequal world. It has highlighted inequalities and structural vulnerabilities, often the result of long histories of marginalization. Although the virus initially spread in richer countries, the trends soon reversed".

One example of these inequalities reinforced by COVID-19, among many others that we could point out, is closely linked to the digital divide, and it has been demonstrated that, with the closure of schools, socially and economically disadvantaged students have found it more difficult to keep up with school subjects [10,37,38].

We are confident that our readers will appreciate this contribution toward (re)thinking the post-COVID-19 period in a desirably more sustainable world, which will always be necessary in a permanently built balance between society, nature, and technology [18]. In this balance, citizenship exercised in a conscious way, scientific interdisciplinarity, the community–scientists–political decision relationship and communication, and collective cooperation (group, national, and transnational) are crucial elements for success in achieving this goal [3,21].

Funding: This research was funded by the University of Azores, Interdisciplinary Centre of Social Sciences-CICS.UAc/CICS.NOVA.UAc, UID/SOC/04647/2020, with the financial support of FCT/MEC through national funds, and when applicable, co-financed by FEDER under the PT2020 Partnership Agreement.

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Not applicable.

Conflicts of Interest: The authors declare no conflict of interest.

References

1. Andreucci, M.B.; Marvuglia, A. Investigating, implementing and funding regenerative urban design in a post-COVID-19 pandemic built environment: A reading through selected UN Sustainable Development Goals and the European Green Deal. In *Rethinking Sustainability Towards a Regenerative Economy*; Andreucci, M.B., Marvuglia, A., Baltov, M., Hansen, P., Eds.; Springer: Cham, Switzerland, 2021; pp. 395–413. [CrossRef]
2. Andrijasevic, M.; Tomic, V.P.; Jovanovic, V. Post-COVID sustainable economic development. *Probl. Ekorozv.* **2021**, *16*, 58–65. [CrossRef]
3. Aristovnik, A.; Ravšelj, D.; Umek, L. A bibliometric analysis of COVID-19 across science and social science research landscape. *Sustainability* **2020**, *12*, 9132. [CrossRef]
4. Barberia, L.; Plümper, T.; Whitten, G.D. The political science of COVID-19: An introduction. *Soc. Sci. Q.* **2021**, *102*, 2045. [CrossRef]
5. Leach, M.; MacGregor, H.; Scoones, I.; Wilkinson, A. Post-pandemic transformations: How and why COVID-19 requires us to rethink development. *World Dev.* **2021**, *138*, 105233. [CrossRef] [PubMed]
6. Lee, J.-H.; Woo, J. Green New Deal policy of South Korea: Policy innovation for a sustainability transition. *Sustainability* **2020**, *12*, 10191. [CrossRef]
7. Morea, J.P. Post COVID-19 pandemic scenarios in an unequal world challenges for sustainable development in Latin America. *World* **2020**, *2*, 1–14. [CrossRef]
8. Rutjens, B.T.; van der Linden, S.; van der Lee, R. Science skepticism in times of COVID-19. *Group Processes Intergroup Relat.* **2021**, *24*, 276–283. [CrossRef]
9. Sá, M.J.; Serpa, S. The COVID-19 pandemic as an opportunity to foster the sustainable development of teaching in higher education. *Sustainability* **2020**, *12*, 8525. [CrossRef]
10. Sá, M.J.; Serpa, S. The global crisis brought about by SARS-CoV-2 and its impacts on education: An overview of the Portuguese panorama. *Sci. Insights Educ. Front.* **2020**, *5*, 525–530. [CrossRef]
11. Zinn, J.O. Introduction: Towards a sociology of pandemics. *Curr. Sociol.* **2021**, *69*, 435–452. [CrossRef]
12. O'Connor, C.; O'Connell, N.; Burke, E.; Nolan, A.; Dempster, M.; Graham, C.D.; Nicolson, G.; Barry, J.; Scally, G.; Crowley, P.; et al. Media representations of science during the first wave of the COVID-19 pandemic: A qualitative analysis of news and social media on the island of Ireland. *Int. J. Environ. Res. Public Health* **2021**, *18*, 9542. [CrossRef] [PubMed]
13. Ferreira, C.M.; Serpa, S. (Eds.) *COVID-19 and Social Sciences*; MDPI: Basel, Switzerland, 2021. [CrossRef]
14. Lusardi, R.; Tomelleri, S. The juggernaut of modernity collapses. The crisis of social planification in the post COVID-19 era. *Front. Sociol.* **2020**, *5*, 611885. [CrossRef] [PubMed]
15. Echegaray, F. What post-COVID-19 lifestyles may look like? Identifying scenarios and their implications for sustainability. *Sustain. Prod. Consum.* **2021**, *27*, 567–574. [CrossRef] [PubMed]
16. Serpa, S.; Ferreira, C.M. Societies—Special Issue "Challenges of Post-COVID-19 for a Sustainable Development Society" 2020. Available online: https://www.mdpi.com/journal/societies/special_issues/Post_COVID-19 (accessed on 23 March 2022).
17. Aysan, A.F.; Bergigui, F.; Disli, M. Blockchain-based solutions in achieving SDGs after COVID-19. *J. Open Innov. Technol. Mark. Complex.* **2021**, *7*, 151. [CrossRef]
18. Zinn, J.O. Conclusions: Towards a sociology of pandemics and beyond. *Curr. Sociol.* **2021**, *69*, 603–617. [CrossRef]

19. Ferreira, C.M.; Sá, M.J.; Martins, J.G.; Serpa, S. The COVID-19 contagion-pandemic dyad: A view from social sciences. *Societies* **2020**, *10*, 77. [CrossRef]
20. Arnove, R.F. Imagining what education can be post-COVID-19. *Prospects* **2020**, *49*, 43–46. [CrossRef]
21. Duflot, R.; Baumeister, S.; Burgas, D.; Eyvindson, K.; Triviño, M.; Blattert, C.; Kuparinen, A.; Potterf, M. Building up an ecologically sustainable and socially desirable post-COVID-19 future. *Sustain. Sci.* **2021**, *16*, 1397–1403. [CrossRef]
22. Lehmann, P.; Beck, S.; de Brito, M.M.; Gawel, E.; Groß, M.; Haase, A.; Lepenies, R.; Otto, D.; Schiller, J.; Strunz, S.; et al. Environmental sustainability post-COVID-19: Scrutinizing popular hypotheses from a social science perspective. *Sustainability* **2021**, *13*, 8679. [CrossRef]
23. Tazreiter, C.; Metcalfe, S. New vulnerabilities for migrants and refugees in state responses to the global pandemic, COVID-19. *Soc. Sci.* **2021**, *10*, 342. [CrossRef]
24. Neto, P. EU cohesion policy post-2020, European Green Deal and Territorial Agenda 2030. The future of the place-based approach in the new EU policy framework in the context of COVID-19. *Eur. XXI* **2020**, *38*, 33–50. [CrossRef]
25. Arya, D.; Henn, M. COVID-ized ethnography: Challenges and opportunities for young environmental activists and researchers. *Societies* **2021**, *11*, 58. [CrossRef]
26. Fontefrancesco, M.F. Jogging during the lockdown: Changes in the regimes of kinesthetic morality and urban emotional geography in NW Italy. *Societies* **2021**, *11*, 124. [CrossRef]
27. Kim, K.; Zhao, L. Filtering facepiece respirator supply chain management framework in a disaster such as COVID-19. *Societies* **2021**, *11*, 136. [CrossRef]
28. Martin-Fuentes, E.; Mostafa-Shaalan, S.; Mellinas, J.P. Accessibility in inclusive tourism? Hotels distributed through online channels. *Societies* **2021**, *11*, 34. [CrossRef]
29. McAuliffe, M.; Blower, J.; Beduschi, A. Digitalization and artificial intelligence in migration and mobility: Transnational implications of the COVID-19 pandemic. *Societies* **2021**, *11*, 135. [CrossRef]
30. Ferreira, C.M.; Serpa, S. COVID-19 stigma and charismatic social relationship: A Legitimization narrative of President Trump's status as a charismatic leader following a SARS-CoV-2 infection reported by the Portuguese media. *Societies* **2021**, *11*, 130. [CrossRef]
31. Neilson, D. Learning for the future beyond COVID-19: A critical alternative to the neoliberal model of development. *Societies* **2022**, *12*, 32. [CrossRef]
32. Pereira, H. Male sex workers selling physical sex during the COVID-19 pandemic in Portugal: Motives, safer sex practices, and social vulnerabilities. *Societies* **2021**, *11*, 118. [CrossRef]
33. Tzoraki, O.; Dimitrova, S.; Barzakov, M.; Yaseen, S.; Gavalas, V.; Harb, H.; Haidari, A.; Cahill, B.; Ćulibrk, A.; Nikolarea, E.; et al. The impact of the COVID-19 pandemic on the working conditions, employment, career development and well-being of refugee researchers. *Societies* **2021**, *11*, 71. [CrossRef]
34. Bogdewic, S.; Ramaswamy, R. Developing complexity-informed COVID-19 responses to optimize community well-being: A systems thinking approach. *Systems* **2021**, *9*, 68. [CrossRef]
35. Serpa, S.; Ferreira, C.M. COVID-19 and stigmatisation processes. *J. Educ. Soc. Res.* **2021**, *11*, 5–9. [CrossRef]
36. Pierce, R. Fortified nudges? Protecting the vulnerable in a post-COVID Society. In *The New Common*; Aarts, E., Fleuren, H., Sitskoorn, M., Wilthagen, T., Eds.; Springer: Cham, Switzerland, 2021; pp. 169–173. [CrossRef]
37. Ferreira, C.M.; Serpa, S. Society 5.0 and social development: Contributions to a discussion. *Manag. Org. Stud.* **2018**, *5*, 26–31. [CrossRef]
38. Sá, M.J.; Santos, A.I.; Serpa, S.; Ferreira, C.M. Digitainability—Digital competences post-COVID-19 for a sustainable society. *Sustainability* **2021**, *13*, 9564. [CrossRef]

societies

MDPI

Concept Paper

Learning for the Future beyond COVID-19: A Critical Alternative to the Neoliberal Model of Development

David Neilson

Department of Sociology, The University of Waikato, Hamilton 3240, New Zealand; poli1215@waikato.ac.nz

Abstract: This paper reviews how COVID-19 became a global pandemic, why we now have to live with it, and what needs to be done to stop viruses going global in the future. Specifically, it argues that the still prevailing neoliberal model of development combined with related forms of class structure and ideological struggle all but guaranteed that the priorities of global capital and its agents, along with COVID-19, would win out in the end. Vaccinations have become the only path for resolving the tension between neoliberal capitalism and COVID-19 suppression. However, they take time to develop, are hampered by the capitalist model of vaccine production and distribution, and face a resistant alienated precariat. As a critical alternative, this article explores the neoliberal model of development's democratic socialist transformation with particular reference to the prevention of global pandemics.

Keywords: COVID-19; neoliberal model of development; democratic socialist model of development; class; ideology; anomie; moral regulation

Citation: Neilson, D. Learning for the Future beyond COVID-19: A Critical Alternative to the Neoliberal Model of Development. *Societies* **2022**, *12*, 32. https://doi.org/10.3390/soc12020032

Academic Editors: Sandro Serpa, Carlos Miguel Ferreira and Simon Susen

Received: 2 November 2021
Accepted: 18 February 2022
Published: 24 February 2022

1. Introduction

The "neoliberal model of development" comprises a global market regulatory form of capitalism that defines the terrain of capital accumulation, which centrally comprises global production and distribution circuits plus tourist-led service sectors [1]. This mode of globalization, that spreads things and people backwards and forwards between and within nation states, initially carried the virus to the countries of the world. In turn, nation states that have become increasingly integrated into this global market economy and thus less and less self-sufficient, cannot quickly decouple and switch to localized regimes of accumulation. In short, they face economic problems when they close their borders, but they must close them if they are to stop the virus spreading into the local community. The longer a country closes its borders, the greater the economic, as well as social and political, fallout. In the end, keeping secure borders has proved unsustainable because countries are dependent on remaining open to the world.

Through under-estimation of the threat and inadequate border closing strategies, the virus has streamed into many countries. Subsequently, many countries have adopted inadequate strategies to stop the local spread. The world's hegemon USA, especially during Trump's presidency, is the classic example of all of these problems. Beyond the success of authoritarian regimes not discussed here, only a few state-led national movements of coordinated solidarity or compliance were able to quickly eliminate COVID-19's first wave community spread and thus avoid serious economic fallout. However, in a world where the virus has spread nearly everywhere, even limited international interaction has meant that the borders in such countries would be breached again, thus forcing another round of community trench warfare with COVID-19. As local economic and social hardships increased and multiplied with each new wave of incoming infections, that to make matters worse has mutated into much more infectious variants, the elimination strategy has been revealed as only a means of buying time before vaccinations came on-line.

Promoted by the failure to eliminate community spread and the coming on-line of vaccines, the "return to normalcy" project is now winning out everywhere including in those countries that had done well in stamping out the initial spread. Specifically, across the advanced capitalist countries governments are negotiating an emerging consensus between business, health professionals, and much of the broader population that combines a hard push to maximize vaccination rates with a staggered return to "business as usual".

Nonetheless, the vaccination strategy is problematic in this neoliberal world of unequal development. For the Global South, the problem is the lack of vaccine supplies. They are last in the vaccine queue because the pharmaceutical industry is driven by profit and the Global North gets preferential treatment [2]. However, once the virus begins to spread through the population, it can mutate and then spread back to the global North. Furthermore, although there is adequate supply in the advanced capitalist countries, they are confronted with a heterogeneous minority, over-represented by the precarious and alienated who continue to be non-compliant. The problem is that avoiding overwhelming national spread requires high levels of vaccine compliance amongst the population. Finally, these problems will have to be confronted repeatedly because vaccines are not long lasting or completely effective and as the virus mutates may require new vaccine formulations.

In sum, this very infectious virus that has been able to spread and mutate across this neoliberal-led capitalist world of internationally divided and unevenly developed countries has rendered closed borders and lockdowns ultimately ineffective for all countries. Advanced capitalist countries are moving decisively to primary reliance on vaccinations. This reliance legitimates a new kind of neoliberal abnormal normalcy where the return to free movement within and between countries combines with acceptance that COVID-19 is here to stay. For the countries of the Global South, the reality is grimmer. Although in the most need due to economic vulnerability, inadequate health systems, and large poor and slum populations, they are without adequate vaccine access. Especially in terms of the situation of the alienated and vulnerable precariat, the Global South situation resonates with many of the more neoliberalized countries of the Global North. Nonetheless, the return to normalcy with COVID-19 gathers steam as health-first closedowns viciously interact with growing economic instability that even before the virus was threatening to become another global economic crisis.

The existing literature on COVID-19 that is growing every day covers many, including epidemiological, psychological, sociological, geographical, political-economic, disciplines. This article's conceptual approach is situated within critical political economy perspectives, which it draws on, but it also builds specifically on the author's existing research agenda that goes beyond much of the existing literature. In particular, this article offers a global overview perspective of COVID-19 that is rooted in the author's conception of a 'model of development' that builds beyond methodologically nationalist and praxis-free standard regulation theory [1,3,4]. It argues, innovatively, that COVID-19 is the latest expression of the catastrophic failure of the "neoliberal model of development" that is driving a planet-wide descent towards collapse. In this respect, this article brings in a "methodological trans-nationalism" beyond the "methodological nationalism" that dominates existing literatures, especially the influential critical geography perspective that flows through into the examination of COVID-19. In this later approach, neoliberalization and COVID-19 are examined as two spreading viruses, evolving "in different ways in different contexts" in "co-pathogenic interaction" that have resulted in global health insecurities [5,6].

By stylistically overviewing key developments within the terms of its innovative conceptual framework, this paper outlines elements of a novel mid-range argument regarding the major global contours of the context and process of COVID-19's social transmission across the world. Within the context of the unfolding 'neoliberal model of development', the paper makes a broad distinction between the Global North, comprising the wealthy industrially advanced capitalist democracies, and the Global South, that most clearly refers to the poor and uncompetitive 'underdeveloped' countries. It also offers a broad global class analysis, unavoidably without detailed quantitative description, of the process of

virus transmission and associated ideological struggles around social distancing and vaccinations. This conceptual paper demonstrates the need and agenda for, but does not actually deliver, detailed empirical comparative investigation of the countries of the world. Nonetheless, its critical focus on key problems of the neoliberal model of development central to why we have lost the war on COVID-19, raise fundamental themes regarding the need for, and the general characteristics of, an alternative model of development.

The author's perspective though drawing on, also goes beyond the growing Marxist literature on COVID-19 (e.g., [7]) by focusing much more persistently on a mid-range perspective whose ultimate focus is on the possibility of consciously making another world based in the democratic socialist transformation of the neoliberal model of development. The neoliberal causes of the present global pandemic gripping the whole of human civilization point viscerally towards the urgency of formulating and pursuing an alternative democratic socialist model of development. In short, with specific reference to COVID-19, this article focuses on the alternative that is in the critique of the neoliberal model of capitalist development and its associated ideology. It makes the case that this neoliberal project is responsible for COVID-19 becoming a global pandemic that we will just have "to learn to live with". This general argument is examined through the major pre-vaccination and vaccination stages of the struggle against COVID-19. It is organized in terms of an "alternative is in the critique" approach that moves from regulation theory themes of "accumulation regime" and "mode of regulation" to then bring in themes of class structure, class struggle, and the war of ideological position. The concluding discussion revisits the article's primary argument with particular reference to an alternative model of development that could prevent global pandemics in the future.

2. The General Argument for a Critical Alternative to the Neoliberal Model of Development

In standard regulation theory, a "model of development" refers to a "mode of regulation", or ensemble of laws, policies, and norms, which defines the institutional terrain on which unfolds an "accumulation regime" understood as a dynamically reproducing pattern of production, investment, and consumption [8–10]. The standard approach, however, is constrained by "methodological nationalism" and an over-emphasis on "political contingency" as a process of "accidental discovery". In contrast, in the non-standard approach adopted here, a model of development refers to a consciously designed and calculated trans-national project to get countries to adopt a national regulatory template. Widespread adoption of this prescribed template as a national mode of regulation creates the terrain on which unfolds a national–trans-national regime of accumulation that sets the priorities and constraints of capitalist agency, and in turn, national economic agency. Further, the revised approach offered here distinguishes between the postwar Keynesian-led "Fordist model of development" and rather than a post-Fordist era without a model of development as in the standard view, treats the post-1980s as being dominated by the "neoliberal model of development". In historical practice, national–trans-national connections deliberately constructed as a conscious praxis rather than "accidentally discovered" commonly define both models of development. However, while the former Keynesian model "counteracted", the later neoliberal model has "proactivated", capital logic [1,3].

At Bretton Woods, Keynes pushed for the widespread adoption of his national-centric regulatory template that restrained international capital and facilitated local national accumulation. In contrast, the neoliberal model of development has directly reversed the Keynesian direction. Under the auspices of the "Washington Consensus", UN regulatory agencies of the International Monetary Fund, World Bank, and the World Trade Organization have successfully sought the widespread adoption of its national template that has opened up countries to the unimpeded movement of capital across and within national borders. In aggregate, this project has created the regulatory terrain of global market competition between capitalist firms, and in turn, "locational competition" between countries. This model of development has unleashed the unfolding of a highly unstable and

crisis-ridden planetary regime of accumulation. Consequences include deepening uneven development between and within countries, a growing relative surplus population, recurring economic crises, deepening competition and mistrust between countries and an associated rise of "regressive nationalism", rapidly deteriorating planet-wide ecological integrity, and now a global pandemic [4,11].

The general argument applied specifically here to COVID-19 is as follows. The neoliberal model of development has created the terrain on which has unfolded global circuits of accumulation that move people backwards and forwards across the planet and thereby rapidly spread the virus. The WHO struggles to lead a coordinated international effort to stop the virus because it is both underfunded and undermined by the competitive imperatives and ethos unleashed globally and locally by the neoliberal model of development. It also confronts a trans-national regime of accumulation that undermines sustainable local accumulation and instead creates global market dependency, thereby making it economically unsustainable for countries to decouple from capital's global circuits that spread the virus. Fighting the virus within countries is hampered not only by local capital's dependence on extensive human movement, but also by the contemporary neoliberal-led nature of class structure and ideological struggle within nation states. This general critique, that points directly towards the urgency of constructing and deploying an alternative model of development, is now applied to accumulation, regulation, class structure, and ideological struggle.

2.1. Neoliberal-Led Mode of Global Material Accumulation Regime Spreads the Virus: Glocalization Is the Alternative

The neoliberal-led globalization of capital accumulation has created a world where national survival is dependent on maintaining viable positions in a world of global market standards of global market competitiveness [1,4]. Viability manifests in terms of the form of globalized production and distribution chains and for which countries are its geopolitical links. That is, countries unevenly house different specialized segments of globally networked circuits of production, and secure different shares of the globalized tourist driven service sector chain. National economic viability has become dependent on being able to house sufficient niches of globally competitive production and tourists that will bring in more revenue than the cost of importing everything else. Countries, dependently integrated into this global framework of accumulation, lose any semblance of local self-sufficiency such that economic instability will follow quickly if a country seeks to seal its borders.

Countries thus face a zero-sum trade-off situation. On the one hand, they are inextricably integrated into the economic logic of neoliberal globalization that entails the free movement of people across and within national borders. Accumulation occurs as a complexly integrated global division and distribution of production and services that integrally involves high levels of international movement amongst the population. It includes moving occupations such as in transportation, seafaring, and air travel. It also includes international movement of cosmopolitan middle class tourists, managerial coordinators of globally mobile capital, and competitors in professionalized global sports. As well, because of the globalization of the labor market, it also includes movement of globally scarce skilled workers, tradespeople, professionals, as well as seasonal workers imported from lower waged countries. As a function of this extensive global flow of people unleashed by neoliberal globalization, COVID-19 spreads to the countries of the world. However, on the other hand, in order to prevent the incoming flow of the virus, nation states must stop this inflow of people from beyond its borders on which it is economically dependent.

Global and thus local economic viability is dependent on the smooth functioning of this complexly interdependent system of globally integrated accumulation that looks a lot like the Japanese model of lean production writ large [12]. While more flexible than the single integrated assembly line system of Fordist mass production lean, "Just In Time" inventory systems are much more fragile than the more forgiving "Just In Case"

inventory systems of Fordism that can function as built-in buffers to counteract temporary disruptions in the chain of supply. Moreover, especially when raised to being a global framework for organizing the accumulation of many different products across globally dispersed geographical locations, the "Just In Time" lean production paradigm is revealed to be unwieldly, fragile, and inflexible, and unable to adapt to shocks that disrupt links in the chain. Without the free movement of people, and integrally as people fall sick with COVID-19, then steps in the global supply chain of the neoliberal mode of capital accumulation break down [13].

While the lean production model makes segments of the assembly chain temporarily independent of each other in order to deal with disruptions elsewhere in the process, this simply does not translate into a global supply chain scenario of a global pandemic. That is, when the links in the accumulation chain that are geographically dispersed across the planet are disrupted by border closures, then the whole system breaks down. In addition, countries understood as the geographical expression of these links cannot just decouple from this global network and switch to a locally self-sufficient alternative. There is no Plan B; the world's population spread across the countries of the planet are all materially dependent on the continuation of this globally integrated capital accumulation framework. Thus, while the only sure way to keep COVID-19 out at the national level is to keep borders closed, this globally integrated accumulation system requires national borders to be open. COVID-19 thereby reveals that this globally integrated system of accumulation, which also has numerous other including ecological problems, is fragile, unwieldly, and inflexible.

However, immaterially, the neoliberal form of economic globalization is inefficiently perpetuating uneven development across countries by constraining the maximal spread of knowledge to the world's population. That is, the neoliberal mission to privatize almost everything, from space to DNA to knowledge, is a serious restraint on efficient immaterial globalization that perpetuates uneven development. Further, unlike material globalization, immaterial globalization does not spread viruses.

The alternative is in the critique. Rather than globally integrated material accumulation coordinated by privatized knowledge, the way forward is encapsulated in the concept of 'cosmopolitan glocalization'. More specifically, the alternative accumulation paradigm proposed would be based in a global project underpinned by an ethos of global cooperation and institutions of shared knowledge that would prioritize where practically possible the capacity of countries to flexibly and independently develop sustainable local accumulation regimes. The accumulation paradigm envisaged is one where globally coordinated knowledge and expertise would be made universally available to inform and develop local forms of material production. In a direct reversal of the present neoliberal model of accumulation, the intensified globalization of knowledge would drive locally distributed systems of production. Priority would be given to material viability and human security beginning with the poorest and most dysfunctional countries of the Global South. With input from UN-centered knowledge and expertise, countries could develop on their own terms diverse and ecologically sustainable local food regimes, eco-friendly forms of human-centered shelter, UBI distribution mechanisms, local education systems based in universal access to the world's diverse knowledge, and vibrant socialized health systems [4,11].

This model of glocalized accumulation would also be highly effective in dealing with global pandemics. First, it would ensure that countries could maintain economic viability while being able to quickly and sustainably close down their national borders in order to prevent local virus infiltration. If a virus did penetrate national borders, universal local material security, the central goal of this alternative model of glocalization, is the best foundation for being able to sustain lockdowns because it is the basic condition for ensuring all members of society can viably isolate. Finally, in the worst-case scenario, the proposed regime of glocal accumulation would function to ensure even and maximum production of vaccines. Such a model that showcases glocalization is already something that the World Health Organization has considered in the past but has had neither the resources nor the ideological mandate to pursue in practice [14]. Under the auspices of

what elsewhere the author has named the "World Knowledge Bank" [15], the World Health Organization could procure vaccine designs that could be dispersed to local manufacturing plants [14]. Such a glocalized mode of accumulation would both increase and even out global supply of vaccines across the countries of the world. Combined with universally viable local accumulation regimes, such a system of vaccine production would be able to prevent scenarios like the present conjuncture in which a virus that, because never contained in Global South countries, will continue to mutate and spread around the planet.

2.2. The Neoliberal-Led Regulatory Framework Creates a World of Competition: When We Need Coordinated Cooperation

The neoliberal-led regime of global accumulation is underpinned by a global regulatory framework based in the widespread adoption of its national template that opens countries up to the free movement of capital. This national–trans-national mode of regulation generates for capital a world in which competition can come from anywhere, but also a world in which countries must compete with each other to win a viable share of this globally mobile capital. This framework decouples capital from countries that are subordinated to its imperatives. It also pits countries against each other in a form of "locational competition" to house segments of global production. Further, because as the population surplus to capital's requirements grows capital becomes scarcer, locational competition is zero-sum [1,16]. In short, the neoliberal model of development has created a world of aggressive competition that actually punishes cooperation. This framework and its corresponding worldview also dominate the institutions of the United Nations while its founding principles of democratic cooperation, inclusive solidarity, and universal wellbeing presently function just as obscuring window dressing. Furthermore, this form of locational competition is also a central structural driver behind the current xenophobic and racist Alt. Right form of 'regressive nationalism' [11].

While competition can be a strong performance motivator, under the neoliberal model of development it has becomes a dominating survival imperative that is destructively aggressive and negates cooperative efficiencies that are especially important in times of crisis that require unity of purpose. In these neoliberal times of viciously interacting crises, the current regulatory framework of aggressive competition between countries is deeply counterproductive. Under this neoliberal model of development, countries constantly confront zero-sum trade-offs between what is in the human collective global interest and what is in their narrow short-term national interest. Words of cooperation often hide a cynical mindset that considers trusting each other as naïve and that has become habitually embedded. The neoliberal regulatory framework and its associated mentality undermine both capacity and willingness to cooperate in order to overcome a common threat or enemy such as COVID-19.

Relatedly, the neoliberal regulatory framework also undermines the capacity of the World Health Organization to lead a strategy of coordinated cooperation to meet a common alien threat. The World Health Organization is underfunded, without clear United Nations institutional support, and relatedly, is without a clear mandate from the world's countries. Furthermore, the world's failing hegemon, USA, is the key underwriter of the neoliberal model of development, but until recently has even abdicated that responsibility because they were led by an aggressive "regressive nationalist" [11].

The alternative is in the critique. Rather than ruled by a mode of competitive regulation, a globally sustainable human civilization needs an alternative model of national–trans-national cooperative regulation to which competition can be subordinated. Such a mode of regulation would reverse "neoliberal multilateralism" that subordinates countries to the will of capital and replace it with a "social democratic multilateralism" that subordinates capital to the will of countries [11]. Key to "social democratic multilateralism" is trans-national agreements between countries that move them towards establishing shared principles to which each country's national regulatory framework would adhere. These would include shared ecological and decent employment standards, so that capital could

not push standards down by playing countries off against each other. Having common goals regarding the dimensions of basic universal material security would also imply a shared commitment to promoting local self-sufficiency within a framework of glocalization. This means that countries would each have the local flexibility within shared international agreements to protect and promote the development of local regimes of flexible accumulation. This flexibility would involve selective import controls to protect local autocentric accumulation and the capacity to reject products not produced according to agreed standards, while also giving countries the flexibility to import products that they are unable to produce locally [4,11].

This model of development presupposes the cosmopolitan democratic transformation of the United Nations and its various agencies. Of particular importance would be the transformation of its present economic regulatory agencies. Given the mandate by a genuinely cosmopolitan democratic federation of United Nations, such institutions would seek to promote and facilitate the national regulatory templates of social democratic multilateralism and the cooperative development of local accumulation modes. In addition, a "World Knowledge Bank" would seek to procure knowledge that would become the common property of all humanity, and in addition, such an agency would combine this knowledge with resources and expertise that would help facilitate countries to develop their own efficient and ecological sustainable local accumulation regimes [15,17]. This is not about imposing a model of production on to countries. Rather, it is about helping countries to develop, on their own terms, sustainable ways of living that can prioritize local food regimes, sustainable shelter, local health institutions including the development of local manufacturing plants for vaccines, and education models that could draw freely on the world's knowledge. In sum, the proposed regulatory framework would systematically transform the anti-local model of neoliberal competition into a framework of cooperative nationalism and cosmopolitan coordination that would also be exactly appropriate for preventing viruses becoming global pandemics.

2.3. From Class Structure to Class Struggle in the War against COVID-19

Contra the *Communist Manifesto* scenario but following Marx's implicit analysis in *Capital Vol. 1*, capitalism's mature class structure comprises the distribution of the laboring population into three major groups: knowledge workers, the industrial working class ("Active Army"), and the "relative surplus population". This later group refers to those made redundant relative to capital's needs because of the introduction of "self-acting machinery" [18]. It is segmented and includes the "Reserve Army" of labor that intersects with the Active Army, as well as the "lumpen proletariat" and the destitute [16,18,19].

Under the neoliberal mode of uneven development, the relative surplus population has grown as the coercive whip of technological competition making labor redundant has extended to apply across the whole planet. This development has generated a zero-sum competition between countries that arises from a viciously interacting causality between labor in oversupply, and capital that is thus made scarce [1,19]. The relative surplus population bears the brunt of resulting wage declines and the related facilitating of "labor market flexibility" policies and welfare policy retrenchment. Workers in the Global North are subject to the redundancy effects of both automation and de-industrialization as capital moves to newly industrializing low wage countries. In the Global South, the peasantry, still the largest social grouping in the world, is violently brought into this redundancy process due to the neoliberal-led global unleashing of technological competition in agriculture. This redundant population trudges into the growing slumlands of the cities. The capitalist class has also become highly segmented. It includes those at the apex of the power and wealth structure of multi-national corporations. However, it also includes the "contradictory class positions" of knowledge workers who perform capitalist functions but are also being precarianised, and small businesses and the self-employed or "own account workers" that grow, and whose experience overlap, with the relative surplus population.

This global class structure is unevenly overlaid and intersected by culturally, politically, and ideologically inflected social divisions between and within nations. Within countries, subordinated cultures are overrepresented in the relative surplus population. Raced and gendered class structures are also overlaid by the divisions within a prevailing hegemonic project between the "securiat", the "social bloc" of secure and advantaged groups who are integrated into and supported by the prevailing project, and the "precariat" whose core is in the relative surplus population and who are outside of the prevailing hegemony [20–22]. This insecure and disadvantaged precariat is vulnerable, marginalized, and alienated from the dominant structures and systems of the prevailing hegemony.

Common features, though unevenly variegated across and within the strata of relative surplus populations of unevenly developed countries, are poverty, employment and income precarity, insecure and unhealthy shelter, and living in competition with each other for scarce work. This complexly class structured and competitively divided distribution of the world's population also presents as a highly unequal distribution of wealth, welfare, and security. At its bottom is a stratified relative surplus population whose circumstances are characterized by deep poverty and everyday uncertainty. For the most desperate strata living in the streets of the large city slums of the Global South without steady employment or housing and for whom food needs to be procured daily, social distancing and self-isolation are unrealistic. In addition, the countries in the Global South with less developed health and social security systems cannot provide short-term welfare, or offer adequate hospital service, and for whom the vaccine is still unavailable. The tragic irony of the present situation in the Global North is that the relative surplus population, defined here as the most precariously located and therefore the most vulnerable, are also the most alienated, implying lower trust in government. Vulnerability to COVID-19, that follows this stratified social division of vulnerability that resonates with the division of the population into the vaccinated and the unvaccinated, is increasingly central to why the epidemic continues to rage in both the Global South and the Global North.

Especially in the Global South, this social division resonates most strongly with the internationally uneven division of wealth leading to vaccine undersupply that most strongly affects the relative surplus population. However, especially in the Global North, the most vulnerable within the relative surplus population are likely to be suspicious of the vaccine. That is, this core precariat, at the very bottom of which are the destitute and homeless, has reason to be suspicious because it is alienated from the mainstream middle class inflected habituses that pervade prevailing education and health systems.

Marx's early work [23] emphasizes how capitalist production relations are the source of alienation that is both self-estrangement and estrangement towards others. Following on, Durkheim's classic work on alienation, or what he names as "anomie", refers more specifically to atomized, lonely socially disconnected people that results when there is not, or they are not part of, widely shared integrating values or "moral regulation". In short, alienation or anomie arises for those without the unifying solidarity of "moral regulation". The term "system anomie" is introduced here as referring to people's disconnection from the "moral regulation" of prevailing hegemonic institutions and discourses.

The key problem in this present context is that to eliminate COVID-19 from the community, by means of social distancing and vaccinations, requires a movement of unified solidarity across the whole population that in turn is premised on universal awareness and trusting acceptance of hegemonic socially integrative system discourses and institutions. However, the population, divided between those with permanent secure employment and income, and those in the relative surplus population located outside or on the margins of organized capitalism, manifests as differing levels of precarity/security that unevenly overlaps with differing levels of system integration/alienation.

Mid-range capitalist projects differ in the extent to which they unify or divide the population. The pre-neoliberal project of the Keynesian welfare state, driven by an inclusive vision of social democracy that spreads free health and education and radically reduced the size of the precariat while also reducing the wealth and power of the capitalist class,

generated a form of society characterized by security, integration, and solidarity. As well, the dominant perspective of the "expertocracy" located within the legitimized systems of the state–capital–science complex was largely unchallenged and trusted by the population. In short, there was unified "moral regulation" and low "system anomie".

In contrast, the neoliberal model of development has moved the world in exactly the opposite direction, towards an increasing proportion of the population susceptible to "system anomie" combined with declining "moral regulation". Growing social fragmentation and deepening inequality follows the form of the class structure under the neoliberal model of development that grounds system anomie. Ideologically, neoliberal values of individualism and competition have undermined solidarity and trust. Further, especially since the birth of the internet, the exponential rise in the number and availability of competing narratives has filled the emptying space of shared values due to declining hegemonic socially integrative discourse or "moral regulation". For those already disconnected from the prevailing hegemonic discourse, this fracturing of a singular common sense view of the truth, or what can be called the "postmodern malaise", presents as a smorgasbord of anti-hegemonic discourses that replaces the unifying discourse of solidarity or "moral regulation". The war against COVID-19 is being waged on this highly fractured and divided social terrain. Rather than solidarity and a unity of purpose, central preconditions for winning a war, this competitive, unequal, disconnected, alienating, and divisive terrain is a recipe for social conflict and the unsustainability of a unified solidarity.

Competition and division within and between the national societies in this neoliberal era strongly indicate that COVID-19 will remain in global circulation indefinitely. Moreover, without the neoliberal model of development's democratic socialist transformation, humanity will remain susceptible to the global spread and embedding of more viruses. In the immediate present, the ideological war of position overlaying this complex class structure is being won by the neoliberal project as the moderate Left concedes with the neoliberals to an acceptance of a vaccine-mitigated, living-with-COVID-19, return-to-neoliberal-normalcy strategy. On-going battles, complicated by the Alt. Right's articulation with popular frustration, anger, and COVID-19 denial, focus on how best to manage a vaccine-led transition back to neoliberal normalcy.

2.4. Sketching the Contours of the Ideological War of Position on COVID-19

Three major perspectives, though in varying proportions and forms across the advanced capitalist democracies, are central to the current war of ideological position. There is a moderate Left perspective implicit in solidarity-led health-first responses to COVID-19, a neoliberal business-first perspective that always prioritizes the path back to neoliberal normalcy, and contradictory Alt. Right views that feed the anger and denial of the alienated and vulnerable. Intersecting this Left–Right reading are other dimensions of ideological struggle related to what are called "culture wars" around race, gender, religion, and science. The moderate Left's solidarity project against COVID-19 has been hamstrung by the hostile neoliberal-led economic, political, and ideological environment, but integrally, without an alternative post-neoliberal Left imaginary, it has also become subordinated to the neoliberal project. In the end, neoliberal right and left positions have coalesced towards a practical Third Way win–win strategy—summed up as "vaccinate, vaccinate, vaccinate!"—that seeks to make neoliberal normalcy compatible with containing, but not eliminating, the virus. However, this Third Way movement of the majority has also brought to the surface an oppositional minority, primarily located amongst the alienated precariat, who resist vaccination. However, alienation also articulates with other system-alienated views such as often contained in alternative health-based movements that mistrust dismissive mainstream medical science and post-colonial movements that do not trust the state that continues to be infected by colonial residues. This heterogeneous social bloc in-the-making are brought together by Alt. Right discourses that connect with the anxiety, anomie, and mistrustful disposition of all groups associated with this alienated and under-vaccinated minority.

More generally, the Alt. Right's ascendancy has been facilitated by the catastrophically failing neoliberal project that pits nations against nations and by the absence of a progressive alternative that could win the hearts and minds of the population, especially the alienated precariat that is growing, to an alternative counter-hegemonic project [4]. In addition, the divisively anti-democratic nature of the neoliberal project itself has also opened up space for the Alt. Right. The neoliberal-led underfunding of educational institutions undermining an informed citizenship sustains immature neoliberal views of citizenship rights. Especially pronounced in the USA, me-first market individuals see only their possessive rights and freedoms, and do not grasp that the individual rights of the "one" integrally entail obligations to the "other" in the form of collective commitments to the wellbeing of the whole of society. Ideally, a democratic socialist world is one in which solidarity is the basis of an inclusive individual freedom where everyone can meet their needs and pursue their own destiny. However, especially in times of war, as with COVID-19, where a consensual solidarity needs to be fully inclusive, the dissenting minority becomes deeply problematic. That is, solidarity, across a population bifurcated between those within and those outside of the prevailing hegemony, is the only path to universally meet citizens' rights for a sustainable collective environment free of the virus, but this right directly clashes with the democratic right of the minority to dissent.

Finally, social media has undermined, rather than promoted, a vibrant virtual global civil society that could generate genuine unity. Profit-driven companies are soft on disinformation and use algorithms that reinforce and radicalize existing views rather than providing a genuine democratic forum for facilitating honest and open debate between different perspectives. Within the context of the postmodern malaise, declining moral regulation, and increasing alienation, a space has opened up for the Alt. Right to give expression and identity to the growing proportion of the population in precarious, alienated, and vulnerable circumstances that have been neglected by both the neoliberal Right and the neoliberal Left. In sum, through manipulative tropes of mistrust and blame, the Alt. Right gives voice and expression to the alienated minority that releases its anger and anxiety on to the "other" thus feeding social division and conflict [11,21].

Within the immediate terms of the prevailing model of development, the evolving ideological struggle over COVID-19 grows out of the deep tension confronted by all countries. Especially in the pre-vaccine phase, this tension is between opening up the neoliberal-led global capitalist economy on which depend livelihoods and eventually lives, and directly prioritizing the health response by closing national borders and locking down the population in order to eliminate COVID-19 and save lives. The lockdown response provoked by initial cases sneaking through borders into the community also necessitated solidaristic movements of the whole population to socially distance and abide by drastic restrictions on the freedom of movement if local spread was to be stamped out. Both at and within borders, success in the war against COVID-19 has depended on the unified consent and solidarity of the population that in turn is dependent on high "moral regulation" and low "system anomie". In other words, unless nearly everyone accepted state-led discourses of social distancing, restricted freedom of movement, and vaccination, then especially with the highly infectious Delta and Omicron variants, the virus was guaranteed to spread rapidly amongst the population, though most seriously amongst the unvaccinated.

While the coming on-line of the vaccine has added a crucial line of defense, the recent more infectious strains demonstrate that anything less than complete elimination is losing the struggle. That is, the eventual universal spread of COVID-19 only needs a dissenting minority that does not get vaccinated or follow the rules of social distancing to ignite the rapid spread of the virus. Further, the Alt. Right movement that, ironically, asserts democratic rights as absolute freedom of choice and movement has articulated and validated this dissent. The problem is that even if the forces on the side of reopening the country to movement and business are only a minority, this will still de-rail the project to stamp out the virus locally. Compounding this logic is the tragedy that the portion of the population most alienated from the system and its legitimating discourses, and where

vaccination is low, is also in the end most vulnerable to COVID-19. These tensions break out into a complex ideological and political struggle between different agents to win the hearts and minds of complexly overlapping social groupings. This struggle is nonetheless based in the bifurcation of the population into, on the one hand, the socially integrated and trusting securiat that is vaccinated who are increasingly intolerant and dismissive towards, on the other hand, the system-alienated mistrusting unvaccinated precariat.

Institutional and ideological neoliberalization that has been central in creating alienated, uninformed, impoverished, and precarious segments of the population has ensured the failure of the moderate Left's health-first project of solidarity. The deeply precarious core of these overlapping groupings have been less able to abide by the rules of social distancing and staying at home, and along with other less precarious but also alienated groups, have been ideologically open to conspiracy, freedom, and denial narratives that have been coordinated by the Alt. Right. Not only does this all lead to a resistant non-vaccinated social bloc, it also generates an opposition movement to the solidarity movement against COVID-19, and indeed supports a return to neoliberal normalcy.

The consequences of the neoliberal model of development, including threatened democracy, undermined solidarity, and a world of divisive competition, are central to why COVID-19 will likely become a permanent feature of the human condition. In turn, only the neoliberal model of development's democratic socialist transformation can prevent future pandemics. Such an alternative requires the construction of a cooperative global regulatory framework whose political precondition is the genuine democratization of the United Nations. Such a transformation would provide the political preconditions leading to support for an alternative cooperative regulatory framework dedicated to helping all the nations of the world achieve local material security and self-sufficiency in food, shelter, health, and education that are the basic material prerequisites for the establishment of a genuine solidaristic social democracy. Relatedly, such a reformed United Nations could develop globally socialized forums of virtual democratic communication and a "World Knowledge Bank" dedicated to the procurement and then free distribution of cosmopolitan knowledge to the countries of the world that together would facilitate international cooperation and local self-sufficiency [15].

3. Concluding Discussion

This article has provided a "methodologically trans-national" stylized global overview of the COVID-19 pandemic. It has demonstrated how the neoliberal model of capitalist development and its associated worldview are central to why the virus is becoming a permanent feature of the human world, and how an alternative democratic socialist model of development is needed in order to prevent global pandemics in the future. This paper's overview conceptual perspective deployed the fundamental Global North/Global South geopolitical distinction, but further research needs to examine in much more detail the varying national forms of the struggles and timing of the stages of the war against COVID-19. It also should examine ideological variations in the struggle across nation states, especially regarding the nature and danger of the virus that link with specifically varying practical responses that can potentially have global outcomes. However, under the still-prevailing terms of the global capitalist neoliberal project, all paths are leading towards the same end-point. In simple terms, COVID-19 is becoming a permanent parasitic feature of the human condition that we must "learn to live with" as the world returns towards a recalibrated neoliberal normalcy.

Agents and defenders of capital and the neoliberal project that have pushed for and celebrate a return to normalcy will crow that they were right all along. The global market will once again be equated with freedom, openness, democracy, and the only path to progress, while the tentative war socialism of local solidarity in the face of a common threat that pointed embryonically towards the need for the (g)localizing transformation of the neoliberal model of development will be demonized as authoritarian and regressive. One already hears neoliberal slogans that localization is like living in a cave or seeking

a North-Korean-like hermit fortress. The term "fortress", in particular, articulates back with the neoliberal critique of the postwar nation-centric Keynesian model of development and more generally expresses opposition to all developments that move in a socialist or nation-centric direction.

In sum, even though the neoliberal model of capitalist development is the root cause of this global pandemic, the failure of solidarity to win out will be made to appear as a victory for the resilience of the neoliberal capitalist world. Expressed as an intellectually pessimistic hindsight, it is obvious that the solidarity project was up against insurmountable odds, and the return to a neoliberal normalcy albeit with COVID-19 can now be seen as the almost guaranteed final outcome inscribed in the very logic of the neoliberal model of development itself. Rather than gaining insight into the neoliberal-led capitalist causes of this outcome that underpins the construction of a progressive alternative, neoliberal global capitalism will, without significant critical exposure, continue to lead human civilization into the darkness. Paralleling the experience of the global financial crisis, capital will be given bonuses, humanity will bear the brunt, and little will change.

Capital will continue on its path of systematic destruction that treats Nature, including humanity, as expendable resources. Under the neoliberal model of capitalist development in particular, profitability has become the overriding global imperative that also drives locational competition, which feeds "regressive nationalism" and undermines the capacity of countries to prioritize humanity's and, integrally, Nature's health and wellbeing. If indeed this is to be the future, then one can assume there will be more viruses that will become global pandemics that we will not be able to stamp out. In sum, the world organized within the framework of the neoliberal model of development has ensured COVID-19's planet-wide embeddedness and that future viruses will also become global pandemics. This future is not guaranteed, but if there is to be an alternative future, it is imperative that the critical lessons coming out of this global pandemic are translated into the democratic socialist transformation of the neoliberal model of development.

Multiple dysfunctions in global supply chains into which countries are unevenly inserted and dependent upon spread the virus and prevented local de-coupling. The inflexibly unstable nature of this global monolith thus revealed by this global pandemic points urgently towards the need for a "glocalization" alternative. Such an alternative is based in global socialization of cosmopolitan knowledge deployed to facilitate locally controlled material accumulation. Such an alternative is particularly relevant for vaccine production and distribution.

Relatedly, global market competition generated by the neoliberal model that pits countries against each other that has rendered international cooperation impossible has been demonstrated to be particularly dangerous in global emergency situations where international coordination and organized cooperation is crucial. In particular, this dangerous situation is reflected in problems with the World Health Organization. It lacks power and resources that have their root causes in the overall neoliberal infected organizational framework of the United Nations linked with its domination by the neoliberalized countries of the Global North. As a result, the World Health Organization has been unable to coordinate an international response that could have stopped COVID-19's spread and that could have been central in the management of its elimination once getting a foothold in countries.

The present COVID-19-led conjuncture underpinned by the interacting crises of the neoliberal model of development has also revealed a deeply conflictual and unstable dynamic of political and ideological struggle. While there are complex reasons for people being anti-vaccination, a central factor is the neoliberal model of development itself that has generated a vulnerable and alienated precariat. System alienation corresponding with me-first neoliberal individualism and the absence of the unifying cement of shared discourses of social integration (or "moral regulation") has generated a dissenting and resisting minority. This minority is particularly significant in this context because the project of solidarity in order to stamp the virus out is fragile because only the resistance of the few is needed to put it in jeopardy.

Only briefly in a few countries did the war against COVID-19 take the form of a unified struggle against a common threat. In the end, the on-going struggle boils down to that between the project to save a catastrophically failing model of capitalism that has led to COVID-19 becoming a global pandemic in the first place, and the counter-movement which, ultimately, pushes towards the neoliberal model of development's democratic socialist transformation. The present return to neoliberal normalcy represents another missed opportunity to progressively reverse the devastating consequences of the catastrophically failing neoliberal model of development, at least partly because of the absence of an ideological imaginary and blueprint for a counter-hegemonic democratic socialist model of development. The neoliberal model of development's viciously interacting economic, ecological, and political crisis tendencies, that now include viral pandemics, all point towards the urgent need for a democratic socialist model of development.

Under the cosmopolitan democratic leadership of a reformed United Nations, a socialized form of knowledge globalization and a new national–trans-national regulatory framework would facilitate universally material self-sufficiency for the countries of the world. Under this model of "glocalization" that defines the democratic socialist model of development, countries would be able close borders quickly without significant economic fallout and reformed United Nations institutions would have the mandated support and capacity to effectively coordinate this process within a framework of cooperative nationalism.

Funding: This research received no external funding.

Conflicts of Interest: The author declares no conflict of interest.

References

1. Neilson, D. Bringing in the neoliberal model of development. *Cap. Cl.* **2020**, *44*, 85–108. [CrossRef]
2. Williams, O. Access to medicines market failure and market intervention: A tale of two regimes. *Glob. Public Health* **2012**, *7*, S127–S143. [CrossRef] [PubMed]
3. Neilson, D. Re-making the connections: Marxism and the French Regulation School. *Rev. Radic. Political Econ.* **2012**, *44*, 160–177. [CrossRef]
4. Neilson, D. Reversing the Catastrophe of Neoliberal Led-Capitalism in the Time of Coronavirus: Towards A Democratic Socialist Alternative. *Cap. Cl.* **2021**, *45*, 191–214. [CrossRef]
5. Sparke, M.; Williams, O.D. Neoliberal disease: COVID-19, co-pathenogenesis and global health insecurities. *EPA Econ. Space* **2022**, *54*, 15–32. [CrossRef]
6. Peck, J. Explaining (with) neoliberalism. *Territ. Politics Gov.* **2013**, *1*, 132–157. [CrossRef]
7. Saad-Filho, A. From COVID-19 to the end of neoliberalism. *Crit. Sociol.* **2020**, *46*, 477–485. [CrossRef]
8. Aglietta, M. *A Theory of Capitalist Regulation: The US Experience*; Verso: London, UK, 1979.
9. Lipietz, A. Reflections on a tale: The Marxist foundations of the concepts of regulation and political economy. *Stud. Political Econ.* **1988**, *26*, 7–35. [CrossRef]
10. Boyer, R.; Saillard, Y. *Regulation Theory: State of the Art*; Routledge: London, UK, 2002.
11. Neilson, D. Beyond Regressive Nationalism and the Neoliberal Model XE Model of development:Neoliberal Model of Development. *Rev. Radic. Political Econ.* **2021**, *53*, 17–34. [CrossRef]
12. Moody, K. How just-in-time capitalism spread COVID-19: Trade routes, transmission, and international solidarity. *Spectre*, 8 April 2020. Available online: https://spectrejournal.com/how-just-in-time-capitalism-spread-covid-19/(accessed on 1 November 2021).
13. Moody, K. Why it is high time to move on from just-in-time' supply chains. *The Guardian*, 11 October 2021. Available online: https://www.theguardian.com/commentisfree/2021/oct/11/just-in-time-supply-chains-logistical-capitalism(accessed on 1 November 2021).
14. Kamrad-Scott, A.; Lee, K. The 2011 Pandemic Influenza Preparedness Framework: Global Health Secured or a Missed Opportunity? *Political Stud.* **2011**, *59*, 831–847. [CrossRef]
15. Neilson, D. The democratic socialisation of knowledge: Integral to an alternative to the neoliberal model of development. In *Knowledge Socialism. The Rise of Peer Production: Collegiality, Collaboration, and Collective Intelligence*; Peters, M., Besley, T., Jandrić, P., Zhu, X., Eds.; Springer: Singapore, 2020.
16. Neilson, D.; Stubbs, T. Relative surplus population and uneven development in the neoliberal era: Theory and empirical application. *Cap. Cl.* **2011**, *35*, 435–454. [CrossRef]
17. Neilson, D.; Enright, N. From Dead Information to a Living Knowledge Ecology. In *Bioinformational Philosophy and Postdigital Knowledge Ecologies*; Peters, M.A., Jandric, P., Hayes, S., Eds.; Springer: Singapore, 2022.

18. Marx, K. *Capital*; Penguin: Harmondsworth, UK, 1976; Volume 1.
19. Neilson, D. In-itself for-itself: Towards second generation neo-Marxist class theory. *Cap. Cl.* **2018**, *42*, 273–296. [CrossRef]
20. Standing, G. The precariat: From denizens to citizens. *Polity* **2012**, *44*, 588–608. [CrossRef]
21. Neilson, D. Class, precarity, and anxiety under neoliberal global capitalism: From denial to resistance. *Theory Psychol.* **2015**, *25*, 185–201. [CrossRef]
22. Neilson, D. *The Struggle to Make Democratic Socialism in the Twenty-First Century*; Nova: New York, NY, USA, 2022.
23. Marx, K. *Economic and Philosophical Manuscripts*; Penguin in Association with New Left Review: Harmondsworth, UK, 1957.

societies

MDPI

Concept Paper

Filtering Facepiece Respirator Supply Chain Management Framework in a Disaster Such as COVID-19

Kihyung Kim [1,*] and Li Zhao [2]

[1] Trulaske College of Business, University of Missouri, Columbia, MO 65211, USA
[2] Textile and Apparel Management, University of Missouri, Columbia, MO 65211, USA; Zhaol1@missouri.edu
* Correspondence: kimkihy@missouri.edu

Abstract: Due to the lack of vaccines and treatments, filtering facepiece respirators are a primary and effective tool to dampen the spread of COVID-19. To meet the huge and continuous demand for filtering facepiece respirators, this concept paper suggests a supply chain management framework based on the disaster management principle. This concept paper adopts an exploratory and qualitative literature review to provide managerial insights for the supply chain participants. Due to implementation delay and strategic interdependency, the supply chain management strategies need to be systematically integrated. A viable way to integrate strategies is based on the disaster management cycle: mitigation, preparation, response, and recovery phases. Our model integrates innovative and successful but overlooked supply chain management strategies. First, the production capacity should be flexible so that the production mode in emergency and normal situations can be different. Second, the concept paper and development facilities can utilize their capacities for actual production in emergencies. Third, the quality certification process should accommodate the flexible production capacities. Fourth, inventory stockpiling should be renewable. This concept paper contributes to policymakers, healthcare sector decision-makers, stakeholders throughout the FFR supply chain to cope with future crises caused by pandemics by providing a systematic approach to constructing an effective, flexible, and resilient supply chain.

Keywords: COVID-19; filtering facepiece respirators; supply chain management; disaster management cycle

Citation: Kim, K.; Zhao, L. Filtering Facepiece Respirator Supply Chain Management Framework in a Disaster Such as COVID-19. *Societies* **2021**, *11*, 136. https://doi.org/10.3390/soc11040136

Academic Editors: Sandro Serpa and Carlos Miguel Ferreira

Received: 12 August 2021
Accepted: 8 November 2021
Published: 11 November 2021

1. Introduction

In 2020, coronavirus disease 2019 (COVID-19) spread all over the world. To control the disease outbreak, it is essential for the public to wear filtering facepiece respirators (FFRs), such as surgical and N95 masks. Unfortunately, the capacity of the FFR supply chain is insufficient to fulfil the sudden and huge demand under this disastrous situation. To protect society from another respiratory disease pandemic, it is urgent for researchers, industry practitioners, and governments to construct effective FFR supply chains. To answer this urgent need, this concept paper provides an implementable framework that integrates supply chain management (SCM) strategies based on the crisis management principle through extensive case study reviews.

COVID-19 is caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) that is highly contagious with human-to-human transmission. PPE, such as FFRs, medical gowns, gloves, and goggles, protect the wearers from the virus's transmission. We focused on FFRs because other PPE is mainly consumed by restricted users such as healthcare providers. This implies the demand for FFRs is much larger than that for other PPE, and this causes formidable challenges. In addition, we focused on disposable masks and respirators and excluded cloth masks. Cloth masks are made of a normal woven fabric and cover the wearer's mouth and nose. The effectiveness of cloth masks is questionable [1,2]. Moreover, supply shortages do not occur for cloth masks because people can make cloth masks using their own fabric.

Due to the shortage of vaccines and lack of treatments, FFRs are a primary and effective tool to dampen the spread of COVID-19. Accumulated evidence supports the idea that "public mask wearing is most effective at stopping spread of the virus when compliance is high [3]." Moreover, when a mask can filter small sized airborne particles, it protects the wearer more effectively [1]. Recent observations and empirical studies show that COVID-19 transmission is lessened when the public wears FFRs. For example, the citizens of South Korea and China actively wear FFRs, and the countries have successfully controlled the spread of COVID-19 compared to other countries [4]. Chu et al. [1] found that "face mask use could result in a large reduction in risk of infection, with stronger associations with N95 or similar respirators compared with disposable surgical masks or similar."

The demand for FFRs has been huge and continuous during the pandemic. The global yearly market volume of FFRs was less than $356 million dollars in 2018 [5]. According to the Ministry of Food and Drug Safety of South Korea (MFDS), the monthly FFR market size of South Korea in June 2020 was approximately $400 million dollars. The demand for FFRs exploded during the pandemic such that a country's monthly market size exceeded the world's annual trading volume two years ago. The demand for FFRs is huge because both healthcare providers and all of society should wear FFRs to curb spread of the contagious disease. Moreover, the demand is continuous throughout the pandemic period because FFRs are designed to be disposable.

Unfortunately, the FFR supply did not meet the sudden and huge demand for FFRs in the early stage of the COVID-19 pandemic. Due to the supply shortages of personal protective equipment (PPE) including FFRs, many countries, including the most developed countries in the world such as the U.S. and the U.K., there was a failure to curb the spread of COVID-19 before it became a pandemic [5–7]. The failure has resulted in a disastrous loss of lives and enormous economic damage worldwide. Revisiting the supply chain of FFRs and finding solutions for future needs is very important.

To achieve our theoretical goals, we first reviewed extensive articles and case studies about the countries that successfully contained the COVID-19 outbreak. We then examined perspective articles that discuss similar strategies that we find in the case studies. We suggested a conceptual model to build an FFR supply chain that effectively copes with future emergencies. In particular, supply chain management framework and disaster management cycle were used to envision the FFR supply chain. The gap between the regular FFR supply chain capacity and the demand for FFRs during the initial stage of COVID-19 pandemic was examined. Four phases of disaster management cycle including mitigation, preparation, response, and recovery were discussed. Considering four pillars in the FFR supply chain including information, production, distribution, and sustainability, we demonstrate detailed strategies under each stage for an effective FFR supply chain. We assert that the systematic management of the entire supply chain is crucial. An anecdote illustrates the importance of taking a supply chain viewpoint. This study aims to propose solutions for future emergencies that the FFR supply chain may face.

2. Literature Review

We conducted an unstructured literature review, starting with industry news and reports related to FFR shortages in our supply chain. Journal articles were reviewed to formulate research problems and identify solutions. Articles were gathered from three areas: SCM, disaster management, and COVID-19 updates. Articles were selected using both inclusion and exclusion criteria. We included both qualitative and quantitative studies with keywords 'personal protective equipment', 'filtering face mask', 'supply chain', and 'COVID'. Non-English articles were excluded. We select relevant articles based on our experience. Then, we explored and selected theoretical studies to construct the framework of this study based on our experience as well.

We built a conceptual model based on the integration of SCM with the disaster management cycle. The SCM approach tracks the increasing value of FFR from raw

material to the final product. The SCM approach has the advantage of identifying the extent of the gap between supply and demand at each stage of production. This advantage is important to account for the bottleneck in FFR production. However, bottlenecks vary from situation to situation. The SCM approach is limited in understanding the dynamics of bottlenecks. The disaster management framework provides a complementary perspective for addressing fluctuating bottlenecks in the FFR supply chain. Disaster management provides a procedural approach to responding to crises caused by a disaster, called the disaster management cycle. This article provides a constructive framework for addressing the crisis in the FFR supply chain caused by the COVID-19 disaster by integrating the SCM approach with the disaster management cycle approach.

2.1. SCM Approach in Managing FFR Supply Chain Reacting to the COVID-19 Crisis

There is a gap between the regular FFR supply chain capacity and the demand for FFRs during the COVID-19 pandemic. For instance, at the beginning of April 2020, the U.S. government ordered 3M, one of the major FFR producers in the world, to produce more masks based on the Defense Production Act. However, it was difficult for 3M to follow the order due to the insufficient nonwoven melt-blown filter (MB filter) supply [8]. Many reports agree with our perspective that coherent and systematic strategies are required throughout the FFR supply chain to cope with the disastrous situation [9–11]. The gap identifies the challenges to coping with the surging demand for FFRs during a respiratory contagious disease outbreak.

The supply chain starts with raw material suppliers and ends with the end users. Figure 1 depicts the core structure of the FFR supply chain. This paper focuses on the three main tiers (component providers, manufacturers, and distribution channels) and the quality certification process.

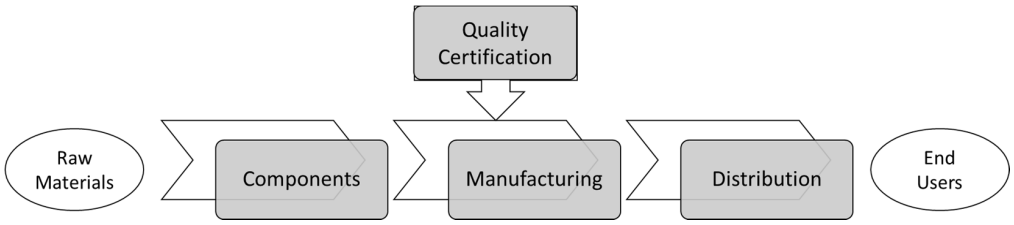


Figure 1. FFR supply chain.

The FFR components include MB filters, ear-loop or head-loop straps, and main bodies that are made up of plastic or fabric. Among the raw materials, the key component is the MB filters. The MB filter is produced through a nonwoven web-forming process known as melt blowing to form fine fiber [12]. FFRs filter out droplets and airborne particles that contain viruses by using this material as a filter. In 2019, the U.S. capacity of melt-blown fiber was estimated to be 250,000 metric tons per year and 34% of the fiber was used for filtration media [13]. One ton of MB fiber yields 1 million filters, and FFRs contain 1–4 filters, depending on their protection level.

The manufacturers assemble the components as FFRs. The FFR manufacturing capacity is highly concentrated in a couple of regional clusters. Notably, China possesses much of the capacity. The FFR manufacturing capacity is distributed over three major regional clusters: the U.S., Asia, and Europe. China produced approximately 20 million units of masks a day, which was approximately half the global production capacity for masks [5]. According to the U.S. Department of Health and Human Services, the U.S. imports 95% of its surgical masks and 70% of its respirators [7].

Quality control is essential for FFRs to protect their wearers. Certification is required for manufacturers to sell their FFRs in major markets. The certified protection level is often represented in the product names. For example, N95 represents the filtering ability of at least 95% of the airborne particles. The National Institute for Occupational Safety

and Health (NIOSH) manages the N95 certification process in the U.S. [14]. The N95 certification process takes approximately three months from submittal to approval [15].

The end users acquire masks through two types of distribution channels. Institutional consumers, such as hospitals and manufacturing firms, procure the masks in business-to-business transaction channels and distribute them to their employees according to their needs. In this case, the contract is settled through a negotiation process between the buyer and the manufacturer. Individual consumers purchase masks from retail pharmacies. The transactions depend on the market mechanism.

There is little consensus on how much demand should be fulfilled. For example, various estimations of the demand in the U.S. have been provided. Assuming a 42-day severe influenza pandemic, the U.S. CDC estimated a need for at least 1.5 billion medical masks for the healthcare sector and 1.1 billion for the public. In addition, the healthcare sector will demand more than 90 million N95 respirators [16]. Carias et al. [17] estimate the maximum demands at 7.3 billion respirators and 0.04 billion surgical masks for healthcare institutes in the U.S. In March 2020, the U.S. Department of Health and Human Services estimated that U.S. healthcare workers would need 300 million N95 respirators per month to fight a pandemic [18]. The estimations for the healthcare sector vary to a significant extent, and estimations for the public are rare.

2.2. The Disaster Management Cycle

Disaster management has been intensively studied because of the serious effects of disasters and the difficulty in containing them. Disasters refers to "events that occur when significant numbers of people are exposed to hazards to which they are vulnerable, with resulting injury and loss of life, often combined with damage to property and livelihoods" [19]. Disasters cause crises, which are "the perception of an unpredictable event that threatens important expectancies of stakeholders and can seriously impact an organization's performance and generate negative outcomes" [20]. Both disaster management and crisis management agree on the four interrelated phases: preparation, response, recovery (revision), and mitigation (prevention). As depicted in Figure 2, a disaster management cycle refers to repeating the four steps to manage the severe impact of a disaster.

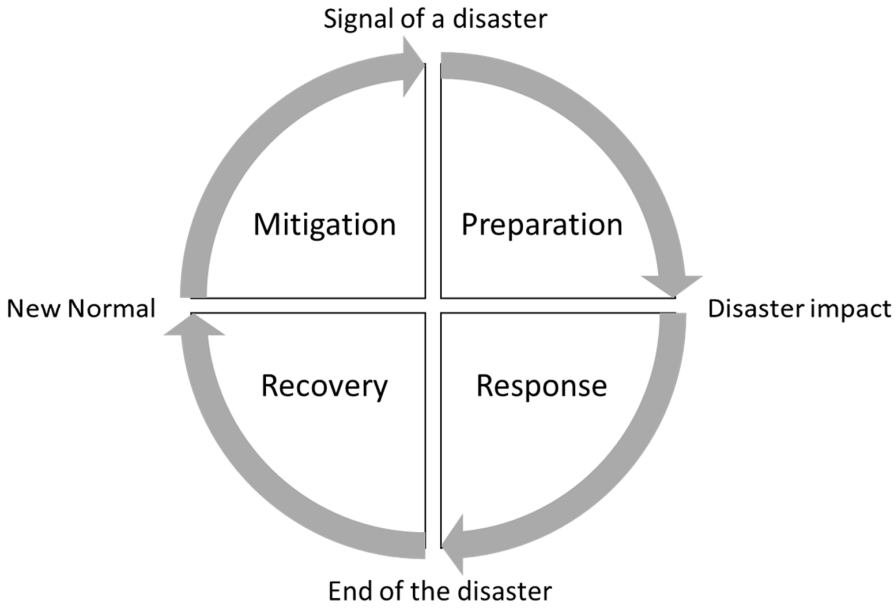


Figure 2. Disaster management cycle.

The disaster management cycle has been used in many studies to explore extreme events and management practices, and public affairs. For example, Basri et al. [21] conducted survey research to explore disaster management cycle of a flood event in Malaysia from the perspective of industry players and flood victims. Based on the four

stages of the disaster management cycle, Sim et al. [22] employed in-depth interviews to develop competence and skill sets of social workers for the field of disaster management in China. Recently, Thyagarajan et al. [23] applied the disaster management cycle to describe the development, implementation, and outcomes of a national-scale simulation delivery platform in response to the COVID-19 pandemic disaster. This platform is developed by India's Pediatric Simulation Training and Research Society. Their research presented how this platform enabled the management team to address key aspects of the disaster management cycle. The disaster management cycle has been confirmed as an effective approach to encompass preparation for and recovery from large-scale disasters.

In advance of the evident threat of a respiratory disease pandemic, the mitigation phase comprises designing and constructing an FFR supply chain that decreases the impacts of the disaster on society and the environment.

When the threat of a respiratory disease pandemic is observed but the disease has not yet impacted society, the preparation phase includes activities to organize and to allocate resources along the FFR supply chain to provide the product where it is needed during the pandemic. The tasks in the preparation phase are relatively short-term proactive compared to the tasks in the mitigation phase. The preparation phase continues some tasks from the mitigation phase, such as vulnerability assessment, constructing an information sharing system, estimating the supply chain capacity, diversifying suppliers, and constructing an FFR stockpile. In this section, we discuss the other additional tasks in the preparation phase.

Once the pandemic impacts society, the response phase consists of rapid and effective actions to provide the FFRs to reduce the damage from the disaster. When the supply chain is efficiently designed and constructed in the mitigation and preparation phases, the reaction will be more effective than the case for COVID-19.

After the pandemic, the recovery phase involves the actions taken to return to a new normal situation such as returning the supply chain resources to an efficient allocation for to meet normal demands.

3. Conceptual Model of FFR Supply Chain Management Based on the Disaster Management Cycle

To build an effective FFR supply chain to cope with a disastrous situation such as the COVID-19 pandemic, it is necessary to integrate existing and proposed supply chain management strategies based on the disaster management principle.

We propose an implementable FFR supply chain management framework based on the disaster management cycle. Figure 3 illustrates the overview of our framework. Compared to existing articles that focus on increasing the production capacity, our framework considers four pillars: information, production, distribution, and sustainability. The unique feature of this paper is the systematic integration of multidimensional supply chain management strategies over the four phases of the disaster management cycle.

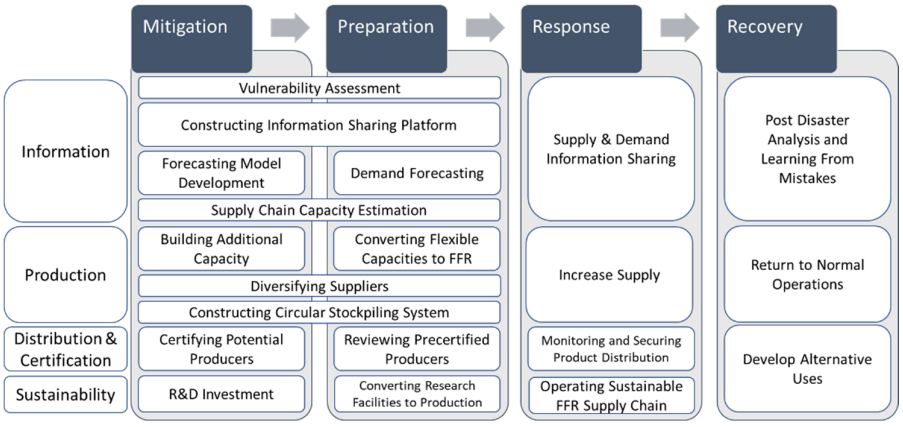


Figure 3. FFR supply chain management framework based on the disaster management cycle.

3.1. Mitigation Phase

3.1.1. Vulnerability Assessment

In terms of FFR supply chain management, a vulnerability assessment identifies the anticipated bottlenecks that the supply chain will face [10]. For example, Rice [24] states that too high a concentration of suppliers in China is the most critical vulnerability. However, there is little consensus about the lack of diversification being the most important obstacle. For instance, Gereffi [25] asserts that the MB filter supply shortage is the primary problem of the FFR supply during the COVID-19 pandemic.

Considering the huge and continuous demand for FFRs, it is necessary to conduct a vulnerability assessment of various aspects of the entire supply chain. According to the theory of constraints, a bottleneck is the least capable tier of a supply chain that restricts the entire supply chain capacity [26]. This theory implies that every tier in the FFR supply chain should have enough capacity to meet the demand. Because multiple processes of the current FFR supply chain do not have enough capacity to meet the huge and continuous demand, researchers have presented various opinions on the vulnerability assessment. Diversified vulnerability assessments are desirable to identify various potential bottlenecks.

Vulnerability assessments are essential in the mitigation and preparation phases because they form the basis to construct an effective FFR supply chain. A vulnerability assessment calls for follow-up actions such as source diversification and increasing the MB filter supply. Because it takes considerable time to implement the follow-up actions, we should conduct this task in the mitigation phase or at least in the preparation phase.

3.1.2. Constructing an Information Sharing and Monitoring Platform

Under unexpected disastrous situations, we cannot overemphasize the importance of using information to make decisions to reduce the damage from disasters. Efficient information sharing is one common aspect of the countries that successfully contained the COVID-19 outbreak such as South Korea and Taiwan [4,27,28]. The governments of these countries control the supply of FFRs and provide the supply chain data to the public. The data include the import and production of the components (such as MB filters) and final products and the FFR inventory of retail shops. The manufacturers and retail shops collaborate with the government to update the data on time.

The information-sharing platform can be used for material flow monitoring [9]. For example, the infiltration of fake FFRs and underperforming materials into the FFR supply chain is a significant problem [29]. Researchers suggest blockchain as a tool to secure the supply chain from illegitimate products [30,31]. It is a critical task in the mitigation phase to construct an information-sharing platform utilizing advanced information technologies that can be used for supply chain monitoring.

3.1.3. Developing a Forecasting Model

It is essential to develop a forecasting model for FFR demands during a disastrous situation. The scope of the forecasting model includes not only the independent demand for the final product, but it also includes the derived demand for the components. Despite the estimation of the demand for the final product during the COVID-19 pandemic, it is rare that the demand for other components such as MB filters, manufacturing processes, and quality certification processes be estimated. Because it is a requirement to manage the entire supply chain, the forecasting model should be informative for every tier of the supply chain.

The forecasting model should be able to reflect the updated data through the information sharing system. As we can see in South Korea's case, the dynamic forecasting model forms the basis of societies' proactive strategies against the disastrous situation [28]. The possible models include scenario-based forecasting models, stress test models, and artificial intelligence algorithms [27,32,33].

3.1.4. Supply Chain Capacity Estimation

As we show with the FFR supply chain capacity before the pandemic section, the FFR supply capacity estimation requires identifying each tier's capacity and the bottleneck of the supply chain. For example, during the COVID-19 pandemic, the production capacity bottleneck has been the MB filter supply capacity [8,18]. It is impossible to increase the FFR supply without identifying the bottleneck. Moreover, a finer estimation of each tier's capacity allows one to conduct risk assessments such as the what-if test. For example, we can answer the question "when a part of supply chain is disrupted, how much supply can we acquire?" by identifying the bottleneck under the postulated scenario.

3.1.5. Build Additional Flexible Capacity

To fill the supply and demand gap, capacity expansion is a straightforward strategy. Reacting to the COVID-19 outbreak, huge capital investments have been made to build additional FFR production capacity. For example, the U.S. Department of Defense (DOD) invested $133 million in domestic N95 mask production. Through the investment, three major companies, 3M, O&M Halyward, and Honeywell, will produce 37.5 million masks per month after initialization [34].

Because capacity expansion takes considerable time, it is part of the mitigation phase. For example, Reicofil is a German manufacturer of the machinery used to make MB filters. The company can establish a melt-blown production line in less than four months. This is an expedited timeframe to cope with the COVID-19 pandemic [35]. This implies that effective capacity expansion requires well-developed plans and accurate forecasting. Researchers use the real options approach and stochastic control theory to determine the investment timing and size [36,37].

When the capacity is expanded, how to utilize the expanded capacity after the crisis should be considered. For example, Medicom Group, a Montreal-based company, opened an FFR factory in Canada. The company and the Canadian government made a long-term agreement about after pandemic FFR supply. Medicom's chief executive, Ronald Reuben, stated that the long-term agreement was crucial for the investment decision [18]. Without a plan to handle the excess capacity, much of the capacity will be idle after the pandemic.

The additional capacity should be flexible so that it can be utilized to meet regular demands for other products. During the COVID-19 pandemic, suppliers increase the mask material supply by modifying their similar production lines to mask filter production lines. From the production technology viewpoint, mask MB filters are similar to absorbent hygiene products. Therefore, diaper and feminine hygiene producers can change their production lines to mask MB filter lines. For example, Procter and Gamble (P&G) converted approximately 10 absorbent hygiene product production lines to mask material production lines in reaction to COVID-19 outbreak [35]. If the converted capacity can be returned to their usual production mode, we can avoid a considerable amount of inefficient capacity.

3.1.6. Developing Diversified Sources

It is essential to diversify the FFR sources to mitigate the supply disruption risk for concentrated sources. If sourcing options are concentrated in a specific region, disruptions at the location put the entire supply chain at risk [38]. The COVID-19 spread started to be serious in Wuhan, China. Due to the surging demand, China prohibited FFR exports to satisfy the domestic demand first. Because China retained approximately 50% of the FFR production capacity, many countries suffered FFR supply disruptions in the early stage of the COVID-19 pandemic.

If the sources are diversified, the risk of disrupting all the diversified sources is significantly lower than the case of a concentrated source. Therefore, countries have sought to develop alternative FFR suppliers. For example, Tajikistan, where no COVID-19 cases had been reported until early April 2020, became an alternative mask production country that provides masks to other countries [39]. A supply chain redesign with second sources and a redesign to local sources are possible options for source diversification [10]. Researchers in

the operations management area have studied the optimal level of diversification considering the costs and benefits [40,41].

We remark that nondiversifiable risk exists, and source diversification should be integrated with other strategies. Although it has been regarded as a rare event, sourcing diversification is ineffective when all the sources are disrupted by a super event [40]. Unfortunately, the COVID-19 pandemic is a super event. Approximately 80 countries prohibited or restricted the export of COVID-19 products by the end of April 2020 [42]. Because the 80 countries include most of the FFR suppliers, supplier diversification has limited effect in managing a disastrous event such as the COVID-19 pandemic. This implies that source diversification should be a part of the solution in a systematic framework.

3.1.7. Constructing a Circular Stockpiling System

Inventory stocking is a traditional solution to cope with high demand. Many countries stockpile medical devices to counter potential threats. For example, the U.S. Strategic National Stockpile system stores vaccines, antiviral drugs, and PPE to cope with public health emergencies, such as large-scale pandemics and natural disasters. Canada, Australia, and Finland also operate similar systems [43,44].

Because FFRs are perishable items, the stockpile and rotation systems of Singapore and Taiwan provide valuable managerial insights. The functionality of FFRs deteriorates over time [45]. To prevent obsoletion, Singapore and Taiwan periodically replace old items with new items if no threats occur [44]. The old, replaced items are consumed by medical institutions. By maintaining the FFR stockpiling system during the mitigation phase, society can cope with a sudden outbreak of a contagious respiratory disease pandemic.

Stockpiling should be a part of a systematic solution because it provides a temporary buffer until other strategies are effectively exercised. The COVID-19 pandemic has lasted longer than the stockpiles lasted, even for countries that operate a large-scale stockpiling system. Therefore, countries source additional FFRs from alternative sources [46]. Although the stockpile does not cope with the entire demand for a pandemic, it provides valuable time to exercise other strategies because the inventory can be used instantaneously. For example, society can use the FFR inventory while it converts a diaper production line to the FFR production mode. Stockpiling plays a critical role as the buffer to reduce the impact of a sudden shock in the FFR supply chain management framework.

3.1.8. Certifying Potential Producers

In the mitigation phase, certification authorities need to certify potential FFR suppliers. During the COVID-19 pandemic period, underperforming and fake masks were traded [29]. The certification process takes considerable time although it provides valuable information about the product quality to consumers. A possible solution is certifying potential FFR producers during the mitigation phase. By certifying the potential production capacity in advance, society can timely acquire confirmed FFRs during an emergency.

3.1.9. Research and Development for a Sustainable FFR Supply Chain

Designing and building a sustainable FFR supply chain is an urgent request and requires aggressive investment in research and development (R&D). Regarding FFR production technologies, the impending R&D topics include durable FFR development, recycling technologies, waste treatment technologies, and a reverse logistics design. The current FFRs are designed to be disposable. Therefore, huge waste continuously occurs during a pandemic, and it causes a serious problem to our ecosystem [47,48]. If a durable FFR protects the wearer from virus transmission, it will dramatically reduce the production burden and the medical waste. If a used FFR can be disinfected while maintaining a reasonable protection ability, we can expect a similar benefit [49]. Another imminent research topic is how to design a closed-loop FFR supply chain that encompasses a reverse logistics system to manage the used FFRs. The used FFRs are a plastic medical waste that should be disposed of carefully. This implies that treating the used FFRs requires specialized systems to reduce

the harmful effects on our ecosystem [50]. Finding the optional locations and capacities of the waste treatment facilities to build the reverse logistics system is a requirement [51].

R&D investment is worthwhile because R&D facilities can be converted to supply bases during a pandemic. For example, North Carolina State University produces face mask material using their research facilities [52]. The University of Missouri utilizes their research facility to cut the mask materials [53]. Skoltech FabLab, a Russian research facility, produces PPE for hospitals in Moscow [54]. Because many research facilities belong to nonprofit organizations, they are willing to form a cooperative societal effort to overcome the emergency. R&D investment is a strategy to build a cooperative emergency supply base.

3.2. Preparation Phase

3.2.1. Demand Forecasting

Using the forecasting model developed in the mitigation phase, the demand for FFR should be estimated based on the data about the impending disaster. This task includes adjusting model assumptions, selecting appropriate scenarios, and numerical calculations. Moreover, risk assessments, such as stress tests, are essential to building reaction strategies [55]. In the preparation phase, the demand for FFRs is estimated under the specific model for the imminent disaster including the uncertainty assessment for the demand.

3.2.2. Converting Flexible Capacity to FFR Supply Capacity

The preparation phase is the best time to convert production with flexible capacities to the FFR supply capacity. Production line conversion is well-known to operations managers as production flexibility. The flexible capacities include research facility capacities, manufacturing process (such as cutting and knitting) capacities, and the absorbent MB fiber capacities that can be converted to the FFR MB filter production process.

It takes time to establish a new production process and train workers for FFR production. For example, P&G had to install new equipment or adjust existing equipment to change its production mode. Moreover, the employees need to be trained for the new production process. P&G collaborated with their business partners to reduce the friction from changing systems [35]. Considering the conversion time delay and the demand estimation, the preparation phase coordinates the order of the flexible processes to be converted to FFR production, the timing of exercising the flexibility option, and the magnitude of the production capacity. These decision problems have been an intensive research topic in operations management and industrial engineering [56]. By utilizing the accumulated knowledge, flexible capacities should be efficiently reallocated to cope with the approaching disaster.

3.2.3. Renewing the Precertified Suppliers

When precertified suppliers convert their production lines to FFR production, they must renew their quality certification. The renewal process should be faster than the regular certification process and effective enough to ensure the produced FFR's protection capability. For a new producer that has not been certified, the regular certification process should be imposed.

3.3. Response Phase

3.3.1. Supply and Demand Information Sharing

An efficient information flow is beneficial to stakeholders to make better decisions. For example, the Korean Ministry of Food and Drug Safety (MFDS) provided the FFR production, consumption, and inventory data to the public every day during the COVID-19 pandemic. The data help producers to determine their production rates and to comply with the government's control policy. The public can find where to buy FFRs in real time through mobile apps [57]. A sharp contrast to South Korea's successful case is the U.S.'s case. In the U.S., all the FFR supply chain data are confidential except for the manufacturing facility locations, and even the nationwide FFR supply data are closed to the public [55].

The lack of data transparency hinders the abilities of governments, hospitals, and other stakeholders to assess and to respond to the FFR supply disruption risk in the U.S. during the COVID-19 pandemic.

The shared information forms the basis of trust among the stakeholders and results in societal collaboration to cope with emergencies. The public and private sectors of South Korea effectively collaborate to fight COVID-19 based on the trust based on transparent information sharing [4,28]. Hong Kong successfully contained the spread of COVID-19 through the community's voluntary information sharing and collaboration [58]. The China Aid organization utilizes a blockchain to increase trust and transparency [59]. On the other hand, Italy and the U.S. had difficulties coordinating resources due to insufficient trust among decision makers, even though the coordination mechanisms are formal [60]. These cases illustrate the importance of transparent and active information sharing in the response phase.

3.3.2. Increase FFR Supply

To fulfil the sudden, huge, and continuous demand for FFRs, we need to fully utilize the options for increasing the FFR supply developed in the mitigation and preparation phases. Considering the costs and time to implement the strategies, the order of the strategies is: (1) consuming the stored FFR inventories, (2) sourcing from diversified suppliers, (3) increasing the production rate within the existing capacity, (4) converting more flexible capacity to FFR supply, and (5) building additional capacity. If the demand for FFRs is within the estimation made in the preparation phase, the demand would be fulfilled with the first three options. If the demand exceeds the forecasted level, however, implementing the last two options should be considered.

3.3.3. Monitoring and Securing Product Distribution

In the response phase, it is necessary to distribute the qualified FFRs to consumers at a reasonable price. The COVID-19 pandemic illustrates challenges for this task: (1) qualifying a large number of products in a short amount of time, (2) preventing hoarding and panic buying, and (3) securing the distribution channels from being infiltrated by fake products and underperforming products. The strategies we discussed in the mitigation and preparation phases are premises to overcome these challenges.

There is a dilemma between quality assurance and timely supply. To be able to have an agile reaction against the COVID-19 outbreak, expediting quality certification processes is a common action that many authorities in the world implement. For instance, the U.S. Food and Drug Administration (FDA) operates Emergency Use Authorizations (EUAs) that allow "unapproved medical products or unapproved uses of approved medical products to be used in an emergency to diagnose, treat, or prevent serious or life-threatening diseases or conditions caused by CBRN (Chemical, Biological, Radiological and Nuclear) threat agents when there are no adequate, approved, and available alternatives [61]." The FDA includes FFRs in the EUA program and presents the information on approved items on its webpage. However, Plana et al. [29] examined the quality of the FFRs that are approved under EUA. The test results show that "Many did not perform to accepted standards and are likely to be counterfeit." It is an urgent and difficult task to construct a trustworthy supply chain under emergencies.

To mitigate the certification delay, it is effective to utilize precertified suppliers and research facilities. For the precertified suppliers in the mitigation phase, the certification process is unnecessary or reduced. The research facilities can participate in the certification process to reduce the burden on the certification authorities. Utilizing these devices can increase the capacity of the potential bottleneck of the FFR supply chain.

When necessary goods are in short supply, market-based transactions may result in prices soaring, panic buying, hoarding, and counterfeits. It is not surprising that we observe these phenomena in the FFR market during the COVID-19 pandemic [62–64]. On the other hand, South Korea, Taiwan, and Singapore successfully control their FFR

distribution, which is one of the critical ways that those countries successfully curbed the spread of the disease.

By utilizing the information sharing system that is constructed in the mitigation phase, governments can control the FFR material flows to prevent hoarding and panic buying. For example, the Korea Public Procurement Service (KPPS) procured masks from producers and distributed them to the public. The masks distributed in this channel are called public masks. KPPS controlled both the unit price of the public masks at approximately $1.20 and the maximum number that could be bought per week according to the supply [28]. Korean citizens could find where to buy the public masks using a mobile phone app in real time [57,65]. The South Korean government successfully led the public to curb the spread of COVID-19 spread by utilizing the product distribution control and the real-time inventory information app.

Although actual application cases are rare, researchers suggest the blockchain and artificial intelligence as the tools to secure the supply chain from underperforming and fake products. Orcutt [66] asserts that the blockchain enhances transparency in supply chain tiers so that it can prevent a supply chain network failure. The China Aid organization has implemented a blockchain system, and pharmaceutical supply chains are conducting pilot studies on blockchain systems [59,67]. The information sharing system equipped with advanced technologies can assist in securing the FFR distribution channels [68,69].

3.3.4. Operating a Sustainable FFR Supply Chain

Even though a well-designed sustainable FFR supply chain has been constructed, it is still challenging to operate the chain in the response phase. For example, after members of the public use masks, they dispose of the used masks at home. How can the waste from individual households be collected and put into a sustainable supply chain? Despite the increasing volume of research on sustainable FFR supply chains, solutions to this question are limited [70].

3.4. Recovery Phase

3.4.1. Post Disaster Analysis and Learning from Mistakes

The lessons learned from previous mistakes are valuable. One factor of Asian countries' successful reaction is that they learned costly lessons from previous respiratory disease outbreaks such as severe acute respiratory syndrome (SARS) in 2003 and Middle East respiratory syndrome (MERS) 2015 [4]. The abundant data that are gathered through the information-sharing system must be analyzed. Post-event data analysis should answer the following important questions:

1. What was the valuable information that the information-sharing system did not include?
2. What were the demand forecasting errors and why did forecasting errors occur?
3. What was the gap between the estimated supply capacity and the actual supply and why do supply estimation errors occur?
4. Did the FFR distribution deliver satisfactory quality products at a reasonable price on time? If not, what was the problem that disturbed the distribution channels?
5. Were there effective and innovative FFRs? If so, how can they be incorporate the new FFRs in the certification process?
6. What were the situations that the developed plan did not cover?

By answering these critical questions to assess the key performance of each tier, we can acquire insights to improve the disaster management strategies.

3.4.2. Returning Flexible Capacities to Normal Operations

As the pandemic diminishes, the demand for FFRs declines. This is the time for the flexible FFR production capacities to return to their original businesses. For example, there can be back orders for products such as water filters, diapers, and feminine hygiene products. By returning the FFR production capacities to these products, we can avoid

inefficient redundant capacity maintenance. Because of this property, flexibility is often regarded as a synonym of resilience.

3.4.3. Develop Alternative Uses

Developing alternative uses for the FFR production capacities is necessary if excessive capacities still exist after reallocating the flexible capacities. Without developing alternative demand, the industry does not maintain the redundant capacity, and this will result in supply deficiencies in future disasters. Moreover, the public and private sector agreements may include the government's support for the FFR producers after the disaster [18]. Therefore, how to handle the excessive but necessary capacities is an important issue in the recovery phase.

Demand development requires both the public and private sectors to be creative, and it is desirable to generate constant demands for FFR related products. For example, the MB filter production capacity can be modified to produce water filters. By providing water purification systems to public schools, the government can generate ongoing demand to maintain the flexible capacity for the FFR.

3.5. Discussion

There are limitations of this study that provide future research directions. First, we restrict our interest to FFR supply chain management. To curb disease outbreaks, the public's willingness to wear masks is essential. However, our discussion does not include how to get the public to wear masks. Wearing masks is effective when combined with other strategies such as aggressive testing, infection path tracking, and appropriate patient quarantines. Therefore, our framework is a part of a wider framework. We hope that our paper contributes to building a society safer from diseases.

Second, extended qualitative studies based on this conceptual model will be valuable to enhance our understanding of effective strategies for managing disaster situations. Interviews and focus groups should be conducted among FFR supply chain members to provide practical insights.

Third, empirical studies may be developed to offer quantitative estimation and prediction of the supply and demand of FFR. Trade data of raw materials and finished FFR products can be incorporated to understand the dynamics of the FFR supply chain on a global scale.

Last, our framework can be more efficient through global cooperation. However, the international partnership has not been discussed enough. For example, future research can investigate how much value can be created when developed countries establish a forecasting system and share the information with other underdeveloped countries. The future research topic can include the priority and emphasis of resource allocation according to the country's development phase.

4. Conclusions

This paper provides a framework to manage the FFR supply chain when reacting to a disastrous situation such as the COVID-19 pandemic. We provide implementable strategies based on the disaster management cycle that includes the mitigation, preparation, response, and recovery phases. Based on the four pillars, this conceptual framework demonstrated major topics in four phases of the disaster management cycle. Each point was discussed by presenting examples and current practices. The mitigation phase focuses on building an information-sharing infrastructure, developing a demand forecasting model, evaluating the supply chain capacity, constructing various supply bases, and creating contingency plans by forming a social consensus. The preparation phase takes short-term proactive actions such as forecasting the demand and converting flexible capacities into FFR production. In the response phase, all available resources are mobilized to increase the supply to meet the growing demand. Securing the distribution channels is also critical in the response phase. After the disaster, it is a painful but necessary step to reflect on the past event to

learn from any failures. In addition, managing the increased FFR supply chain capacity is essential to sustaining the emergency reaction capability in the supply chain. We developed a framework based on an intensive literature review. We hope that our paper contributes to mitigating future pandemics. Policy makers, healthcare sectors, stakeholders throughout FFR supply chain may establish a database and monitoring system to respond such urgent events in the future.

Author Contributions: Conceptualization, K.K. and L.Z.; writing—original draft preparation, K.K.; writing—review and editing, K.K. and L.Z. All authors have read and agreed to the published version of the manuscript.

Funding: This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

Data Availability Statement: No new data were created or analyzed in this study. Data sharing is not applicable to this article.

Acknowledgments: We thank Jung E. Ha-Brookshire for the helpful comments for this research project. We also thank the anonymous reviewers and the editors for the constructive comments to improve this manuscript.

Conflicts of Interest: The authors declare no conflict of interest.

References

1. Chu, D.K.; Akl, E.A.; Duda, S.; Solo, K.; Yaacoub, S.; Schünemann, H.J.; El-harakeh, A.; Bognanni, A.; Lotfi, T.; Loeb, M.; et al. Physical distancing, face masks, and eye protection to prevent person-to-person Transmission of SARS-CoV-2 and COVID-19: A systematic review and meta-Analysis. *Lancet* **2020**, *395*, 1973–1987. [CrossRef]
2. MacIntyre, C.R.; Seale, H.; Dung, T.C.; Hien, N.T.; Nga, P.T.; Chughtai, A.A.; Rahman, B.; Dwyer, D.E.; Wang, Q. A cluster randomised trial of cloth masks compared with medical masks in healthcare workers. *BMJ Open* **2015**, *5*, e006577. [CrossRef]
3. Howard, J.; Huang, A.; Li, Z.; Tufekci, Z.; Zdimal, V.; van der Westhuizen, H.-M.; von Delft, A.; Price, A.; Fridman, L.; Tang, L.-H.; et al. Face mask against COVID-19: An evidence review. *Br. Med. J.* **2020**, 1–8. [CrossRef]
4. Moon, M.J. Fighting COVID-19 with agility, transparency, and participation: Wicked policy problems and new governance challenges. *Public Adm. Rev.* **2020**, *80*, 651–656. [CrossRef] [PubMed]
5. Park, C.-Y.; Kim, K.; Roth, S.; Beck, S.; Kang, J.W.; Tayag, M.C.; Grifin, M. *Global Shortage of Personal Protective Equipment amid COVID-19: Supply Chains, Bottlenecks, and Policy Implications*; Asian Development Bank: Manila, Philippines, 2020.
6. Ranney, M.L.; Griffeth, V.; Jha, A.K. Critical supply shortages—The need for ventilators and personal protective equipment during the Covid-19 pandemic. *N. Eng. J. Med.* **2020**, *382*, E41. [CrossRef] [PubMed]
7. McKenna, M. Amid Coronavirus Fears, a Mask Shortage Could Spread Globally. Available online: https://www.wired.com/story/amid-coronavirus-fears-a-mask-shortage-could-spread-globally/ (accessed on 3 August 2020).
8. Yu, H. 3M Makes a Lot of Masks But Trump Can't Increase Its Supply. Available online: https://www.forbes.com/sites/howardhyu/2020/04/03/3m-makes-a-lot-of-masks-but-trump-cant-increase-its-supply/#793e98053596 (accessed on 3 August 2020).
9. Linton, T.; Vakil, B. Coronavirus Is Proving We Need More Resilient Supply Chains. Available online: https://hbr.org/2020/03/coronavirus-is-proving-that-we-need-more-resilient-supply-chains (accessed on 12 August 2020).
10. Shih, W. Global supply chains in a post- pandemic world companies need to make their networks more resilient. Here's how. *Harv. Bus. Rev.* **2020**, *95*, 82–90.
11. Atkinson, C.L.; McCue, C.; Prier, E.; Atkinson, A.M. Supply chain manipulation, misrepresentation, and magical thinking During the COVID-19 pandemic. *Am. Rev. Public Adm.* **2020**, *50*, 628–634. [CrossRef]
12. Kalil, B. COVID-19 SUPPLY & Demand—International Fiber Journal. Available online: https://fiberjournal.com/covid-19-supply-demand/ (accessed on 3 August 2020).
13. Rousse, D. Achieving US Self-Sufficiency on Meltblown Fabric for Facemasks. Available online: https://fiberjournal.com/achieving-us-self-sufficiency-on-meltblown-fabric-for-facemasks/ (accessed on 3 August 2020).
14. NIOSH Approved N95 Respirators Particulate Filtering Facepiece Respirators. Available online: https://www.cdc.gov/niosh/npptl/topics/respirators/disp_part/n95list1-a.html (accessed on 7 August 2020).
15. Birkner, J. Detailing the process for NIOSH respirator approval. *Saf. Health* **2006**, *173*, 52.
16. *Institute of Medicine Reusability of Facemasks during an Influenza Pandemic: Facing the Flu*; National Academies Press: Washington, DC, USA, 2006.
17. Carias, C.; Rainisch, G.; Shankar, M.; Adhikari, B.B.; Swerdlow, D.L.; Bower, W.A.; Pillai, S.K.; Meltzer, M.I.; Koonin, L.M. Potential demand for respirators and surgical masks during a hypothetical influenza pandemic in the United States. *Clin. Infect. Dis.* **2015**, *60*, S42–S51. [CrossRef]

18. Hufford, A. 3M CEO on N95 Masks: 'Demand Exceeds Our Production Capacity'. Available online: https://www.wsj.com/articles/3m-ceo-on-n95-masks-demand-exceeds-our-production-capacity-11585842928 (accessed on 7 August 2020).
19. Wisner, B.; Adams, J.; World Health Organization (WHO). *Environmental Health in Emergencies and Disasters: A Practical Guide / Edited by B. Wisner, J. Adams*; World Health Organization: Geneva, Switzerland, 2002.
20. Coombs, W. *Timothy. Ongoing Crisis Communication: Planning, Managing, and Responding*; SAGE Publications: Thousand Oaks, CA, USA, 2014.
21. Basri, S.A.A.; Zakaria, S.A.S.; Majid, T.A.; Yusop, Z. Exploring awareness and application of disaster risk management cycle (drmc) from stakeholder's perspective. *Int. J. Disaster Resil. Built Environ.* **2021**. preprint. [CrossRef]
22. Sim, T.; Cui, K.; Tan, Z.; Yan, E.; He, M. Against the odds: Developing a core competence framework of social work practice for the field of disaster management in China. *Impact* **2021**, *2021*, 9–11. [CrossRef]
23. Thyagarajan, S.; Ramachandra, G.; Jamalpuri, V.; Calhoun, A.W.; Nadkarni, V.; Deutsch, E.S. Simulathon 2020: Integrating simulation period prevalence methodology into the COVID-19 disaster management cycle in India. *Simul. Healthc. J. Soc. Simul. Healthc.* **2021**. [CrossRef] [PubMed]
24. Rice, J.B., Jr. Prepare Your Supply Chain for Coronavirus. *Harvard Business Review*, 7 February 2020.
25. Gereffi, G. What does the COVID-19 pandemic teach us about global value chains? The case of medical supplies. *J. Int. Bus. Policy* **2020**, *3*, 1–15. [CrossRef]
26. Schroeder, P. The goal: A process of ongoing improvement. *J. Nurs. Care Qual.* **1994**, *8*, 83. [CrossRef]
27. Hsieh, C.C.; Lin, C.H.; Wang, W.Y.C.; Pauleen, D.J.; Chen, J.V. The outcome and implications of public precautionary measures in Taiwan–Declining respiratory disease cases in the COVID-19 pandemic. *Int. J. Environ. Res. Public Health* **2020**, *17*, 4877. [CrossRef]
28. Lee, E.; Chen, Y.-Y.; McDonald, M.; O'Neill, E. Dynamic response systems of healthcare mask production to COVID-19: A case study of Korea. *Systems* **2020**, *8*, 18. [CrossRef]
29. Plana, D.; Tian, E.; Cramer, A.K.; Yang, H.; Carmack, M.M.; Sinha, S.; Bourgeois, F.T.; Yu, S.H.; Masse, P.; Boyer, J.; et al. Assessing the quality of nontraditional N95 filtering face-piece respirators available during the COVID-19 pandemic 2. *medRxiv* **2020**. preprint. [CrossRef]
30. Van Hoek, R.; Lacity, M. How the pandemic is pushing blockchain forward. *Harv. Bus. Rev.* **2020**, *7*, 1–7.
31. Yoon, J.; Talluri, S.; Yildiz, H.; Sheu, C. The value of blockchain technology implementation in international trades under demand volatility risk. *Int. J. Prod. Res.* **2020**, *58*, 2163–2183. [CrossRef]
32. Di Vaio, A.; Boccia, F.; Landriani, L.; Palladino, R. Artificial Intelligence in the agri-food system: Rethinking sustainable business models in the COVID-19 scenario. *Sustainability* **2020**, *12*, 4851. [CrossRef]
33. Ivanov, D. Predicting the impacts of epidemic outbreaks on global supply chains: A simulation-based analysis on the Coronavirus outbreak (COVID-19/SARS-CoV-2) case. *Transp. Res. E Logist. Transp. Rev.* **2020**, *136*, 101922. [CrossRef] [PubMed]
34. US Department of Defense DOD Details $133 Million Defense Production Act Title 3 COVID-19 Project. Available online: https://www.defense.gov/Newsroom/Releases/Release/Article/2158351/dod-details-133-million-defense-production-act-title-3-covid-19-project/ (accessed on 9 August 2020).
35. McIntyre, K. Nonwovens Supply Shifts. Available online: https://www.nonwovens-industry.com/issues/2020-05/view_features/nonwovens-supply-shifts/ (accessed on 3 August 2020).
36. Kim, K.; Deshmukh, A. Effect of investment and disinvestment delay in biofuels. *Int. J. Real Options Strategy* **2018**, *6*, 1–11. [CrossRef]
37. Elsanosi, I.; Øksendal, B.; Sulem, A. Some solvable stochastic control problems with delay. *Stochastic Rep.* **2000**, *71*, 69–89. [CrossRef]
38. Sturgeon, T.; van Biesebroeck, J.; Gereffi, G. Value chains, networks and clusters: Reframing the global automotive industry. *J. Econ. Geogr.* **2008**, *8*, 297–321.
39. Arthur, C. (United N.I.D.O. COVID-19: UNIDO Helps Tajik Textile Enterprises Diversify into PPE Production. Available online: https://www.unido.org/stories/covid-19-unido-helps-tajik-textile-enterprises-diversify-ppe-production (accessed on 3 August 2020).
40. Berger, P.D.; Gerstenfeld, A.; Zeng, A.Z. How many suppliers are best? A decision-analysis approach. *Omega* **2004**, *32*, 9–15. [CrossRef]
41. Tang, C.; Tomlin, B. The power of flexibility for mitigating supply chain risks. *Int. J. Prod. Econ.* **2008**, *116*, 12–27. [CrossRef]
42. World Trade Organization (WTO) Export Prohibitions and Restrictions. Available online: https://www.wto.org/english/tratop_e/covid19_e/export_prohibitions_report_e.pdf (accessed on 8 August 2020).
43. Anderson, C.; Libell, H.P. Finland, 'prepper nation of the Nordics,' isn't worried about masks. *New York Times*, 5 April 2020.
44. Chen, Y.J.; Chiang, P.J.; Cheng, Y.H.; Huang, C.W.; Kao, H.Y.; Chang, C.K.; Huang, H.M.; Liu, P.Y.; Wang, J.H.; Chih, Y.C.; et al. Stockpile model of personal protective equipment in Taiwan. *Health Secur.* **2017**, *15*, 170–174. [CrossRef]
45. Rottach, D.R.; Lei, Z. Stockpiled N95 filtering facepiece respirator polyisoprene strap performance. *J. Int. Soc. Respir. Prot.* **2017**, *34*, 69–80.
46. Kauranen, A. Finland's Emergency Supply Agency Head Quits over Face Mask Purchase. Available online: https://www.reuters.com/article/us-health-coronavirus-finland-facemasks-idUSKCN21S1NE (accessed on 7 August 2020).

47. Aragaw, T.A. Surgical face masks as a potential source for microplastic pollution in the COVID-19 scenario. *Mar. Pollut. Bull.* **2020**, *159*, 111517. [CrossRef]
48. Fadare, O.O.; Okoffo, E.D. Covid-19 face masks: A potential source of microplastic fibers in the environment. *Sci. Total Environ.* **2020**, *737*, 140279. [CrossRef]
49. Armani, A.M.; Hurt, D.E.; Hwang, D.; McCarthy, M.C.; Scholtz, A. low-tech solutions for the COVID-19 supply chain crisis. *Nat. Rev. Mater.* **2020**, *5*, 403–406. [CrossRef]
50. Rajmohan, K.V.S.; Ramya, C.; Viswanathan, M.R.; Varjani, S. Plastic pollutants: Effective waste management for pollution control and abatement. *Curr. Opin. Environ. Sci. Health.* **2019**, *12*, 72–84. [CrossRef]
51. Yu, H.; Sun, X.; Solvang, W.D.; Zhao, X. Reverse logistics network design for effective management of medical waste in epidemic outbreaks: Insights from the Coronavirus Disease 2019 (COVID-19) outbreak in Wuhan (China). *Int. J. Environ. Res. Public Health* **2020**, *17*, 1770. [CrossRef]
52. Kulikowski, M. A Necessary Filter: Nonwovens Institute Steps Up to Combat COVID-19. Available online: https://news.ncsu.edu/2020/04/a-necessary-filter/ (accessed on 3 August 2020).
53. University of Missouri Life-Saving Fabrics. Available online: https://news.missouri.edu/2020/life-saving-fabrics/ (accessed on 3 August 2020).
54. Kalyaev, V.; Salimon, A.I.; Korsunsky, A.M. Fast mass-production of medical safety shields under COVID-19 quarantine: Optimizing the use of university fabrication facilities and volunteer labor. *Int. J. Environ. Res. Public Health* **2020**, *17*, 3418. [CrossRef] [PubMed]
55. Dai, T.; Bai, G.; Anderson, G.F. PPE supply chain needs data transparency and stress testing. *J. Gen. Intern. Med.* **2020**, *35*, 2748–2749. [CrossRef]
56. Buzacott, J.A.; Mandelbaum, M. Flexibility in manufacturing and services: Achievements, insights and challenges. *Flex. Serv. Manuf. J.* **2008**, *20*, 13–58. [CrossRef]
57. Lim, J. Apps show mask inventory for nearby locations in real time. *Korea Herald*, 13 March 2020.
58. Wan, K.M.; Ka-ki Ho, L.; Wong, N.W.M.; Chiu, A. *World Development*; Elsevier: Amsterdam, The Netherlands, 2020.
59. Joseph, G. Can Blockchain Save the Supply Chain from COVID-19? Available online: https://www.nasdaq.com/articles/can-blockchain-save-the-supply-chain-from-covid-19-2020-04-21 (accessed on 3 October 2020).
60. Vecchi, V.; Cusumano, N.; Boyer, E.J. Medical supply acquisition in Italy and the United States in the era of COVID-19: The case for strategic procurement and public–private partnerships. *Am. Rev. Public Adm.* **2020**, *50*, 642–649. [CrossRef]
61. FDA Emergency Use Authorization | FDA. Available online: https://www.fda.gov/emergency-preparedness-and-response/mcm-legal-regulatory-and-policy-framework/emergency-use-authorization (accessed on 9 August 2020).
62. Katersky, A.; Doom, J. New York Man Accused of Hoarding COVID-19 Materials for Price Gouging—ABC News. Available online: https://abcnews.go.com/US/york-man-accused-hoarding-covid-19-materials-price/story?id=70333494 (accessed on 10 August 2020).
63. Matsakis, L. As Covid-19 spreads, Amazon tries to curb mask price gouging. *Wired*, 25 February 2020.
64. Nelson, S. Feds Distribute 200K N95 Masks Seized from Coronavirus Hoarder. Available online: https://nypost.com/2020/04/02/feds-distribute-200k-n95-masks-seized-from-coronavirus-hoarder/ (accessed on 10 August 2020).
65. Nortes, S.; Battaglia, L.S.; Borowiec, S. Generation app: How do different generations feel about sharing personal data in order to tackle Covid-19? We ask people in South Korea, Spain and Italy. *Index Censorsh.* **2020**, *49*, 18–23. [CrossRef]
66. Orcutt, M. The Pandemic Has Messed up Global Supply Chains. Blockchains Could Help. | MIT Technology Review. Available online: https://www.technologyreview.com/2020/04/07/998602/blockchains-covid19-supply-chain-wef/ (accessed on 3 October 2020).
67. Gopie, N. Blockchain's Role in COVID-19 Response and Recovery. Available online: https://www.ibm.com/blogs/blockchain/2020/04/blockchains-role-in-covid-19-response-and-recovery/ (accessed on 3 October 2020).
68. Golan, M.S.; Jernegan, L.H.; Linkov, I. Trends and applications of resilience analytics in supply chain modeling: Systematic literature review in the context of the COVID-19 pandemic. *Environ. Syst. Decis.* **2020**, *40*, 222–243. [CrossRef]
69. Dolgui, A.; Ivanov, D.; Sokolov, B. Ripple effect in the supply chain: An analysis and recent literature. *Int. J. Prod. Res.* **2018**, *56*, 414–430. [CrossRef]
70. Silva, A.L.P.; Prata, J.C.; Walker, T.R.; Duarte, A.C.; Ouyang, W.; Barcelò, D.; Rocha-Santos, T. Increased plastic pollution due to COVID-19 pandemic: Challenges and recommendations. *Chem. Eng. Sci.* **2021**, *405*, 126683. [CrossRef] [PubMed]

societies

MDPI

Concept Paper

Digitalization and Artificial Intelligence in Migration and Mobility: Transnational Implications of the COVID-19 Pandemic

Marie McAuliffe [1], Jenna Blower [2,*] and Ana Beduschi [3]

[1] International Organization for Migration, The Australian National University, Canberra, ACT 0200, Australia; marie.mcauliffe@anu.edu.au
[2] Department of Social Anthropology, York University, Toronto, ON M3J 1P3, Canada
[3] Law School, University of Exeter, Exeter EX4 4PY, UK; a.beduschi@exeter.ac.uk
* Correspondence: jenna.blower@hotmail.ca

Abstract: Digitalization and artificial intelligence (AI) technologies in migration and mobility have incrementally expanded over recent years. Iterative approaches to AI deployment experienced a surge during 2020 and into 2021, largely due to COVID-19 forcing greater reliance on advanced digital technology to monitor, inform and respond to the pandemic. This paper critically examines the implications of intensifying digitalization and AI for migration and mobility systems for a post-COVID transnational context. First, it situates digitalization and AI in migration by analyzing its uptake throughout the Migration Cycle. Second, the article evaluates the current challenges and, opportunities to migrants and migration systems brought about by deepening digitalization due to COVID-19, finding that while these expanding technologies can bolster human rights and support international development, potential gains can and are being eroded because of design, development and implementation aspects. Through a critical review of available literature on the subject, this paper argues that recent changes brought about by COVID-19 highlight that computational advances need to incorporate human rights throughout design and development stages, extending well beyond technical feasibility. This also extends beyond tech company references to inclusivity and transparency and requires analysis of systemic risks to migration and mobility regimes arising from advances in AI and related technologies.

Keywords: international migration; mobility; Migration Cycle; artificial intelligence; digitalization; digital divide; COVID-19; human rights

Citation: McAuliffe, M.; Blower, J.; Beduschi, A. Digitalization and Artificial Intelligence in Migration and Mobility: Transnational Implications of the COVID-19 Pandemic. *Societies* **2021**, *11*, 135. https://doi.org/10.3390/soc11040135

Academic Editors: Sandro Serpa and Carlos Miguel Ferreira

Received: 22 September 2021
Accepted: 7 November 2021
Published: 10 November 2021

1. Introduction

In the current era of online connectivity, described by some as the Age of Algorithms [1], increasingly complex digital technologies including those related to artificial intelligence (AI) underpin more and more everyday activities performed by people all over the world. Substantial developments in computational power and data generation have resulted in people's daily lives being shaped through AI-related services and digital interfaces, such as the personalization of newsfeeds, online advertising tailored to browsing activity, interactive chatbot assistance and automated analytical updates. The range of "smart" products using AI technologies has also grown, now covering appliances, vehicles, houses and integrated voice assistants.

Routine activities in day-to-day lives around the world speak volumes of the recent emergence of modern-day digital transformations. Sending e-mails, transferring money to family back home, searching online for information and advice, posting comments on social media and lodging e-forms through online platforms have become routine even in the most geographically remote locations. This is especially the case for interactions related to international migration and mobility, which is an inherently transnational phenomenon

that has been shaped by social networks over hundreds of years often involving person-to-person links built up over generations [2,3]. Over recent years, however, our social and economic interactions have been increasingly mediated through digital systems and processes, placing much greater emphasis on digital technologies and reducing the need for personal interaction [4].

Alongside the impacts on individuals, the pressure on industry to digitalize has resulted in every sector (and, to a lesser degree, all organizations) needing to transform its systems, structures and processes toward data capture, storage, reporting and related analysis. As part of these digital transformations, we have seen the management of migration and mobility systems globally being affected by increased digitalization and improving AI capabilities. The use of these data-driven technologies is not new, with some countries having utilized AI in their migration management systems for more than two decades, including as a means to manage rising demand for visa and travel-related products and services [5]. AI is increasingly used throughout the Migration Cycle, for example, to facilitate pre-departure identity checks, support online visa applications, manage administrative decision-making, enable "smart" border processing, and produce data analytics on travelers' compliance with legal frameworks.

AI technologies can help people access up-to-date information in real-time, improve system efficiency and reduce service times for clients. However, AI poses a variety of issues for policymakers, practitioners and migrants, including concerns about technology-enabled surveillance of individuals, the potential for systemic bias in AI decision-making in the areas of migration and mobility, the increased interactions between public and private sectors and their competing interests, and the negative impact of AI technologies on the protection of human rights.

Data-driven AI technologies have also played a critical role in the fight against COVID-19, especially during the initial months of the pandemic. Many governments and businesses around the world quickly developed digital solutions to monitor public health, such as mobile phone applications for contact tracing to support self-isolation strategies aimed at minimizing transmission rates [6–8]. COVID-19, and the urgency related to immediate responses, acted to further intensify the pre-existing pressures on industry and States to 'digitalize or perish' [9,10]. It had become a matter of life and death, on a large scale, and closely linked to the movement of people across borders as well as within local communities.

This paper critically examines the implications of intensifying digitalization and AI for migration and mobility systems for a post-COVID transnational context. First, it situates digitalization and AI in migration by analyzing its uptake throughout the Migration Cycle. Second, the article evaluates the current challenges and opportunities to migrants and migration systems brought about by the deepening digitalization due to COVID-19, with reference to human rights and international development. This is important because of the widely recognized risks AI implementation poses to the adherence of human rights, most especially concerning identity and privacy [11,12]. In addition, the potential impacts of the "digital divide" extend beyond individuals and communities, taking in entire countries beset by global inequalities. Further leaps in the roll-out of super technologies in migration and mobility regimes, such as AI, risk further polarizing the potential for developing countries to also realize a global mobility dividend.

In writing this paper the researchers conducted a review of the available literature on this subject drawing from academic articles published in peer-reviewed journals, research reports, and other relevant national and international government documents on migration management, AI and COVID-19. Document analysis was used as the primary research method, drawing on the available literature to provide new insight into the implications of increasing digitalization and use of AI in migration and mobility systems for a post-COVID transnational context.

2. From Abstract Conceptualizations to Functional Realities: The AI and Migration Story So Far

There is no universally agreed definition of AI. However, in a broad sense, it can be thought of as "the programming of computers to do tasks that would normally require human intelligence" [13]. With its roots in computer science of the 1950s, AI was initially conceived to convey the aspirational development of a computer that would deliver the high-level or cognitive capability of humans to reason and to think—otherwise referred to as "general AI" [14,15]. More than six decades later, high-level reasoning and thought remain elusive. Yet, AI technologies have developed over time to encapsulate different streams that utilize machine capabilities for such work as natural language processing, speech processing, machine learning, vision recognition, neural networks, and robotics [16,17]. AI-based systems can be purely software-based, acting in the virtual world (e.g., voice assistants, image analysis software, search engines, speech and face recognition systems) or AI can be embedded in hardware devices (e.g., advanced robots, autonomous cars, drones or Internet of Things applications) [14]. All of these AI technologies are relevant to migration and mobility systems, which operate in physical as well as virtual spaces.

The long-term trend toward computer-based migration and mobility systems involving the capture of vast amounts of data on travelers, movements, regulatory decisions and processes, has enabled the development and deployment of super technologies such as AI. AI technologies have increasingly been used in migration since the late 1990s, including in Australia, the United States, Japan and many European countries and by the European Union [18–20]. Increasing volumes of administrative processing—such as visa applications, airline check-ins, border point crossings—resulted in growing data repositories that were challenging for governments to utilize. This challenge, combined with increasing security risks associated with international travel particularly following the 9/11 terrorism attacks, saw many countries pursue AI in migration and mobility systems that also involved a distinct preference for optimizing security [20,21]. Early investments in machine learning and other analytical capabilities significantly enhanced States' abilities to monitor their borders and implement pre-entry detection systems, including by analyzing data on hundreds of millions of border crossings amounting to many gigabytes of "unstructured intelligence" [22]. It is also important to note that AI technologies rely on underlying data capture and digital capabilities in order to be applied. "Digitalization" of aspects of migration systems is, therefore, a necessary condition for the application of AI technologies. However, digitalization does not necessarily result in AI technologies being developed and implemented. Compared with digitalization, AI in migration and mobility is currently much more limited, although it has experienced a surge in focus over the last 12–18 months.

To situate the analysis of digitalization and AI in migration, we apply the analytical framework of the "Migration Cycle" [23,24] to demonstrate its broader applicability that is much wider than the more obvious areas of border management and visa processing. The increase in digital capture means that AI has been used throughout the Migration Cycle at all stages: pre-departure, entry, stay and return (see Figure 1).

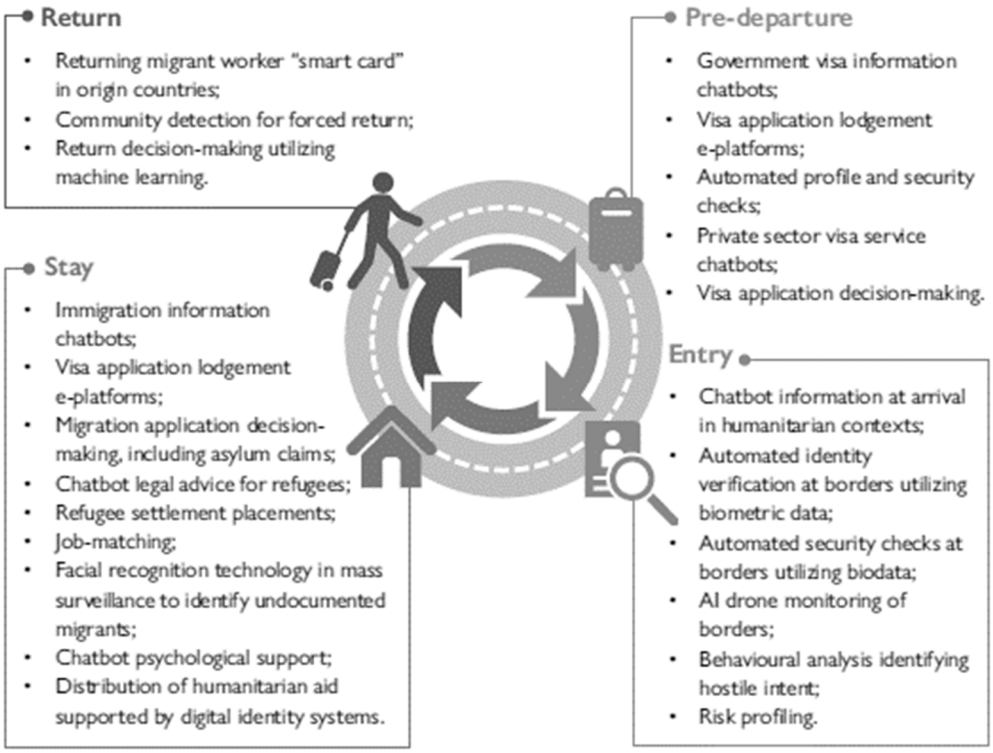


Figure 1. AI and the Migration Cycle.

As can be seen in Figure 1, the advancement of AI through the Migration Cycle has extended beyond its initial focus on pre-departure and entry. Similarly, the expansion has occurred alongside an increase in the variety of actors involved in the creation and management of such systems, posing concerns for the data management and privacy of highly sensitive information across various jurisdictions. These non-state actors span the public and private domains including civil society, large corporations and agencies such as airlines and 'platform companies' such as Facebook and Google [25–27]. Multinational technology corporations that operate transnationally are increasingly involved in the development of AI systems in migration, often for government clients, and their data collection and analytical capabilities extend beyond borders and national boundaries. However, an underlying profit motive means that much of the development and implementation globally is situated in high-income economies, resulting in profound asymmetry between countries in terms of the use of AI technologies in migration and mobility systems [5].

States with developed capabilities in AI technologies could thus be placed in a leading position at the forefront of the global efforts to manage migration. Consequently, States with less advanced technologies could be further isolated. Such a situation could create a new paradigm, an AI divide, whereby AI-capable States would set the agenda and priorities for international migration management. That is particularly relevant as States viewed as more authoritarian regimes may be placed on the same side of the AI divide with traditional western liberal democracies, due to the development in AI capabilities around the world. Such a scenario may have significant consequences for migration and mobility, as the AI divide could either reinforce or, conversely, depart from the north–south migration paradigm [5]. The drive to accelerate the digital transformation and increase AI capabilities in migration is also deeply influenced by the worldwide efforts to curb the COVID-19 pandemic, as discussed in the next section.

3. Digital Technologies and AI throughout the Migration Cycle during COVID-19

Digital technology and AI interventions have advanced and taken new forms as a result of COVID-19 management strategies to curb the spread of the virus such as contact tracing, quarantine measures, and crowd surveillance. Using the Migration Cycle as a

framework, this section examines these evolving technologies and the ways in which migrants' journeys are impacted by digital advances during the COVID-19 pandemic (See Figure 2. COVID-19 Technological Interventions throughout the Migration Cycle).

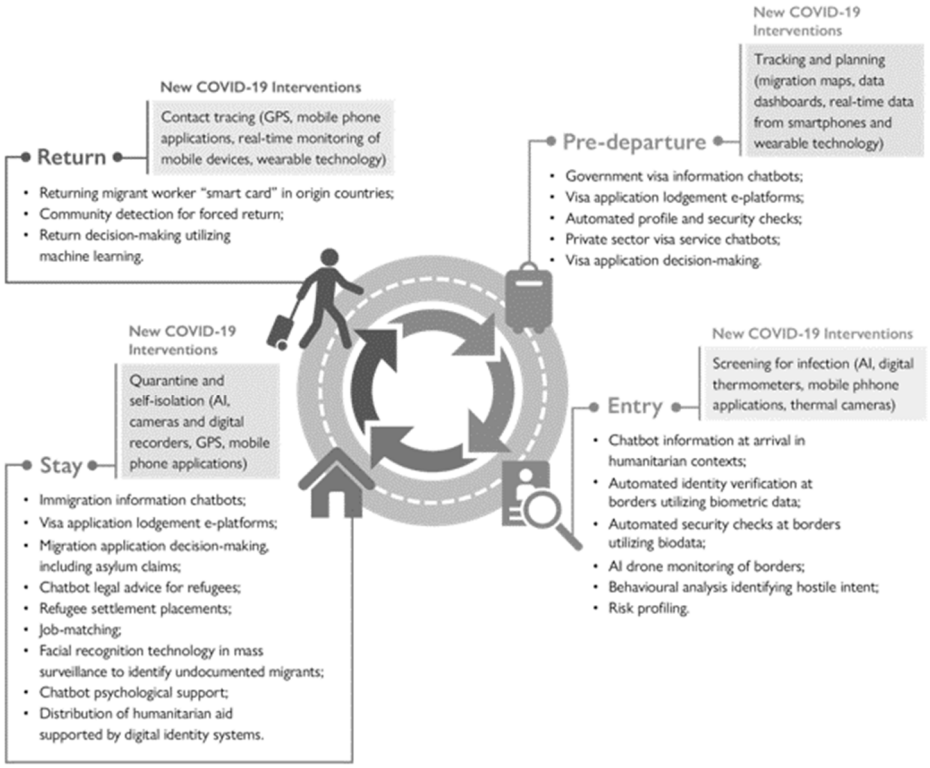


Figure 2. COVID-19 Technological Interventions throughout the Migration Cycle.

3.1. Pre-Departure: The Role of Mobility Data

From global data dashboards and neighbourhood maps to personal wearable technology, devices producing real-time data aimed to track and monitor the spread of the virus and subsequently the movement of people has become all the more significant during COVID-19. The data produced by AI, mobility monitoring platforms and wearable technology helps to inform COVID-19 impact strategies, including lockdown measures, border closures and other restrictions to movement. Big tech companies have released mobility data, for example, Google's 'community mobility reports' and Facebook's 'movement range trends' report. Both companies emphasize that the aggregated data is anonymous and based on users who opt in to share their location history, which is turned off by default [28,29]. Facebook (n.d.) describes how population density maps rely on data collected from users and are combined with satellite imagery from machine vision AI and census information. Such data sets are intended to inform public health officials and researchers how people are responding to COVID-19 interventions such as social distancing measures and lockdowns [30,31], however, limitations are revealed in assessing how accurately the data represents the examined population as there is no information on the number of 'users' accounted for in the Google and Facebook outputs or if any strategies are applied in the data analysis to account for demographic and/or other biases [32].

Mobility data are made available through mobile phones and also through wearable technology, defined as "communication enhancing devices worn on the body that are connected to an internet source", for example, smartwatches and fitness trackers [6] (p. 90243). These movement tracking devices are supported by Bluetooth, GPS, and GIS technologies, which raises serious privacy concerns. Notably, there are few guidelines and regulations about the use of this private data and what is entailed in information sharing [6]. Critical to

the safety of individuals, private telecom companies maintain a database of these records and authorities can gain access to users' exact locations [27].

In the context of COVID-19, mobility data directly relates to the pre-departure stage of the Migration Cycle due to its influence on the prediction and modelling of population movement, tracking the spread of the virus, and subsequently implementing movement restrictions. The acceleration of technology and use of big data and AI due to COVID-19 has direct impacts on migrants in the immediate and the foreseeable future [26,33]. Big data, recognized for its ability to process high-volume information, from a variety of sources and at a high velocity, enables decision making and process automation [34]. Big data is currently being leveraged to monitor migrants approaching the border [33], with experiments taking place at EU borders, for example, to predict population movements and inform automated decision-making in immigration applications [26]. In keeping with this trend, the ways in which big data analytics are being used to monitor movement at border points will continue to intensify.

3.2. Entry: Increased (Bio)Surveillance

There is a range of technological interventions that migrants, and citizens alike, are subject to at border points upon entry. Drone technology, which relies on AI applications, for example, has become particularly significant in the context of COVID-19, due to its ability to survey and observe crowds, conduct thermal imaging to screen for those with a high body temperature, sanitize public spaces, and even carry essential medical supplies [6,35]. Unmanned aerial vehicles have become a large part of migration management technologies and are regularly used to monitor border sites [33]. The European Commission's ROBORDER project, is an example of how such technologies are advancing, as the project seeks to create a "fully-functional autonomous border surveillance system with unmanned mobile robots including aerial, water surface, underwater and ground vehicles" [36]. These technologies have far-reaching human rights implications due to the accumulation of private data and the lack of regulatory policies in place [26]. Additionally, there are security risks as drones are vulnerable to GPS-jamming and hacking for users to conduct criminal activity [6].

Integrated into drone technology and other surveillance devices is the capturing of biometrics, the collection of data through "physiological or behavioral traits such as voice recognition, fingerprints, retinal recognition or facial thermograms" [25]. Face scanners, for example, are equipped with AI-based multisensory technology and have been adopted in airports in efforts to identify individuals with symptoms of COVID-19 and limit exposure to frontline staff [6]. These camera technologies collect real-time data and often rely on AI machine learning to screen and diagnose individuals and produce research that supports virus modelling and risk prediction [6]. The collection of biometric data raises serious questions about how the data is stored, who owns it, who can access it, and how it will be protected [25,26,37]. The increase of surveillance technologies that utilize biometrics has given rise to "virtual" or "digital" borders which have great implications for migration [25,37]. For one, biometric identifiers as a prerequisite for travel is expanding, we see this especially in the context of COVID-19 with the requirements for proof of vaccination and COVID-19 test results [38]. While there is no consensus on COVID-19 health status certificates as a prerequisite for international travel [39], the inequitable vaccine access may act to reduce international mobility. Those unable to access vaccination programs in developing countries will face obstacles to international travel, further to the already significant visa restrictions [40]. In addition, vaccination registration and identity verification may also deter migrants in an irregular situation from being vaccinated, which may not only exclude them from access to COVID-19 certificates but also jeopardize broader public health goals [41].

3.3. Stay: Quarantine, Testing, and Healthcare Provision

Digital technologies have been incorporated into various COVID-19 management strategies including mandated quarantine and self-isolation. Techniques employed in this context have grave implications for migration and mobility systems. For example, in Taiwan, quarantined individuals were monitored through government-issued mobile phones and tracked by GPS. If individuals breached their quarantine by crossing a "digital fence", a message was sent to the individual and individuals were issued fines [42]. Similarly, many countries instructed individuals to download a mobile phone application to self-report COVID-19 symptoms and self-isolate [43]. For migrants in particular, the collection of personal data for public health purposes, raises concerns for their privacy and safety. Immigrants have expressed concerns accessing COVID-19 related programs due to the fear of exposing their immigration status [44,45]. Examples of extracting personal data from mobile phones stem into migration and mobility management practices, as it is becoming common among authorities to use personal electronic devices as a verification tool, gaining access to call data, text messages, location history and more [26]. Advocates call for the establishment of firewalls between health and immigration authorities to encourage the uptake of COVID-19 technologies and protect the rights of migrants [45].

The digital transformation of healthcare provision has also uniquely informed mobility and migration systems and has implications for migrants themselves, especially when it comes to accessing healthcare services. The application of health-related technologies during the pandemic has been imperative to provide virtual care, track medication orders, and communicate health information from wearable technology to healthcare professionals [35,43]. For example, in the United States, Kinsa Health, a technology company that created smart thermometers that connect to a mobile application, generates daily maps illustrating potential hot spots across the United States. Such technology works to track the spread of the virus and inform public health safety measures, such as when to implement movement restrictions, for example, curfews and lockdowns [46]. Additionally, COVID-19 has given rise to a suite of virtual healthcare services and telehealth platforms. While some have been designed with migrants in mind, such as "Karim the Chatbot X2AI", a program created to deliver remote psychotherapy to Syrians in the Zaatari refugee camp [47,48], the streamlining of remote healthcare services raises concerns for migrants who may lack access to a stable computer and internet access, lack digital proficiency, and do not access available services due to privacy concerns [49]. The use of digital technologies within migrant communities prompts further reflection on the use of digital technologies during COVID-19 and how it exacerbates not only the "digital divide" with unequal access to technology and networks but also inequality with lasting implications for health and security.

3.4. Return: Contact Tracing and the Digitalization of Visa Applications

According to the World Health Organization (WHO) contact tracing involves the identification of individuals who have come in contact with an infected person(s), recording the details of those individuals, and getting tested for infection [50]. The exercise of contact tracing requires people to willingly have their personal details captured, often in a government-protected database, to help curb the spread of the virus [8]. From large-scale surveillance cameras to mobile phone applications and wearable technology, digital technologies have been adopted to aid the process of contact tracing. In South Korea, for example, a combination of data is pulled from "security camera footage, facial recognition technology, bank card records, and GPS data from vehicles and mobile phones" to produce real-time data on people's travel [43] (p. 436). Using a mobile phone application, individuals are then notified of COVID-19 cases nearby and instructed to visit a testing centre [43,51]. Singapore has also implemented a mobile phone application using Bluetooth signals that allow individuals to keep track of who they are in proximity to. When an individual is diagnosed with COVID-19, public health officials will access the data to identify individuals who were in contact with the infected person [43,52]. While both Singapore and South Korea have maintained record low COVID-19 mortality rates [43],

for contact tracing to be effective, Oxford University researchers suggest that over half the population would need to adopt the technology [53]. Utilizing contact-tracing applications may be a challenge for migrants due to connectivity issues, and as a migrant advocacy organization reports, migrants often share devices or lack a mobile phone all together [53].

COVID-19 disrupted forced and voluntary return procedures, however, to adapt to various travel restrictions and office closures, many countries began to accept immigration applications by post and email, issuing documents digitally [54]. There are drawbacks to online systems including access to technology by applicants, data protection and quality control [54]. The digitalization of migration management regarding online applications and the issuing of visas existed prior to the pandemic. For example, Canada, the United States, and the EU have been investing in AI algorithms to automate decisions on visa applications [33]. The pandemic has heightened the need for digital services, and it is likely the integration and adoption of digital technologies will continue to accelerate.

4. Implications for Migrants, Migration Trends and Migration Corridors

As discussed in the previous sections, digitalization and AI are increasingly becoming a common feature of migration and mobility. The COVID-19 pandemic further accelerated the adoption of technology-driven solutions that directly impact migration and mobility systems. While technological innovation presents many opportunities, notably concerning migrants' access to information and services throughout the Migration Cycle, the potential over-reliance on these technologies also brings about significant challenges. Two key areas of interest can be highlighted in this regard, concerning the protection of migrants' human rights, and the effects on long-term migration trends and the implications for migration corridors.

4.1. Protection of Migrants' Human Rights

While the challenges posed by the development of digital technologies and AI are not exclusive to migration, the power imbalance between migrants and public authorities may aggravate existing weaknesses in protecting their human rights. Two areas are of particular interest—the potential for algorithmic bias to exacerbate inequalities and lead to unlawful discrimination and the effects of increased surveillance on the protection of migrants' right to privacy.

First, research demonstrates that AI systems can reflect the biases of their human creators [55–57]. For instance, bias may arise from a lack of representation and diversity in datasets used to train AI algorithms [56]. For example, researchers found that due to a lack of diversity in the datasets used for training commercially available facial recognition algorithms, these were significantly less accurate when recognizing women's faces with darker skin types [58].

AI systems may also reflect structural and historical bias against minorities [57]. For instance, researchers demonstrated that AI systems operating sentiment analysis, a technique allowing text to be marked as having a positive or a negative meaning, showed significant race and gender bias [59].

While bias is not exclusively related to migration and mobility, the consequences for migrants' rights are significant. For example, if facial recognition technologies are used for identification and identity verification of migrants, individuals with darker skin types may be more exposed to inaccuracies and misidentification. If such mistakes are not corrected, misidentification may lead to exclusion from access to assistance and services throughout the Migration Cycle, and potentially, unlawful discrimination based on race [60].

Certainly, bias may go undetected in AI systems, particularly due to a lack of transparency and auditability of proprietary AI algorithms—the so-called "black box" problem [11,61]. Yet, in areas where the evidence clearly indicates a high risk of bias, such as in facial recognition technologies, it is possible to argue that authorities ought to know about those risks. Suppose public authorities still deploy these AI systems for decision-making concerning migrants without addressing the issue of bias. In that case, they may be ex-

posing migrants to unlawful discrimination on the grounds of race, gender, or any other protected characteristic (as per Article 7 of the Universal Declaration of Human Rights, Article 26 of the International Covenant on Civil and Political Rights, Article 14 of the European Convention on Human Rights, Article 24 of the American Convention on Human Rights, and Article 3 of the African Charter on Human and Peoples' Rights) [62,63].

Second, as discussed in the previous sections, digital technologies, including AI, contribute to the technologization of migration and mobility. Consequently, that can lead to an intensification of migrant surveillance practices. In addition, the urgency surrounding the COVID-19 pandemic has also led to public authorities increasingly experimenting with digital technologies without due public scrutiny—with migrants and other marginalized communities often more severely impacted [26,64].

Certainly, there are practical advantages in using digital technologies and AI in migration, for example, streamlining repetitive tasks requiring large amounts of data processing. However, technology-enabled surveillance of migrants, notably at borders, can disproportionately interfere with their right to privacy [65].

Under International Human Rights Law, everyone has the right to respect for their private life (as per Article 12 of the Universal Declaration of Human Rights, Article 17 of the International Covenant on Civil and Political Rights, Article 8 of the European Convention on Human Rights, Article 11 of the American Convention on Human Rights). This right is also protected in the digital space, as "the same rights that people have offline must also be protected online, including the right to privacy" [66] (para. 3).

The right to respect one's private life encompasses telecommunications and electronic data [67–72]. The protection of this right extends to non-nationals insofar as they fall within the jurisdiction of a State party to an international treaty recognizing this right [73].

Yet, the right to privacy is not absolute. Public authorities may impose restrictions insofar as these are not arbitrary. For instance, under Article 8, paragraph 2 of the European Convention on Human Rights, restrictions must be adopted in accordance with the law, follow a legitimate interest (such as national security, public safety, the prevention of disorder or crime, or the protection of the rights and freedoms of others) and satisfy the tests of necessity and proportionality. In the EU, the General Data Protection Regulation (GDPR) also recognize restrictions on data protection, including in the interests of national security and public security (Article 23 paragraph 1 of the GDPR).

Accordingly, public authorities should strike a fair balance between protecting migrants' right to privacy and increasing their digital and AI capabilities to support migration management and border security and control. In addition to the impact on migrants' rights, digitalization and AI also have important effects on migration trends, as discussed below.

4.2. Effects on Long-Term Migration Trends and Migration Corridors

Digital technologies and AI are likely to impact international migration patterns over time. If progressively more occupations become automated or replaced by computers, the future of work and that of trends in work-related migration may be affected.

Research demonstrates that automation, AI and advanced robotics risk rendering the recourse to many migrant workers obsolete in key destination economies [74–77]. Changes in the nature of work within existing jobs, also motivated by the COVID-19 pandemic, may force workers to be increasingly flexible, adaptable and focused on managerial and social skills while machines and computers may take over a growing share of repetitive and routine tasks. For instance, COVID-19 has accelerated the search for scalable automated crop harvesting solutions utilising robotics in order to reduce the reliance on temporary migrant workers [74].

Accordingly, less well-educated and low-skilled workers, who tend to undertake more routine tasks, may be particularly affected by automation [75,76]. For example, in a report focusing on Bahrain, Egypt, Kuwait, Oman, Saudi Arabia and the UAE, researchers found that the automation of routine work is particularly relevant to low-skilled migrant workers

in these countries. For instance, in the UAE, over 93% of automation potential may affect jobs currently held by migrant workers [77].

Yet, research suggests that changes in work patterns may also affect professional "white-collar" jobs and consequently, migration and mobility of skilled and high-skilled migrants [78]. For instance, the bestowing of citizenship to the Sofia robot in 2017 by Saudi Arabia may have signalled the country's willingness to "fast-track" technological solutions and to afford robots with status often unattainable by migrant workers [79].

5. Conclusions

Digitalization and AI technologies have been progressively utilized in migration and mobility. As analysed in this paper, the advancement of AI and digital technologies through the Migration Cycle has extended beyond its initial focus on pre-departure and entry. AI and digital technologies are also a feature of stay and return programs and initiatives. Examples include the digitalization of visa and asylum applications and processing, automated security checks at borders and AI-powered immigration information chatbots. Digital technologies and AI in migration and mobility are likely to continue expanding in the upcoming years.

The COVID-19 pandemic has exposed the need for better digital technologies to support the management strategies aimed at curbing the spread of the virus. These included digitalization regarding contact tracing, quarantine measures, and crowd surveillance. Such advances in digital technologies have also impacted migrants' journeys during the pandemic. For instance, mobility data has played an important role in pre-departure strategies as they were used to predict and model population movement, track the spread of the virus, and subsequently, for decision-making concerning movement restrictions. Similarly, the COVID-19 pandemic led to an increase in the utilization of drones relying on AI applications and unmanned aerial vehicles for population and border surveillance.

While technological innovation presents many opportunities, notably concerning migrants' access to information and services throughout the Migration Cycle, the potential over-reliance on these technologies also brings about significant challenges.

The protection of migrants' human rights can be particularly affected by the advances in digital technologies and AI, notably due to the inherent power imbalance between migrants and public authorities. For example, algorithmic bias may exacerbate existing inequalities and lead to unlawful discrimination, which can significantly affect migrants. Similarly, the intensification of migrant surveillance practices has considerable effects on the protection of migrants' right to privacy.

In addition, digital technologies and AI are likely to impact international migration patterns over time, affecting long-term migration trends and migration corridors. In particular, the potential for increased automation and AI in certain areas of work and occupations, also motivated by the COVID-19 pandemic, may disrupt migration and mobility and even render the recourse to many migrant workers obsolete in key destination economies.

Accordingly, human rights should be incorporated in the design and development of digital technologies to mitigate potential risks to migrants' human rights. Similarly, decision-makers deploying these technologies should consider the systemic risks to migration and mobility regimes arising from advances in AI and related technologies. That is even more crucial in light of the transnational implications of the COVID-19 pandemic for migration and mobility.

Author Contributions: Conceptualization; formal analysis; writing original draft preparation; writing review and editing, all the authors; supervision, M.M. All authors have read and agreed to the published version of the manuscript.

Funding: This research received no external funding.

Data Availability Statement: Statement excluded.

Acknowledgments: The authors are grateful to the organizers of the May 2021 World Migration and Displacement Symposium—Harvard Data Science Review, USA for IOM and USA for UNHCR—for

the opportunity to present initial analysis that formed the basis of this paper. Please note that views expressed are the authors' and do not necessarily reflect those of IOM or its member states.

Conflicts of Interest: The authors declare no conflict of interest.

References

1. Abiteboul, S.; Dowek, G. *The Age of Algorithms*; Cambridge University Press: Cambridge, UK, 2020.
2. Boyd, M. Family and personal networks in international migration: Recent developments and new agendas. *Int. Migr. Rev.* **1989**, *23*, 638–670. [CrossRef]
3. Massey, D.S.; Alarcón, R.; Durand, J.; González, H. *Return to Aztlan: The Social Process of International Migration from Western Mexico*; University of California Press: Berkeley, CA, USA; Los Angeles, CA, USA, 1987.
4. Hirsh-Pasek, K.M.; Schlesinger, R.; Michnick, G.; Care, E. The New Humanism: Technology should enhance, not replace, human interactions. *Brook. Inst.* **2018**. Available online: https://www.brookings.edu/blog/education-plus-development/2018/06/11/the-new-humanism-technology-should-enhance-not-replace-human-interactions/ (accessed on 20 September 2021).
5. Beduschi, A. International migration management in the age of artificial intelligence. *Migr. Stud.* **2020**, 1–21. [CrossRef]
6. Chamola, V.; Hassija, V.; Gupta, V.; Guizani, M. A Comprehensive Review of the COVID-19 Pandemic and the Role of IoT, Drones, AI, Blockchain, and 5G in Managing its Impact. *IEEE Access* **2020**, *8*, 90225–90265. [CrossRef]
7. Dong, Y.; Yao, Y.D. IoT Platform for COVID-19 Prevention and Control: A Survey. *IEEE Access* **2021**, *9*, 49929–49941. [CrossRef]
8. Kariuki, P.; Ofusori, L.O.; Subramaniam, P.R.; Okpeku, M.; Goyayi, M.L. Challenges in contact tracing by mining mobile phone location data for COVID-19: Implications for public governance in South Africa. *Interdiscip. J. Inf. Knowl. Manag.* **2021**, *16*, 101–124. [CrossRef]
9. Blum, S. Behaviour Detection Technology: Screening on the Go. *Transp. Secur. Int.* **2020**. Available online: https://www.tsi-mag.com/behaviour-detection-technology-screening-on-the-go/ (accessed on 20 September 2021).
10. Gurbuz, I.; Ozkan, G. Transform or Perish: Preparing the Business for a Postpandemic Future. *IEEE Eng. Manag. Rev.* **2020**, *48*, 139–145. [CrossRef]
11. Pizzi, M.; Romanoff, M.; Engelhardt, T. AI for humanitarian action: Human rights and ethics. *Int. Rev. Red Cross* **2020**, *102*, 145–180. Available online: https://international-review.icrc.org/sites/default/files/reviewspdf/2021-03/ai-humanitarian-action-human-rights-ethics-913.pdf (accessed on 20 September 2021). [CrossRef]
12. United Nations Secretary-General. Report of the Secretary-General Roadmap for Digital Cooperation. New York. June 2020. Available online: www.un.org/en/content/digital-cooperation-roadmap/ (accessed on 20 September 2021).
13. Mehr, H. Artificial Intelligence for Citizen Services and Government. *Harv. Kennedy Sch.* **2017**. Available online: https://ash.harvard.edu/files/ash/files/artificial_intelligence_for_citizen_services.pdf (accessed on 20 September 2021).
14. Jordan, M.I. Artificial Intelligence—The Revolution Hasn't Happened Yet. *HDSR* **2019**. Available online: https://hdsr.mitpress.mit.edu/pub/wot7mkc1/release/9 (accessed on 20 September 2021).
15. Tegmark, M. Benefits and Risks of Artificial Intelligence. Future of Life Institute. 2016. Available online: https://futureoflife.org/background/benefits-risks-of-artificial-intelligence/ (accessed on 20 September 2021).
16. McLaughlin, R.; Quan, T. *On the Edge of Tomorrow—Canada's AI Augmented Workforce*; Information and Communications Technology Council: Ottawa, ON, Canada, 2019. Available online: https://www.ictc-ctic.ca/wp-content/uploads/2020/02/canadas-ai-workforce-FINAL-ENG-2.24.20.pdf (accessed on 20 September 2021).
17. Angelov, P.P.; Soares, E.A. Towards explainable deep neural networks. *Neural Netw.* **2020**, *130*, 185–194. [CrossRef] [PubMed]
18. Australian National Audit Office (ANAO). *DIAC's Management of the Introduction of Biometric Technologies*; Department of Immigration and Citizenship: Canberra, Australia, 2008.
19. Frontex. *Artificial Intelligence-Based Capabilities for the European Border and Coast Guard Final Report*; Frontex, European Commission: Brussels, Belgium, 2021. Available online: https://frontex.europa.eu/assets/Publications/Research/Frontex_AI_research_study_2020_final_report.pdf (accessed on 20 September 2021).
20. Rizvi, A. Designing and delivering visas. *People Place* **2004**, *12*, 45–52.
21. Faist, T. *The Migration–Security Nexus: International Migration and Security Before and After 9/11*; Willy Brandt Series of Working Papers in International Migration and Ethnic Relations; Malmo University: Malmö, Sweden, 2004.
22. Tay, L. Immigration targets 'problem travellers' with analytics. *IT News*, 5 November 2012. Available online: www.itnews.com.au/news/immigration-targets-problem-travellerswith-analytics-321562 (accessed on 20 September 2021).
23. Gmelch, G. Return Migration. *Annu. Rev. Anthropol.* **1980**, *9*, 135–159. [CrossRef] [PubMed]
24. McAuliffe, M.; Koser, K. *A Long Way to Go. Irregular Migration Patterns, Processes, Drivers and Decision-Making*; ANU Press: Canberra, Australia, 2017.
25. Bither, J.; Ziebarth, A. AI, Digital Identities, Biometrics, Blockchain: A Primer on the Use of Technology in Migration Management. *Ger. Marshall Fund United States 2020.* Available online: www.gmfus.org/publications/aidigital-identities-biometrics-blockchain-primer-use-technology-migration-management (accessed on 20 September 2021).
26. Molnar, P. Technological Testing Grounds: Migration Management Experiments from the Ground Up. *EDRi Refug. Law Lab.* **2020**. Available online: https://edri.org/wp-content/uploads/2020/11/Technological-Testing-Grounds.pdf (accessed on 20 September 2021).

27. Puddephatt, A. *Letting the Sun Shine in: Transparency and Accountability in the Digital Age*; UNESCO: Paris, France, 2021. Available online: https://ifap.ru/pr/2021/n210510c.pdf (accessed on 20 September 2021).
28. Herdagdelen, A.D.; State, B.; Mohassel, P.; Pompe, A. Protecting privacy in Facebook mobility data during the COVID-19 response. *Facebook Res.* **2020**. Available online: https://research.fb.com/blog/2020/06/protecting-privacy-in-facebook-mobility-data-during-the-covid-19-response/ (accessed on 20 September 2021).
29. Google, Mobility Report CSV Documentation, COVID-19 Community Mobility Reports, 2020. Available online: https://www.google.com/covid19/mobility/data_documentation.html?hl=en (accessed on 20 September 2021).
30. Facebook, COVID-19 Interactive Map & Dashboard, 2020. Available online: https://dataforgood.facebook.com/covid-survey/survey-and-map-data (accessed on 20 September 2021).
31. Facebook, Methodology: High Resolution Population Density Maps + Demographic Estimates, n.d. Available online: https://dataforgood.fb.com/docs/methodology-high-resolution-population-density-maps-demographic-estimates/ (accessed on 20 September 2021).
32. Toh, A. Big Data Could Undermine the COVID-19 Response: Blind Spots in Location-Tracking Data Can Threaten Both Public Health and Human Rights. *WIRED*. 2020. Available online: https://www.wired.com/story/big-data-could-undermine-the-covid-19-response/ (accessed on 20 September 2021).
33. Korkmaz, E.E. Refugees Are at Risk from Dystopian 'Smart Border' Technology, The Conversation, 2020. Available online: https://theconversation.com/refugees-are-at-risk-from-dystopian-smart-border-technology-145500 (accessed on 20 September 2021).
34. Leclerc, B.; Cale, J. *Big Data*; Routledge: Milton Park, UK, 2020.
35. Chukwudi Okara, B.; Al-Turjman, F. Smart Technologies for COVID-19: The Strategic Approaches in Combating the Virus. *Artif. Intell. Mach. Learn.* **2021**, *924*, 1–23.
36. ROBORDER. Available online: https://roborder.eu/ (accessed on 25 August 2021).
37. Nedelcu, M.; Sovsüren, I. Precarious migrants, migration regimes and digital technologies: The empowerment-control nexus. *J. Ethn. Migr. Stud.* **2020**, 1–18. [CrossRef]
38. Beduschi, A. *COVID-19 Health Status Certificates: Policy Recommendations on Data Privacy and Human Rights*; University of Exeter: Exeter, UK, 2021.
39. World Committee on Tourism Ethics. *Recommendation on COVID-19 Certificates for International Travel*; UN World Tourism Organization: Madrid, Spain, 2021.
40. McAuliffe, M.; Kitimbo, A.; Goossens, A.M.; Ullah, A.A. Understanding migration journeys from migrants' perspectives. In *World Migration Report 2018*; McAuliffe, M., Ruhs, M., Eds.; IOM: Geneva, Switzerland, 2017.
41. UN Committee on Migrant Workers. *Joint Guidance Note on Equitable Access to COVID-19 Vaccines for All Migrants*; United Nations: Geneva, Switzerland, 2021.
42. Wang, J.; Ng, C.Y.; Brook, R.H. Response to COVID-19 in Taiwan: Big data analytics, new technology, and proactive testing. *JAMA* **2020**, *323*, 1341–1342. [CrossRef] [PubMed]
43. Whitelaw, S.; Mamas, M.A.; Topol, E.; Spall, H.G.C.V. Applications of Digital Technology in COVID-19 Pandemic Planning and Response. *Lancet Digit. Health* **2020**. Available online: https://www.thelancet.com/journals/landig/article/PIIS2589-7500(20)30142-4/fulltext (accessed on 20 September 2021).
44. Galletly, C.L.; Lechuga, J.; Dickson-Gomez, J.B.; Glasman, L.R.; McAuliffe, T.L.; Espinoza-Madrigal, I. Assessment of COVID-19 Related Immigration Concerns Among Latinx Immigrants in the US. *JAMA Netw.* **2021**, *4*, e2117049. [CrossRef] [PubMed]
45. Global Detention Project. The Impact of COVID-19 on the Human Rights of Migrants. 2021. Available online: https://www.globaldetentionproject.org/submission-to-the-un-special-rapporteur-on-the-human-rights-of-migrants-the-impact-of-covid-19-on-the-human-rights-of-migrants (accessed on 20 September 2021).
46. Kinsa Inc. Available online: https://kinsahealth.com/ (accessed on 25 August 2021).
47. Solon, O. Karim the AI delivers psychological support to Syrian refugees. *Guardian* **2016**, *22*. Available online: https://www.theguardian.com/technology/2016/mar/22/karim-the-ai-delivers-psychological-support-to-syrian-refugees (accessed on 20 September 2021).
48. Sengupta, Y. The Role of Chatbots in Mental Healthcare. *DZone*, 26 March 2019. Available online: https://dzone.com/articles/the-role-of-chatbots-in-mental-healthcare (accessed on 13 September 2021).
49. Brickhill-Atkinson, M.; Hauck, F.R. Impact of COVID-19 on Resettled Refugees. *Prim. Care Clin. Off. Pract.* **2021**. Available online: https://doi.org/10.1016/j.pop.2020.10.001 (accessed on 20 September 2021). [CrossRef] [PubMed]
50. World Health Organization (WHO). Contact Tracing in the Context of COVID-19. 2021. Available online: https://www.who.int/publications/i/item/contact-tracing-in-the-context-of-covid-19 (accessed on 20 September 2021).
51. Fisher, M.; Sang-Hun, C. How South Korea Flattened the Curve. *The New York Times*, 23 March 2020. Available online: https://www.nytimes.com/2020/03/23/world/asia/coronavirus-south-korea-flatten-curve.html (accessed on 20 September 2021).
52. Dick, S. Singapore's coronavirus temperature scans and tracking leading the way. *The New Daily*, 19 March 2020. Available online: https://thenewdaily.com.au/news/national/2020/03/19/singapore-coronavirus-temperature-scans/ (accessed on 20 September 2021).

53. Toh, A.; Brown, D. How Digital Contact Tracing for COVID-19 Could Worsen Inequality. *Hum. Rights Watch*, 4 June 2020. Available online: https://www.hrw.org/news/2020/06/04/how-digital-contact-tracing-covid-19-could-worsen-inequality (accessed on 20 September 2021).
54. European Migration Network and OECD. The Impact of COVID-19 in the Migration Area in EU and OECD countries. *OECD* **2021**. Available online: https://www.oecd.org/migration/mig/00-eu-emn-covid19-umbrella-inform-en.pdf (accessed on 20 September 2021).
55. Friedman, B.; Nissenbaum, H. Bias in computer systems. *ACM Trans. Inf. Syst.* **1996**, *14*, 330–347. [CrossRef]
56. Zou, J.; Schiebinger, L. AI can be sexist and racist—It's time to make it fair. *Nature* **2018**, 324–326. Available online: https://www.nature.com/articles/d41586-018-05707-8 (accessed on 20 September 2021).
57. Suresh, H.; Guttag, J.V. A Framework for Understanding Unintended Consequences of Machine Learning. 2020. Available online: https://arxiv.org/pdf/1901.10002.pdf (accessed on 20 September 2021).
58. Buolamwini, J.; Gebru, T. Gender shades: Intersectional accuracy disparities in commercial gender classification. In Proceedings of the Conference on Fairness, Accountability and Transparency, New York, NY, USA, 29–31 January 2019.
59. Caliskan, A.; Bryson, J.J.; Narayanan, A. Semantics derived automatically from language corpora contain human-like biases. *Science* **2017**, *356*, 183–186. [CrossRef] [PubMed]
60. Israel, T. Facial recognition is transforming our borders and we are not prepared. *Policy Options*, 9 November 2020. Available online: https://policyoptions.irpp.org/magazines/november-2020/facial-recognition-is-transforming-our-borders-and-we-are-not-prepared/ (accessed on 20 September 2021).
61. Pasquale, F. *The Black Box Society: The Secret Algorithms That Control Money and Information*; Harvard University Press: Cambridge, UK, 2016.
62. UN General Assembly. *Report of the Special Rapporteur Tendayi Achiume on Contemporary Forms of Racism, Racial Discrimination, Xenophobia and Related Intolerance*; UN Doc A/75/590; United Nations: New York, NY, USA, 2020.
63. Sharkey, N. The impact of gender and race bias in AI. *Humanit. Law Policy* **2018**. Available online: https://blogs.icrc.org/law-and-policy/2018/08/28/impact-gender-race-bias-ai/ (accessed on 20 September 2021).
64. Madianou, M. A Second-Order Disaster? Digital Technologies During the COVID-19 Pandemic. *Soc. Media Soc.* **2020**, *6*, 2056305120948168l–5. [CrossRef] [PubMed]
65. *Human Rights Council. Impact of the Use of Private Military and Security Services in Immigration and Border Management on the Protection of the Rights of All Migrants*; Un Doc A/HRC/45/9; United Nations: Geneva, Switzerland, 2020.
66. UN General Assembly. *Resolution 68/167. The Right to Privacy in the Digital Age*; UNGA: New York, NY, USA, 2014.
67. *Uzun v. Germany*; ECHR 2010-VI; ECHR: Strasbourg, France, 2010.
68. *S. and Marper v. UK ECHR 2008-V*; ECHR: Strasbourg, France, UK, 2008.
69. *Big Brother Watch and Others v UK*; ECHR: Strasbourg, France, 2018.
70. *Big Brother Watch and Others v UK*; ECHR: Strasbourg, France, 2021.
71. Tristan Donoso v. Panama. Inter-American Court of Human Rights, Serie C No. 193, 27 January 2009. Available online: https://globalfreedomofexpression.columbia.edu/cases/tristan-donoso-v-panama/ (accessed on 20 September 2021).
72. Escher v. Brazil. Inter-American Court of Human Rights, Serie C No. 200, 6 July 2009. Available online: https://policehumanrightsresources.org/escher-et-al-v-brazil-series-c-no-200 (accessed on 20 September 2021).
73. UN General Assembly. *Resolution 40/144. Declaration on the Human Rights of Individuals Who Are not Nationals of the Country in Which They Live*; UNGA: New York, NY, USA, 1985.
74. Mitaritonna, C.; Ragot, L. After COVID-19, Will Seasonal Migrant Agricultural Workers in Europe Be Replaced by Robots? *CEPII Policy Brief 2020.* Available online: http://www.cepii.fr/PDF_PUB/pb/2020/pb2020-33.pdf (accessed on 20 September 2021).
75. Ernst, E.; Merola, R.; Samaan, D. *The Economics of Artificial Intelligence: Implications for the Future of Work. International Labour Organization*; International Labour Organization: Geneva, Switzerland, 2018. [CrossRef]
76. Hertog, S. The future of migrant work in the GCC: Literature review and a research and policy agenda. In Proceedings of the Fifth Abu Dhabi Dialogue Ministerial Consultation, Dubai, United Arab Emirates, 16–17 October 2019. Available online: http://eprints.lse.ac.uk/102382/1/Hertog_future_of_migrant_work_in_GCC_published.pdf (accessed on 20 September 2021).
77. Aus Dem Moore, J.P.; Chandran, V.; Schubert, J. The Future of Jobs in the Middle East. *World Gov. Summit McKinsey Co.* **2018**. Available online: https://www.mckinsey.com/~{}/media/mckinsey/featured%20insights/middle%20east%20and%20africa/are%20middle%20east%20workers%20ready%20for%20the%20impact%20of%20automation/the-future-of-jobs-in-the-middle-east.ashx (accessed on 20 September 2021).
78. Hanke, P. Artificial Intelligence and Big Data—An Uncharted Territory for Migration Studies? *Natl. Cent. Competence Res.* **2017**. Available online: https://nccr-onthemove.ch/blog/artificial-intelligence-and-big-data-an-uncharted-territory-for-migration-studies/ (accessed on 20 September 2021).
79. McAuliffe, M. *The Link between Migration and Technology Is Not What You Think, Agenda*; World Economic Forum: Geneva, Switzerland, 2018. Available online: https://www.weforum.org/agenda/2018/12/social-media-is-casting-a-dark-shadow-over-migration/ (accessed on 20 September 2021).

societies

MDPI

Concept Paper

COVID-19 Stigma and Charismatic Social Relationship: A Legitimization Narrative of President Trump's Status as a Charismatic Leader following a SARS-CoV-2 Infection Reported by the Portuguese Media

Carlos Miguel Ferreira [1,*] and Sandro Serpa [2]

[1] Interdisciplinary Centre of Social Sciences—CICS.NOVA, Estoril Higher Institute for Tourism and Hotel Studies, 2765-273 Estoril, Portugal
[2] Interdisciplinary Centre for Childhood and Adolescence—NICA—UAc, Interdisciplinary Centre of Social Sciences—CICS.UAc/CICS.NOVA.UAc, Department of Sociology, Faculty of Social and Human Sciences, University of the Azores, 9500-321 Ponta Delgada, Portugal; sandro.nf.serpa@uac.pt
* Correspondence: carlos.ferreira@eshte.pt

Abstract: This concept paper aimed to understand how stigma, a concept usually associated with negative social relationships, in the context of a pandemic threat such as COVID-19 can, in some situations, structure a charismatic social relationship in a perceived positive association between stigma and a specific social characteristic. For this purpose, we used the example of the news selected and highlighted by several Portuguese media about the actions and messages developed by President Trump in the context of his infection with SARS-CoV-2 and the subsequent recovery process. These news reports gave visibility to a narrative that can be considered as reinforcing the legitimization of his condition as a charismatic leader in an electoral context marked by the pandemic threat. In conclusion, stigma associated with a pandemic health threat and generally linked to a negative social status can also reinforce admiration, trust, and belief in the charismatic leader by supporters and followers, as demonstrated with the plight of President Trump. Stigma can be a factor in social uplift in affirming an upward trajectory of social status and symbolic power for actors seen as ill, where stigma-motivated discrimination is experienced positively, unlike in most cases.

Keywords: COVID-19 pandemic; SARS-CoV-2; stigma; stigmatization; charisma; charismatic domination; President Trump; legitimation; social elevation; media narrative; media

Citation: Miguel Ferreira, C.; Serpa, S. COVID-19 Stigma and Charismatic Social Relationship: A Legitimization Narrative of President Trump's Status as a Charismatic Leader following a SARS-CoV-2 Infection Reported by the Portuguese Media. *Societies* **2021**, *11*, 130. https://doi.org/10.3390/soc11040130

Academic Editor: Gregor Wolbring

Received: 15 September 2021
Accepted: 22 October 2021
Published: 28 October 2021

1. Introduction

This conceptual paper aimed to understand how stigma, a concept usually associated with a negative social relationship, in the context of a pandemic threat such as COVID-19 can, in some situations, structure a charismatic social relationship in an association between stigma and a socially positive dimension. For this purpose, the authors analyzed selected news stories highlighted by several Portuguese media about the actions and messages developed by President Trump in the context of his infection with SARS-CoV-2 and the subsequent recovery process. These news items give visibility to a narrative that can be considered as reinforcing the legitimization of his condition as supreme leader in an electoral context marked by the pandemic threat [1].

The perception of this condition of a supreme chief is based on a gift, i.e., on the extraordinary ability that chiefs possess. These exceptional gifts gain visibility and meaning in the proclamation and realization of a political, warlike, religious, or philanthropic objective, among others [2]. Those who acknowledge this gift also acknowledge the duty to follow the charismatic leader, whom they obey exclusively because of their exceptional qualities and not according to their statutory position or traditional dignity [3]. The

influence of charisma is born and persists if the goal is achieved, i.e., if it offers effective and useful evidence capable of strengthening the faith of the followers [2].

Charisma cannot be confused with prestige, consideration, popularity, or personal talent. Charisma establishes a social relationship that fundamentally changes the structure of behavior [4]. Charisma produces its "magic from within"; "charisma produces a transfiguration of identity" [5] (p. 67).

Charisma as an unpredictable, revolutionary force presents a disruptive capacity for all established orders [3,5]. A charismatic situation creates a rupture with the usual and institutionalized structures of behavior. A charismatic leader is not just a person who inspires confidence, raises high expectations, or to whom special competencies are ascribed. A charismatic leader establishes a new leadership position, a new structure of social relationships, and a new cognitive definition of the action situation [4] (p. 5).

In this relationship between stigma and charisma, and despite considering stigma as a mark or trait that devalues the individual [6], emphasizing the negative effects that it can cause on individuals, stigma can be seen as the mark of something extraordinary that, on the contrary, enhances the affirmation of the social status and symbolic power of the actors characterized as ill-healthy (for example, COVID-19), in which labelling, stereotyping, cognitive separation, and discrimination [7] tend to transform significantly, reinforcing the admiration, trust, and belief in the chief by supporters and followers.

2. The COVID-19 Pandemic and the Stigmatization of the "Other"

The COVID-19 pandemic, like any other pandemic, is a health threat that can be characterized by uncertainty, powerlessness, dystopia, and fear of the "other" [8]. The belief in the association between contagion and danger intrinsic to the health threat caused by COVID-19 has reinforced fears, prejudices, stigma, and xenophobia, reproducing a social image of the dangerousness of the disease, the "impure" patients, the potential patients, and the regions and countries associated with the genesis of the disease. The epidemic is categorized as an attribute inherent in the invasion of the "strange", the "foreign", the "other".

COVID-19 shaped a stigma generally understood as full social disqualification, in negative discrimination that generates exclusion [9–16].

The WHO (World Health Organization) [17] stated that three core factors underpin the level of stigma arising from COVID-19: "[...] (1) it is a disease that's new and for which there are still many unknowns; (2) we are often afraid of the unknown; and (3) it is easy to associate that fear with 'others'. It is understandable that there is confusion, anxiety, and fear among the public. Unfortunately, these factors are also fueling harmful stereotypes" (p. 1).

Stigma corresponds to a mark or attribute that devalues the individual [6]. According to Goffman [6], identity manipulation may occur in the relationship with others through social information and full social acceptance—or not—based either on discredited attributes (visible or known) or discreditable attributes (attributes that may become known). Stigma is a mark or attribute that links the individual to undesirable characteristics, the stereotype. Thus, stigma can affect individuals directly, through mechanisms of discrimination and automatic activation of the stereotype, and indirectly, to the extent that it can threaten the personal and social identity of the stigmatized individual [18].

COVID-19, as a contagious disease, seems obviously undesirable for everyone, so its classification as a disease seems objective and self-evident. However, it is a social assessment. Although this assessment focuses on the "disease", it imposes on the "sick" person to wish to be cured and seek technically competent help. Otherwise, the individual would be freed from other roles and would not be responsible for their actions. The nosological classification and social qualification of a given "disease" is not a socially neutral process; medical management is characterized by the close articulation between legitimacy and stigma. To consider someone as sick has immediate consequences for their identity, and the medical qualification of a disease, even if it is a mistake, may be

sufficient to introduce the individual into a career of sickness. Even if the illness has seen its legitimacy recognized—having the right to be sick—the sick person cannot always avoid stigmatization [19].

Stigmatization can be seen as a social process within a power relationship. Besides emphasizing the interdependent relationships between "normal" and "stigmatized", this conceptualization allows this social phenomenon to be placed within a dynamic social, cultural, economic, and political context. The process of stigmatization occurs when labelling, stereotyping, cognitive separation, loss of status, and discrimination are interrelated in a situation of power that allows such components to happen [7]. Power can be seen as conducive to the process. Dominant groups have the ability to impose their values, norms, and beliefs on people with fewer resources; stigmatization is a condition that promotes inequality regarding the distributions of resources and power in a given society and time, enabling the categorization and labelling of differences, the construction of stereotypes, the separation between the "normal" and the "others", disapproval, rejection, exclusion, and discrimination [7].

This social process of stigmatization is characterized by several interdependent components of categorization and labelling that negatively and continuously limit the life of those who are victims of this process, such as labelling, stereotyping, physical and/or social separation, status loss, discrimination, and exclusion by those considered in a given social and cultural context normal or dominant in relation to others [6,7].

The mobilization of this conceptual perspective allows framing an analytical model for understanding the social process of stigmatization associated with a disease in which negative social representations emerge and are reinforced for certain groups of individuals [20,21]. This model has the following characteristics: the disease that is the object of stigmatization is conceived as avoidable and considered to be under the control of those affected; the behavior that caused the disease or the condition considered to be a risk of a disease is the object of some form of disapproval, a moral judgement is performed on people, and they are blamed for the disease or the behavior; the individuals or groups affected by a given disease are associated with negative stereotypes (negative social representations associated with the disease); people are associated with a socially differentiated group, i.e., a labelled and stereotyped group with which a distancing is made based on the existing social representations of the "other"; and people see their social status "diminished" and suffer various forms of disadvantage, whether the stigma is real, anticipated or perceived [7,20,21].

3. COVID-19 and the Processes of Stigmatization

Every society has social control mechanisms to ensure that the majority of its members conform to the socially dominant norms and rules. People who do not conform to these rules or break social taboos are socially excluded [22]. For Becker and Arnold [22], members of society have common beliefs about the cultural significance of an attribute and the stigma attached to it. These beliefs about stigma dictate the nature of stigma. People take specific attitudes about a given stigma and the responses of stigmatized people, thus affecting the way in which a stigmatized individual is either integrated into a group or socially excluded [22,23].

In the various representations conveyed in multiple discursive records about COVID-19, this pandemic is associated with the matrix metaphor of the plague expressed in the series contagion–death–medi-isolation. The contagion–epidemic dyad underlies the perception of a great danger, amplified in contemporary societies by the extreme speed of movement of people, goods, and information. The belief in the association between contagion and danger intrinsic to epidemic diseases, namely the COVID-19 health threat, has reinforced fears, prejudices, and enhanced stigma and xenophobia, reproducing a social image of the dangerousness of the disease, the "impure" patients, the potential patients, and the regions and countries associated with the genesis of the disease.

Negative social representations associated with epidemics and contagions have persisted over time, reinforcing prejudices and potentiating the stigmatization processes of various groups of individuals and some regions. Hostile attitudes have been and continue to be directed at groups categorized and socially labelled as having negative attributes in relation to the dominant groups in certain contexts: the *familia diaboli* [24]—consisting of beggars, vagabonds, Jews, "lepers", prostitutes, gravediggers—in the plague epidemic in the 14th century; the vagabonds and the destitute in the Renaissance in the epidemics of black plague and typhus; Irish immigrants in the cholera epidemic in the 19th century; the poor and working classes—the "dangerous classes"—in the outbreaks of tuberculosis in the 19th and 20th centuries; homosexuals, Haitians, hemophiliacs, and heroin addicts in the 1980s in the HIV/AIDS epidemic; the indigenous people of the European colonies in the 19th century associated with the resurgence of leprosy; Africans linked with the emergence of the "West Nile Virus", the "Lassa Fever", the "Ebola Virus"; and Chinese and Asians in the H1N1, H5N1, SARS, and COVID-19 epidemics [25].

The stigma generated by COVID-19 is usually a source of shame, anxiety, and potentially social rejection felt directly by the infected, stigmatized person (or the person considered by others as a possible agent of infection) but also by those close to them (family, friends, health professionals, and communities considered to be more conducive to the existence and transmission of the virus, among others) [15,26–28]. Stigma is almost always regarded for its potentially negative characteristics of social rejection and the various consequences involved, and the same has happened with its association with COVID-19 [11,29–41], which may even reinforce pre-existing stereotypes, difficulties, and negative images [33,42]. According to Joshi and Swarnakar [36] (p. 3), "All these cases of infectious-disease stigma rely on a binary between the 'normal' and the 'other' in the form of a culturally defined negative attribute or stigma to pass blame through social positions of power and control".

The stigma arising from COVID-19 has, therefore, an important effect on three dimensions of the infected individuals' lives: (1) individual life and well-being: this stigma reduces the individuals' opportunities, negatively affects their ability to prevent and control health risks, causes the violation of human rights and dignity, increases physical and psychological stress, and in many cases leads to self-stigma; (2) public health and pandemic response: stigma hinders the detection and control of the disease, impacts health professionals, and contributes to increased mortality and morbidity; and (3) society at large: the COVID-19 stigma causes increased social inequalities, notably through the marginalization of those infected and the normalization of exclusion [43]. Table 1 shows how stigma manifests in behaviors and its consequences on individuals.

Table 1. How stigma occurs and what impacts it has.

How Stigma Manifests Itself in Behaviors	Consequences
- **Blaming and shaming**: questioning the etiology of the pandemic, conspiracy theories, undesirable behaviors of a specific group of individuals (e.g., eating live bats/animals)	**Individual plan**
	Fear, feeling abandoned, angry, hurt
	Despair, anxiety, depression
	Isolation, withdrawal, alienation, suicide
- **Indifference, apathy, exclusion**: deliberately accepting unjust situations (e.g., isolating and excluding people who have recovered from COVID-19, ignoring the death of homeless people from COVID-19, or indifference to COVID-19 infection within marginalized groups such as prisoners, prostitutes, homosexuals, etc.)	**Community/societal plan**
	Social segregation and punishment
	Violence/crime against the victim
	Dehumanization and violation of human rights
	Protest, community resistance
	Economic/political sanctions
- **Preventing any connection and repudiation**: discrimination (e.g., refusing someone access to services, use of the same space, or public transport)	**Impact on control of COVID-19**
	Avoidance of contact tracing, hiding from surveillance
	Avoiding/running away from medical care/treatment
	Nonconformance to social measures
	Putting people at greater risk through inability to access services

Table 1. *Cont.*

How Stigma Manifests Itself in Behaviors	Consequences
- **Denying access**: to employment, education, health services, or housing (expulsion of the person from their home or removal from schools) - **Verbal attacks, threats, harassment, pointing and offending**: ethnocentrism, prejudice, degrading comments or looks, cursing, shouting - **Victimization and violence**: physical assaults	**The impact on health workers further weakens the health system and the ability to control the pandemic**

Source: WHO [44] (p. 6).

In summary, individuals infected with or considered to be infected with COVID-19 are often seen as active agents of virus dissemination. This stereotypical view leads society to treat these individuals negatively [15]. In the current pandemic situation, one aspect of the salutogenic discourse focuses on the metaphor of body contamination, intensifying the susceptibility and aversion to body degradation. The sick, the old, the contaminated, and those with bodily marks of physical decay tend to be excluded or ignored [45]. Nuckchady [34] (p. 32) presents a categorization of infected individuals, and thus potential victims of stigmatization, into the following four groups: "[...] stigma of people who are perceived to be carriers of the disease but who most likely are not infected, stigma of people who are actually infected, stigma of people who were infected but who have recovered and are no longer contagious and stigma towards people who care for the ill".

3.1. Stigma and Charismatic Domination

In almost all of the consulted studies that analyzed, directly or indirectly, the COVID-19 pandemic and its social consequences, stigma and the process of stigmatization were addressed in a socially negative way; i.e., the studies focused on the negative impacts of stigma on the lives of people socially categorized as stigmatized [6,17,26,27,33,46,47]. Despite the negative effects that stigma can cause in individuals, stigma can be seen as the mark of something extraordinary that, on the contrary, promotes the affirmation of the social status and symbolic power of the actors characterized as ill-healthy, in which the labelling, stereotyping, cognitive separation, and discrimination [7] tend to be significantly transformed, reinforcing the admiration, trust, and belief in the charismatic leader by supporters and followers. The indispensable presupposition is "to be believed": the charismatic leader has to be believed as a leader "by the grace of God" [3].

In the analysis of the configuration of the charismatic social relationship, the model of charismatic domination proposed by Max Weber was favored. The Weberian model offered the advantage of thematizing the issue of the relationship between the person and the structure [4].

In this model, domination is viewed as a structure of power that not only demands obedience, but demands obedience resulting from the will to obey [5]. Domination, as a probability of finding obedience to a particular mandate, can be based on various motives of submission [3]. The kinds of pretension that the holders of power have for the legitimacy of their power shape the forms or types of domination: traditional, charismatic, and rational–legal. Traditional domination is based on the appeal to the sanctity of habits and immemorial traditions; rational–legal domination is based on formally approved rules and statutes and has its archetype in the bureaucracy; and charismatic domination is based on the personal gift of a heroic figure who is in a state of grace [3,5].

In charismatic domination, individuals obey the charismatically qualified chief because of personal trust in revelation, heroism, or exemplarity within the scope of the validity of the belief in the chief's charisma [3]. Leaders that exert this type of domination are characterized by having a specifically extra quotidian character, presenting a strictly personal social relationship associated with the charismatic validity of personal qualities and their proof [3].

Charisma, in the Weberian sense, is understood as a quality deemed extraordinary of a person through which they are regarded as endowed with supernatural or superhuman forces or characteristics not accessible to all, or else are seen as sent by God or as exemplary and therefore as "*chief*" [3] (pp. 706–707). Charisma is thus based on a social relationship between a charismatic individual and a believer who is faithful to the charisma. The feature considered charismatic is ascribed to an individual by their followers; in turn, the bearer of charisma gains recognition of the charisma they claim. A social relationship is shaped in which the position of the leader, the dominance exercised, and the form of obedience have a specific nature [4]. Weber's model is not oriented towards an analysis of the personality of the charismatic leader, but towards the structure of the charismatic social relationship characterized by a set of specific features [4].

The first feature concerns the recognition of the validity of the charisma by the dominated, assured by the verification inherent in the revelation, the veneration of the hero, the trust in the *chief*. The chief claims supreme authority, whereas the disciple accepts obedience as a duty. The charismatic chief must be willing to claim supreme authority, and the follower must be willing to submit entirely to the chief. The second feature of a charismatic relationship regards the dissolution of previously existing norms, procedures, and forms of organization. The more a charismatic chief makes claims about themselves that they want all others to accept, the less they can allow for other normative rules and control procedures. These would limit their arbitrariness by subjecting obedience to certain conditions. The third feature is a consequence of the previous one. The social formation that is shaped based on charismatic relationships is an "emotional communization", the cohesion of which is linked to a personal bond with the chief and that, when the size of the group requires so, is organized by the disciples and trusted persons summoned by the chief. The fourth feature of a charismatic relationship is the need for confirmation. The belief in charisma, its ascription to a person, is dependent on the perception of confirmation. The expectations associated with the belief in charisma are not disconnected from the perception of reality and the interests of those who believe in it. Confirmation can be attained when the followers' propensity to believe is reinforced by "enthusiasm, distress or hope" [4] (p. 4), i.e., when the orientation of action is emotional and, when in a situation of uncertainty, alternative interpretations and options for action are lacking. Once a charismatic leadership position is established, its holder is likely to determine the perception of reality in their followers and exclude alternative courses of action, deinstitutionalizing the processes of intention and decision making [4] (p. 4).

The precondition for establishing charismatic dominance is the existence of a latent charismatic situation, a propensity to believe in charisma and to submit to direct personal dominance [4] (p. 5). This latent charismatic situation has two dimensions: one cultural and one social [4]. The cultural dimension emphasizes that the propensity for charismatic belief is culturally determined by the idea that transcendental powers directly influence human destiny and are embodied in the qualities of an individual, who acts on behalf of a God or "Providence". In American culture, there is a relatively strong tendency towards the belief in charismatic forces. The perception of a crisis underlies the social dimension of a latent charismatic situation. The inability to overcome the crisis delegitimizes national and international political institutions, which are held responsible for its genesis and development; the hope grows that a "strong individual" will emerge to put an end to the situation of distress. A latent charismatic situation emerges only when a charismatic claim is made, when an individual seems to promise to overcome the crisis and this message is deemed acceptable [4] (p. 7).

3.2. President Trump's Legitimation Narrative of Charismatic Chieftaincy following a SARS-CoV-2 Infection Reported by the Portuguese Media

The authors analyzed some selected news stories highlighted by several Portuguese media about the actions and messages developed by President Trump in the context of his SARS-CoV-2 infection and subsequent recovery process. These news items gave visibility to a narrative that can be considered as reinforcing the legitimization of his condition as

supreme leader in an electoral context marked by the pandemic threat. Different types of public domain documentary sources were mobilized, namely newspapers, videos, posts, and television reports (RTP, Portuguese Public Television), on the process of the infection and recovery of President Trump.

It should be noted that public domain documents reflect two discursive practices: as a genre of circulation, as artifacts of the sense of making public; and as content, in terms of what is printed on their pages. They are "in time" products and significant components of everyday life; they complement, supplement, and compete with narrative and memory. Documents in the public domain, like records, are documents made public; their intersubjectivity is a product of interaction with an unknown but meaningful and often collective other [48].

Media can be understood as practices of meaning construction in public spaces, which enable the configuration of shared universes and guide the topics of conversation of social groups based on debates and polemics determined by the specific interests of these groups [49]. The media are relevant in the process of the social construction of reality: they guide the public's attention and influence its perception of reality as well as determining the social relevance of topics and what is under discussion in the social space.

In the news selected and reported by the Portuguese media on the infection and recovery process of President Trump, the authors focused on identifying the thematic structures of each text, which implied a reduction of the information to the central semantic aspects. This reduction was performed through "macrorules", namely the elimination of redundant information and the summary of several propositions into a single, more generic one, allowing the reconstruction of the texts in the form of "thematic skeletons" [50,51]. Macrostructures (organized sets of prepositions) as macropropositions were organized into a set of categories emphasizing the causes of an event, the antecedents, and the consequences [50,51], being relevant elements of a narrative that underlies the time sequence of an action, an outcome, characters, and a framework of action [51].

The vicissitudes of President Trump's recovery process were prolifically reported in the media. In Portugal, multiple media considered to be of high quality and reliability broadcast several reports on the recovery of President Trump in which the characteristics of a charismatic leader can be highlighted (or, at least, the transmission of several of these characteristics were present in some of the news reports) [52–54].

The Público newspaper, dated 2 October, 2020, reported that North American President Donald Trump was infected with the new coronavirus, along with first lady Melania Trump:

> *"The information was advanced by the head of state himself via the social network Twitter. 'Tonight, Melania and I tested positive for COVID-19. We will begin our quarantine and recovery process immediately. We will get through this together,' he wrote. Melania Trump also confirmed on Twitter that the couple is infected. 'As too many Americans have done this year, Donald Trump and I are in quarantine at home after testing positive for COVID-19. We are feeling fine and have postponed all engagements for the foreseeable future. Please make sure you are safe and we will get through this together.' The US President's physician, Sean Conley, has also confirmed this information and assured that both 'plan to stay at home inside the White House' during their convalescence, without saying, however, whether the couple has symptoms of the disease. 'The White House medical team and I will be keeping a watchful eye, and I appreciate the support provided by some of the greatest medical professionals and institutions in our country. Rest assured, I expect the President will continue to perform his duties uninterrupted during his recovery, and I will keep you informed of any future developments,' he stressed in an official statement quoted by The New York Times. At 74 years of age, Trump falls into one of the risk groups for COVID-19. According to the American daily, about eight out of ten deaths attributed to the disease in the U.S. were recorded in citizens over 65 years. In May, and despite warnings from public health authorities, the President had already stated that he was taking hydroxychloroquine (a drug used to treat malaria*

> *and autoimmune diseases such as rheumatoid arthritis or lupus) after two White House staffers revealed that they were infected*.
>
> *The isolation that Trump will now have to comply with will condition his campaign for the November 3 presidential election, in which the Republican-backed candidate faces Democrat Joe Biden, with whom he debated on Tuesday"* (Pedro Guerreiro and Sofia Neves, 2 October 2020; https://www.publico.pt/2020/10/02/mundo/noticia/trump-testa-positivo-covid19-entra-isolamento-plena-campanha-presidencial-1933713, accessed on 17 October 2021)

A beneficial representation of the disease underlies these messages [55]. While in the disease-bad-happiness model, individuals experience the disease as harmful, unbearable, and responsible for the loss of their credibility, in the beneficial model, symptoms are not considered as a deviation to be contained but as a message to be heard and decoded. Illness is a reaction that has, if not a value, at least a meaning, since it is seen as an attempt to restore the disturbed balance and even, in some cases, as an exalting and enriching episode. The dominant beneficial representation of illness is that of the disease-salvation, in the religious view, as a grace, holiness, that exalts, liberates, and enriches [55]. The disease is felt as "liberating" when it offers the individual the possibility of escaping from a social role perceived as suffocating and unbearable. Far from being perceived as a misfortune or destruction, illness is seen as an opportunity to find meaning in one's life, to affirm "new life norms" that lead to the individual's enrichment and fulfillment. This condition takes on a negative or positive value depending only on how the individual lives it in relation to the environment, i.e., in relation to the individual's own normative power [56]. The experiences and representations of a disease acquire meaning only through connection to the set of interdependent relationships between individuals and society present in the interpretation of the illness in a specific time and space. Thus, on the one hand, an illness expresses the living conditions, values and belief systems, medical knowledge, and representations in a given spacetime; on the other hand, an illness is "resented" by the individual only when the signs that they perceive correspond to the symptoms that are socially recognized as disease indicators [57–59].

President Donald Trump's ritualized actions, as reported in some relevant Portuguese media, embody something that goes beyond everyday normality in the sense of exalting everyday behaviors. Rituals can be both routine and excessive, transporting the people involved into a somewhat extraordinary world. These rituals can be understood as manifestos against indeterminacy [60,61], as symbolic acts that aim at mitigating uncertainties and insecurities, fostering a feeling of ontological security among their adherents and followers. Every rite tends to consecrate or legitimate, i.e., make an arbitrary limit recognized as legitimate, as natural [62]. The "limit" that Bourdieu [62] mentions (p. 58) is the symbolic line marking the passage between the before and the after. It is thus the line demarcated by the rite that signals a change of state, the passage from one condition to another [62].

Rádio Televisão Portuguesa (RTP), a public television network, reported on 8 October, 2020, that President Trump, speaking of his early recovery at lines, said that contracting the COVID-19 disease had been a "blessing from God" and that he wished all Americans had "the same treatment as their President":

> *"[...] US President Donald Trump said that contracting COVID-19 was a 'blessing from God' and assured that it will help 'heal' other Americans, although he himself has not yet overcome the disease. 'It made me feel better, I call that healing. And I want everyone to have the same treatment as their President', Trump said in a video posted on Twitter. [...] In this regard, Trump explained that his Administration plans to approve, as a matter of urgency, the Regeneron cocktail he was administered and assured that it will be distributed free of charge"* (Mário Aleixo—RTP, 8 October 2020 (https://www.rtp.pt/noticias/mundo/covid-19-trump-diz-que-contrair-a-doenca-foi-uma-bencao-de-deus_n1265044, accessed on 17 October 2021)

The Expresso newspaper of 7 October reported that President Trump reiterated that this was indeed a cure:

> *"They're going to say that this is therapeutic, and maybe these medicines are really therapeutic, some people don't know how to define 'therapeutic', the views are different, but for me it's a cure. I went in, they gave me the treatment, and 24 h later I was perfect, I wanted to leave the hospital. I want everyone to have the same treatment as your President. It was a blessing from God. And I was the one who said I wanted to have this treatment. I want you to have the same treatment and for free. You are not to blame for this, it's China's fault, China will pay"* (Expresso, 7 October 2020, https://expresso.pt/coronavirus/2020-10-07-Covid.-Trump-diz-que-tratamento-que-recebeu-e-uma-cura-promete-oferece-lo-de-borla-afirma-se-abencoado-por-Deus-e-ataca-a-China, accessed on 17 October 2021)

This narrative highlighted a set of actions and messages developed by President Trump, which can be considered as reinforcing the legitimization of his charismatic leader status in an electoral context marked by the pandemic threat.

These various news stories about President Trump's infection with the new SARS coronavirus COV-2 expressed the meanings that translate the semantic network of the disease [63,64], the symbolic connections that a given individual establishes among their various life experiences, particularly critical events and experiences. The meaning units composed of words used to describe symptoms and sensations are connected by causal relationships or by a metaphorical, analogical, or symbolic logic [64]. The logic inherent in the semantic network allows one to go beyond the representations underlying the etiological and therapeutic models, allowing the individual to interpret the disease within their social and cultural context [64]. Language and representations have a symbolic efficacy in constructing reality and structure the perception that social agents have of society [65].

Following the media account exposed above, one possible interpretation is that, for the American President and his supporters and followers, this miraculous nature of the President's healing expresses "the two bodies of the President": human by its nature and divine by the granting of God's grace. The "presidential miracle" is presented as the expression of the supreme political power of the "Head of State", who exercises a centralizing power of physical and symbolic force. It is the affirmation of the symbolic dimension of the President's power. This President's symbolic power is a power to consecrate or reveal things that already exist. This symbolic power is founded on the possession of symbolic capital, which is situated in the order of knowledge and recognition. The followers, the dominated, know and recognize: the act of obedience presupposes an act of knowledge, which, at the same time, is an act of recognition [65]. In the recognition, there is "knowledge"; those who submit, obey, subject themselves to an order, operate a cognitive action. The acts of submission and obedience are cognitive acts that operate cognitive structures, categories of perception, schemes of perception, and principles of vision and division [65].

We recall that the leaders based on charismatic authority, when successful in a particular action or outcome, are perceived as having high competence, to the detriment of their conventional peers who have not attained this success. Conventional leaders are considered unworthy of leadership; they possess qualities that would have made them worthy of leadership in the past but that, according to the new charismatic criteria, are a sign of their unworthiness as leaders. That is, "[...] just as the charismatic leader impresses the onlooker by means of a positive expression of their new vision and mission, so the conventional contender performs the inadequacy of the status quo" [53] (p. 930).

The expression of the charismatic process, the new rules, the force, the proofs that demonstrate the legitimacy of the charisma and the mission, are placed in a revolutionary way in relation to the institutionalized situation through a social experience that demands conversion (metanoia) in the followers' attitudes and behavior, as in those of the leader themselves. The reference to metanoia [66] shows that charisma touches an existential sphere of experience and meaning of charismatic leaders [67]. Charisma can be interpreted as a subjective "boundary experience", because in this experience, individuals take on "a re-

ligious worldview" without having to understand the process as a religious experience [68]. The experience of charisma can be seen as a religious experience, in the phenomenological sense, even when the contents of the mission are manifested externally as secular, political, or social action orientations [67,68].

4. Conclusions

As previously mentioned, this article aimed to analyze how stigma, as a social relationship, in the context of a pandemic threat such as COVID-19 can, in some situations, structure the charismatic social relationship. Stigma, when considered as a mark of something extraordinary—a "grace from God"—that enhances the affirmation of the social status and symbolic power of social actors characterized as ill-healthy, tends to significantly transform the labeling, stereotyping, cognitive separation, and discrimination that normally attend stigma, reinforcing the charismatic legitimacy of the leader and inspiring the admiration, trust, and belief of their followers.

It was found that in the news selected and highlighted by several Portuguese media about the actions and messages developed by President Trump as part of the recovery process from an infection by SARS-CoV-2, a narrative was given visibility that can be considered as reinforcing the legitimization of the President's condition as the supreme leader of the American nation. In this narrative, moral vocabularies [69] were produced that could express to followers the belief in President Trump, who overcame the COVID-19 disease, and in his superiority and natural aptitude to lead, to govern; a fact potentially reinforced by the President being perhaps so charismatic as to let the audience think a very serious illness can be healed by the force of the Nation praying for the recovery of its own President. Charismatic authority and legitimacy depend on the ability to simultaneously convince followers that the leader has extraordinary powers and that the faith voluntarily invested by followers in the chief does not fade [69]. The foundations of the "inspirational" request for obedience are centered on the motto "obey me because I can transform your life" [69] (p. 59).

In a charismatic social relationship, stigma, when viewed as the mark of something extraordinary, may enhance the claims that individuals and dominant groups make about themselves and that they want all others to accept [69]; it may reinforce the admiration, trust, and belief in the charismatic leader by supporters and followers.

Stigmas can be considered symbolic maps revealing the political, social, and cultural structures that give them meaning and sense, which are implicated in multiple regimes of regulation [59]. A positive conception of stigma associated with illness can promote the blurring of the moral boundaries that support the process of categorization and labeling of illnesses perceived as indecent, shameful, impure, polluting, and dirty [59]. Other challenges may arise, such as discussion on the implications of the positive and negative components of stigma and the risk of stigmatization. Researchers and other agents, namely politicians, must reflect on the challenges associated with a perspective of "de-normalization" of stigma [59] and with stigmatization as a prevention and health-promotion strategy [21,70].

Author Contributions: Conceptualization, C.M.F. and S.S.; methodology, C.M.F. and S.S.; formal analysis, C.M.F. and S.S.; investigation, C.M.F. and S.S.; writing—original draft preparation, C.M.F. and S.S.; writing—review and editing, C.M.F. and S.S. All authors have read and agreed to the published version of the manuscript.

Funding: This work is financed by national funds through FCT—Foundation for Science and Technology, I.P., within the scope of the project «UIDB / 04647/2020» of CICS.NOVA—Centro Interdisciplinar de Ciências Sociais da Universidade Nova de Lisboa.

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Not applicable.

Acknowledgments: The authors would like to thank the editor and reviewers for their comments and suggestions.

Conflicts of Interest: The authors declare no conflict of interest.

References

1. Baccini, L.; Brodeur, A.; Weymouth, S. The COVID-19 pandemic and the 2020 US presidential election. *J. Popul. Econ.* **2021**, *34*, 739–767. [CrossRef] [PubMed]
2. Sandre, I. Charisma. In *Dictionary of Politics*; Bobbio, N., Matteucci, N., Pasquino, G., Eds.; University of Brasília Press: Brasília, Brazil, 1998.
3. Weber, M. Types of domination. In *Teorias Sociológicas. Os Fundadores e os Clássicos [Sociological Theories. The Founders and the Classics]*; Cruz, M.B., Ed.; Calouste Gulbenkian Foundation: Lisboa, Portugal, 1989.
4. Lepsius, M. Le modèle de la domination charismatique et son application possible au "Führerstaat" d'Adolf Hitler [The model of charismatic domination and its possible application to Adolf Hitler's "Führerstaat"]. *Trivium* **2016**, *23*, 1–24.
5. Parkin, F. *Max Weber*; Celta Editora: Oeiras, Portugal, 1996.
6. Goffman, E. *Stigma: Notes on the Management of Spoiled Identity*, 4th ed.; Editora Guanabara: Rio de Janeiro, Brazil, 1988.
7. Link, B.; Phelan, J.C. Conceptualizing Stigma. *Annu. Rev. Sociol.* **2001**, *27*, 363–385. [CrossRef]
8. Ferreira, C.M.; Serpa, S.; Ferraz, J. Pestis: The Collective Challenges of Epidemics. *Acad. J. Interdiscip. Stud.* **2021**, *10*, 1. [CrossRef]
9. Villa, S.; Jaramillo, E.; Mangioni, D.; Bandera, A.; Gori, A.; Raviglione, M.C. Stigma at the time of the COVID-19 pandemic. *Clin. Microbiol. Infect.* **2020**, *26*, 1450–1452. [CrossRef]
10. Goniewicz, K.; Khorram-Manesh, A. Maintaining Social Distancing during the COVID-19 Outbreak. *Soc. Sci.* **2021**, *10*, 14. [CrossRef]
11. Qin, X.; Song, L. Addressing stigma in the context of the coronavirus disease 2019 (COVID-19) outbreak: A socio-ecological approach. *Infect. Control. Hosp. Epidemiol.* **2021**, 1–2. [CrossRef] [PubMed]
12. Paleari, F.G.; Pivetti, M.; Galati, D.; Fincham, F.D. Hedonic and eudaimonic well-being during the COVID-19 lockdown in Italy: The role of stigma and appraisals. *Br. J. Health Psychol.* **2021**, *26*, 657–678. [CrossRef]
13. Budhwani, H.; Sun, R. Creating COVID-19 Stigma by Referencing the Novel Coronavirus as the "Chinese virus" on Twitter: Quantitative Analysis of Social Media Data. *J. Med. Internet Res.* **2020**, *22*, e19301. [CrossRef]
14. Srivastava, V.K. Anatomy of Stigma: Understanding the Case of COVID-19. *Soc. Chang.* **2020**, *50*, 385–398. [CrossRef]
15. Bhanot, D.; Singh, T.; Verma, S.K.; Sharad, S. Stigma and Discrimination during COVID-19 Pandemic. *Front. Public Health* **2021**, *8*, 577018. [CrossRef]
16. Watkins, D.V.; Clevenger, A.D. US Political Leadership and Crisis Communication during COVID-19. *Cogent Soc. Sci.* **2021**, *7*, 1901365. [CrossRef]
17. WHO. Social Stigma Associated with COVID-19: A Guide to Preventing and Addressing Social Stigma. 2020. Available online: https://www.who.int/docs/default-source/epi-win/stigma/covid19-stigma-guide.pdf?sfvrsn=48f6ac1_2&download=true (accessed on 22 July 2021).
18. Major, B.; O'Brien, L.T. The Social Psychology of Stigma. *Annu. Rev. Psychol.* **2005**, *56*, 393–421. [CrossRef]
19. Herzlich, C. Modern medicine and the search for meaning: The disease as a social signifier. In *The Meaning of Evil. Anthropology, History, Sociology of Disease*, 3rd ed.; Augé, M., Herzlich, C., Eds.; Éditions des Archives Contemporaines: Paris, France, 1991.
20. Deacon, H. Towards a sustainable theory of health-related stigma: Lessons from the HIV/AIDS literature. *J. Community Appl. Soc. Psychol.* **2006**, *16*, 418–425. [CrossRef]
21. Désy, M.; Filiatrault, F. *Ethical Dimension of Stigma in Public Health. A Thinking Aid Tool*; Institut National de Santé Publique du Québec: Quebec City, QC, Canada, 2013.
22. Becker, G.; Arnold, R. Stigma as a social and culture construct. In *The Dilemma of Difference*; Ainlay, S., Becker, G., Col-man, L., Eds.; Plenum: New York, NY, USA, 1986; pp. 39–76.
23. Siqueira, R.; Cardoso, H. The concept of Stigma as a social process: A theoretical approach from the North American literature. *Imagonautas* **2011**, *2*, 92–113.
24. Fabre, G. *Epidemics and Contagions. The Imagination of Evil in the West*; PUF: Paris, France, 1998.
25. Ferreira, C.M.; Serpa, S. Contagions: Domains, Challenges and Health Devices. *Acad. J. Interdiscip. Stud.* **2020**, *9*, 1. [CrossRef]
26. Bologna, L.; Stamidis, K.V.; Paige, S.; Solomon, R.; Bisrat, F.; Kisanga, A.; Usman, S.; Arale, A. Why Communities Should Be the Focus to Reduce Stigma Attached to COVID-19. *Am. J. Trop. Med. Hyg.* **2021**, *104*, 39–44. [CrossRef] [PubMed]
27. Amir, K. COVID-19-related stigma in COVID-19 survivors in Kampala, Uganda: A qualitative study. *Preprints* **2021**. [CrossRef]
28. Turner-Musa, J.; Ajayi, O.; Kemp, L. Examining Social Determinants of Health, Stigma, and COVID-19 Disparities. *Healthcare* **2020**, *8*, 168. [CrossRef] [PubMed]
29. Borges, T.P.; Schulz, R.D.S.; de Magalhães, J.B.; Campos, L.M.; dos Anjos, K.F.; Rosa, D.D.O.S. Stigmas related to COVID-19 and their prevention. *Physis J. Collect. Health* **2021**, *31*. [CrossRef]
30. Abdelhafiz, A.S.; Alorabi, M. Social Stigma: The Hidden Threat of COVID-19. *Front. Public Health* **2020**, *8*, 429. [CrossRef]
31. Muhidin, S.; Vizheh, M.; Moghadam, Z.B. Anticipating COVID-19-related stigma in survivors and health-care workers: Lessons from previous infectious diseases outbreaks—An integrative literature review. *Psychiatry Clin. Neurosci.* **2020**, *74*, 617–618. [CrossRef] [PubMed]

32. Peprah, P.; Gyasi, R.M. Stigma and COVID-19 crisis: A wake-up call. *Int. J. Health Plan. Manag.* **2020**, *36*, 215–218. [CrossRef]
33. Chopra, K.; Arora, V. COVID-19 and social stigma: Role of scientific community. *Indian J. Tuberc.* **2020**, *67*, 284–285. [CrossRef]
34. Nuckchady, D.C. Stigma Linked to COVID-19. *Int. Neuropsychiatr. Dis. J.* **2021**, 29–38. [CrossRef]
35. Choi, S. "People look at me like I AM the virus": Fear, stigma, and discrimination during the COVID-19 pandemic. *Qual. Soc. Work. Res. Pract.* **2020**, *20*, 233–239. [CrossRef]
36. Joshi, B.; Swarnakar, P. Staying away, staying alive: Exploring risk and stigma of COVID-19 in the context of beliefs, actors and hierarchies in India. *Curr. Sociol.* **2021**. [CrossRef]
37. van Daalen, K.R.; Cobain, M.; Franco, O.H.; Chowdhury, R. Stigma: The social virus spreading faster than COVID-19. *J. Epidemiol. Community Health* **2021**, *75*, 313–314. [CrossRef]
38. Roelen, K.; Ackley, C.; Boyce, P.; Farina, N.; Ripoll, S. COVID-19 in LMICs: The Need to Place Stigma Front and Centre to Its Response. *Eur. J. Dev. Res.* **2020**, *32*, 1592–1612. [CrossRef] [PubMed]
39. Lohiniva, A.-L.; Dub, T.; Hagberg, L.; Nohynek, H. Learning about COVID-19-related stigma, quarantine and isolation experiences in Finland. *PLoS ONE* **2021**, *16*, e0247962. [CrossRef]
40. Schubert, M.; Ludwig, J.; Freiberg, A.; Hahne, T.; Starke, K.R.; Girbig, M.; Faller, G.; Apfelbacher, C.; Knesebeck, O.V.D.; Seidler, A. Stigmatization from Work-Related COVID-19 Exposure: A Systematic Review with Meta-Analysis. *Int. J. Environ. Res. Public Health* **2021**, *18*, 6183. [CrossRef] [PubMed]
41. UNICEF. Social Stigma Associated with the Coronavirus Disease (COVID-19). Available online: https://www.unicef.org/media/65931/file/Social%20stigma%20associated%20with%20the%20coronavirus%20disease%202019%20(COVID-19).pdf (accessed on 24 February 2020).
42. Jesus, T.; Bhattacharjya, S.; Papadimitriou, C.; Bogdanova, Y.; Bentley, J.; Arango-Lasprilla, J.; Kamalakannan, S.; The Refugee Empowerment Task Force, International Networking Group of the American Congress of Rehabilitation Medicine. Lockdown-Related Disparities Experienced by People with Disabilities during the First Wave of the COVID-19 Pandemic: Scoping Review with Thematic Analysis. *Int. J. Environ. Res. Public Health* **2021**, *18*, 6178. [CrossRef] [PubMed]
43. Das, M. Social Construction of Stigma and Its Implications—Observations from COVID-19. *SSRN Electron. J.* **2020**. Available online: https://ssrn.com/abstract=3599764 (accessed on 12 July 2021). [CrossRef]
44. WHO. Guidelines Aimed at Reducing the Stigma Associated with COVID-19 Towards Health Professionals and Their Families. Available online: https://www.afro.who.int/sites/default/files/Covid-19/Techinical%20documents/Orienta%C3%A7%C3%B5es%20destinadas%20a%20reduzir%20o%20estigma%20associado%20%C3%A0%20COVID-19%20em%20rela%C3%A7%C3%A3o%20a%20profissionais%20de%20sa%C3%BAde%20e%20suas%20fam%C3%ADlias.pdf (accessed on 12 July 2021).
45. Gomes, R. Body and risks. In *Words beyond the Pandemic: One Hundred Sides of a Crisis*; Reis, J., Ed.; Centre for Social Studies, University of Coimbra: Coimbra, Portugal, 2020.
46. Sotgiu, G.; Carta, G.; Suelzu, L.; Carta, D.; Migliori, G.B. How to demystify COVID-19 and reduce social stigma. *Int. J. Tuberc. Lung Dis.* **2020**, *24*, 640–642. [CrossRef]
47. Etika, A.N.; Yunalia, E.M.; Lutfi, E.I.; Sulisyawati, W. Impact of Stigma in COVID-19 Patient: A Litteratur Review. *J. Qual. Public Health* **2020**, *4*, 161–164. [CrossRef]
48. Spink, P. Analysis of public domain documents. In *Discursive Practices and Production of Meaning in the Everyday Life. Theoretical-Methodological Approaches*; Spink, M.J., Ed.; Centro Edelstein de Pesquisas Sociais: Rio de Janeiro, Brazil, 2013; pp. 100–126.
49. Macedo, I.; Cabecinhas, R. Social representations, migrations and media: Reflections on the role of film literacy in the promotion of interculturality. In *On Communication and Culture: I PhD Student Conference in Communication Sciences and Cultural Studies*; Pinto-Coelho, Z., Fidalgo, J., Eds.; Universidade do Minho—Centro de Estudos de Comunicação e Sociedade: Braga, Portugal, 2012.
50. Van Dijk, T. *News as Discourse*; Laurance Erlbaum: Hillsdale, NJ, USA, 1988.
51. Carvalho, A. Methodological options in discourse analysis—Instruments, assumptions and implications. *Comun. Soc.* **2000**, *2*, 143–156. [CrossRef]
52. Herrick, C. Geographic charisma and the potential energy of Ebola. *Sociol. Health Illn.* **2019**, *41*, 1488–1502. [CrossRef]
53. Joosse, P. Countering Trump: Toward a Theory of Charismatic Counter-Roles. *Soc. Forces* **2018**, *97*, 921–944. [CrossRef]
54. Tanne, J.H. COVID-19: Trump returns to White House amid confusion over his illness and treatment. *BMJ* **2020**, *371*, m3897. [CrossRef] [PubMed]
55. Laplantine, F. *Anthropology of the Disease*; Petite Bibliothèque Payot: Paris, France, 1986.
56. Canguilhem, G. *The Normal and the Pathological*; Presses Universitaires de France: Paris, France, 2013.
57. Herzlich, C. *Health and Sickness. Analysis of a Social Representation*, 4th ed.; Éditions EHESS: Paris, France, 1969.
58. Carapinheiro, G. Health in the context of sociology. *Sociol.—Probl. Práticas* **1986**, *1*, 9–22.
59. Carapinheiro, G. Health and illness: A critical health sociology program. *Sociol. Line Rev. Assoc. Port. Sociol.* **2011**, *3*, 57–71.
60. Moore, S.; Myerhoff, B. *Secular Ritual*; Van Gorcum: Assen/Amsterdam, The Netherlands, 1977.
61. Brown, G. Theorizing ritual as performance: Explorations of ritual indeterminacy. *J. Ritual Stud.* **2003**, *17*, 3–18. Available online: https://www.jstor.org/stable/44368641 (accessed on 27 July 2021).
62. Bourdieu, P. Rites as acts of institution. *Actes Recherche Sci. Soc.* **1982**, *43*, 58–63. Available online: https://www.persee.fr/doc/arss_0335-5322_1982_num_43_1_2159 (accessed on 4 August 2021).
63. Good, B.J. The heart of what's the matter the semantics of illness in Iran. *Cult. Med. Psychiatry* **1977**, *1*, 25–58. [CrossRef]

64. Massé, R. *Culture and Public Health. The Contributions of Anthropology to Health Prevention and Promotion*; Gaëtan Morin: Montréal, QC, Canada, 1995.
65. Bourdieu, P. *About on the State. Course at the Collège de France (1989–1992)*; Edições 70: Lisboa, Portugal, 2014.
66. Weber, M. (Ed.) *Economy and Society*; Editora da UnB: Brasília: Brazil, 1999.
67. Bach, M. Charism and rationalism in Max Weber's sociology. *Rev. Sociol. Antropol.* **2011**, *1*, 51–70. [CrossRef]
68. Schütz, A.; Luckmann, T. *The Structures of the Life-World*; Northwestern University Press: Evanston, IL, USA, 1989.
69. Parkin, F. *Max Weber*, 2nd ed.; Celta Editora: Oeiras, Portugal, 2000.
70. Weiss, M.G.; Ramakrishna, J.; Somma, D. Health-related stigma: Rethinking concepts and interventions 1. *Psychol. Health Med.* **2006**, *11*, 277–287. [CrossRef]

societies

MDPI

Article

Jogging during the Lockdown: Changes in the Regimes of Kinesthetic Morality and Urban Emotional Geography in NW Italy

Michele Filippo Fontefrancesco [1,2]

[1] University of Gastronomic Sciences, 12042 Bra (CN), Italy; m.fontefrancesco@unisg.it
[2] Department of Anthropology, Durham University, DH1 3LE Durham, UK

Abstract: Jogging is the most practiced physical activity in the west. This form of light running appears a solution to the health problems caused by the sedentary of contemporary dwelling and affirmed the role of the extensive use of urban space as a key to individual well-being and health. The COVID-19 pandemic and the imposition of lockdowns imposed a new form of kinesthetic morality based on domestic confinement; a morality that is in open contrast to that of jogging. The article explores this conflict and its consequences in terms of perception of the urban environment and the society among joggers. Based on case study research conducted in 2020 in Alessandria, NW Italy, this study delves into this abrupt change and explores how the urban spatiality changed for the joggers. In so doing, it asks what this event teaches us about the development of new, more effective, urban policies.

Keywords: jogging; COVID-19; emotional geography; lockdown; urban ethnography; Italy

Citation: Fontefrancesco, M.F. Jogging during the Lockdown: Changes in the Regimes of Kinesthetic Morality and Urban Emotional Geography in NW Italy. *Societies* **2021**, *11*, 124. https://doi.org/10.3390/soc11040124

Academic Editors: Sandro Serpa, Carlos Miguel Ferreira and Gregor Wolbring

Received: 14 August 2021
Accepted: 3 October 2021
Published: 9 October 2021

1. Introduction

1.1. COVID-19 Pandemic and the Experience of Urban Space

Since its beginning, the COVID-19 pandemic has appeared to be a phenomenon that can rewrite the consolidated geographies of social relations, exacerbating existing inequalities and requiring communities to revise their daily practices in a radical way [1]. On a local level, the implementation of mobility restrictions, the so-called lockdowns, and the fear of contagion had a deep effect on individuals and communities and their use of private, public, and third spaces [2]. This reverberated in the quality of the inter-relationships between people and their surroundings and interpretations of the landscape, so that the virus appeared, as Vannini [3] has suggested, to be an atmospheric disease: an invisible circumstance that reshaped familiar places into an uncanny and uncertain landscape. If space is made above all from "complex compositions assembled out of bodies, materialities, scenes, events, and the substantial micropolitics of force fields saturating everything from institutions to collective mood" [4], the pandemic obliged individuals and communities to reshape their worlds and reassemble their everyday lives. In so doing, even the most mundane practices changed their meanings, with the design of a new regime of sign—the collective assemblage of enunciations that defines the individual and collective understanding and guides the acting in the world [5]—which shaped the experience of the pandemic.

The lockdowns put in place by many countries to counteract the spread of the pandemic involved, among other things, limitations on access to public spaces and bans on gatherings. Physical practices that involve the use of public facilities or access to public spaces were particularly affected, among these was jogging.

1.2. Jogging and the Experience of Urban Space

Jogging is an intrinsically non-agonistic form of running: There is the famous definition of Sheehan [6], who suggested that the only distinction between jogging and running is "a signature on a race application." Jogging is a slow run, at less than 15 km/h, and is largely practiced in urban contexts on a daily or weekly basis. It was codified in the USA in the 1960s and links its success to the spread of the fitness movement that occurred in the period after the Second World War, which contributed to the raised awareness of the link between physical practice and expectation of better health, particularly among the middle class. The success of this bodily activity [7] connected with a deeper sense of redemption felt by a generation and a class during a period of economic and political insecurity; this understanding reverberated in the public debate [8]. As Gillick suggests: "running had appealed to politicians and businessmen in the sixties to cardiovascular health. But exercise had also been seen by some as part of a program in better living that was to be the first step towards the spiritual renewal of America" [9].

Over fifty years, jogging has secured a central role among the most commonly practiced physical activities, being able to provide a simple way to fulfil what Bauman [10] refers to as the tacit duty of fitness that characterizes contemporary western society. In fact, unlike other practices, it can be performed individually and does not require the use of specific facilities or expensive equipment. It can be easily conducted in the surroundings of one's home, by running along roads with less traffic, or sidewalks, pathways, or dirt roads. In this respect, jogging, as with other sporting practices such as cycling [11], can foster a deep kinesthetic involvement with the jogger's surroundings [12], due to the alternative to the ordinary use of the urban landscape. In this respect, it produces a new emotional geography of the city.

Dunlap et al. [13] showed that, when cycling in Nashville, individuals develop an alternative perception of the metropolitan environment, an enhanced connection to place, and a comparative sense of control and autonomy: They find an emergent emotional geography—the affective connections to space through experiences [14]—for the city that intimately and relationally connects people and place. While, as suggested by Augé [15], the bicycle, among the modern locomotive vehicles and in contrast with cars, is the vehicle that is able to create the deepest relationship between the driver and the surroundings, running, as with walking, represents one of the most ancient practices through which people have made sense of the world they live in, expanding their knowledge [16]. In this respect, in a similar but more intensive way to other physical practices, the experiences linked with jogging offer the opportunity of exploring not just the relationship between people and the city, but the transformation of the livability of the city [17,18]. Thus, in a peculiar context such as that of the pandemic, jogging opens a window to understand how the relationship with the city can mutate in the context of a crisis, generating a new emotional geography for the city and transforming the ordinary affects [19] that substantiate the urban environment.

1.3. Jogging and COVID-19 in Italy

This article investigates this window by focusing on Italy, one of the most affected countries in the early months of the pandemic and the first western country to adopt a national lockdown to stem the spread of the virus between March and May 2020.

While early cases of COVID-19 were recorded in Italy from 30 January 2020 onwards, the first hotspot was found in Lombardy on 20 February. The contagion spread fast across the region, and, on 25 February, the national government adopted extraordinary measures to restrict mobility on a local and international level: from suspending all direct flights to and from China to instituting quarantine zones, the so-called "Red Zones", to isolate the municipalities in which there were hotspots. These measures did not stop the contagion, however, and it engulfed the entire north of Italy. On 7 March, the government announced the extension of the mobility restrictions that had been imposed in the Red Zones to the territories of 14 provinces in the northern part of the country. On 11 March, the lockdown

was extended to the whole of Italy: This was the beginning of Phase 1, which ended after two months, on 4 May. During Phase 1, all retail trade was suspended, with a few exceptions such as food stores and newspaper sellers. Schools, restaurants, bars, theatres, and cinemas, together with most industries and public offices, were closed. Only those firms working in strategic sectors, such as health and care, food businesses, and agriculture, could continue with their activities. Mobility was restricted. People could go out of their homes only for quick shopping, medical treatment, or to travel to work. The severe national measures were further intensified in the north by the regional government, to cope with the rampant medical emergency.

During the lockdown, the political debate gave a great deal of attention to the area of sport and physical activities, and to jogging specifically. This prominence can be explained looking at the role played by this practice in the country. While jogging spread in these circumstances in the United States in the 1960s, it was introduced in Italy at the end of the 1970s [20]. In a context of the reduction of physical activity at work [21], since the 1990s, it has been the most commonly performed physical activity in the country, with over half of the active population jogging at least once a month, and 10% of the active population doing so weekly [22]; these joggers are mainly men (55%), and over 50% of them are aged between 30 and 60 [23]. During the lockdown, while parks, gyms, and swimming pools were closed, and cycling was banned, the only sporting activity allowed was jogging, although only in the proximity of one's home (regional governments adopted specific acts to fix the maximum range for a jogger, e.g., 200 m, 500 m, 1 km, and the use of personal protection devices, such as face masks).

Despite this authorization and legitimation, starting from the first week of lockdown, the national press started reporting a growing number of attacks suffered by joggers and runners across Italy. These episodes involved TV celebrities, professional athletes, and ordinary people, and occurred across the country in both large and small cities: episodes that hinted at a profound change in the attitude of society towards this physical practice and those who engage in it.

1.4. The Study Location

Thus, the lockdown coincided with the emergence of a new, contradictory emotional geography of the city for joggers. It was marked by the interlacing of a formal legitimation of their practice, the imposition of unprecedented heavy restrictions that affected the possibility of practicing it, and an increased social pressure. This new landscape opens questions about how joggers adapted to the new geography as well as how they changed their perception of this physical practice and the ways of practicing it. The article ethnographically explores these issues by focusing the anthropological spyglass on a specific case study [24] of an Italian middle city Alessandria.

Alessandria is the thirty-seventh largest municipality in Italy (out of a total of 7904). It covers 203 km^2, and has a population of around 92,000 inhabitants, with an average age of 47.5 years. The city, established in the twelfth century CE, lies on the plain created by the confluence of the rivers Tanaro and Bormida. It is an hour's drive southwest of Milan, on the border between Piedmont and Lombardy (Figure 1). Its position has made Alessandria a fundamental military and logistical center since the eighteenth century, creating a strong interconnection between the economy of the city and those of the three largest centers of Northwest Italy (Genoa, Milan, and Turin) [25–27].

In the period since the Second World War, the city has enriched its sports scene, and now hosts both professional and semi-professional sports clubs (e.g., Alessandria Football Club plays in the national third division, and the rugby team plays in the national second division). Moreover, Alessandria has numerous gyms, dojos, swimming pools, and sports centers. It is a city of Olympic and Paralympic runners such as Valeria Stranio and Roberto La Barbera. Thus, sports, and physical activity in general, are common practices in Alessandria and, since the 1970s [28], they have been at the center of the local political and public debate concerning the development of the city. Since the 1990s, jogging has gained

prominence; this role is marked by the success of Stralessandria, an annual charity event that includes a competitive 6 km run and a non-competitive run/walk through the streets of the city center. Stralessandria has been organized from 1995 onwards, and there were over 10,000 participants when it was most recently held, in 2019 (www.stralessandria.it). While it is possible to meet joggers around the city, one of the favorite places for jogging is along the embankments of the Tanaro river: early in the morning and particularly at the end of the day one can count several people jogging along the 10 km track. Other favorite places are on the peripheries of the city, such as in the industrial area D3, in the western outskirts, or in the rural suburbs, such as around Valle San Bartolomeo.

Figure 1. Localization of the study area.

1.5. Objectives

Through the exploration of the ethnographic case study, the article answered to the following research questions:

- How did COVID-19 change the livability of the city?;
- How did the lockdown change the meaning of a cultural physical practices in an urban environment?;
- How did the lockdown change the understanding of the city environment among the joggers?; and
- How did the clash between opposing kinesthetic moralities develop for the joggers?

2. Materials and Methods

The article is a result of the collective effort promoted by the researchers of the University of Gastronomic Sciences to reflect on the causes of the COVID-19 pandemics [29], and explore its impacts on the local and global population. In this respect, a particular focus was on the effects of the lockdowns on the lifestyle of Italians [30] and their relationship with the urban environment [31].

Considering the numerous episodes of attacks suffered by joggers and runners across Italy, in both large and small cities, during the first lockdown [32], the research focused on exploring, ethnographically, the experiences of joggers in the period. In fact, these

episodes, which involved TV celebrities, professional athletes, and ordinary people, hinted at a profound change in the attitude of society towards this physical practice and those who engage in it. The research investigates how joggers perceived this change and how it influenced their practice as well as their understanding of the urban environment.

In so doing, the research focused on the case study of Alessandria. Case study research, as explained by Yin [24], offers an easy access to emerging social phenomena. Although this approach is often at the basis of ethnographic studies of bounded communities, a back-bone of anthropological research [33], it also allows comparative studies [34]. In this case, the case study method was used as exploratory heuristic strategy of a phenomenon conducted during its emergence.

Fieldwork was based on a campaign of in-depth interviews conducted between March and June 2020 (between March and April the interviews were conducted via phone or digital platform, from May to June they were conducted face-to-face due to the loosening of lockdown restriction).

Twenty-eight joggers were interviewed (15 men, 13 women; 14 between 30 and 40 years of age, and 14 between 41 and 63 years of age). Although the sample was not constructed to achieve perfect statistical representativity, it aimed to encompass people who have been consistently engaged in jogging in recent years, practice jogging at least 2–3 times a week or more, and have also participated in non-competitive events, such as Stralessandria. It mirrors the overall gender, and age distribution in this sector (60% men, 80% over 35 years of age; see [35]).

Considering the absence of organized groups or associations of joggers in Alessandria, the interviewees were selected by snowball sampling [36], starting from joggers met before the lockdown, and from them expanding the reach of the research including people who lives in all the neighborhoods of the city.

The campaigns were structured to allow a comparative case study analysis [37]. In particular, the interviews were conducted using the same semi-structured format, which involved questions aimed at investigating the relationship with jogging, the motivations linked to the practice, the impact of lockdown to their lives, the ways in which they reacted to the limitations in terms of their jogging practice. All the interviews were structured according to the life story method considering the effectiveness of this interviewing method in terms of exploration of individual's affectivity and perception of the world [38]

The research was conducted according to the ethical guidelines of the American Anthropological Association (Principles of Professional Responsibility). Informed consent was obtained from all subjects involved in the study. Interviews were recorded transcribed in an anonymized form. The names of the research participants, their sensitive data, as well as the names of places have been anonymized. Only the anonymized transcripts were conserved by the researcher.

The transcripts were entered into NVivo qualitative data analysis version 12.5.0 (QSR International, Melbourne, Australia), to conduct a thematic analysis of the contents [39] aimed at identifying the key elements concerning the change in perception of jogging and the urban environment during the lockdown. The result allowed, first of all, the elaboration of qualitative overview of the emerging phenomenon (see Table 1), identifying five dimensions of change that affected the practice (change in place where to jog, change in the range run, change in time of the day when running, change in duration of jogging session, interruption of the practice) and the occurrence of three forms of incidents (being insulted by bystanders, being physically assaulted, or being halted and/or fine by policemen). This overview was then complemented with a tale of the field [40] weaved by integrating the information coming from the interviews with data collected with participant observation [41] and autoethnography [42][1] conducted in the years prior the lockdown in the area, as well as the direct experience gained as a jogger and as a member of the working group of the National Association of Italian Municipalities focused on the implementation of urban health policies. Following the example provide by Bourdieu [43], the ethnographic account was structured by focusing on the life stories of few joggers who well explain the meanings

of behavioral changes and the trajectories concerning the change in perception concerning the environment.

Table 1. Summary of the impact of the lockdown on the jogging practices of the informants.

Id.	Age Group	Change	Incidents
1M	30/40	Interruption	None
2M	30/40	Location, Range	Insults
3M	30/40	Range, Duration	Police
4M	30/40	Interruption	None
5M	30/40	Range, Duration	None
6M	30/40	Location, Period	Insults
7M	30/40	Interruption	Insults
8M Luca	41/63	Interruption	Insults
9M Francesco	41/63	Period	Police
10M Simone	41/63	Range	Insults
11M	41/63	Interruption	None
12M	41/63	Interruption	None
13M	41/63	Range, Duration	Insults
14M	41/63	Location	Insults, Attack
15M	41/63	Interruption	Insults, Police
16F Laura	30/40	Range, Location, Period	Police
17F	30/40	Interruption	None
18F	30/40	Location, Period	Attack
19F	30/40	Range, Duration	None
20F	30/40	Interruption	None
21F	30/40	Interruption	Police
22F	30/40	Range, Period	Police
23F Maria	41/63	Interruption	Insults, Attack
24F	41/63	Range, Duration	Insults
25F	41/63	Interruption	None
26F	41/63	Range, Duration	None
27F	41/63	Range, Duration	Insults
28F	41/63	Interruption	None

3. Results

3.1. The Role of Jogging

> *"For me, jogging means freedom. It allows me to undress from my everyday life. I take off my jacket and my tie and put on one of those absurd sports shirts. No cell phone. No wallet. I jump on the street and am alone with my thoughts. I listen to the noises of the city and the countryside. It's hard to say in words, but that's why I love to jog every day. It's my salvation or at least it was before the COVID [pandemic]. Before the lockdown I always felt free when I jogged. Then it became different... the very city was different... and I found I was asking myself 'Am I wrong? Am I the enemy of the people? Or is it the city turned into a hostile place?'"*

Luca is one of the joggers I met during my research. He is a bank clerk in his forties, who arrived in Alessandria after university when his company transferred him to work in the local branch and began running in the mid-2000s. He loves jogging, and his deep relationship with this physical practice opens an ethnographic window for investigating the deep transformation that the recent COVID-19 pandemic has brought in the relationship between the urban environment and its dwellers [44].

All my informants link jogging with an overt demand for fitness and well-being in a context of the increasingly sedentary nature of the daily routine. "Look, I need to do some [physical] activity", "I jog because it makes me feel good", and "I need to do some exercise and jogging is cheap and works with me and my daily routine" are some of the most recurrent comments. Among the interviewees, only five have labor-intensive jobs (two factory workers, one craftsman, and two working in medical professions); the others are clerks, public officers, teachers, or workers in other jobs that require little physical activity. Jogging is often described in contrast to other forms of physical practice, such as gym training or participation in team sports (such as football or basketball), highlighting the overall practicality of this practice and its affordability. This is the case for Laura, a cook in her late thirties, who explains:

> *"I started jogging five or six years ago when I changed jobs. Before I worked in a shop and with shifts, I managed to go to the swimming pool most days. Since I started working in the restaurant sector I started commuting to [a nearby town]. There is no swimming pool there and I could not put the times together to go every day to the swimming pool in Alessandria. So, I decided to start running every day. For better or for worse, I manage to go running every day in the morning, one hour. It makes me feel good and I don't have big-time problems."*

Other interviews echo Laura with their comments: "You just need a decent pair of shoes to jog: no extra fees or hidden costs", "If you want to jog, you do not depend on the working hours of a gym: it's just about you", "You can jog any time, when fits better with your schedule. And you can jog with your friends too." Thus, jogging appears to leak into the life of the practitioners as an interstitial practice that fills the gaps in their daily schedules, and slowly to assume centrality in their routines, being recognized as an important aspect of their well-being, and, occasionally, their social life. This is what Maria, a teacher in her fifties, says:

> *"I started jogging twenty years ago. I was twenty-five or so. From jogging then I started to participate in some non-competitive races, such as Stralessandria. Jogging is my way to relax after a day in the office. Taking part in these competitions amuses me because I team up with friends. To meet with friends for running is important. Every week, before the pandemic, on Saturday afternoons, I and other friends went for a run. Sometimes just outside the city, we took the car and went to some new places in the countryside. For me, at the end of the day, jogging is to live the space of the city and the countryside and share emotions with the people who run with me."*

Like Maria, other respondents recognize jogging as a different form of urban mobility that pushes them to experience different spaces from those they use otherwise. Luca puts it this way:

> *"I started jogging a few years ago; it must have been 2015. [...] It is often the only real physical activity I do [...]. I work in an office: hours in front of the computer. The most I walk is from home to the garage and from the parking lot to the office. I need to run; it's freedom and well-being for me. Before, Alessandria was for me just the street from home to work and another bunch of places and shops. Since I have started jogging, I have known new places, such as the hamlets around the city, or the hills just beyond the river. I also met new people who jog like me every day on the embankments."*

Jogging, therefore, is linked to an expansion of the daily horizon beyond the boundaries of the domestic places or those of work to involve new spaces, and potentially new

relationships. It draws an emotional geography that, as is expressed by some informants, is based on the sense of "decompression", "freedom", and "escape". An example is Francesco, an engineer in his fifties:

> *"My wife and I are both professionals and, in the evening, when we are back from the office, we go for a run in the countryside. We both run. It is something we do mostly two or three times a week and it is our way to escape from the city and it makes us feel good."*

This geography includes and expands the lived space. It involves streets, squares, and avenues often traveled by car or when walking on errands. It also includes new places inside Alessandria, such as parks and alleys, or places immediately outside it, such as the embankments or country roads that are otherwise unknown and unused. Overall, therefore, jogging is linked with a sense of empowerment and fulfilment: a dimension that has been severely hit by the pandemic.

3.2. The Experience of the Lockdown

The lockdown coincided for all the informants with a sudden change to their physical activity. The restrictions on mobility included a halt to most of their commercial activities. "There was nobody around the city: no cars, no people. The only people one could meet were policemen, people walking their dogs and some joggers like myself." These memories of one of the interviewees living in the city center are confirmed by the photos and videos still circulating online, and, in particular, by those published in a book, "Il nemico invisibile", "the invisible enemy", sponsored by the municipality of Alessandria together with many local industrial companies, such as Guala Closures Group, 3i Group and Eurocap [45]. During the whole period of the lockdown, people jogged. In fact, although jogging was not officially completely forbidden, its possibilities were drastically reduced, with limited access to public places such as parks or to locations away from one's home. The weight of these restrictions was emphasized by all the informers. They pointed to them as constrictions that reduced the sense of freedom and enjoyment associated with jogging. However, the restrictions were not what affected the informants most. The lockdown generated public hostility toward jogging. Luca explains this point and its consequences:

> *"I usually run at 6.00/6.30 AM. If I meet someone it is some animal or possibly someone from my condominium (I live in a condominium). March and April were tough. Even before the most stringent obligations, people have changed. It didn't matter if I had a mask or whatever. For the first time, I realized that people were looking at me. A neighbor, one day, started shouting at me from the balcony: "Bastard! You want to kill us all!" The thing repeated for some days. Then, I started going to run earlier; at 5.00, in order not to meet anyone, but still, I did not feel safe. I felt like they had put me in a cage. In the end, I bought a treadmill and for almost a month I didn't put my nose out of the flat."*

The hostility was not limited to verbal assault, as Maria remembers:

> *"My jogger quarantine experience? A bucket of cold water at the beginning of March. I don't speak metaphorically. It was still more or less allowed to go for a run. I leave the house to do my usual run. I go under various condominiums and shops. I usually go around 7.00 in the morning and it's not like there are all these people. Well ... I was running and: "splash!". From the second floor, a man threw a bucket of water over me. I almost had a heart attack. Was it a joke? No. He shouted at me: "You should be ashamed running these days! Stay at home!" I didn't do anything. I didn't say anything. I left, running. What could I do? Should I denounce him? For what? After that day, I hung up the boots. Once and for all after that episode. Well, more or less. Sometimes I got up before dawn and went around a few blocks ... but I felt I was moving in a hostile landscape; not because of the virus. Because of the people around me."*

As happened in other cities, the interviewees lamented the sudden transformation in the public attitude towards this practical activity: "The day before we were good people

interested in our health, the day after we were a public enemy," one of the informants said in summary. Joggers directly experienced the hostility of neighbors and bystanders, being repeatedly insulted (10) or being physically assaulted (3). The cause of such hostility was found in a mixture of envy and fear of contagion: an attitude that stemmed from the characteristics of the historical moment, as remembers Simone, a fifty-year-old public employee:

> *"It was a horrible time. Every day, we received new decrees that instituted new prohibitions we, as public officers, had to enforce and make people respect. Most of the time, the norms appeared to contradict the ones of the day before. Every day, newspapers and television spoke only of death and contagion. We reach a level of collective delirium. Everyone was looking at everyone else as a possible enemy, a plague carrier. Let alone, what people should have thought seeing us, four idiots running around the neighborhood in multicolored shirts. I can understand why some yelled at us or told us that we were criminals. Try to explain to them that we weren't hurting anyone. I continued jogging during the lockdown, around my home... but it was quite shitty. It was not real jogging. We were in a cage even if we can technically run. That's for sure."*

Faced with the impossibility of carrying out the physical practice in their usual ways and perceiving an increasing pressure, the joggers changed their habits. Like Maria, some of the joggers (13) stopped practicing jogging until the end of the lockdown. Others (15), like Simone, chose to continue. To do so, they had to change the ways in which practicing the activity. In particular, they had to revise their usual route, reducing its range to the proximity of their house (10) abiding the current anti-COVID-19 regulations. This change was commonly linked with a reduction of the duration of their sessions (8). However, the change was also coupled with the decision of moving their practice in different, interstitial spaces (4) and times (5). This was the case for Laura and Francesco:

> *"During the lockdown, I continued to work. [... However,] tension and fear were high: a dozen colleagues were affected by the disease or had close relatives affected. [...] When I got home, I needed to be distracted; I needed to move [recalls Laura]. As far as I could, I kept jogging [... but] when they put the obligation to run within a few meters from home, I started going around the block. I felt like an idiot, but I continued for a few days. Then the police stopped me. They were about to fine me because I was jogging. We discussed for a good ten minutes before they understood I was just jogging around my block. I read about other joggers being stupidly fined on the internet and I read about people who were starting to run up and down the stairs of their buildings. I live in a ten-story building. I started doing it too: up and down, up, and down. I did not use my shoes because I did not want to bother my neighbors too much. I ran with two pairs of socks to make no noise. There was certainly someone else in the building who ran on the stairs during the night because I could hear the rushing up and down. In the end, I made the stairs go well. In May, the first time I was able to run on the street again without fear of being fined or insulted, I started to cry with happiness."*

> *"During the lockdown we [Francesco and his wife] worked mostly from home [...]. We live outside the city and there are just fields and a few farmhouses around. Thus, we felt we could go jogging without a big fuss. However, in April, we were blocked twice by policemen in civilian dress, and we reckon they were patrolling the area now and then. So, we decided to change time. We started going out in the dark, very early in the morning. We fixed our alarm at 4.30 and we went out. It was crazy, I know... "*

Overall, the lockdown is associated with a sense of "oppression", "imprisonment", "suffocation", "narrowness", "constant wariness", and "discomfort". In this respect, despite a limited number of interviewees that experienced assaults of a sort (3), two were the main factors that intensified and give concreteness to this sense of oppression: the insults received by bystanders and neighbors (8) and the intensified controls made by policemen (5). In some cases (5) these events led to the halt of the practices. In order to describe the situation

experienced, the joggers sometimes use metaphors, such as: "I felt like Alice in Wonderland. Suddenly my world has shrunk, and I felt as usual but was not able to move anymore".

While all the joggers linked the lockdown with a sense of oppression, the disease only had a marginal or accidental role in their narratives, despite Alessandria being severely hit by the pandemic during the lockdown, with more than 600 people dying of COVID-19 between March and May 2020. Contracting the virus was a possibility recognized by all the interviewees, but none of them linked it to the practice of jogging. Conversely, it was common to exclude the possibility that the physical practice was risky (e.g., "I understand there may be the need to stop mobility, but do you really believe I risk catching the virus by jogging alone in a street? Do you think it is more possible I would do it when queuing in front of a supermarket?"). Despite the circumstances, the association between jogging and good health remained strong, if not reinforced, making the physical practice a sort of COVID test in a period when medical tests were not commonly available to the population (e.g., "Do you really think that if I had COVID I would be able to run every day for over 30 minutes?"), and a way to establish and maintain a sense of security in a context of severe uncertainty ("To jog every day, even only around the block, was my way to tell myself 'everything will be ok'").

3.3. The Experience of the End of the Lockdown

The interviewees experienced the end of the lockdown as a strongly emotional moment linked with a sense of reappropriation of agency and legitimation: "It was beautiful, I finally ran through places I took for granted, I could move and breathe"; "I felt whole again"; "I thought I couldn't run for miles again without feeling like a criminal." Despite this, the moment was also tainted by wariness about another possible lockdown, as actually occurred a few months later, and by mistrust for the people surrounding them: "After what they did during the lockdown, I cannot see my neighbors in the face without thinking: look at that #####!"

Overall, jogging, for those who continued to practice it during the lockdown, appeared to be a device [46] used to secure a sense of normality in a context of exceptionality. Through it, in a regime of limited mobility, the joggers attempted to appropriate to themselves a contested spatiality, jogging in public spaces, as well as occupying interstitial areas perceived to be free from risks or surveillance. The circumstances marked a shift in the meaning and role given to this physical practice by the joggers. All those who continued, about a third of the interviewees, answered in a similar way to the conclusions Luca draws in his interview:

> *"Well... normally I jog because I feel better... it is for my health... During the lockdown it was different. It was not simple, and I did not feel freedom by jogging during the lockdown. However, it was a way of still feeling in control of my life in a moment of... well... when everything appeared out of control."*

4. Discussion

The research shows the abrupt change in the daily life of the informers; a transformation that is linked both to the change in their daily practices and to a radical transformation of the daily urban landscape in which informers have lived.

The change imposed by the COVID-19 pandemic was above all relational [3], and related to the engagement with public and public spaces. This change is, however, substantial, since the geography of a city should not be understood only as a static assemblage of buildings, but rather, as Thrift [47] points out, as an emergent phenomenon described by the spatial and temporal relationships that are developed within it. Thus, the COVID-19 pandemic brought to the emergence of a new, specific urban geography in Alessandria as in the rest of the world [1]. It is marked by a radical transformation in the kinetic structure of the urban context expressed by the prohibition of the use of common, public spaces and by the obligation to domestic reclusion. In this new context, individuals tried to adapt their everyday habits and practices. This adaptation, however, was difficult and meaningful.

As Bourdieu [48,49] pointed out, any form of physical practice is a sociocultural action through which the individuals both embody social values and norms and reproduce and disseminate them. In this respect, any physical practice, such as jogging, refers to a regime of kinesthetic morality deeply situated in a social and historical context. As a regime of kinesthetic morality, I refer to the set of formal and informal, implicit, and explicit norms that define the meaning of physical practice and determine its public acceptability. The lockdown coincided with an abrupt shift in the regime of kinesthetic morality associated with jogging.

Before the pandemic, jogging became popular as a fitness practice aimed at achieving well-being for an individual by addressing instances of caring for one's body in a context of increasingly sedentary lifestyles, since it promotes extensive use of the landscape based on the pedestrian's fruition of urban and peri-urban space [8]. Jogging, thus, expressed a regime of kinesthetic morality that placed at the center of the daily life of the individuals a form of self-care based on regular physical practice and the refusal of domestic sedentariness. In this respect, this morality nurtured an idea of "good citizenship" [50] based and dependent on the persistent use of the public space experienced by jogging. This understanding, thus, reverberated in public policies of urban health [51] aimed at promoting forms of physical activities, such as jogging, northern walking, and running. Similarly to the process described by Wacquant [52] in the case of boxing, constant practice and its enjoyment embedded jogging in the everyday life of the informants embodying the dominant pre-pandemic kinesthetic morality.

The insurgence of the COVID-19 pandemic brought a sudden change in this moral regime epitomized by the motto "Stay at Home" (Figure 2). The enforcement of the lockdown imposed a new idea concerning health that had at its center the abandonment of the public space. Public health, during the pandemic, was achieved by remaining home and embracing a new form of forced domesticity and sedentariness. Consequentially, this new regime of kinesthetic morality depicted all who infringed the obligation as possible vehicles for the spreading of the virus, thus a public menage.

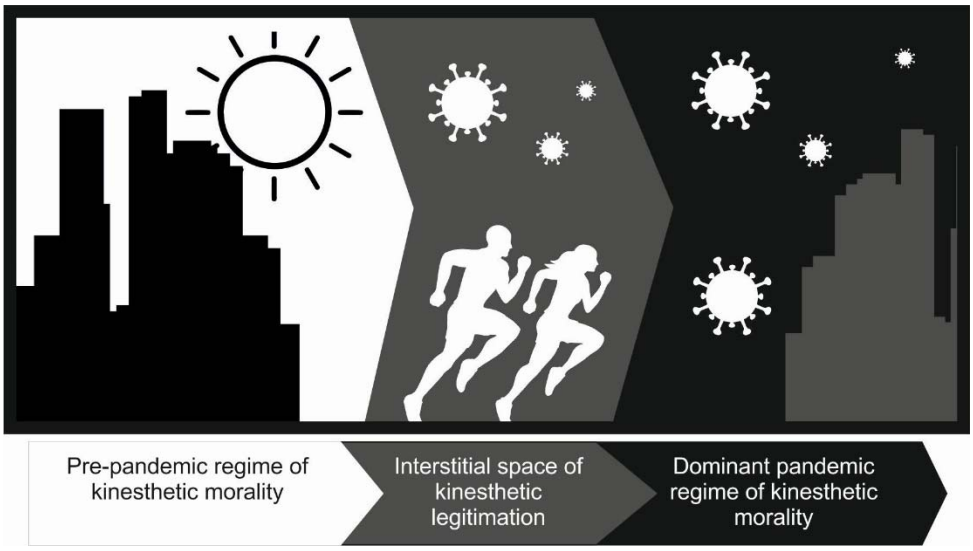


Figure 2. Graphical representation of the sociocultural transformation experienced by the joggers.

Although the legislation of the lockdown did not completely ban jogging, the lockdown marked a shift in the public understanding of this practice that made joggers transformed from examples of good citizens into public enemies. At the same time, the lack of a complete ban created an uncertain grey area of legitimation that some of the joggers tried to use as a space to continue their practice. It is in this attempt the joggers expressed

their embodied pre-pandemic regime of kinesthetic morality living the conflict between opposite regimes.

In face of a hostilized environment, the respond of the joggers was fluid. On the one hand they withdrew from the contested space and abandoned the practice. On the other, they moved more and more the practice into interstitial times and spaces less in the spot of the public eye where they felt to be more secure, such as the condominium stairways or the hours before dawn or after twilight. Thus, overall they accepted the new regime of kinesthetic morality or attempted to find ways to avoid open conflict, waiting for the emergency to end.

The experience of this moral conflict was directly linked with the joggers' experience of the change in the urban environment. The pandemic marked a shift of their urban emotional geography. Following Tuan [53], the concept of emotional geography describes the understanding of the environment emerging from its emotional and bodily experience. The pre-pandemic urban emotional geography of joggers derived from the bodily self-awareness as well as the deeper understanding of the urban space this physical practice produces [54]. It was linked with the idea of freedom that coupled with the belief of doing something able to make them achieve their personal well-being. Moreover, insofar as jogging was promoted by public policies and the media as a respectable activity, they felt supported and reinforced in their practice.

The enforcement of the lockdown imposed a stringent limitation of the use of the public space. However, the new, emergent emotional geography was not affected mainly by the quantitative restrictions, but rather the qualitative change in the possibility of using the public space due to the increasing social pressure perceived. The new geography was, thus, linked with a complex bundle of emotions. Doubts, perplexity, and preoccupation marked the emotional geography of the lockdown. They delimited a shrinking space whose boundary stiffened under the pressure of increasing police controls and the brewing hostility that surrounded the joggers. The emerging result was marked by a sense of compression, an affect that "create[s] the very effect of the surfaces or boundaries of bodies and worlds" [55] of the pandemic geography.

In their strenuous attempts to maintain their pre-pandemic daily routines, however, the joggers demonstrated their fear of being overwhelmed by the insurgent situation; and in the perception of the hostility of their surrounding world, they express the weakening of their social ties, strong and weak [56], in the face of social distancing obligations. This appears the faces of the atmospheric dis-ease" [3] that engulfed Italy: an emotional geography of crisis.

Walby [57] defines a crisis as "a moment when there is the possibility of large-scale change consequent upon a small event in a narrow-window of time." She also suggests that crises differ in their consequences: "The crisis leads to a system breakdown; after the crisis there is a return to pre-crisis conditions; the crisis drives to a renewal of the system along its existing path of development; or the system leads to a new kind of system." From the interviews, and writing in 2021, what the joggers lived through was not a crisis of the first kind. Although joggers associated the end of the lockdown with a sense of utter relieve, the question of what kind of crisis it was is still open.

5. Conclusions

This research investigated the urban emotional geography of joggers in Alessandria during the first COVID-19 lockdown. Their experience points to the radical change in everyday life experienced by the interviewees, which passes through adaptation to an emerging context based on weakened sociality and the compression of the individual space. It confirms the crucial role of physical practices in individual well-being before and during the lockdown. It explores the practices undertaken to cope with the anti-COVID public measures and their effects on the perception of jogging and the urban environment shared by the informants. The research shows that the emotional geography of joggers in the lockdown was marked by a sense of growing oppression and rising hostility, against which

they developed coping strategies, which points to a crisis in the model of social life and society on which the joggers relied.

In the months after the research, the national government imposed other periods of lockdown (October 2020–May 2021). However, the most severe restrictions generally ceased to be in force. Physical activity, and especially jogging, has always been allowed since that time, at least within the borders of one's own municipality. Stories of nocturnal runs up and down the condominium stairways were therefore not reported any more, and news reports of assaults against runners and joggers became isolated. This can be considered a good sign for the future, but it does not mean that the pandemic period and the lockdowns came at no cost in terms of how people changed their perception of their surroundings and the strengths of their social ties. These aspects are deeply connected with individual well-being and the very livability of the urban context.

Thus, the research calls for renewed attention to the issue of urban livability, as well as for new urban policies. Whereas in the past the promotion of jogging (along with fast walking or running) in public spaces, conducted individually or in a group, was seen as a winning strategy to ensure well-being and health, the COVID-19 pandemic has shown the limits of this solution. These limits are well described by the voices of the joggers. Thus, questions arise about how to re-think both the access to and the use of urban spaces, negotiating a way forward between collective and individual rights to avoid the pandemic risk and to guarantee equal opportunities for different sectors of society. These interrogatives thus ask for more insight into the role and tools of the state for preserving public health and common well-being, to avoid further social suffering in a context of overall social fragility.

Funding: The research was conducted without external funding. The publication of the article was financed by the University of Gastronomic Sciences with the 2021 research funds provided to the author.

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Informed consent was obtained from all subjects involved in the study.

Data Availability Statement: Not applicable.

Conflicts of Interest: The author declares no conflict of interest.

Notes

[1] Overall, the research was conducted from a common perspective to anthropological research in which the researcher is placed within the local reality, being a participant observer of the local context [58]. As pointed out by Bourdieu [59], this perspective is not antithetical to a rigorous social analysis insofar as it is made explicit and the role of the researcher within the research context is objectified. In this sense, my personal experience and involvement with jogging was not a cause of awe or embarrassment, but a factor capable of creating a positive and empathic atmosphere during interviews.

References

1. Rose-Redwood, R.; Kitchin, R.; Apostolopoulou, E.; Rickards, L.; Blackman, T.; Crampton, J.; Rossi, U.; Buckley, M. Geographies of the COVID-19 pandemic. *Dialogues Hum. Geogr.* **2020**, *10*, 97–106. [CrossRef]
2. Low, S.; Smart, A. Thoughts about Public Space During Covid-19 Pandemic. *City Soc.* **2020**, *32*, 1. [CrossRef]
3. Vannini, P. COVID-19 as Atmospheric Dis-ease: Attuning into Ordinary Effects of Collective Quarantine and Isolation. *Space Cult.* **2020**, *23*, 269–273. [CrossRef]
4. Stewart, K.; Lewis, E. Affect and Emotion, Anthropology of. In *International Encyclopedia of the Social & Behavioral Sciences*, 2nd ed.; Wright, J.D., Ed.; Elsevier: Oxford, UK, 2015; pp. 236–240.
5. Deleuze, G.; Guattari, F. *A Thousand Plateaus: Capitalism and Schizophrenia*; Athlone: London, UK, 1987.
6. Sheehan, G. *Running and Being: The Total Experience*; Simon and Schuster: New York, NY, USA, 1978.
7. Tomlinson, A. Pierre Bourdieu and the Sociological Study of Sport: Habitus, Capital and Field. In *Sport and Modern Social Theorists*; Giulianotti, R., Ed.; Palgrave Macmillan: London, UK, 2004; pp. 161–172.
8. Latham, A. The history of a habit: Jogging as a palliative to sedentariness in 1960s America. *Cult. Geogr.* **2015**, *22*, 103–126. [CrossRef]
9. Gillick, M.R. Health Promotion, Jogging, and the Pursuit of the Moral Life. *J. Health Politics Policy Law* **1984**, *9*, 369–387. [CrossRef]

10. Bauman, Z. *Liquid Life*; Polity Press: Cambridge, UK, 2005; p. 164.
11. Camy, J.; Adamkiewics, E.; Chantelat, P. Sporting Uses of the City: Urban Anthropology Applied to the Sports Practices in the Agglomeration of Lyon. *Int. Rev. Sociol. Sport* **1993**, *28*, 175–185. [CrossRef]
12. Latham, A.; McCormack, D.P. Affective Cities. In *Routledge Handbook of Physical Cultural Studies*; Silk, M.L., Andrews, D.L., Thorpe, H., Eds.; Routledge: London, UK, 2017; pp. 369–377.
13. Dunlap, R.; Rose, J.; Standridge, S.H.; Pruitt, C.L. Experiences of urban cycling: Emotional geographies of people and place. *Leis. Stud.* **2021**, *40*, 82–95. [CrossRef]
14. Smith, M.; Davidson, J.; Cameron, L.; Bondi, L. *Emotion, Place and Culture*; Routledge: London, UK, 2016.
15. Augé, M. *Il Bello Della Bicicletta*; Bollati Boringhieri: Torino, Italy, 2009.
16. Horvath, A.; Szakolczai, A. *Walking into the Void: A Historical Sociology and Political Anthropology of Walking*; Routledge: New York, NY, USA, 2017.
17. Bodin, M.; Hartig, T. Does the outdoor environment matter for psychological restoration gained through running? *Psychol. Sport Exerc.* **2003**, *4*, 141–153. [CrossRef]
18. Karusisi, N.; Bean, K.; Oppert, J.-M.; Pannier, B.; Chaix, B. Multiple dimensions of residential environments, neighborhood experiences, and jogging behavior in the RECORD Study. *Prev. Med.* **2012**, *55*, 50–55. [CrossRef]
19. Stewart, K. *Ordinary Affects*; Duke University Press: Durham, NC, USA, 2007; p. 133.
20. Gervasoni, M. *Storia D'Italia Degli Anni Ottanta: Quando Eravamo Moderni*; Marsilio: Venice, Italy, 2010.
21. Cialdea, L.; Michelini, M. L'intensità dell'attività fisica degli occupati. In Proceedings of the AIQUAV 2018. V Convegno Nazionale dell'Associazione Italiana per gli Studi sulla Qualità della Vita, Fiesole (FI), Italy, 13–15 December 2018; Libro dei Contributi Brevi. di Bella, E., Maggino, F., Trapani, M., Eds.; Genoa University Press: Genoa, Italy, 2019; pp. 83–90.
22. Patucchi, M. Running "partito di maggioranza", il 51% degli italiani corre almeno una volta al mese. *La Repubblica* **2017**. Available online: https://www.repubblica.it/sport/running/storie/2017/06/03/news/running_partito_di_maggioranza_il_50_degli_italiani_corre_almeno_una_volta_al_mese-167137753/ (accessed on 4 October 2021).
23. Marathonworld. Numeri e curiosità. *Marathonworld* **2015**. Available online: https://www.marathonworld.it/praticanti-running-corsa-maratona-italia-2015.html (accessed on 4 October 2021).
24. Yin, R.K. *Case Study Research and Applications: Design and Methods*, 6th ed.; Sage: Thousand Oaks, CA, USA, 2018.
25. Cassa di Risparmio di Alessandria. *L'economia Alessandrina Dal Secondo Dopoguerra a Ogg*; Cassa di Risparmio di Alessandria SPA: Alessandria, Italy, 1992.
26. Caramellino, A. L'archiettura rurale alessandrina. In *L'architettura Ruale in Provincia di Alessandria*; Caramellino, A., Ed.; Provincia di Alessandria: Alessandria, Italy, 1999; pp. 64–89.
27. Pasquariello, M.; Chiesi, G. L'analisi dei determinanti di un'area territoriale. Studio preliminare in preparazione del Piano strategico per il comune di Alessandria. *POLIS Work. Pap.* **2009**, *152*, 1–121.
28. Comune di Alessandria. *Convegno Turismo Tempo Libero Sport: Alessandria, 29–30 November 1975*; Comune di Alessandria: Alessandria, Italy, 1975.
29. Volpato, G.; Fontefrancesco, M.F.; Gruppuso, P.; Zocchi, D.M.; Pieroni, A. Baby pangolins on my plate: Possible lessons to learn from the COVID-19 pandemic. *J. Ethnobiol. Ethnomed.* **2020**, *16*, 19. [CrossRef]
30. Fontefrancesco, M.F. *Effetto Lockdown: Come Sono Cambiate le Abitudini Alimentari Degli Italiani Durante L'emergenza COVID-19*; Università degli Studi di Scienze Gastronomiche: Bra, Italy, 2020.
31. Fontefrancesco, M.F. The Urban Disease Revealed In Italy. *Anthropol. News* **2020**. Available online: https://www.anthropology-news.org/articles/the-urban-disease-revealed-in-italy/ (accessed on 4 October 2021).
32. Guigoni, A.; Ferrari, R. *Pandemia 2020. La Vita Quaotidiana in Italia Con il Covid-19*; M&J Publishing House: Danyang, China, 2020.
33. Candea, M. Arbitrary locations: In defence of the bounded field-site. *J. R. Anthropol. Inst.* **2007**, *13*, 167–184. [CrossRef]
34. Calhoun, C.J. Toward a Variable Conceptualization for Comparative Research. *Soc. Hist.* **1980**, *5*, 105–129. [CrossRef]
35. Pagliara, F.; Gigliuto, L. *Di Corsa of Course*; Malcor D': Catania, Italy, 2017.
36. Goodman, L.A. Snowball Sampling. *Ann. Math. Stat.* **1961**, *32*, 148–170. [CrossRef]
37. Eisenhardt, K.M. Building Theories from Case Study Research. *Acad. Manag. Rev.* **1989**, *14*, 532–550. [CrossRef]
38. Atkinson, R. The life story interview. In *Handbook of Interview Research*; Gubrium, J.F., Holstein, J.A., Eds.; Sage Publications: Thousand Oaks, CA, USA, 2002; pp. 121–140.
39. Elo, S.; Kääriäinen, M.; Kanste, O.; Pölkki, T.; Utriainen, K.; Kyngäs, H. Qualitative Content Analysis: A Focus on Trustworthiness. *SAGE Open* **2014**, *4*, 2158244014522633. [CrossRef]
40. Van Maanen, J. *Tales of the Field: On Writing Ethnography*; University of Chicago Press: Chicago, IL, USA, 1988.
41. Hobbs, D. Ethnography. In *The SAGE Dictionary of Social Research Methods*; Jupp, V., Ed.; Sage: London, UK, 2006; pp. 101–103.
42. Ellis, C.; Adams, T.E.; Bochner, A.P. Autoethnography: An Overview. *Hist. Soc. Res. Hist. Soz.* **2011**, *36*, 273–290.
43. Bourdieu, P. *The Weight of the World*; Polity Press: Cambridge, Italy, 1999.
44. Higgins, R.; Martin, E.; Vesperi, M.D. An Anthropology of the COVID-19 Pandemic. *Anthropol. Now* **2020**, *12*, 2–6. [CrossRef]
45. Decorato, F. AL Il Nemico Invisibile. 2020. Available online: https://radiogold.it/cronaca/251329-libro-fotografie-alessandria-covid-lockdown-nemico-invisibile-fabio-decorato-csva/ (accessed on 4 October 2021).
46. Deleuze, G. What is a dispositif? In *Michel Foucault, Philosopher: Essays Translated from the French and German*; Armstrong, T.J., Ed.; Harvester Wheatsheaf: New York, NY, USA, 1992.

47. Thrift, N. *Non-Representational Theory: Space, Politics, Affects*; Routledge: London, UK, 2008.
48. Bourdieu, P. *The Logic of Practice*; Stanford University Press: Stanford, CA, USA, 1990.
49. Bourdieu, P. *Outline of a Theory of Practice*; Cambridge University Press: Cambridge, UK, 1977; p. 248.
50. Westheimer, J.; Kahne, J. What Kind of Citizen? The Politics of Educating for Democracy. *Am. Educ. Res. J.* **2004**, *41*, 237–269. [CrossRef]
51. di Nardo, F.; Williams, G.; Patterson, L.; Harrison, A.; Verma, A. Current Challenges for Urban Health. *Health Policy Non-Commun. Desease Diabetes* **2017**, *4*, 10–13.
52. Wacquant, L. *Body and Soul: Notebooks of an Apprentice Boxer*; Reaktion: London, UK, 2003.
53. Tuan, Y.-F. *Topophilia: A Study of Environmental Perception, Attitudes, and Values*; Prentice-Hall: Engelwood Cliffs, NJ, USA, 1974.
54. Gruppuso, P.; Whitehouse, A. Exploring taskscapes: An introduction. *Soc. Anthropol.* **2020**, *28*, 588–597. [CrossRef]
55. Ahmed, S. Affective Economies. *Soc. Text* **2004**, *22*, 117–139. [CrossRef]
56. Granovetter, M.S. The strenght of weak ties. *Am. J. Sociol.* **1973**, *78*, 1360–1380. [CrossRef]
57. Walby, S. *Crisis*; Polity Press: Cambridge, UK, 2015.
58. Spradley, J.P. *Participan Observation*; Waveland Press, Inc.: Long Grove, IL, USA, 1980.
59. Bourdieu, P. Participant Objectivation. *J. R. Anthropol. Inst.* **2003**, *9*, 281–294. [CrossRef]

societies

MDPI

Article

Male Sex Workers Selling Physical Sex during the COVID-19 Pandemic in Portugal: Motives, Safer Sex Practices, and Social Vulnerabilities

Henrique Pereira [1,2]

[1] Department of Psychology and Education, Faculty of Social and Human Sciences, University of Beira Interior, 6200-209 Covilhã, Portugal; hpereira@ubi.pt
[2] Research Centre in Sports Sciences, Health Sciences and Human Development (CIDESD), 5001-801 Vila Real, Portugal

Abstract: The purpose of this research was to assess the motives, safer sex practices, and vulnerabilities of male sex workers who sold physical sex during the COVID-19 pandemic. This study used a mixed strategy, utilizing purposive sampling techniques to conduct 13 online surveys with male sex workers working in Portugal during the COVID-19 pandemic. Participants were aged between 23 and 47 years old and mostly provided their services to other men. Additionally, half of the participants were immigrants. Participants mentioned paying for essential expenses (rent, food, phone, etc.), having money for day-to-day expenses, wanting to, and enjoying it, as their main motives for engaging in sex work. Regarding sexual practices, 3 to 11 participants did not always or did not consistently use condoms during penetrative sex with their clients. Thematic analysis was used to identify the following repeated patterns of meaning regarding COVID-19-related vulnerabilities, encompassing a loss of clients and income, increased work availability, price reductions and negotiation difficulties, emotional functioning, health care access, safer sex negotiations, age, and immigration status. The findings serve as a basis for recommendations regarding social policies aimed at male sex workers who sell physical sex in Portugal.

Keywords: male sex workers; commercial sex; COVID-19; motives; practices; vulnerabilities; Portugal

Citation: Pereira, H. Male Sex Workers Selling Physical Sex during the COVID-19 Pandemic in Portugal: Motives, Safer Sex Practices, and Social Vulnerabilities. *Societies* **2021**, *11*, 118. https://doi.org/10.3390/soc11040118

Academic Editors: Sandro Serpa and Carlos Miguel Ferreira

Received: 29 August 2021
Accepted: 22 September 2021
Published: 24 September 2021

1. Introduction

The necessary policies to combat the spread of the Coronavirus Disease 2019 (COVID-19), such as social isolation and lockdown measures, have had relevant implications on sexual activity, including commercial sexual activity. In the same way that HIV has created specific challenges for sex workers [1], the COVID-19 pandemic has highlighted the vulnerabilities of their professional activities, which are often associated with stigmatization, criminalization, drug use, violence, mental health challenges, unemployment, homelessness, and difficulties in accessing health care [2]. Sex workers' ability to develop self-protection strategies strongly depends on their social circumstances, namely, the availability of community support [3]. In this regard, sex workers have been able to develop some degree of resilience [4] and to draw attention to their specific needs, despite the obstacles, social exclusion, and oppression fostered by the COVID-19 pandemic.

Although the stereotyped image of sex work is feminine, in reality, it is a heterogeneous activity also practiced by men. The invisibility of male sex work is associated with mechanisms of oppression that are reinforced by sexual stigma, homophobia, and a lack of systematic research [5]. Some of the scientific research regarding male sex workers have focused on sexual health, behavioral risk factors, human immunodeficiency virus (HIV), sexually transmitted infections (STIs) (namely, STI prevalence) [6,7], condom use negotiations [8,9], pre-exposure prophylaxis (PrEP) use [10,11], and network and dyadic characteristics [12], with all factors providing evidence of male sex workers' vulnerabilities.

The increased use of technology in recent years has created a new digital space for male sex work, making it both more accessible [13] and, simultaneously, more invisible due to the persistence of stigmatizing factors [14]. Many related studies have provided a limited analysis of the transient online profiles of sex workers in these contexts. In turn, this limitation prevents researchers from cultivating a deeper understanding of the reality of online sexual transactions, which probably involve problematic and diverse socioeconomic circumstances motivating sex workers' online presence [15].

Portugal decriminalized sex work in 1983, but a political void remains due to the lack of professional recognition by the state. In addition, the main conceptual understanding of the reality of sex work is through processes of victimization and oppression that are involved in commercial sex [5], accentuating the vulnerability and invisibility of sex workers. The limited prior research regarding male sex work Portugal shows that most sex workers work in apartments or hotels, the majority are young and foreign nationals (mainly Brazilian immigrants), and their main motives for engaging in commercial sex are of a financial nature [16].

In this context, the transformations imposed by the COVID-19 pandemic may have aggravated stigma, discrimination [2–4], the risk of engaging in unprotected sexual activity [17], and difficulties in accessing health care [18], but, above all, access to clients and income [19]. Given that the restrictions associated with the COVID-19 pandemic involved restrictions on people's movements, lockdowns, and stay-at-home orders, it is possible that many male sex workers have witnessed a reduction in their number of clients due to the social isolation measures imposed by health authorities or due to COVID-19 infection fears. Thus, this study was developed to fill the gap left by the lack of studies in Portugal and around the world concerning the motives, practices, and circumstances surrounding the vulnerability of male sex workers who sell physical sex during the COVID-19 pandemic.

2. Materials and Methods

This research utilized a mixed methods strategy [20], using purposive sampling techniques [21,22] to conduct 13 online surveys with male sex workers in Portugal during the COVID-19 pandemic. Personal contacts advertised on Portuguese escort websites were made to gain access to the participants. A total of 497 requests to participate were sent through a message containing a link to an electronic survey, which consisted of two parts. The first part contained directed questions concerning participants' sociodemographic information, motives, and safer sexual practices, while the second part included an open-ended question about the impact of COVID-19 on participants' personal and professional lives as a sex worker. The study's methodological foundation was based on a participatory paradigm, promoting an understanding of the relevant determinants for social change [23]. Participation was voluntary, in addition to guaranteeing participants' confidentiality and anonymity.

The data consisted of direct transcripts imported from the information provided by the online survey participants. Thematic analysis was used to identify repeated patterns of meaning [24], framing an epistemologically critical point of view that recognized that male sex work narratives are socially constructed and linked to social oppression [25]. Inductive thematic analysis was conducted using the data obtained from the semantic content and the latent constructs present in participants' written responses [26]. Subsequently, the researcher utilized NVivo software to assist in data analysis, namely, familiarization with the data, generating initial codes, searching for themes, reviewing themes, defining and naming themes, and producing the data report. The author conducted the initial coding and identification, which were later verified, discussed, and refined through coding consistency with two independent experts in the fields of sexuality and psychology. In cases where a match occurred, the researcher and the experts engaged in discussions in order to reach a consensus.

3. Results

3.1. Sociodemographic Information

The study recruited 13 male sex workers in Portugal who offered physical sexual services during the COVID-19 pandemic. Data collection took place during the month of January 2021, in the midst of the pandemic's third wave in Portugal, which corresponded to the greatest infection peak in the country and forced the government to impose a general strict lockdown that lasted for several weeks. Participants' ages ranged between 23 and 47 years old, with five identifying themselves as gay, six as bisexual, and two as heterosexual. Seven participants were Portuguese nationals, five were Brazilian immigrants, and one was an Uzbek immigrant. Most men worked with other men, couples, and women, especially at their homes, at clients' homes, at hotels, or online or via online applications. The number of weekly clients varied between 1 and 10. Most participants claimed to be HIV negative, but only six were on PrEP. Table 1 displays participants' sociodemographic information.

3.2. Motives

Table 2 provides a more detailed description of sex workers' primary professional motives during the pandemic. The most important motives mentioned were wanting to, paying for essential expenses (rent, food, phone, etc.), having money for day-to-day expenses, because sex work is exciting, and enjoying it. Table 2 displays additional motives for engaging in sex work mentioned by participants.

3.3. Sexual Practices

As shown in Table 3, only 61.5% of participants claimed that they always used a condom when engaging in vaginal sex, 76.9% for insertive anal sex, and 61.5% for receptive anal sex. This finding signifies that participants partook in a considerable number of sexual activities involving penetrative sex that implied elevated HIV and STI transmission risks.

3.4. Social Vulnerabilities

3.4.1. Loss of Customers and Income

All participants reported that the main impact of the COVID-19 pandemic was a drop in their number of customers and, consequently, a drop in income. This reduction in clients may have been related to the consequences of health policies that limited social interactions through lockdowns and stay-at-home orders. These policies could have deterred clients from seeking out sex workers' services, while simultaneously encouraging sex workers to take precautionary measures to avoid COVID-19 infection risks. All participants exercised their professional activities online and, given that sex work is not legally regulated in Portugal, participants were unable to request government financial support to assist with any financial difficulties that may have arisen as a result of the pandemic. Moreover, most participants were single and lived alone, increasing the likelihood of lacking family, friends, or social support networks, thus intensifying isolation experiences. The aforementioned findings are illustrated by select participant quotations below:

> "*I have a lot of difficulties paying my daily bills, rent, electricity, water, Internet, food, transportation . . . My few savings are running out, and I have no way to save enough to pay my expenses . . . All because customers have decreased dramatically. Now, if I manage to get 3 or 4 customers in a week, it is already very good, while, before the pandemic, I could easily have had 15.*"
>
> Sex worker #4, 27 years old, bisexual, Brazilian immigrant.
>
> "*There has been a big drop in calls. My biggest source of income is from trips outside Lisbon, namely to Madrid, Paris, and Rome. With airports closed, I was trapped in a city where customers do not have enough money to pay for my services.*"
>
> Sex worker #3, 37 years old, gay, Brazilian immigrant.

Table 1. Sociodemographic Information.

Sex Worker Number	Age	Sexual Orientation	Nationality	Client Description	Marital Status	Time Working as a Sex Worker	Work Location	Days/Hours of Work	# of Clients per Week	HIV Status	PrEP Usage
1	32	Gay	Portuguese	Men Gay couples	Single	2 years	Shared apartment At home At clients' homes Hotels	3 days 4 h/day	10	Neg.	No
2	27	Gay	Brazilian	Men Gay couples	Single	1 year	At home At clients' homes	3 days 24 h/day	3	Neg.	Yes
3	37	Gay	Brazilian	Men Gay couples	Single	2 years	At home At clients' homes Hotels	7 days 5 h/day	10	Unknown	Yes
4	27	Bisexual	Brazilian	Men Women Straight couples Gay couples	Single	8 years	At home Hotels Online apps	7 days/ 24 h/day	4	Neg.	Yes
5	28	Straight	Portuguese	Women Straight couples Lesbian couples	Single	2 years	At home At clients' homes Hotels Online	3 days/ 12 h/day	3	Neg.	No
6	42	Bisexual	Portuguese	Men Women Straight couples	Single	1 year	At home At clients' homes On the street Hotels	1 day/ 1 h/day	1	Neg.	No
7	27	Gay	Brazilian	Men Gay couples	Dating a man	4 years	At clients' homes On the street Hotels Online apps	7 days/ 24 h/day	4	Neg.	Yes
8	26	Bisexual	Portuguese	Men Women Straight couples Gay couples	Civil union with a woman	6 months	At clients' homes Escort agency Hotels Online apps	3 days/ 2 h/day	4	Neg.	No
9	27	Bisexual	Uzbek	Men	Single	5 years	At home	5 days/ 16 h/day	5	Neg.	No
10	47	Straight	Portuguese	Women	Single	5 years	At home At clients' homes Hotels Online apps	1 day/ 4 h/day	1	Neg.	No

Table 1. *Cont.*

Sex Worker Number	Age	Sexual Orientation	Nationality	Client Description	Marital Status	Time Working as a Sex Worker	Work Location	Days/Hours of Work	# of Clients per Week	HIV Status	PrEP Usage
11	35	Bisexual	Portuguese	Men Women Straight couples Gay couples	Single	3 years	At home Bar/clubs Online apps	4 days/ 6 h/day	4	Neg.	Yes
12	23	Gay	Brazilian	Men Gay couples	Single	5 months	At home At clients' homes	1 day/ 24 h/day	1	Unknown	No
13	45	Bisexual	Portuguese	Men Women Straight couples	Single	7 years	At clients' homes Online apps	4 days/ 3 h/day	5	Unknown	No

Table 2. Sex Work Motives during the Pandemic.

	Not Important at All *n* (%)	Somewhat Unimportant *n* (%)	Neutral *n* (%)	Somewhat Important *n* (%)	Very Important *n* (%)
To pay for essential expenses (rent, food, phone, etc.)	2(15.4%)	1 (7.7%)	0 (0%)	2 (15.4%)	8 (61.5%)
To afford luxuries, social life, etc.	6 (46.2%)	1 (7.7%)	0 (0%)	3 (23.1%)	3 (23.1%)
To save money	1 (7.7%)	1 (7.7%)	4 (30.7%)	3 (23.1%)	4 (30.7%)
To pay for school	5 (38.4%)	0 (0%)	3 (23.1%)	3 (23.1%)	2(15.4%)
To help family	7 (53.8%)	1 (7.7%)	1 (7.7%)	1 (7.7%)	3 (23.1%)
To have sexual experiences	1 (7.7%)	1 (7.7%)	5 (38.4%)	2(15.4%)	4 (30.7%)
A lack of family financial support	5 (38.4%)	0 (0%)	1 (7.7%)	4 (30.7%)	3 (23.1%)
A lack of family emotional support	7 (53.8%)	1 (7.7%)	1 (7.7%)	3 (23.1%)	1 (7.7%)
Influence of friends	11 (84.6%)	1 (7.7%)	1 (7.7%)	0 (0%)	0 (0%)
Because it is exciting	1 (7.7%)	0 (0%)	0 (0%)	6 (46.2%)	6 (46.2%)
To finance a gambling problem	13 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
To finance an alcohol problem	13 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
To finance a drug problem	13 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
To have money for day-to-day expenses	1 (7.7%)	1 (7.7%)	0 (0%)	3 (23.1%)	8 (61.5%)
To make my own schedule	6 (46.2%)	0 (0%)	0 (0%)	4 (30.7%)	3 (23.1%)
Lack of other qualifications/skills	10 (76.9%)	0 (0%)	1 (7.7%)	1 (7.7%)	1 (7.7%)
Because I like it	0 (0%)	0 (0%)	3 (23.1%)	3 (23.1%)	7 (53.8%)
Because I want to do it	0 (0%)	0 (0%)	1 (7.7%)	2(15.4%)	10 (76.9%)
I don't know how to leave	11 (84.6%)	0 (0%)	2(15.4%)	0 (0%)	0 (0%)

Table 3. Sexual Practices with Clients.

	Never *n* (%)	Rarely *n* (%)	Sometimes *n* (%)	Frequently *n* (%)	Always *n* (%)
Condom use for vaginal sex	0 (0%)	1 (7.7%)	1 (7.7%)	3 (23.1%)	8 (61.5%)
Condom use for anal sex (insertive)	0 (0%)	2 (15.4%)	0 (0%)	1 (7.7%)	10 (76.9%)
Condom use for anal sex (receptive)	0 (0%)	3 (23.1%)	1 (7.7%)	1 (7.7%)	8 (61.5%)
Condom use for oral sex (active)	5 (38.4%)	3 (23.1%)	1 (7.7%)	2 (15.4%)	2 (15.4%)
Condom use for oral sex (passive)	3 (23.1%)	5 (38.4%)	1 (7.7%)	2 (15.4%)	2 (15.4%)
Condom use when using sex toys	2 (15.4%)	1 (7.7%)	5 (38.4%)	0 (0%)	5 (38.4%)

> "*I have experienced a drastic drop in income, even after trying to maximize opportunities to get more customers, especially over the Internet and by increasing service times. But, it has not been easy because they do not show up. I have no one to ask for help, as I do not speak to my family members, they do not know about my profession, and I live alone. Even some friends and former clients with whom I had a closer connection are also experiencing financial difficulties and cannot help me . . . There are days when I have to resort to community support services for essential goods.*"
>
> Sex worker #5, 28 years old, straight, Portuguese national.

3.4.2. Increased Work Availability

Almost all participants significantly increased their professional availability during the pandemic, even during lockdowns or following increases in COVID-19 cases, with the exceptions of sex workers #10 and #12, who limited their services. Additionally, participants stated that they employed careful attitudes regarding COVID-19 prophylactic measures, namely, using masks and disinfectant gel, as well as frequently sanitizing their workspaces.

> "*I started to be available 24 h a day, 7 days a week. I advertise my services by reinforcing hygienic measures and ensuring, that they [clients] are safe with me, as much as possible.*"
>
> Sex worker #4, 27 years old, bisexual, Brazilian immigrant.

> "*Now, I usually work 72 h in a row, and I go everywhere—to clients' houses, hotels and guest houses, over the Internet, and even on the street.*"
>
> Sex worker #7, 27 years old, gay, Brazilian immigrant.

3.4.3. Price Reductions and Negotiation Difficulties

Some participants reported that they have had to cut prices and even deal with problematic customers that did not want to or could not pay for their services. The pandemic also significantly impacted the customers of paid sex services and, as a result, exacerbated sex workers' economic vulnerability, as well as threats to their physical and emotional integrity.

> "*I started to include the possibility of charging 'low-cost' prices to try to get more clients. In comparison with before the pandemic, I have had many more customers leave without paying because they are more aggressive and upset about the pandemic and because they do not even have money.*"
>
> Sex worker #8, 28 years old, bisexual, Portuguese national.

3.4.4. Emotional Functioning

Some participants reported that the pandemic and social isolation measures imposed by the government did not affect them greatly from an emotional point of view. Explanations encompassed personal reasons, such as possessing an introverted personality, fixed habits at home, and having managed to adjust to the changes imposed on their routines.

> "*On a personal level, I think that [social] isolation did not affect me much, as I am already naturally a homebody. I simply adapted to new circumstances.*"
>
> Sex worker #1, 32 years old, gay, Portuguese national.

> "*As I work mostly at home, and I am very much a homebody, I managed the need to be isolated at home well. Of course, I go out, especially to go to customers' houses or to the supermarket, but I also started doing more shopping online to stay sane.*"
>
> Sex worker #7, 27 years old, gay, Brazilian immigrant.

However, most participants reported having felt very relevant emotional impacts, not only due to income declines that generated financial problems, but also in relation to inherent pandemic-related anxieties, such as infection fears, the distress resulting from significant behavioral changes that were imposed by lockdown measures, and even existential questions.

> "*The pandemic has affected my life a lot, [and] it has worsened all aspects of my existence. I became more vulnerable, afraid, anxious, and even depressed. I am in a very complicated situation, mentally. It is not easy for me to deal with isolation, [and] I feel distraught and disoriented. I find myself feeling a lack of interest in the things around me, but I force myself to get up every day, so as not to lose heart.*"
>
> Sex worker #11, 35 years old, bisexual, Portuguese national.

> "*The main problem is the loss of contact with friends and family. I completely lost my social life and that makes me feel very lonely and disoriented. I have not seen my children in many months . . . *"
>
> Sex Worker #13, 45 years old, bisexual, Portuguese national.

> "*It has forced me to reflect on my life values, [and] it has forced me to examine my decisions and think about past bitterness. Unfortunately, it did not help to solve anything. On the contrary, I became more isolated and felt greater uncertainty about my life plans.*"
>
> Sex worker #5, 28 years old, straight, Portuguese national.

3.4.5. Health Care Access

In Portugal, even during the most severe periods of prophylactic isolation, health care access was never limited due to the COVID-19 pandemic. However, some participants reported that they had to adjust their schedules in response to postponements and changes, in order to obtain health care access.

> "*The pandemic forced me to better manage my time in order to keep myself healthy. For example, PrEP or STI testing appointments have become more limited during the lockdowns, but these always involve a certain number of unforeseen events, delays, and postponements, which is understandable given these circumstances.*"
>
> Sex worker #7, 27 years old, gay, Brazilian immigrant.

Other participants indicated that they sometimes needed to use sildenafil for work. Given the limitations imposed by pandemic-related restrictions, the online pharmaceutical market became a solution to purchase this medication.

> "*We men do not run at full speed all the time. As I work 24 h in a row, sometimes I have to take that pill in order to work. Fortunately, we can buy it online, easily and discreetly.*"
>
> Sex worker #2, 27 years old, gay, Brazilian immigrant.

3.4.6. Safer Sex Negotiations

Some participants, even those not on PrEP, mentioned the need to resort to the possibility of partaking in unsafe sexual practices, as requested by some clients. Agreeing to engage in unsafe sexual practices was viewed as a means of attracting more clients and, thus, minimizing any negative effects on income.

> "*I have had this job for two years, and I have never had an HIV test, so I do not know if I am positive or not. If a client wants to pay a little more to have unprotected sex, I will not say no. I think the responsibility is his.*"
>
> Sex worker #3, 37 years old, gay, Brazilian immigrant.

> "*I am HIV-negative and I am on PrEP. So, I feel a little safer when a client asks me to have unprotected sex. I try to convince them that it is better to use a condom, but that is not always possible because some men really insist. Nowadays, you cannot be picky, [and] we have to take advantage of everything that comes our way.*"
>
> Sex worker #7, 27 years old, gay, Brazilian immigrant.

However, some participants also reported never having sex without a condom. In some cases, this was due to the fact that they were involved in romantic relationships, while, in other cases, they cited the high value they attributed to their health.

> "*I have only been involved in this life for 6 months. It was really necessary to survive due to the pandemic. My girlfriend knows about it, and the one essential condition that she imposed on me was to always use a condom.*"
>
> Sex worker #6, 26 years old, bisexual, Portuguese national.

> "*My health is priceless. Even if things are going badly, I will not have sex without a condom. I have been working in this field for 5 years, and this is a fundamental rule in my profession. Without a condom, there is no deal. I am STI-free and I want to continue that way.*"
>
> Sex worker #9, 27 years old, bisexual, Uzbek immigrant.

3.4.7. Age

Three of the study participants were over 40 years old (aged 42, 45, and 47, respectively). In their cases, they often pointed out age-related discrimination as a professional obstacle that aggravated the customer shortage caused by the COVID-19 pandemic. Ageism is present in society, and it may have increased negative aging experiences among some of our participants, in addition to the stigma associated with sex work.

> "*In this competitive market, younger people are more successful. It frustrates me a lot, but I have to accept it. If I were in my twenties, I think it would be different . . . I try to use other advantages, since I work with a female audience, [and] I have to use age and experience as a charm factor . . .* "
>
> Sex worker #10, 47 years old, straight, Portuguese national.

> "*I have been doing this for a long enough time (7 years) to understand the dynamics. Customers prefer younger guys. And, with the pandemic, older people will be left behind. That is how it works. Sometimes, I think about giving up, but also, what is my alternative?*"
>
> Sex worker #13, 45 years old, bisexual, Portuguese national.

3.4.8. Immigration

Poor economic conditions, national security issues, and a lack of respect for sexual minority rights in migrants' countries of origin could be the principal migration motives for several of our participants. However, several found their destination country to be facing a highly vulnerable economic situation due to the pandemic and were unable to find jobs, while others were unable to gain legal migration status, creating a context of

enormous socioeconomic fragility. For many, paid sexual activity was their only means of survival.

> "*I arrived in Portugal 7 months ago, right in the middle of the pandemic. As an immigrant without many academic or professional qualifications, I could not find a job and my savings only lasted for 2 months. I ran out of money. I had to enter this life in order to survive. There is discrimination because we are immigrants, coupled with discrimination against being gay and being a sex worker.*"
>
> Sex worker #12, 23 years old, gay, Brazilian immigrant.
>
> "*I was unable to find work during the pandemic, and I cannot legalize myself without a formal employment contract. I have been living in the country illegally for over a year, and I had to do this job to survive.*"
>
> Sex worker #2, 27 years old, gay, Brazilian immigrant.

4. Discussion

This research explored the motives, safer sex practices, and vulnerabilities of self-employed male sex workers selling physical sex in Portugal during the COVID-19 pandemic. This research provides important contributions to understanding the effects of the COVID-19 pandemic on an activity that is already highly invisible and subject to increased risks and vulnerability. Regarding motives for selling sex during the COVID-19 pandemic, most participants highlighted wanting to or enjoying sex work, as well as financial reasons, such as paying essential bills and having money for daily expenses. As in previous studies [27], this study found that practical, financial, and intrinsic (wanting to or enjoying sex work) reasons were the most prevalent motives for male sex workers to engage in paid sexual activity. Previous studies have confirmed these results, underlining the importance of men's economic conditions when deciding to partake in sex work [28,29].

The COVID-19 pandemic has created an unprecedented economic crisis that has forced many men to start working as sex workers to pay for their basic needs and everyday expenses. However, others indicated that they also engaged in sex work because they viewed it as an exciting and flexible activity. This combination of factors suggests that male sex work is not an inherently negative experience among the participants. This finding contrasts with those of earlier studies [30], which have highlighted the negative experiences associated with the cost-benefit negotiations between the positive and negative factors inherent to the nature of sex work, encompassing managing potential problems with clients, psychological problems, stigma toward sex work, adverse economic and employment conditions, and a lack of formal recognition by the state [27]. Thus, as previously demonstrated [31], it is clear that many men's motives for engaging in sex work arose from the economic conditions created by changes related to the COVID-19 pandemic [4].

In regard to participants' sexual practices, an evidently significant number of participants (5 to 11) do not always or consistently use condoms when partaking in penetrative sexual practices with their clients. Increasing evidence has shown that there are several facilitators that can increase the frequency of unprotected sexual activity between male sex workers and their clients, including biological, behavioral, and structural determinants [7,32]. However, very little research has been carried out on this topic regarding male sex workers. On the one hand, clients may request that condoms not be used due to the fact that they are men who often do not identify as gay or bisexual, may have regular female sexual partners, and may not be informed about the importance of having safer sex with other men. On the other hand, several of our participants indicated that they use and are knowledgeable about PrEP, which may allow them to lower their guard in relation to condom use [33]. In Portugal, PrEP is currently available at hospitals that are part of the HIV hospital referral network, and PrEP prescriptions must be written by infectious disease specialists after assessing patients at a high risk of acquiring HIV or other sexually transmitted infections (namely, sex workers), after obtaining patients'

informed consent [34]. Thus, it is clear that it is of the utmost importance to support more systematic educational and informational efforts concerning PrEP access, in addition to safer sex health campaigns aimed at male sex workers in Portugal. These policies could not only encourage behavioral change, but also might promote innovative interventions suitable to the complexity of these interactions, with the aim of reducing HIV and STI risk exposure among both male sex workers and their clients.

Participants manifested several vulnerabilities in this study's discourse analysis. All men highlighted poverty-related risks and a decrease in income and customers. Participants' vulnerabilities were reinforced by their need to make major professional adaptations, such as increasing available working hours or reducing prices, as well as the more frequent difficulties they encountered in negotiating payments, which demonstrated their increased exposure to poverty, hunger, and violence in the context of pandemic-related lockdowns and stay-at-home orders. As illustrated by other studies that evaluated COVID-19's impacts on sex work, these vulnerabilities can increase poverty risks, as well as the need to work at home, which may lead to confusion surrounding safety precautions and an increased risk of violence [19]. Thus, this research highlights the social disadvantages faced by male sex workers in Portugal, particularly in the context of the COVID-19 pandemic.

Contrary to earlier studies' findings [17], participants did not present excessive consumption of toxic substances, homelessness, or severe mental illness during the COVID-19 pandemic, although some presented emotional difficulties associated with social isolation and a lack of social support. This finding may be related to male sex workers' ability to adapt to the adversities imposed by the pandemic, particularly their resilience in dealing with survival needs [4]. In fact, as demonstrated by other studies [35], working as a male sex worker is not related to any serious mental health problems, and the presence of emotional difficulties among participants is more likely related to the context of the COVID-19 pandemic, as it requires difficult adjustment efforts that can result in anxious, depressive, and post-traumatic symptoms [36]. In the context of sex work, restrictions imposed by governments to try to contain the COVID-19 pandemic caused major obstacles to sex workers' access to specific health care needs [36], although this finding was not communicated by our participants. The Portuguese government has maintained health care appointment access, as well as access to PrEP appointments and online access to medications, although sex workers' specific COVID-19-related health care needs were not explicitly taken into account [3].

Participants also referred to the accumulation of stigma factors, namely, age and country of origin, in addition to the stigma associated with sex work, as factors of increased vulnerability. In fact, a significant percentage of participants were immigrants and three were over 40 years old. Immigration involves a series of changes, adjustments, and cultural adaptations, which can increase stress levels associated with those already experienced due to the pandemic. For sex workers, these processes also involve specific migration trajectories that are embedded in body, gender, sex, and sexuality representations [37], comprising dynamics that future studies should examine in greater detail. Regarding age, risks include the possibility of having fewer customers and, consequently, reduced income flows, as well as enhanced poverty and vulnerability risks. However, the need to manage both the positive and negative perceptions associated with aging [38] could also be seen as an opportunity.

This investigation contributed to findings showing that the COVID-19 pandemic imposed important changes on male sex work in Portugal, creating worrying consequences of vulnerability associated with stigma and invisibility. These vulnerabilities were exacerbated by the lack of formal research into sex work and an absence of legal regulations that would allow for a better evaluation of sex workers' specific needs. These results contrast with those found by studies in the Netherlands and Belgium, where the state regulates sex work [39], calling attention to the need to legalize this activity in Portugal. As demonstrated by this study, the combination of various vulnerabilities accentuated by the COVID-19 pandemic warrants further research designed to explore the pandemic's impacts and how

it may affect other male sex workers in Portugal. Further research could also examine how to implement specific actions to minimize infection risks, such as limiting face-to-face contact or wearing a mask during sexual activity [2], in addition to encouraging lawmakers to assign priority to this population during vaccination campaigns.

This research possesses some limitations. It utilized a small sample collected online through sex service sites for men, and, consequently, it is not representative of all sex workers who sell physical sex in Portugal. Furthermore, most participants were gay or bisexual causing the study sample to underrepresent sex workers who work primarily with women. Finally, the specific context associated with the study's timing, carried out at the peak of the COVID-19 pandemic in Portugal, may have intensified some participants' narratives and views. Future studies should try to monitor the effects of the COVID-19 pandemic on male sex workers' quality of life over time.

5. Conclusions

Male sex workers are key populations who are often affected by stigma that can negatively impact their health and well-being [40]. One of the most insidious consequences of such stigma is its ability to curtail the capacity of sex workers to fight for basic human rights, especially in a country like Portugal where the political void makes sex workers face a range of barriers when accessing health care services, justice services, and victim and protection services, perpetuating experiences of discrimination and their exclusion from employment legislation. In addition, following a participatory paradigm [41], this study highlights the need to involve male sex workers in the design, implementation and evaluation of interventions that concern them, thus allowing for a sense of control so much need in times of vulnerability such as those inflicted by the COVID-19 pandemic.

Male sex workers who sell physical sex during the COVID-19 pandemic in Portugal are a diverse population. Regardless of their sexual orientation, they mostly offer sex to men, and many are at risk of acquiring HIV or being exposed to an increased burden of HIV in the context of the global COVID-19 pandemic. The intersectional stigmas of same-sex practices, commercial sex, and HIV, and the impediment of selling sex due to the government imposed stay-at-home measures have increased the likelihood HIV and STI risk [33,42]. Ongoing efforts to distribute PrEP to at-risk male sex workers should be made available in order to minimize the complex barriers that hinder the consistent use of condoms.

This study's findings serve as a basis for social policy recommendations aimed at male sex workers who sell physical sex in Portugal. Although not criminalized, sex work is an activity burdened with stigma that should be regulated and dignified. Most participants exercise this activity because they want to and because it is their primary means of sustenance. However, a lack of recognition and legal regulation prevents sex work from being treated as a normal job. In turn, this results in a context characterized by an enhanced lack of protection and greater vulnerability, as shown by sex workers' inability to access state subsidies to compensate for financial losses related to the COVID-19 pandemic. On the other hand, sex workers possess specific needs concerning health-related vulnerabilities, especially in relation to the adoption of safer sex practices and discrimination, such as ageism and xenophobia. Thus, the study results point to the need to create policies whose impacts extend beyond the context of the COVID-19 pandemic to facilitate the protection, visibility, and validation of male sex workers who sell physical sex in Portugal.

Funding: This research received no external funding.

Institutional Review Board Statement: The study was conducted according to the guidelines of the Declaration of Helsinki and approved by the Ethics Committee of the University of Beira Interior (Portugal) (code CE-UBI-Pj-2020-088).

Informed Consent Statement: Informed consent was obtained from all subjects involved in the study.

Data Availability Statement: The data presented in this study are available upon request.

Conflicts of Interest: The author declares no conflict of interest.

References

1. Shannon, K.; Crago, A.-L.; Baral, S.; Bekker, L.-G.; Kerrigan, D.; Decker, M.R.; Poteat, T.; Wirtz, A.L.; Weir, B.; Boily, M.-C.; et al. The global response and unmet actions for HIV and sex workers. *Lancet* **2018**, *392*, 698–710. [CrossRef]
2. Singer, R.; Crooks, N.; Johnson, A.K.; Lutnick, A.; Matthews, A. COVID-19 Prevention and Protecting Sex Workers: A Call to Action. *Arch. Sex. Behav.* **2020**, *49*, 2739–2741. [CrossRef]
3. Platt, L.; Elmes, J.; Stevenson, L.; Holt, V.; Rolles, S.; Stuart, R. Sex workers must not be forgotten in the COVID-19 response. *Lancet* **2020**, *396*, 9–11. [CrossRef]
4. Lam, E. Pandemic sex workers' resilience: COVID-19 crisis met with rapid responses by sex worker communities. *Int. Soc. Work.* **2020**, *63*, 777–781. [CrossRef]
5. Oliveira, A. Same work, different oppression: Stigma and its consequences for male and transgender sex workers in Portugal. *Int. J. Iber. Stud.* **2018**, *31*, 11–26. [CrossRef]
6. Callander, D.; Read, P.; Prestage, G.; Minichiello, V.; Chow, E.P.F.; Lewis, D.; McNulty, A.; Ali, H.; Hellard, M.; Guy, R.; et al. A cross-sectional study of HIV and STIs among male sex workers attending Australian sexual health clinics. *Sex. Transm. Infect.* **2016**, *93*, 299–302. [CrossRef]
7. Pereira, H. Male Sex Workers in Lisbon, Portugal: A Pilot Study of Demographics, Sexual Behavior, and HIV Prevalence. *J. AIDS Clin. Res.* **2014**, *5*. [CrossRef]
8. Biello, K.B.; Thomas, B.E.; Johnson, B.E.; Closson, E.F.; Navakodi, P.; Dhanalakshmi, A.; Menon, S.; Mayer, K.H.; Safren, S.A.; Mimiaga, M.J. Transactional sex and the challenges to safer sexual behaviors: A study among male sex workers in Chennai, India. *AIDS Care* **2016**, *29*, 231–238. [CrossRef] [PubMed]
9. Valente, P.K.; Mantell, J.E.; Masvawure, T.B.; Tocco, J.U.; Restar, A.J.; Gichangi, P.; Chabeda, S.V.; Lafort, Y.; Sandfort, T.G. "I Couldn't Afford to Resist": Condom Negotiations Between Male Sex Workers and Male Clients in Mombasa, Kenya. *AIDS Behav.* **2019**, *24*, 925–937. [CrossRef]
10. MacGibbon, J.; Minichiello, V.; Prestage, G.; Bell, S.; Cox, C.; Donovan, B.; Callander, D. How Male Sex Workers and Their Clients Shifted from Reluctance About HIV Pre-exposure Prophylaxis to Advocating for Its Use: A Longitudinal Mixed Methods Study. *AIDS Behav.* **2019**, *24*, 782–790. [CrossRef]
11. Restar, A.J.; Tocco, J.U.; Mantell, J.E.; Lafort, Y.; Gichangi, P.; Masvawure, T.B.; Chabeda, S.V.; Sandfort, T.G.M. Perspectives on HIV Pre- and Post-Exposure Prophylaxes (PrEP and PEP) Among Female and Male Sex Workers in Mombasa, Kenya: Implications for Integrating Biomedical Prevention into Sexual Health Services. . *AIDS Educ. Prev.* **2017**, *29*, 141–153. [CrossRef]
12. Biello, K.B.; Goedel, W.C.; Edeza, A.; Safren, S.A.; Mayer, K.H.; Marshall, B.D.; Latkin, C.; Mimiaga, M.J. Network-Level Correlates of Sexual Risk Among Male Sex Workers in the United States: A Dyadic Analysis. *JAIDS J. Acquir. Immune Defic. Syndr.* **2020**, *83*, 111–118. [CrossRef] [PubMed]
13. Minichiello, V.; Scott, J.; Callander, D. New Pleasures and Old Dangers: Reinventing Male Sex Work. *J. Sex Res.* **2013**, *50*, 263–275. [CrossRef] [PubMed]
14. Kuhar, R.; Pajnik, M. Negotiating Professional Identities: Male Sex Workers in Slovenia and the Impact of Online Technologies. *Sex. Res. Soc. Policy* **2018**, *16*, 227–238. [CrossRef]
15. Grov, C.; Koken, J.; Smith, M.; Parsons, J.T. How do male sex workers on Craigslist differ from those on Rentboy? A comparison of two samples. *Cult. Heal. Sex.* **2016**, *19*, 405–421. [CrossRef]
16. Pereira, H. Homens que Vendem Sexo em Portugal [Men who sell sex in Portugal]. Atas do VI Congresso Português de Sociologia. 2008. Available online: http://associacaoportuguesasociologia.pt/vicongresso/pdfs/795.pdf (accessed on 4 February 2021).
17. Beima-Sofie, K.; Ortblad, K.F.; Swanson, F.; Graham, S.M.; Stekler, J.D.; Simoni, J.M. "Keep It Going if You Can": HIV Service Provision for Priority Populations During the COVID-19 Pandemic in Seattle, WA. *AIDS Behav.* **2020**, *24*, 2760–2763. [CrossRef]
18. Gichuna, S.; Hassan, R.; Sanders, T.; Campbell, R.; Mutonyi, M.; Mwangi, P. Access to Healthcare in a time of COVID-19: Sex Workers in Crisis in Nairobi, Kenya. *Glob. Public Health* **2020**, *15*, 1430–1442. [CrossRef]
19. Kimani, J.; Adhiambo, J.; Kasiba, R.; Mwangi, P.; Were, V.; Mathenge, J.; Macharia, P.; Cholette, F.; Moore, S.; Shaw, S.; et al. The effects of COVID-19 on the health and socio-economic security of sex workers in Nairobi, Kenya: Emerging intersections with HIV. *Glob. Public Health* **2020**, *15*, 1073–1082. [CrossRef] [PubMed]
20. Denzin, N.; Lincoln, Y. *Strategies of Qualitative Inquiry*; Sage: London, UK, 2008.
21. Palinkas, L.A.; Horwitz, S.; Green, C.; Wisdom, J.; Duan, N.; Hoagwood, K. Purposeful Sampling for Qualitative Data Collection and Analysis in Mixed Method Implementation Research. *Adm. Policy Ment. Health Ment. Health Serv. Res.* **2013**, *42*, 533–544. [CrossRef]
22. Welch, J.K.; Patton, M.Q. Qualitative Evaluation and Research Methods. *Mod. Lang. J.* **1992**, *76*, 543. [CrossRef]
23. Simon, W.; Gagnon, J.H. Sexual scripts. In *Culture, Society and Sexuality: A Reader*, 2nd ed.; Parker, R., Aggleton, P., Eds.; Routledge: New York, NY, USA, 2007; pp. 31–40.
24. Braun, V.; Clarke, V.; Terry, G. Thematic analysis. In *Qualitative Research in Clinical and Health Psychology*; Rohleder, P., Lyons, A., Eds.; Palgrave Macmillan: Basingstoke, UK, 2015; pp. 95–113.
25. Joffe, H. Thematic analysis. In *Qualitative Methods in Mental Health and Psychotherapy: A Guide for Students and Practitioners*; Harper, D., Thompson, A.R., Eds.; Wiley: Chichester, UK, 2011; pp. 209–223.

26. Braun, V.; Clarke, V. Using thematic analysis in psychology. *Qual. Res. Psychol.* **2006**, *3*, 77–101. [CrossRef]
27. Sagar, T.; Jones, D.; Symons, K.; Tyrie, J.; Roberts, R. Student involvement in the UK sex industry: Motivations and experiences. *Br. J. Sociol.* **2016**, *67*, 697–718. [CrossRef]
28. Roberts, R.; Sanders, T.; Myers, E.; Smith, D. Participation in sex work: Students' views. *Sex Educ.* **2010**, *10*, 145–156. [CrossRef]
29. Sanders, T.; Hardy, K. Students Selling Sex: Marketisation, Higher Education and Consumption. *Br. J. Sociol. Educ.* **2014**, *36*, 747–765. [CrossRef]
30. Griffith, J.D.; Mitchell, S.; Hart, C.L.; Adams, L.T.; Gu, L.L. Pornography Actresses: An Assessment of the Damaged Goods Hypothesis. *J. Sex Res.* **2013**, *50*, 621–632. [CrossRef] [PubMed]
31. Krüsi, A.; Chettiar, J.; Ridgway, A.; Abbott, J.; Strathdee, S.A.; Shannon, K. Negotiating Safety and Sexual Risk Reduction With Clients in Unsanctioned Safer Indoor Sex Work Environments: A Qualitative Study. *Am. J. Public Health* **2012**, *102*, 1154–1159. [CrossRef] [PubMed]
32. Baral, S.D.; Friedman, M.R.; Geibel, S.; Rebe, K.; Bozhinov, B.; Diouf, D.; Sabin, K.; Holland, C.E.; Chan, R.; Caceres, C. Male sex workers: Practices, contexts, and vulnerabilities for HIV acquisition and transmission. *Lancet* **2014**, *385*, 260–273. [CrossRef]
33. Edeza, A.; Galárraga, O.; Santamaria, E.K.; Sosa-Rubí, S.; Operario, D.; Biello, K.B. "I Do Try To Use Condoms, But ... ": Knowledge and Interest in PrEP Among Male Sex Workers in Mexico City. *Arch. Sex. Behav.* **2019**, *49*, 355–363. [CrossRef] [PubMed]
34. PrEP Watch. A snapshot of PrEP Scale-Up, Registration and Resources for Portugal. Available online: https://www.prepwatch.org/country/portugal/ (accessed on 4 February 2021).
35. Weiss, P. Mental Health and Sexual Identity in a Sample of Male Sex Workers in the Czech Republic. *Med. Sci. Monit.* **2014**, *20*, 1682–1686. [CrossRef]
36. WHO. Mental Health & COVID-19. Available online: https://www.who.int/teams/mental-health-and-substance-use/covid-19 (accessed on 19 September 2020).
37. Valadier, C. Migration and Sex Work through a Gender Perspective. *Context. Int.* **2018**, *40*, 501–524. [CrossRef]
38. Pereira, H.; Serrano, J.P.; De Vries, B.; Esgalhado, G.; Afonso, R.M.; Monteiro, S. Aging Perceptions in Older Gay and Bisexual Men in Portugal: A Qualitative Study. *Int. J. Aging Hum. Dev.* **2017**, *87*, 5–32. [CrossRef]
39. Azam, A.; Adriaenssens, S.; Hendrickx, J. How Covid-19 affects prostitution markets in the Netherlands and Belgium: Dynamics and vulnerabilities under a lockdown. *Eur. Soc.* **2020**, *23*, S478–S494. [CrossRef]
40. Oselin, S.S. Challenging Stigma: Identity Talk among Male Sex Workers in a Recovery Program. *Sociol. Perspect.* **2018**, *61*, 240–256. [CrossRef]
41. Graça, M.; Gonçalves, M.; Martins, A. Action research with street-based sex workers and an outreach team: A co-authored case study. *Action Res.* **2017**, *16*, 251–279. [CrossRef]
42. Fitzgerald-Husek, A.; Van Wert, M.J.; Ewing, W.F.; Grosso, A.L.; Holland, C.E.; Katterl, R.; Rosman, L.; Agarwal, A.; Baral, S. Measuring stigma affecting sex workers (SW) and men who have sex with men (MSM): A systematic review. *PLoS ONE* **2017**, *12*, e0188393. [CrossRef]

societies

MDPI

Article

The Impact of the COVID-19 Pandemic on the Working Conditions, Employment, Career Development and Well-Being of Refugee Researchers

Ourania Tzoraki [1,*], Svetlana Dimitrova [2,*], Marin Barzakov [2], Saad Yaseen [3], Vasilis Gavalas [4], Hani Harb [5], Abas Haidari [1], Brian P. Cahill [6], Alexandra Ćulibrk [1], Ekaterini Nikolarea [7], Eleni Andrianopulu [8] and Miroslav Trajanovic [9]

1 Marine Sciences Department, University Hill, 81100 Mytilene, Greece; abas@marine.aegean.gr (A.H.); aculibrk@marine.aegean.gr (A.Ć.)
2 EURAXESS BHO, Sofia University, Dragan Tzankov, str. 1164, 1504 Sofia, Bulgaria; barzakov@fmi.uni-sofia.bg
3 Institut für Informationsmanagement und Unternehmensführung, Osnabrück University of Applied Sciences, Konrad-Adenauer 13, 49808 Lingen, Germany; s.yaseen@hs-osnabrueck.de
4 Department of Geography, University Hill, 81100 Mytilene, Greece; bgav@aegean.gr
5 German-Syrian Research Society, 60314 Frankfurt, Germany; hani.harb@ds-fg.de
6 Learning and Skills Analytics Group, Leibniz Information Centre for Science and Technology (TIB), 30167 Hannover, Germany; Brian.Cahill@tib.eu
7 School of Social Sciences, University Hill, 81100 Mytilene, Greece; anikolarea@aegean.gr
8 International Office, Bielefeld University, 33615 Bielefeld, Germany; eleni.andrianopulu@uni-bielefeld.de
9 Faculty of Mechanical Engineering, University of Nis, Aleksandra Medvedova 14, 18000 Nis, Serbia; miroslav.trajanovic@masfak.ni.ac.rs
* Correspondence: rania.tzoraki@aegean.gr (O.T.); svetlana@fmi.uni-sofia.bg (S.D.); Tel.: +30-22510-36840 (O.T.); +359-2-9308-200 (S.D.)

Citation: Tzoraki, O.; Dimitrova, S.; Barzakov, M.; Yaseen, S.; Gavalas, V.; Harb, H.; Haidari, A.; Cahill, B.P.; Ćulibrk, A.; Nikolarea, E.; et al. The Impact of the COVID-19 Pandemic on the Working Conditions, Employment, Career Development and Well-Being of Refugee Researchers. *Societies* **2021**, *11*, 71. https://doi.org/10.3390/soc11030071

Academic Editors: Sandro Serpa and Carlos Miguel Ferreira

Received: 14 May 2021
Accepted: 24 June 2021
Published: 1 July 2021

Abstract: The ongoing 'refugee crisis' of the past years has led to the migration of refugee researchers (RRs) to European countries. Due to the COVID-19 pandemic, RRs often had to work from home and/or to continue their social, cultural and economic integration process under new conditions. An online survey carried out to explore the impact of the pandemic on the refugee researchers showed that RRs found it difficult to adapt their everyday working life to the 'home' setting. The majority have had neither a suitable work environment at home nor the appropriate technology. Although they stated that they are rather pleased with the measures taken by the public authorities, they expressed concern about their vulnerability due to their precarious contracts and the bureaucratic asylum procedures, as the pandemic has had a negative impact on these major issues. The majority of RRs working in academia seem not to have been affected at all as far as their income is concerned, while the majority of those employed in other sectors became unemployed during the pandemic (58%). Recommendations are provided to the public authorities and policy makers to assist RRs to mitigate the consequences of the pandemic on their life.

Keywords: COVID-19; refugee researchers (RRs); researcher at risk; scholars at risk; employment; pandemic; working from home; asylum procedure

1. Introduction

The outbreak of the Coronavirus disease COVID-19 has affected all the countries of the world, with 147 million infected and 3.1 million dead at the end of April 2021 [1]. Facing limited preparedness to control the spread of the virus, various governments adopted several public health strategies. The applied measures include enforcing complete or partial restrictions to financial and social activities, the so called "lockdowns", restricting international travel, social distancing and the adoption of hygiene practices (masking, hand disinfection) [2]. Academic events such as conferences and meetings have been taking

place online. Schools and universities closed and started to give classes online. Business activity was restricted.

The COVID-19 pandemic has affected significant aspects of economic and social life, forcing millions of people to working from home (WFH) [3]. Since the start of the pandemic, almost 85% of knowledge workers in Europe made a shift to the WFH practice [4], even though they used to spend more than 80% of their working time in a central office environment [5].

At the same time, Europe faced the so called "refugee crisis", with 2.2 million arrivals in the period 2014–2020 in the South European countries and Germany to host almost half of the asylum seekers reaching Europe [6]. Scientists with academic and specialized knowledge (refugee researchers—RRs) who have left their country, seeking a safer life, have been trying to integrate into their host countries and continue their research careers.

RRs are a vulnerable part of the refugee community (very often waiting for asylum procedures to end). Due to the precarious nature of their research funding, they are strongly dependent on short-term scholarships or research grants that may have been expired during the pandemic, and many are without any financial support for their research, for instance, as they have been waiting for research funding applications to be evaluated. Moreover, RRs employed in industry or in the private sector are potentially in a more vulnerable position due to their generally less stable employment conditions and lower seniority on the job.

The objective of the current research is to explore how the COVID-19 pandemic has affected the working conditions, employment, career development and well-being of refugee researchers (RRs). The outcome of this research will evaluate the impact of the COVID-19 pandemic on refugee scientists' working life and provide recommendations for policy makers. A literature review, which follows, describes the impact of the COVID-19 pandemic on the WFH, on researchers working life and on refugee integration. Then in the section "material and methods" the methodology that was followed is analyzed and finally in the results are presented the main findings of the current research.

1.1. Literature Review: WFH during the COVID-19 Pandemic

Several studies have explored the challenges and opportunities that WFH presents, despite the fact that many of these studies present contradictory results; for instance, some studies have found an increase in work productivity [7] and others a decrease [8] or a heterogeneous effect [9]. Taking into account the rapid improvement of digital technology, team communication platforms (i.e., Zoom, Google Meet) and the special conditions of social distancing and "lockdowns", we examined the recent studies as well as whether and how the pandemic has provided a new challenge for WFH.

Research carried out in Norway to explore the share of jobs that can be carried out from home, found that only 38% of the Norwegian jobs can be considered as being conducive for WFH. The geographical and social context is crucial with urban areas having a higher ratio of WFH positions than rural areas, and vulnerable parts of the society (i.e., migrants, single parents, low qualified workers) have less likelihood to get such jobs [10]. A lower share of jobs with the WFH options is found in East Germany and a much higher share in urban areas, such as, Berlin, Darmstadt, Hamburg and Munich [11]. Analysis of data from several countries has shown that richer and more developed countries have had a higher number of jobs that can be run from home [10], whereas in regions with a low share of WFH jobs, a lower average income has been observed [11].

However, the COVID-19 pandemic may have a more negative impact on poorer districts [11]. The analysis of WFH in developing countries such as Peru, Costa Rica and Brazil has shown heterogeneity, and is strongly dependent on the type of work, the gender and the employee's skills, with educated workers and women having higher chances of being suitable for WFH [12]. In contrast, many studies have described the difficulties WFH presents for women with caring responsibilities for small children at home [13,14]. Moreover, employees with high technical skills and capacity to use digital communication software (i.e., Zoom, Skype) are better paid [15] than women and low skilled workers [16].

In general, the change in lifestyle habits and the mentally passive status of staying at home brought by the pandemic are more likely to deteriorate mental health and reinforce health inequalities in society, with people with low income being the most vulnerable. Symptoms of anxiety and depression became more prevalent due to the unsecure economic situation and the fear of loss of employment [17].

1.2. Literature Review: Impact of COVID-19 on Researchers

The academic community adapted to the COVID-19 pandemic restrictions with an almost complete shift to online working. More than 90% of life scientists reported making use of videoconferencing during the pandemic [18]. The majority of field studies and laboratory studies were postponed, and scientists found more time for data analysis, writing up scientific papers and preparing proposals to compete for research grants [18]. Many researchers shifted their research to contribute to combatting the COVID-19 pandemic through work on medicine, life sciences, biomedical engineering, or by studying the consequences of the pandemic on the social, political and economic life and the environment (i.e., reduction of industrial emissions, increase of wastes) [19,20]. More than 100,000 articles were published in 2020 about the pandemic, which represent 4% of global research output [21].

The pandemic affected various scientific disciplines in different ways. The decline in research time in "laboratory" sciences (i.e., chemistry, biology) was 30–40% less than the pre-pandemic level due to the fact that this kind of research depends on physical presence in the laboratory and on expensive equipment, which cannot be replaced by any other means. In contrast, research fields that rely on information technology (IT), such as computer science, informatics and economics, experienced a much smaller decline in the research time from WFH. At the same time, many conferences shifted online, ensuring that young scientists can share their research findings for free or at lower cost, thus allowing them to maintain or expand their networks and form new collaborations [22]. This shift has provided the opportunity for scientists around the globe to attend e-seminars, and e-conferences, avoid time consuming and expensive travel, and greatly diminish their environmental footprint.

Administrative procedures were delayed due to the absence of the administrative staff from their offices with newly hired young struggling to deal with administrative procedures. However, the most vulnerable were scientists whose contracts ended during the pandemic. Although some universities (i.e., 30 universities in USA) extended work contracts for two months, in many cases researchers with precarious contracts lost their wage once their contracts ran out [22]. European Molecular Biology Organization (EMBO) was one of the first organizations that realized the problem, and acted to extend the scholarships of postdoctoral fellows by two months [23].

Social inequalities increased with the pandemic with women scientists found to be in a more vulnerable situation than men [24]. Due to the fact that female scientists have not had access to their "bench" laboratories, they have faced difficulties with organizing their time in WFH due to school closure, especially those with small children [18,22]. Research analyzing the proportion of women among first authors of scientific articles and preprints as well as the involvement in new projects found that the proportion declined during the lockdown [14].

1.3. Literature Review: COVID-19 Effect on Refugee Integration

The crisis has increased the social vulnerability of RRs and placed obstacles in the way of the integration process [25]. The refugee integration process is strongly related to the long-standing experience of the involved regions. For instance, Berlin, with its cosmopolitan character, offers advantageous conditions for the integration of highly skilled refugees in the labor market. In contrast, in smaller German cities there has been an absence of the institutional settings that operate as long-term points of contact, such as university societies and civil society organizations [26]. In Greece, the absence of any long-term integration strategy of refugees into the labor market has resulted in sporadic funding schemes that limit the mentoring and training activities towards employability provided by

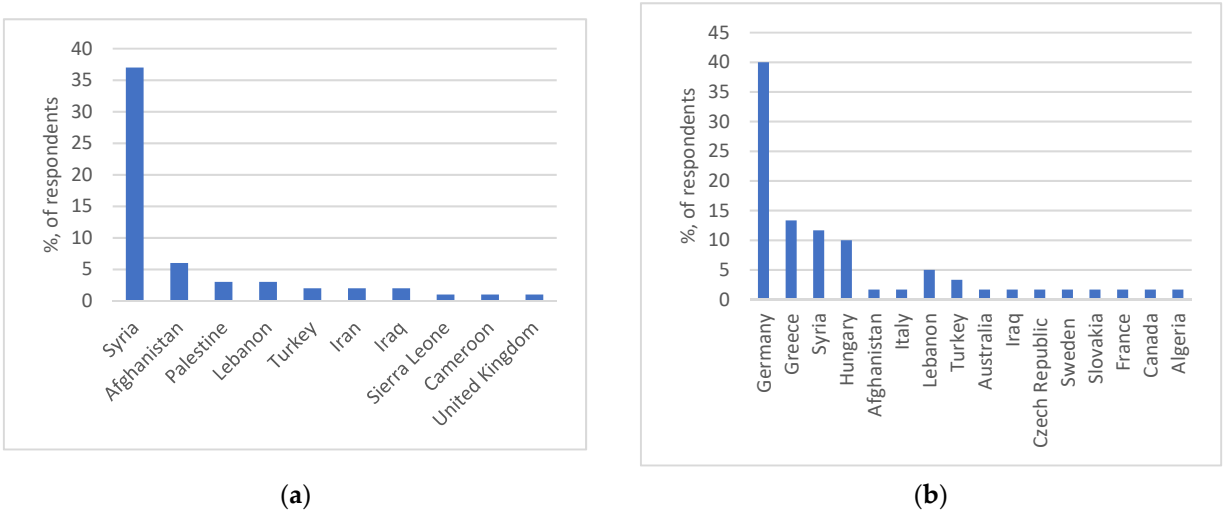
specific organizations, such as Civil Society Organizations and employment agencies [27]. In Sweden, highly skilled refugees have lower employment levels and relative earnings than the natives [28].

Highly skilled refugees are a minority in the "refugee crisis", to which little attention has been paid. Lack of information about the possible choices a refugee may have professionally or research-wise is a major obstacle to his or her integration into the workforce. The Science4Refugees initiative of the European Union gave birth to specific European progams—such as the BRiDGE I and II projects [29], as well as the SCIREA project [30], which developed tools to train refugee researchers (RRs) for and inform them about possible career choices as well as to monitor their efforts to re-enter academia and/or the labor market.

COVID-19 complicated refugee integration in Germany due to concerns about health and financial risk [31]. The pandemic increased the feeling of uncertainty in refugees' everyday working life and diminished the mechanism and objectives to improve their working conditions [25]. Furthermore, internationally mobile scientists are more vulnerable due to the crisis. Almost half of them live alone, feel isolated and frustrated by frequent updates of the local regulations in a foreign language they may not understand well [18].

2. Materials and Methods

An online survey was conducted between December 2020 and January 2021. The participants in the survey were selected through convenience sampling, a type of non-probability sampling, where the sample is taken from a group of people easy to contact and reach. The pool was four networks of refugee researchers (RRs): the Bielefeld University RRs network, the University of the Aegean RRs network, the German–Syrian Research Association, and the Bridge II pilot Refugee Researchers peer group. The total population of these networks is more than 300 persons and comprises refugees mainly from the Middle East and Africa (Figure 1a). The questionnaire (which can be found in the Table S1 in the Supplementary file) was sent by email to everyone that was enlisted in the aforementioned networks (approximately 300 persons). The final sample (those who answered the questionnaire sent to them electronically) was 64 persons, the majority of which (82.8%) were between 25 and 44 years old. Men were more numerous in our sample (43 males vs. 21 females). The sample is vulnerable to non-response bias (those who answered may differ in their answers from those who did not answer the questionnaire). However, the convenience sampling was the only method with which data could be collected from a plenitude of countries (the host countries of RRs) swiftly and relatively efficiently.



(**a**) (**b**)

Figure 1. (**a**) Origin country of refugee researchers (RRs); (**b**) host country of RRs.

Questionnaire and its validity: The questions selected were a synthesis of questions used on previous research surveys, which were studying the effect of the COVID-19 pandemic to the work, health, income of refugees as well as the adaptation level of employees to the WFH situation [4,32]. The survey of Cimpoeru et al. (2020) aimed to document the impact of new living conditions through the pandemic in Germany and Romania. The questions refer to refugees' level of concern about the pandemic as well as the extent to which it has affected their work, health, and income. Kelly's survey (2020) focused on analyzing the employee's ability to adapt to working from home, together with their relationship to available technology. The questionnaires of the above studies and the addition of the refugee's opinion on the delay of the procedures for asylum seekers constitute the framework of this survey (Table S1).

The questionnaire was created via Google Forms and was distributed in English to the aforementioned target group. Information about the scope of the survey was provided, the average amount of time needed to complete the survey and the considered personal data protection rules.

The analysis included the following demographic variables: nationality, country of destination, gender, age, educational level (check the highest available), and family status.

The refugees' economic status was characterized using two variables:

- employment (employed/unemployed/student/self-employed/working in the family business/entrepreneur/NGO); and
- income (living comfortably on present income/coping with the present income/finding it difficult with the present income).

The main variables for this analysis concern COVID-19 on the basis of five core questions, of which one has three subcategories and another has seven subcategories. The first question was "Taking into consideration the current situation of COVID-19, how worried are you according to the current crisis?". This question provides a means to assess how the COVID-19 pandemic has affected levels of anxiety and concern among refugees. A five-point Likert scale was used, starting at 1 with "Not worried at all" and ending at 5 with "Totally worried".

The second question, "To what extent do you feel affected by COVID-19 considering the following issues?", had three subcategories: Employment Status, Income and Health. Three responses were possible for each subcategory: "Not affected at all", "Moderately affected", "Strongly affected".

The effectiveness of authorities' responses to the COVID-19 pandemic was assessed in the third question: "In your opinion are the measurements taken by the public authorities efficient to reduce the spread of the virus in your current country?". A five-point Likert scale was used, starting at 1 with "Not at all efficient" and ending at 5 with "Very efficient".

The fourth question had seven subcategories: (a) the assessment of individual office workers of their own productivity, on being unable to work in their familiar office environment, at short notice and for an undefined amount of time; (b) the evolution of workers' attitudes to workplace technology since the onset of the COVID-19 crisis in Europe (March 2020); (c) whether emerging technologies have facilitated workers to at least have the same/more perceived levels of human–computer interaction.

The fifth question addresses how the COVID-19 pandemic delayed asylum procedures.

All variables are categorical, either nominal or ordinal in their scale of measurement. Frequency tables, presented as bar charts or pie-charts, were used for summarizing the data. Contingency tables were used to detect causal relationships between variables. The Pearson's chi-square test of independence was employed to establish non-random relationships, while measures of association (Cramer's V and Phi) were employed to detect causality. Marital status, educational level, age and working sector were considered as independent variables, which may or may not moderate the effects of the pandemic on the income, the working status and asylum procedures of the refugee researchers.

Practical implication design: Peer group can be defined as a group of people of similar interests or common characteristics, such as a group of people joining the same training

scheme (i.e., students) or who found themselves in the same conditions (i.e., minor refugees in a collective accommodation center) or people who have common concern (i.e., a soccer team, job seekers, asylum seekers). The peer group composition and desires are temporary [33]. In general, RRs are organized in their own networks, mostly those of the same political and national background or from their former academic environment. What is missing is the opportunity to meet RRs from the same discipline and to better understand the local job market, to collaborate and share knowledge and build up peer mentoring relationships. A specific methodology was followed in the creation and operation (with physical and online meetings) of the pilot peer group of RRs in close collaboration with BRIDGE II partners and the German Syrian Research Society. The pilot group consists of 16 RRs as members with origin from seven countries: Yemen, Syria, Iraq, Iran, Afghanistan, Turkey and Cameroon. Eight members live in Greece, seven in Germany and one in Ireland. Two women participated in the peer group. The design of policy recommendations was based on the analysis and discussion of the survey results within three meetings of the "pilot peer group of RRs" that took place on 25 January 2021, 1 February 2021 and 15 February 2021.

3. Results

In this section, the results of the questionnaire survey are presented and analyzed. The main finding is that marital status, age and educational level do not play a substantial role in the income and the working status of RRs amidst COVID-19, given that all RRs are relatively well educated. The variable that exhibits the strongest effect of COVID-19 on income and employment status is the working sector, with those employed in the academic sector being the least affected by lockdown measures. In what follows, some descriptive statistics of the sample are presented and, subsequently, detailed results of the bivariate associations are given.

The first country of origin is Syria (37 respondents), followed by Afganistan (6), Palestine (3) and Lebanon (3) (Figure 1a). Generally, 95% of the participants come from Asian and Middle Eastern Countries. The hosting countries are Germany (24 respondents), followed by Greece (8), Syria (7), Hungary (6) and Lebanon (3) (Figure 1b). Generally, 40% of the participants are hosted in Germany. At this point, it should be noted that five refugees did not answer the questions regarding their country of origin and the hosting country, and, therefore, the aforementioned percentages (valid percent) correspond to a sample of 59 individuals. The majority of the participants are men (77%), and they hold a master's degree (42.2%) or a PhD degree (18.8%) (Figure 2a). In total, 30.5% of the participants are students, 32.2% work in a research institute or at a university, 20.3% in a non-governmental organization (NGO) and, to a lesser extent, are entrepreneurs, self-employed, work in public administration or in the family business (Figure 2b).

The pandemic introduced changes in RRs' lives with 40.6% of the participants declaring that their employment status was negatively and strongly affected, while only 22% were not affected at all. (Figure 3a) As far as their health is concerned, 15.6% stated that were strongly affected by the pandemic (Figure 3b). The participants' level of uneasiness, interest and affection due to the current COVID-19 crisis on a 5-point Likert scale ranges from moderate (32.8%) to high (21.9%) up to very high (28.1%). Many lost their job, friends, family or feel uncomfortable to face the changes in their daily life. A large minority of the RRs face difficulties with coping with their income (46.9%).

The major challenges of the RRS to WFH are to deal with (a) lower productivity (56.3%); (b) the loss of feeling part of a physical team (45.3%); (c) keeping work and home life separate (42.2%) (Figure 4), since the majority of them (59.4%) do not have enough space to set up a home office for remote work. Other studies agree that researchers' self-perceived productivity has been lowered during the lockdown [18]. As for the access to information technology devices, the majority of the respondents have had a personal computer (84.4%) as well as access to online collaboration software (60.9%), whereas a minority had a second display monitor (23.4%) or fast broadband speed (15.6%) (Figure 5).

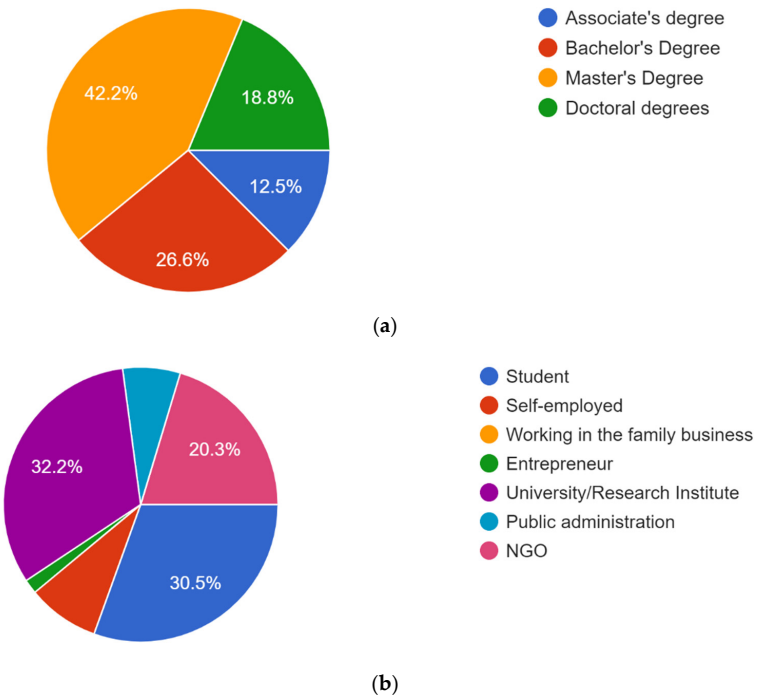


Figure 2. (**a**) RRs' educational level; (**b**) RRs' working sector.

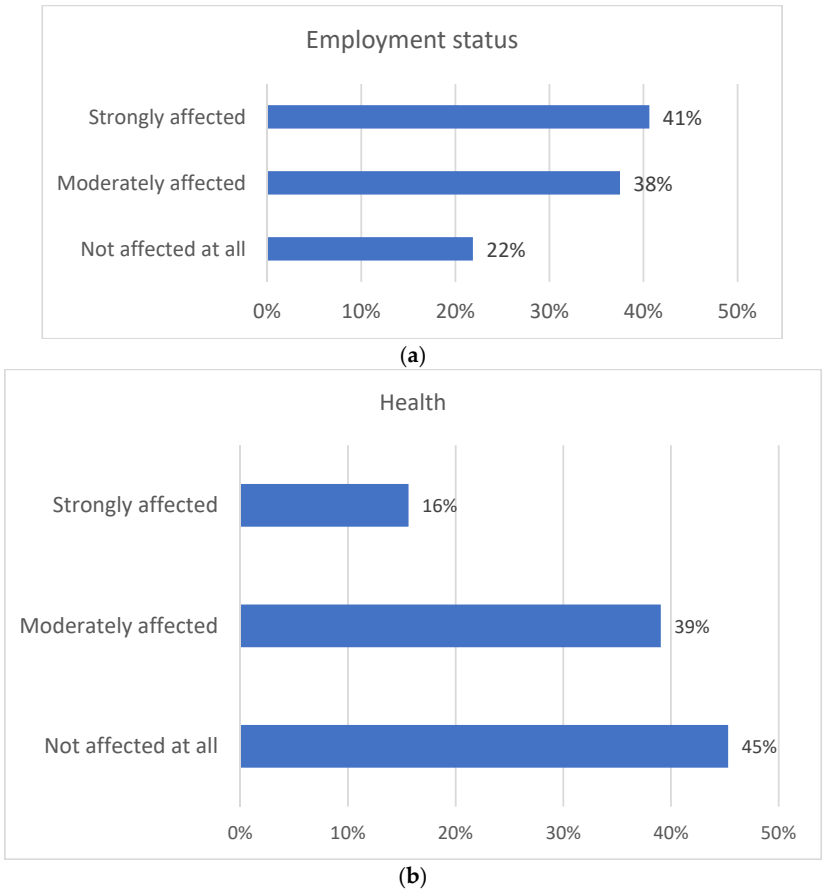


Figure 3. (**a**) Impact of the COVID-19 pandemic on RRs' employment; (**b**) impact of the COVID-19 pandemic on RRs' health. Source: online survey that took place between December 2020 and March 2021. N: 64.

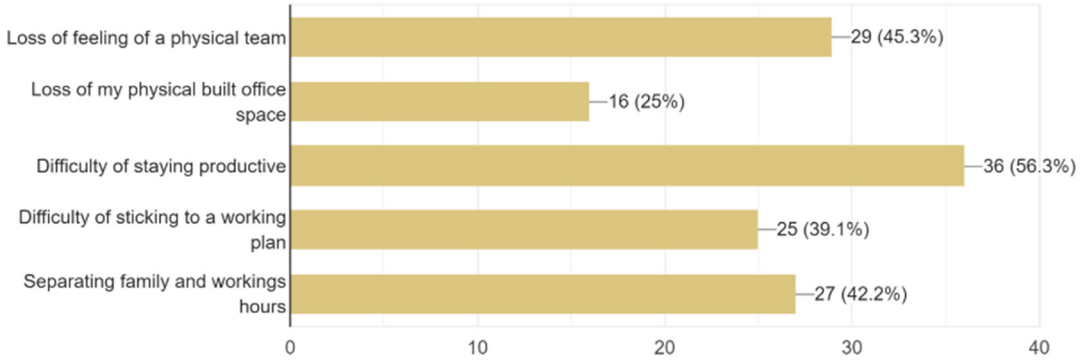


Figure 4. The two most significant difficulties in working from home (WFH). Source: online survey that took place between December 2020 and March 2021. N: 64.

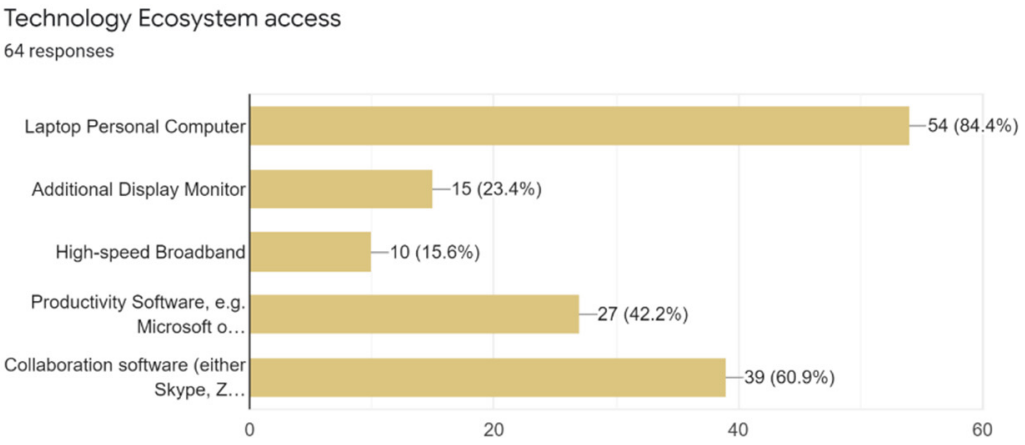


Figure 5. Access to information technology devices in working from home (WFH). Source: online survey that took place between December 2020 and March 2021. N: 64.

Married educated refugees reported being more comfortable with their current income (37%) than their single counterparts (20%). There are two divorced persons in our sample that responded that they were just coping with their present income. This relationship is statistically significant at the 10% level of significance (p-value < 0.1), but it is a weak to moderate relationship (Cramer's V = 0.26) (Table S2). Non-Pharmaceutical Interventions (NPI) and lockdowns seem to have affected equally refugees' income regardless of marital status. A great percentage of both married (48%) and single refugees (46%) have been strongly affected. The differences in the percentages are not statistically significant (Table S3).

In a gross generalization, we could say that the lower the educational level of refugees, the stronger they have been affected by measures to tackle a virulent disease. In total, 60% of those with an associate's degree (a level of qualification between high school and university) or bachelor's degree have been strongly affected by the crisis, while 41% of those with a Master's degree and "only" 25% of those with a PhD degree have been strongly affected. This relationship has a small chance of arising by chance alone, though it is not statistically significant at the 0.05 level of significance (p-value = 0.17). The value of Gamma (−0.4) denotes a moderate relationship (Table S4). It is important that WFH affects equally the young and the older respondents. It is moderately challenging for a great percentage of both age groups (47% for younger migrants, 44% for older), while it is highly challenging for 39% of the young and the older as well (Table S5). The majority of refugees did not like working from home during the pandemic, and this attitude did not

change with age (Table S6). In contrast, 70% of the researchers found the increasing time of WFH in the post-pandemic period favorable and efficient [34].

Lockdowns imposed by governments have not had the same impact on refugees' income. On the one hand, the majority of those working in academia have not been affected at all as far as their income is concerned. Other studies show the researchers' loss of academic work as a potential financial impact due to the need for additional funding for repetition of work affected by lab closures [18]. On the other hand, the majority of those RRs working in other sectors (NGOs, public administration, self-employed) have seen their income reduced during the lockdown (Table S7). The working sector has also played an important role in job security during the pandemic. The majority of those employed in the academic sector were still being employed during the pandemic (74%), while the majority of those employed in other sectors became unemployed during the pandemic (58%). This relationship is statistically significant (p-value < 0.05) but moderately strong (Cramer's V = 0.29) (Table S8).

4. Discussion

With the sudden onset of the pandemic and the strict protection measures, the RRs have faced multiple changes that the crisis has brought about in all areas of life. Almost 15.6% of the RRs feel the impact of the pandemic on their health and 45% on their income, whereas 46.9% find it difficult to live comfortably with their current income and worry about the current health crisis. RRs working in the non-academic sector have had great difficulties in coping with issues, such as unemployment, during the pandemic. It has been found that unemployed refugees and student refugees have experienced economic issues coping with present income, and are extremely anxious that COVID-19 will significantly affect their income and employment [32].

The COVID19 pandemic has caused massive decline in the economic growth of all EU countries, especially the countries hosting RRs [35]. This has caused a change in employment prospects, and a sharp decrease in labor market offers [36]. Furthermore, working from home (WFH) has become the new standard for most of the jobs across different disciplines [3,11]. As for RRs, WFH has become a major issue. Many of them live in crowded home spaces [37] with many family members in most cases. Thus, there is limited space to set up a home office for remote work. Although social communication tools have been improved drastically over the past year, the aforementioned issues have caused massive distress factors to the RRs' lives. In contrast to the findings of recent studies [38], RRs have been struggling to find a work–life balance in WFH and to remain productive.

During the COVID19 pandemic, the asylum procedures over the EU have been affected drastically. In total, 87.3% of the respondents in the current study believe that the COVID-19 pandemic has had negative consequences on asylum procedures. Many of the applications have been put on hold for many months [39]. During the COVID-19 pandemic, the asylum seekers have been left in limbo by the governmental bodies [40,41].

The social distancing that the pandemic brought to RRs' lives generated serious obstacles to create new networks of contacts, accessing job information and obtaining employment [24]. Proactivity is suggested as an important integration process (contact with locals, learn the local language, adaptation of local norms and practices, recognize training opportunities) [42]. Language is a serious barrier for refugees with no or limited English skills. Moreover, the majority of job applications must be in the language of the host country or in the English language, thus resulting in the almost complete exclusion of the non-English speaking refugee population (Tzoraki et al., 2019).

On the one hand, priority was given to the protection of public health, ignoring the need for improving infrastructures and protecting mental health [43], intensifying interpreters' (or cultural mediators') contribution to collective accommodation centers [44] and protecting jobs during COVID-19 [45]. Less attention has been paid to the loss of lifestyle due to decreased physical activity [46] and increased likelihood for stress and mental health problems [17,47,48]. Being employed on precarious contracts or unemployed,

refugees live in overcrowded camps or houses, with limited chances for social distancing, poor nutrition and sanitation [49].

On the other hand, many digital tools have been developed to support RRs to restart their research career. The Science4Refugees (S4R) tool was recently been launched by the Euraxess-EU [50]. This tool helps RRs look for places and opportunities at various European universities. Furthermore, the BRiDGE II project has launched a mentoring program that allows RRs to look for mentorship either by finding peer mentors or other types of mentors that can help RRs in their path back into research life [29]. Financially, there have been efforts by multiple groups, including our BRiDGE II group, to advocate for proper funding mechanisms for refugee scientists. In Germany, multiple funding mechanisms have been established. The Philipp-Schwartz Initiative of the Alexander von Humboldt Foundation is one of them. They help RRs, who have a PhD in their pursuit to re-enter academic life by providing more than two years of funding as a post-doctoral researcher. Furthermore, the German Research Foundation (DFG) facilitates DFG-funded researchers to access extra funding for a RR as a PhD candidate. SCIREA and BRiDGE II projects provided funding for internships across Europe before the pandemic, and some online internships have been provided throughout the pandemic. The European Commission refused to grant paid extensions to Marie Skłodowska Curie (MSCA) fellows, who had to put their research on hold during the coronavirus lockdown [51].

Practical Implication

The main recommendations for the public authorities are the following:

(1) Contractual aspects of employer–employee relationships; existing projects in academia that support RRs should be extended and new projects for RRs should be approved, since most RRs are peripheral workers with precarious contracts.
(2) Prospects and career advancement; authorities should accelerate decisions about the residential status of RRs or give at least a 3 year extension of their residence and foster RRs' careers by supporting programs that provide advice and support. In addition, a new process should be developed to identify and support RRs at their earliest stage of the asylum process.
(3) Lack of language skills is a significant barrier to the integration of RRs in the labor market. Enroll RRs in language courses to reach high/advanced level.
(4) Prolongation of contracts or new scholarships should be offered. This is required to keep RRs on track and motivate them to persist. Moreover, this could create a kind of competition among RRs to do their best.
(5) Provision of the needed technology (computers, internet access); this is essential for RRs, especially for newcomers. It is very hard to get a device (computer) and internet access without support from the authorities. Without these tools, it is impossible for RRs to start over.
(6) Simplification of certificate recognition; it is time consuming and highly costly to prepare the documents for recognition with the requisite stamps, such as, the "apostille" according to the Hague Convention of 1961. Especially under COVID-19 restrictions, the continued use of signed and stamped hardcopies of the documents has become excessively restrictive and time consuming. Moreover, a global database of a list of accredited universities should be generated, where there will be a quality assurance information system that evaluates and certifies the quality standards for each university. A German version of this database has already been in place for years, but it is not updated for the Arabic countries such as Syria [52].
(7) Encourage private companies to employ refugees. Regular "matching events" should be organized between the private sector and RRs in order to provide RRs with the opportunity to work outside of academia.
(8) Provision of psychological support. Throughout the pandemic year, many refugees and, especially RRs, have gone through a lot of stress, and many of them are suffering from depression. Up until now, psychological and social support for RRs has been

very rare. There are a couple of organizations that have been actively helping refugees, including RRs, but the extent of the support they can offer is still inadequate and needs to be enhanced and increased.

5. Conclusions

The socioeconomic and health consequences of the COVID-19 pandemic have increased RRs' vulnerability, especially those found in asylum procedures. It was observed that RRs were greatly worried about the current health crisis, insecure about health protection and lacked resources to effectively WFH, in particular, through lack of working space and access to IT hardware and software. The decrease of income, the loss of employment and the difficulty with staying productive in working from home are important concerns. Recommendations are provided to extend temporary contracts and to prioritize the administration of asylum procedures, as well as various measures to improve RRs' integration such as online advanced language courses and provision of technological hardware and software licenses.

Supplementary Materials: The following are available online at https://www.mdpi.com/article/10.3390/soc11030071/s1, Table S1: The questionnaire about the impact of COVID-19 on the work, income and asylum procedures of refugee researchers (RRs), Table S2: Current income and marital status, Table S3: How much income has been affected during crisis, broken down by marital status. Table S4: How much income has been affected during crisis, broken down by educational level. Table S5: Adaptation to working from home versus age, Table S6: Attitude towards fulltime working from home vs. age, Table S7: Impact of lockdown on income in working sector, Table S8: Impact of lockdown on employment in working sector.

Author Contributions: Conceptualization, O.T. and A.Ć.; methodology, O.T., E.A., V.G. and A.Ć.; investigation, O.T., A.Ć., S.Y., A.H. and H.H.; resources, S.D. and M.B.; writing—original draft preparation, O.T., V.G., M.T. and B.C.; writing—review and editing, all authors; visualization, O.T.; supervision, O.T.; project administration, E.A.; funding acquisition, S.D. and M.B. All authors have read and agreed to the published version of the manuscript.

Funding: This research was funded by Bridge for Researchers in Danger going to Europe Step II (BRIDGEII project), grant number 824601 https://cordis.europa.eu/project/id/824601.

Conflicts of Interest: The authors declare no conflict of interest.

References

1. COVID-19 Google News. 2021. Available online: https://news.google.com/covid19/map?hl=en-US&mid=%2Fm%2F035qy&gl=US&ceid=US%3Aen (accessed on 25 April 2021).
2. Villela, E.F.D.M.; López, R.V.M.; Sato, A.P.S.; de Oliveira, F.M.; Waldman, E.A.; Bergh, R.V.D.; Fodjo, J.N.S.; Colebunders, R. COVID-19 outbreak in Brazil: Adherence to national preventive measures and impact on people's lives, an online survey. *BMC Public Health* **2021**, *21*, 1–10. [CrossRef]
3. Arntz, M.; Ben Yahmed, S.; Berlingieri, F. Working from Home and COVID-19: The Chances and Risks for Gender Gaps. *Intereconomics* **2020**, *55*, 381–386. [CrossRef] [PubMed]
4. Kelly, J. The New "COVID-19" Home Office Worker: Evolving Computer-Human Interactions and the Perceived Value of Workplace Technology. *Tech. Soc. Sci. J.* **2020**, *13*, 575–581. [CrossRef]
5. OECD. Adapting to Technological and Societal Disruption. In *Science, Technology and Innovation Outlook Report*; OECD Publishing: Paris, France, 2018.
6. UNHCR. UNHCR Operational Portal-Meditteranean Situation. 2021. Available online: https://data2.unhcr.org/en/situations/mediterranean (accessed on 17 March 2021).
7. Bloom, N.; Liang, J.; Roberts, J.; Ying, Z.J. Does Working from Home Work? Evidence from a Chinese Experiment. *Q. J. Econ.* **2015**, *130*, 165–218. [CrossRef]
8. Monteiro, N.P.; Straume, O.R.; Valente, M. The Effects of the Digital Transformation on the Economics Workplace and the Labor Market. Does Remote Work Improve or Impair Firm Labour Productivity? Longitudinal Evidence from Portugal. *CESifo Working Paper* No 7991 **2019**. Available online: https://www.cesifo.org/en/publikationen/2019/working-paper/does-remote-work-improve-or-impair-firm-labour-productivity (accessed on 26 June 2021).
9. Dutcher, E.G. The effects of telecommuting on productivity: An experimental examination. The role of dull and creative tasks. *J. Econ. Behav. Organ.* **2012**, *84*, 355–363. [CrossRef]

10. Holgersen, H.; Jia, Z.; Svenkerud, S. Who and how many can work from home? Evidence from task descriptions. *J. Labour Mark. Res.* **2021**, *55*, 1–13. [CrossRef]
11. Irlacher, M.; Koch, M. Working from Home, Wages, and Regional Inequality in the Light of COVID-19. *Jahrbücher für Nationalökonomie und Statistik* **2021**, *241*, 373–404. [CrossRef]
12. Gottlieb, C.; Grobovšek, J.; Poschke, M.; Saltiel, F. Working from home in developing countries. *Eur. Econ. Rev.* **2021**, *133*, 103679. [CrossRef]
13. Yamamura, E.; Tsustsui, Y. The impact of closing schools on working from home during the COVID-19 pandemic: Evidence using panel data from Japan. *Rev. Econ. Househ.* **2021**, *19*, 41–60. [CrossRef]
14. Viglione, G. Are women publishing less during the pandemic? Here's what the data say. *Nature* **2020**, *581*, 365–366. [CrossRef]
15. Kramer, A.; Kramer, K.Z. The potential impact of the COVID-19 pandemic on occupational status, work from home, and occupational mobility. *J. Vocat. Behav.* **2020**, *119*, 103442. [CrossRef] [PubMed]
16. King, E.M.; Randolph, H.L.; Floro, M.S.; Suh, J. Demographic, health, and economic transitions and the future care burden. *World Dev.* **2021**, *140*, 105371. [CrossRef]
17. Blom, V.; Lönn, A.; Ekblom, B.; Kallings, L.V.; Väisänen, D.; Hemmingsson, E.; Andersson, G.; Wallin, P.; Stenling, A.; Ekblom, Ö.; et al. Lifestyle Habits and Mental Health in Light of the Two COVID-19 Pandemic Waves in Sweden, 2020. *Int. J. Environ. Res. Public Health* **2021**, *18*, 3313. [CrossRef] [PubMed]
18. Korbel, J.O.; Stegle, O. Effects of the COVID-19 pandemic on life scientists. *Genome Biol.* **2020**, *21*, 1–5. [CrossRef]
19. Van Fan, Y.; Jiang, P.; Hemzal, M.; Klemeš, J.J. An update of COVID-19 influence on waste management. *Sci. Total Environ.* **2021**, *754*, 142014. [CrossRef]
20. Donzelli, G.; Cioni, L.; Cancellieri, M.; Morales, A.L.; Suárez-Varela, M.M. The Effect of the Covid-19 Lockdown on Air Quality in Three Italian Medium-Sized Cities. *Atmosphere* **2020**, *11*, 1118. [CrossRef]
21. Else, H. How a torrent of COVID science changed research publishing—In seven charts. *Nature* **2020**, *588*, 553. [CrossRef] [PubMed]
22. Myers, K.R.; Tham, W.Y.; Yin, Y.; Cohodes, N.; Thursby, J.G.; Thursby, M.C.; Schiffer, P.; Walsh, J.T.; Lakhani, K.R.; Wang, D. Unequal effects of the COVID-19 pandemic on scientists. *Nat. Hum. Behav.* **2020**, *4*, 880–883. [CrossRef] [PubMed]
23. Matthews, M.; del Álamo Rodriguez, D.; Gray, A. A conversation on the effects of the COVID-19 pandemic on junior researchers' careers with funders and university leaders. *Nat. Commun.* **2021**, *12*, 2096. [CrossRef]
24. Kowal, M.; Sorokowski, P.; Sorokowska, A.; Lebuda, I.; Groyecka-Bernard, A.; Białek, M.; Kowalska, K.; Wojtycka, L.; Olszewska, A.M.; Karwowski, M. Dread in Academia—How COVID-19 affects science and scientists. *Anthropol. Rev.* **2020**, *83*, 387–394. [CrossRef]
25. Falkenhain, M.; Flick, U.; Hirseland, A.; Naji, S.; Seidelsohn, K.; Verlage, T. Setback in labour market integration due to the COVID-19 crisis? An explorative insight on forced migrants' vulnerability in Germany. *Eur. Soc.* **2021**, *23*, S448–S463. [CrossRef]
26. Hillmann, F.; Koca, B.T. "By women, for women, and with women": On the integration of highly qualified female refugees into the labour Markets of Berlin and Brandenburg. *Comp. Migr. Stud.* **2021**, *9*, 1–18. [CrossRef]
27. Bagavos, C.; Kourachanis, N. Civil Society Organizations and Labour Market Integration for Refugees and Asylum Seekers in Greece. *Volunt. Int. J. Volunt. Nonprofit Organ.* **2021**, 1–11. [CrossRef]
28. Irastorza, N.; Bevelander, P. Skilled Migrants in the Swedish Labour Market: An Analysis of Employment, Income and Occupational Status. *Sustainability* **2021**, *13*, 3428. [CrossRef]
29. BRIDGE II. 2021. Available online: https://www.uni-bielefeld.de/uni/profil/international/bridgeprojects/bridge2/index.xml (accessed on 17 March 2021).
30. SCIREA. 2021. Available online: http://scirea.aegean.gr/index.php (accessed on 17 March 2021).
31. Grasso, M.; Klicperová-Baker, M.; Koos, S.; Kosyakova, Y.; Petrillo, A.; Vlase, I. The impact of the coronavirus crisis on European societies. What have we learnt and where do we go from here?—Introduction to the COVID volume. *Eur. Soc.* **2021**, *23*, S2–S32. [CrossRef]
32. Cimpoeru, S.; Roman, M.; Kobeissi, A.; Mohammad, H. How are European Migrants from the MENA Countries Affected by COVID-19? Insights from an Online Survey. *J. Soc. Econ. Stat.* **2020**, *9*, 128–143. [CrossRef]
33. Peroune, D.L. Tacit knowledge in the workplace: The facilitating role of peer relationships. *J. Eur. Ind. Train.* **2007**, *31*, 244–258. [CrossRef]
34. Aczel, B.; Kovacs, M.; van der Lippe, T.; Szaszi, B. Researchers working from home: Benefits and challenges. *PLoS ONE* **2021**, *16*, e0249127. [CrossRef] [PubMed]
35. König, M.; Winkler, A. COVID-19 and Economic Growth: Does Good Government Performance Pay Off? *Intereconomics* **2020**, *55*, 224–231. [CrossRef] [PubMed]
36. Witteveen, D.; Velthorst, E. Economic hardship and mental health complaints during COVID-19. *Proc. Natl. Acad. Sci. USA* **2020**, *117*, 27277–27284. [CrossRef]
37. Cassidy, K. Solidarity in Pandemic Times: Asylum Seekers in Forced Accommodation during COVID-19. Fuse: Centre for Translational Research in Public Health COVID-19. *Semin. Ser.* **2020**. Available online: http://www.fuse.ac.uk/media/sites/researchwebsites/fuse/Kathryn%20Cassidy%20presentation%20July%202020.pdf (accessed on 26 June 2021).
38. Ipsen, C.; van Veldhoven, M.; Kirchner, K.; Hansen, J.P. Six Key Advantages and Disadvantages of Working from Home in Europe during COVID-19. *Int. J. Environ. Res. Public Health* **2021**, *18*, 1826. [CrossRef]

39. EASO. COVID-19 Emergency Measures in Asylum and Reception Systems, Public—Issue No. 3, 41 pages, 7 December 2020. 2020. Available online: https://easo.europa.eu/sites/default/files/publications/COVID-19%20emergency%20measures%20in%20asylum%20and%20reception%20systems-December-2020_new.pdf (accessed on 26 June 2021).
40. Elisabeth, M.; Maneesh, P.-S.; Michael, S. Refugees in Sweden During the Covid-19 Pandemic—The Need for a New Perspective on Health and Integration. *Front. Public Health* **2020**, *8*, 574334. [CrossRef]
41. Doliwa-Klepacka, A.; Zdanowicz, M. The European Union Current Asylum Policy: Selected Problems in the Shadow of COVID-19. *Int. J. Semiot. Law Rev. Int. Sémiotique Jurid.* **2020**, 1–17. [CrossRef]
42. Eggenhofer-Rehart, P.M.; Latzke, M.; Pernkopf, K.; Zellhofer, D.; Mayrhofer, W.; Steyrer, J. Refugees' career capital welcome? Afghan and Syrian refugee job seekers in Austria. *J. Vocat. Behav.* **2018**, *105*, 31–45. [CrossRef]
43. Pinzón-Espinosa, J.; Valdés-Florido, M.J.; Riboldi, I.; Baysak, E.; Vieta, E. The COVID-19 Pandemic and Mental Health of Refugees, Asylum Seekers, and Migrants. *J. Affect. Disord.* **2021**, *280*, 407–408. [CrossRef]
44. Biddle, L.; Jahn, R.; Perplies, C.; Gold, A.W.; Rast, E.; Spura, A.; Bozorgmehr, K. COVID-19 in collective accommodation centres for refugees: Assessment of pandemic control measures and priorities from the perspective of authorities. *Bundesgesundheitsblatt Gesundh. Gesundh.* **2021**, *64*, 342–352. [CrossRef] [PubMed]
45. Betcherman, G.; Giannakopoulos, N.; Laliotis, I.; Pantelaiou, I.; Testaverde, M.; Tzimas, G. *Reacting Quickly and Protecting Jobs: The Short-Term Impacts of the COVID-19 Lockdown on the Greek Labor Market*; Global Labor Organization (GLO): Essen, Germany, 2020.
46. Gallè, F.; Sabella, E.A.; Ferracuti, S.; De Giglio, O.; Caggiano, G.; Protano, C.; Valeriani, F.; Parisi, E.A.; Valerio, G.; Liguori, G.; et al. Sedentary Behaviors and Physical Activity of Italian Undergraduate Students during Lockdown at the Time of COVID−19 Pandemic. *Int. J. Environ. Res. Public Health* **2020**, *17*, 6171. [CrossRef] [PubMed]
47. Byrom, N. COVID-19 and the Research Community: The Challenges of Lockdown for Early-Career Researchers. *eLife J.* **2020**. Available online: https://elifesciences.org/articles/59634 (accessed on 26 June 2021).
48. Byrom, N.; Metcalfe, J. Impact of COVID 19 on Doctoral and Early Career Researchers. *Figshare Dataset* **2020**. Available online: https://figshare.com/articles/dataset/Impact_of_COVID_19_on_Doctoral_and_Early_Career_Researchers/12361493 (accessed on 26 June 2021).
49. Abbasi-Shavazi, M.J. COVID-19, economic recession, and the Refugee situation. *Int. Migr.* **2021**, *59*, 289–292. [CrossRef]
50. EURAXESS. Science4Refugees—Welcome Refugee Researchers and Students Looking for a Suitable Job! 2021. Available online: https://euraxess.ec.europa.eu/jobs/science4refugees (accessed on 23 March 2021).
51. Zubașcu, F. Marie Curie Researchers 'Betrayed' by Commission's Refusal to Extend Costs. *Sci.|Bus. J.* **2020**. Available online: https://sciencebusiness.net/covid-19/news/marie-curie-researchers-betrayed-commissions-refusal-extend-costs (accessed on 23 March 2021).
52. ANABIN. Das Infoportal zu Ausländischen Bildungsabschlüssen. Available online: https://anabin.kmk.org/ (accessed on 8 June 2021).

societies

MDPI

Article

COVID-ized Ethnography: Challenges and Opportunities for Young Environmental Activists and Researchers

Dena Arya * and Matt Henn *

Department of Social and Political Sciences, Nottingham Trent University, Nottingham NG1 4FQ, UK
* Correspondence: dena.arya2019@my.ntu.ac.uk (D.A.); matt.henn@ntu.ac.uk (M.H.)

Abstract: This article offers a critical and reflective examination of the impact of the enforced 2020/21 COVID-19 lockdown on ethnographic fieldwork conducted with UK-based young environmental activists. A matrix of researcher and activist challenges and opportunities has been co-created with young environmental activists using an emergent research design, incorporating a phased and intensive iterative process using online ethnography and online qualitative interviews. The article focuses on reflections emerging from the process of co-designing and then use of this matrix in practice. It offers an evidence base which others researching hard-to-reach youth populations may themselves deploy when negotiating face-to-face fieldwork approval at their own academic institutions. The pandemic and its associated control regimes, such as lockdown and social distancing measures, will have lasting effects for both activism and researchers. The methodological reflections we offer in this article have the potential to contribute to the learning of social science researchers with respect to how best to respond when carrying out online fieldwork in such contexts—particularly, but not only, with young activists.

Keywords: ethnography; environmental; online; activism; young people; COVID-19; lockdown; climate; strikes; methods

Citation: Arya, D.; Henn, M. COVID-ized Ethnography: Challenges and Opportunities for Young Environmental Activists and Researchers. *Societies* **2021**, *11*, 58. https://doi.org/10.3390/soc11020058

Academic Editors: Sandro Serpa and Carlos Miguel Ferreira

Received: 8 April 2021
Accepted: 3 June 2021
Published: 7 June 2021

1. Introduction

The recent COVID-19 pandemic has had a major impact on youth-focused research, particularly the study of youth environmental activism. The UK went into a lockdown on 23 March 2020 at which point all mass gatherings in the UK were made illegal as part of the Coronavirus Act 2020. This resulted in a fundamental shift to the way in which environmental activism could take place in public spaces. Ten days prior to the lockdown, youth led climate strikes across the UK, part of the global Fridays For Future (#FridaysForFuture) day of strikes, were cancelled. To contextualise the enormity of this obstruction to action for the youth environmental movement, only a year earlier in March 2019, 1.5 million young people were estimated to have attended climate strikes across 106 countries [1]. Wahlström [2] and colleagues go as far as to say that 'no youth movement has had such a global reception before' (p. 6). The COVID-19 lockdown therefore presented considerable—indeed fundamental—challenges to the youth environmental activist community as well as to those who research it.

This article offers a critical and reflective examination of the impact of the enforced 2020/21 COVID-19 lockdown on ethnographic fieldwork with young environmental activists in the UK. The intention is that these methodological reflections can add to the learning that social science researchers are gaining with respect to how best to respond when conducting fieldwork, particularly with young activists during this uncertain period. The COVID-19 pandemic has led to a 'public health emergency of international concern' [3], and many universities have placed a moratorium on all face-to-face fieldwork. Where fieldwork is permitted, this has largely shifted online. Ethnography is a method that, by its very nature, embraces uncertainty, in that it is typically exploratory, seeking to uncover new

insights about relatively under-researched groups and processes. The shift to online data collection methods of hard-to-reach populations, such as young environmental activists, exacerbated this complexity and presented significant researcher challenges.

As a response to the new COVID-19 research landscape, this article advocates for greater methodological innovation during the pandemic (and its associated control regimes, such as lockdown and social distancing measures) that will have lasting effects for both activism and researchers. A matrix of research challenges and opportunities has been co-created with a group of young activists that draws on the researchers' observations of youth climate strikes and planning meetings, fieldnotes from relationship-building and networking activities with young activists as well as intensive ethnographic interviews with three young environmental activists. Several key themes emerged during this process, reflecting the challenges and opportunities for research and activism during the COVID-19 pandemic. These include the importance of building relationships and networks with young activists as well as researcher ethics and activist visibility in online spaces.

The matrix was designed both for youth activists and for those working in the wider youth research field when engaging in similar research under COVID-19-related circumstances. This is particularly the case with online research methodologies that are required where face-to-face fieldwork is not viable. It is intended that together, these insights and the matrix of research challenges and opportunities offer a valuable and original contribution to social science researchers and will promote innovation and co-creation when research can only take place online. In addition, the reflections emerging from the researcher matrix offer an evidence base that others researching hard-to-reach youth populations may use themselves when negotiating face-to-face fieldwork approval with their own academic institutions.

2. Young People's Environmental Politics and Methodologies of Co-Production

Young people have often been considered a generation apart when it comes to their engagement with politics [4], and they are often characterised as apolitical or even as politically apathetic, especially when compared to older adults [5,6]. However, for many contemporary academic observers, such a view is misplaced. Although studies have found that many young people experience electorally focused and elite-led politics to be unappealing and somewhat irrelevant [7], there is evidence that such disaffection is neither inevitable nor permanent [8]. Indeed, there is burgeoning evidence of a global tendency towards young people's support for, and participation in, new styles of non-institutionalised political action that seem to better fit their lifestyles and which permit the actualisation of their political aspirations [9]. Thus, we increasingly see young people taking a leading role in political campaigns and movements that centre on everyday issues and which are often spontaneous and intense—such as Black Lives Matter in 2014 and again in 2020, #MeToo in 2017 and also the 2018 #NeverAgain campaign against the US gun lobby [10].

Furthermore, environmental politics is witnessing a resurgence of popularity across the Global North and South, exemplified by youth-led activist groups, such as #FridaysForFuture (Youth Strike 4 Climate) and Extinction Rebellion Youth (hereafter, XR Youth) [2]. Whilst some countries are declaring a climate emergency, young people in other countries have taken their governments to court over climate change [11]. Climate change is part of a much wider environmental crisis held in the spotlight by scientists and activists, and whilst this heightened concern has recently been magnified by media coverage of XR and the #FridaysForFuture activist groups, such anxieties have been growing since 2015 [12].

However, how best to understand the experiences, interpretations and motivations of such young environmental activists is open to debate. A recent and extensive study of 1905 young climate strikers across 9 countries and 13 cities was conducted by Wahlström and colleagues during the March 2019 global youth climate strikes [2]. The findings, although offering a major contribution to the field, also come with limitations that Bowman [13] addresses in his analysis of the work. Key to such limitations is the lack of space given to

understandings of young environmental activists' imaginaries, both of the current concerns they have and importantly the futures they wish to see. In her research on the uneven lines of solidarity in youth climate strikes, Walker [14] notes that while contributions of a minority of participants in the youth climate strikes are significant, those involved in less 'high-profile activities' are often omitted in this kind of research. Engaging with such groups is key to understanding the 'generationally positioned' concerns of young people whose lives will invariability be impacted by the environmental crisis (p. 13).

Children and young people will endure the greatest number of consequences resulting from the environmental crisis and so will have a greater drive to act [15]. This has been complicated by the COVID-19 pandemic. In recent Beat Freaks [16] research, 65% of young people were worried about the impact of COVID-19 on their mental health, with a majority more worried than usual. A key theme that emerged was their fears for the future as a direct result of the pandemic. Taken together, these observations suggest that it is critically important for ethnographic researchers to understand young activists' experiences of the 2020/21 COVID-19 pandemic control regimes if they are to gain deep and valid insights into what lies behind their attraction to, and participation in, (different forms of) environmental politics.

Co-Production in the Research Process

To further understand these experiences, a matrix of challenges and opportunities to youth activists and researchers was co-produced with young environmental activists who all took part in Youth Strike For Climate. Bell and Pahl [17] claim that co-production can be seen as a utopian method, with 'an important role to play in rethinking and remaking the world for the better' (p. 105). While co-production as a method has been drawn from and grown out of a policy context, it has developed over time to ensure that collaboration is at the core of knowledge production [18,19]. Co-production is inherited from the field of participatory methods, with the aim of collective knowledge production from community spaces [20]. This aim has pushed the boundaries of dominant power relations that exist between the researcher and the researched. Bell and Pahl [17] argue that this is challenging work that requires a great deal of researcher reflexivity.

In addressing this challenge for this article, we argue that co-production and the participation of young people in this research exists on a spectrum. Key to understanding this is Roger Hart's [21] ladder of young people's participation. The co-creation of the matrix in this research is reflected in the sixth rung of the ladder of participation. This means that whilst this was an adult initiated research project, the young people involved were not merely consulted or informed about the matrix, but instead actively participated in the process of its creation. They also shared in the decisions that were made in terms of how it was developed.

Co-production, however, does not guarantee a non-hierarchical relationship with participants. An awareness by researchers of the power dynamics that exist with participants is key to recognising and working towards destabilising and rebalancing power [17]. Kara [22] writes about co-production in activist research and points out that traditionally research has been ruled by researchers. The aim of coproduction is to democratise such practices by incorporating the views and experiences of participants in knowledge creation [19].

Co-production allows for further conceptualisation of youth participation in research practices that serve to empower. Whilst there are many benefits that can be outlined through using methods of co-production in research with young people, there are also constraints. Furthermore, researchers who utilise co-production methods recognise that the legitimate expertise of young people is integral to knowledge creation. For instance, Tisdall [18] argues that when co-production takes this into account, it ensures that it has the 'potential for transformative change, which lies with its creation or improvement of participation spaces with children, young people and (adult) decision makers' (p. 70). In their exploration of the different conceptualisations of co-production, Flinders and Wood [23] argue that this is

political and serves as a form of resistance. These understandings of co-production were employed when developing the matrix of opportunities and challenges in the research for this article.

3. Research Context

Ethnography has been key to the co-production of this matrix. This article recounts researcher experiences of ethnographic fieldwork with UK-based young environmental activists during the early months of the 2020/21 COVID-19 pandemic. This fieldwork is part of a multimethod qualitative project. Phase 1 involved ethnography and Phase 2 involved semi-structured interviews.

The research utilises the three categories of political participation defined by Ekman and Amnå [24]. This sees young people as participating in (i) alternative actions and spaces, such as protests and activist groups; (ii) electoral actions and spaces, such as voting and being a member of a youth council; and (iii) standby actions and spaces, such as active non-participation, including refusing to vote (pre-political action) and volunteering. Ethnography was initially selected as the optimal method through which to explore how young people participated in alternative forms of environmental politics. However, this research decision was presented with unprecedented challenges because of the 2020/21 COVID-19 pandemic [25], and it is on this issue that the remainder of this article will now focus.

4. Methodologies in Ethnography with Young Environmental Activists

Youth environmental activism is in a state of flux, and whilst research in this field is growing, there is limited qualitative—and in particular ethnographic—research available from which to glean understandings [26]. Ethnography can serve to create a space in which young people have particular control over the stories they impart about their participation. Whilst there is considerable encouragement for researchers to utilise ethnography to learn about activist communities, it is recognised that this method, like any other, comes with its own distinct set of challenges at the best of times. For instance, Alberro [27] reflects on the considerable difficulties that she encountered in her research, including access to activist groups as well as restrictions to the methodological choices that are most suitable for exploring these social phenomena.

As Onís and Pezzullo [28] state, 'with pressing and colliding ecological, economic and social crises facing the world today, ethnography must remain a vital approach for those studying the frontline of environmental justice' (p. 238). Nonetheless, literature exploring the challenges to ethnographic fieldwork during a global public health pandemic is in its infancy. How this pandemic will affect the nature of research with young environmental activists engaged in action towards transformative change is uncertain. Therefore, collaboration and exploration are required, particularly amongst communities of ethnographers. This article seeks to contribute to early understandings of this shifting landscape, taking the position that ethnography is key to understanding this social phenomenon.

A central tenet of activist ethnography is that knowledge creation is centred on the organising goals of activism and social movements [29]. Following an activist-researcher perspective, this research takes the position that participant observation is not possible in activist ethnography. Rather than *participant* observations, *activist* observations were carried out, involving active researcher participation in the planning and creation of the group. Through this method, it became possible to gain an in-depth understanding of the developments and drivers of young activists' actions. This approach is adopted from the work of other activist scholars, such as Aguirre et al. [30] who deployed activist ethnography with young people in Spain.

Throughout the COVID-19 pandemic, some research methods have been more impacted than others. Whilst online survey-based approaches have remained relatively unaffected, ethnography has been dramatically changed. Fine and Abramson [25] highlight the complexities of ethnography during the pandemic, but also claim that once

face-to-face fieldwork becomes possible post-COVID-19, participants and researchers will need to carefully navigate potential health risks when engaging with one another. Just as environmental activism has itself become constrained by the control regimes of the pandemic (such as lockdown and social distancing), so too have the ethnographic tools to study this particular field, which is now limited to either telephonic or virtual spaces [31].

A particular strength of ethnography is that it allows for a deep dive into the complexities of people's lives; without access to these worlds of experience, qualitative research—especially with marginalised groups—has become more challenging [32]. This is important because existing studies demonstrate the potential value of ethnography for the study of youth civic and political engagement. For instance, the MYPLACE (Memory, Youth, Political Legacy and Civic Engagement) project has helped expand understandings of civic engagement for young people across Europe. MYPLACE included large scale multi-country ethnographic fieldwork with youth activist groups [33], demonstrating the importance of this methodological approach to developing insights in this field.

It is important to reflect here that not all activism exists on the streets and not all ethnography necessitates in-person relationship-building. There has been a wealth of research into digital ethnography over the decades [34–36]. A useful conceptualisation of digital ethnography is offered by Murthy [37], who states that digital ethnography focuses on methods of gathering data that are 'mediated by computer mediated communication' (p. 159). This form of ethnography recognises that technology and digital media are imbedded in social life. Whilst digital ethnography has been evolving with the digital age, the central principles are the same as for ethnography in general—with a focus on the story that is being told by those being observed. Moreover, digital ethnography enables researchers to explore digital communities with a freedom that allows them to develop innovative ways to engage with, and learn from, their participants.

Furthermore, digital activism has evolved as an integral part of youth and non-youth activism in recent decades [38]. Whilst there are critiques of digital ethnography which characterise it as less valuable than face-to-face contexts, there is much that has been advanced by online ethnographic researchers over recent decades [39]. However, as has been demonstrated by the 2020/21 COVID-19 pandemic restrictions in the UK, young people and society at large have at times also rejected 'stay at home' measures and taken to the streets to exercise their collective political voice. This was first evident during the wave of global Black Lives Matter protests in the summer of 2020 and also by the 2021 #KillTheBill protests against the Police and Crime Bill [40]. How far online spaces serve as a platform for political participation and how digital ethnography can respond to and reflect on these actions is brought into question through the bursts of such in-person demonstrations and acts of civil disobedience.

Although the COVID-19 pandemic has driven much of youth civic participation into the digital realm, it is also the case that young people have been using digital spaces to engage in activism since before the pandemic [41]. For instance, Pickard [42] reflects on young people's political participation and argues that their 'Do-It-Ourselves' politics involve vast repertoires of actions facilitated by the digital world. Whilst there are those who have criticised digital activism as no more than 'clicktivism' [43] or 'slacktivism' [44], there is recognition by a growing number of youth scholars that such repertoires of political participation are part of an expanding tool kit of young digital activists in exercising their political voices [42].

Despite this reality, what the COVID-19 pandemic has created is a situation where young people have been forced to act from behind a screen. Whilst some have taken to the streets in protest, not all have had the same access, ability or will to do so. The pandemic has exacerbated the pre-existing inequalities that play out in how young people politically participate, and little is known about how this emerging phenomenon is unfolding. In these challenging times, as young people continue to develop innovative ways to exercise their political voice, how researchers and in particular ethnographers learn from and adapt to these evolutions are crucial. Fine and Abramson [25] eloquently state that, 'it is too early to

suggest where such alternative and hybrid methodologies might lead, but creativity often bursts through on dark days' (p. 8).

4.1. Research Design and Methods—Phase 1

The project that informs this article was at a relatively early stage when the COVID-19 lockdown triggered a moratorium on academic face-to-face fieldwork by universities across the UK. Consequently, fieldwork could only be conducted online. An immediate restructuring of approach was therefore necessary to continue the research.

Prior to the lockdown, the research involved attending planning meetings, events and protests with a youth climate strike group in a medium sized city in the UK. The group was made up of young people who were typically aged 16 and older, together with a number of adult allies. Arrangements were also in train to attend planning meetings of other youth strike groups in different parts of the country as well as protests. These research plans and activities were critically disrupted once the COVID-19 lockdown began. In the months that followed, activist observations at planning meetings continued using online video conference platforms as environmental activism switched to online strikes, such as #ClimateStrikeOnline. Some of the research participants would strike from online lessons and post pictures of themselves and their placards on social media. Instead of meeting young people at protests and youth-led climate events, these took place on webinars, on Zoom and in public discussions, such as the XR Youth online educational series and the 2020 Transform the World youth climate summit.

During these months, a matrix of researcher and activist challenges and opportunities was co-created with the young people involved in the ethnographic fieldwork. The purpose of Phase 1 of this co-creation was to engage in dialogue with young environmental activists involved in the ethnographic research. This was achieved through activist observations rather than participant observations. Whilst some young activists continued attending school through online classes, others were furloughed from their jobs or lost their zero-hour contract employment. Consequently, opportunities surfaced to engage in complex conversations of shared experiences of the pandemic and its associated control regimes. Detailed fieldnotes were taken of the various activities, discussions and experiences with the group, and from these were developed a matrix of challenges and opportunities facing youth environmental activist groups during this time.

Table 1 includes this matrix, which was co-created with a youth climate strike chapter that was part of the UK Student Climate Network. This matrix draws upon reflections from activist observations of planning meetings, online relationship-building activities and co-produced educational workshops during the first UK COVID-19 lockdown, March and July 2020. The core group who contributed to the development of the matrix included 10 young environmental activists.

4.2. Research Design and Methods—Phase 2

The purpose of Phase 2 of co-creation was to acquire critical feedback on the matrix from additional young environmental activists using ethnographic interviews. The process involved three young activists with whom strong pre-established research relationships were already in place prior to start of the COVID-19 pandemic. They were each selected from different environmental groups, all aged between 16 and 25, and all living in different medium sized cities across the UK and from different positions of socioeconomic advantage, gender and life stage (one being at school; another not in any education, employment or training; and another in full time employment). Furthermore, each had been involved in environmental activism for at least 1 year. As the matrix had been built in conjunction with one pre-selected youth strike group (of 10 activists) in Phase 1, one young person from this group was selected for detailed scrutiny of the matrix. This was to ensure that there was continuity between the researchers' interpretations and the experience of a young activist from the same group. Two other youth environmentalists were selected from different groups, one from a Youth Strike 4 Climate chapter based in a different

geographical area and the other a young activist from XR Youth. The purpose of this was to ensure that it was relatable to young activists both within and outside of the group selected for ethnographic fieldwork.

Table 1. Matrix of challenges and opportunities for researchers and young environmental activists during the COVID-19 pandemic and related regimes of control.

Challenges	Opportunities
Researcher	
Building relationships with new networks of young activists	Able to engage more deeply with participants where there is a pre-existing relationship
Rapport with new participants	Activists and researchers spending more time at home and online which can be spent involved in shared activities
Participant observations in online meetings and events	Wide range of online platforms to engage with participants
Access to direct activism (both offline and online)	Activities with participants can be more accessible online to researchers who have financial limitations
Spontaneity in network building, i.e., protests	
Ethics of consent online	Building trust through shared lived experience of the COVID-19 pandemic
Surveillance online and cyber security	
Researcher mental health	
Young Environmental Activists	
Difficult to engage in direct action	More network building opportunities with new activist groups online
Struggling to be 'seen or heard' online	More time to engage in online actions
Access to physical sites of political action, i.e., protests	More time to build relationships with existing activist networks
Impact of actions is minimised online	Validation of importance of climate change through its link with COVID-19
Surveillance and online security	Young activists from rural areas feel more involved with networks online
Young activists' mental health	

These activists-as-research-participants were each sent the draft matrix and invited to reflect on this prior to joining a telephone meeting to discuss their observations. The discussions were unstructured, designed to explore their reactions concerning the value of the matrix in terms of possible omissions and whether it represented their experience of the impact of COVID-19 on their activism. This was to ensure that interviews would remain as natural as possible and to sense check for shared understandings.

The interviews confirmed that all elements of the matrix had been accurately represented (see Table 1). Whilst researchers posit that there are multiple ways of ensuring saturation in qualitative research [45], for this article, it was decided that saturation (and therefore the sample size) would be achieved once Phase 2 confirmed that the research aim and research parameters had each been met. In this case, the research was specific to the design of the matrix; the 'opportunities' and 'challenges' dimensions of the matrix emerged organically through Phases 1 and 2. Therefore, no further data collection was required for the purposes of satisfying the core research aim to co-develop the matrix [46].

5. Findings

In the unprecedented times of the 2020/21 COVID-19 pandemic, young environmental activism has necessarily undergone a process of relative transformation and has materialised online as a response to social distancing and lockdown measures. However, online activism is not a natural or preferred domain when compared to direct action in the physical world. Similarly, the matrix set out in Table 1—the content of which is not novel in scholarship around online methodologies—is not designed as a rubric for researchers to apply when embarking on online research under normal circumstances. Instead, through exploring the limitations imposed by the pandemic on research and

activism and a recognition of the symbiotic nature of the challenges and opportunities presented, it is intended that those new innovative methodologies can be engaged with in academic discourse. The following discussion considers in detail some of the key themes that have emerged from the process of designing the matrix for this particular research project. It gives focus both to relationship-building with young activists and to the ethics of online research. It then explores the themes of visibility, online spaces as a site of activism and the link between the pandemic and environmental concern that emerged as challenges and opportunities to the activists-as-research-participants.

5.1. The Researcher Perspective—Relationship-building with Young Activists

Participant observations are one of the core pillars of ethnographic research, which can result in researchers embodying a variety of roles. Onís and Pezzullo [28] outline some of these roles as 'performer, fellow worker, note taker, consumer, protester [and] community member' (p. 231). In the short time that ethnographic field work was carried out as part of this research project, a number of these roles were embodied, including that of community member. This role necessitated a continual process of reflection of self-positionality in the research process, the relationship with research participants and the spaces that were engaged in. Although age was not an attribute shared with the young environmental activists, there were other commonalities that provided a distinct position from which to engage with them—including long-term experiences of environmental activism [47]. Furthermore, the climate strike group had a number of adult allies with whom networks had previously been constructed. Taken together, these factors presented opportunities for both insider and outsider roles that were of particular benefit when engaging with the young climate activists.

In addition, there were some unexpected opportunities to engage in greater depth and frequency with young activists with whom networking had been established prior to the lockdown. This developed through deepening feelings of trust and reciprocity, especially in terms of mutual support for well-being. Acquiring reliable and in-depth data requires relationships that go beyond the researcher and the researched. Young people's engagement, either in consultation, co-production or research can often result in participants feeling like they are nothing more than data points and that their contributions are relatively tokenistic [48]. Investing the labour required to create relationships with participants embedded in mutual aid and cooperation (built across horizontal lines of power), allowed for enhanced and authentic understandings from the research. Joint researcher-participant activities were undertaken that were far removed from activism. These included sharing articles and reading materials, participating in reading groups, holding video calls to share personal experiences, helping with job applications and personal statements, supporting with schoolwork, attending virtual pub quizzes or simply checking in by text messaging.

Such interactions resulted in some degree of emotional exposure to the research participants—including some level of openness to cooperation in dealing with shared anxieties and feelings of isolation, loneliness, frustration and generalised uncertainty as a consequence of the pandemic. On those occasions where participants offered such support, it was important to reflect on the conflict and tensions between how much to share and how honest to be with them. The boundaries of friendship between ethnographers and their participants are not always clear; in acknowledging that researchers embody multiple roles with their participants, so too do their participants take on different roles in relation to researchers [49].

5.2. The Researcher Perspective—Negotiating Ethics Online

Engaging with potential participants via their social media comes with profound ethical considerations. Age, consent, public profiles, data protection and online safety of young people are each a factor needing to be taken into account. Even where such access issues are resolved, there remains an additional and important consideration with respect to young activists feeling safe online. Checker [50] emphasises the importance of trust and

reciprocity as being key to building relationships in activist ethnography. However, during lockdown, there have been considerable difficulties in attempting to build relationships with new networks of young activists online and this has presented obstacles to growing the participant base for the project.

An additional challenge is that activist groups are usually anti-establishment by nature and are often wary of outsiders [51]. It is therefore to be expected that, given the nature of their campaigning, many young environmental activists will display a degree of distrust of those who they consider to be in positions of authority, including researchers working in academic institutions. This raised a considerable tension for the project in terms of the power dynamics with the young activists and with how their consent should be negotiated. Activist observation of the planning meetings and the ethnographic interviews with the youth strike group were agreed to on the basis of complete anonymity of the group and all members. The requirement to gain signed consent (names and signatures) for the research therefore created a significant hurdle in developing the project. Ethics is an iterative process that must be re-evaluated throughout the research journey. On the relationship between ethics and consent in ethnography, O'Connell Davidson [52] discusses the issue of building relationships with participants and the unanticipated issues that may not be apparent at the start of a research project and which signed consent may not always cover. External issues around consent were much more difficult to navigate for the project once face-to-face meetings with participants were no longer possible. For example, attending group webinars with young people who took part in XR educational events presented deep and potentially valuable insights with respect to how young people are participating in environmental politics. However, consent was not possible to negotiate in the time-limited and structured sessions, and consequently, the data generated from observations of the discussions were not usable for the research project.

5.3. Young Activists' Perspectives—Visibility

Over the period of lockdown, some young activists raised issues concerning the restrictions on large public gatherings and the potential impact on direct activism. Key to those concerns were the lack of means through which to feel seen or heard. Previously, momentum had been building both in XR Youth and the UK Climate Strike Network. National and international protests and weeks of actions were about to take place, all of which were cancelled. Consequently, the move to online campaigning left some young activists feeling that their visibility had been dramatically reduced. However, in some respects, the shift to online platforms served as a partial equaliser between different groups of youth climate strikers. For instance, some of those living in rural spaces who had previously depended on the internet to engage in environmental activism before the pandemic, claimed that the new circumstances had increased the scope for their online activism and for their participation in decision making. Online space was also seen as an opportunity for more young activists to get involved, especially if large groups and social gatherings may have previously been a cause of anxiety. Elsewhere, other participants saw a particular benefit of the lockdown as having presented the opportunity to gain a number of IT skills resulting from their activism on online platforms (such as Slack [an online tool often used by environmental activists], Zoom and other technologies, such as Google Drive).

5.4. Young Activists' Perspectives—Online Spaces as a Form of Activism

There have been historic issues of alleged surveillance and undercover police infiltration of environmentalist groups [53], and these continue to have an impact on how some activists view the motivations of researchers. Some young activists who were approached as part of the project were increasingly concerned about surveillance online, choosing not to discuss certain matters on platforms like WhatsApp or Zoom, but opting instead for encrypted platforms like Signal and Telegram. They reflected that using platforms created by private corporations left their actions without adequate safeguards to protect

against police interference and surveillance. Additionally, one young activist mentioned that although there was value in online activism, they needed to observe the rules set by private platforms when organising. Taken together, these issues raised ethical questions for the research which also involved observations at online planning meetings with young activists.

In general, visibility in public spaces was favoured by all of the participants, but there was a lack of unanimity on the question of the importance of visibility in online spaces. Indeed, Fine and Abramson [54] in their reflections of the challenges to ethnographers, claim that the online world cannot be conflated with the physical world, arguing that 'to say the physical and digital are interchangeable or produce similar analyses is a methodologically indefensible false equivalence' (p. 4). Although all the young people who took part in the ethnographic interviews recognised that the shift to online platforms for their activism presented opportunities for networking and relationship-building, there were mixed positions on the effectiveness of online visibility. One youth climate striker unfavourably compared a Twitter storm[1] to the more effective physical occupation of a building; while Twitter could restrict access or delete social media posts, storming a building would invariably have a greater effect as activists would be considerably harder to remove. However, another participant saw Twitter storms as a very accessible way of drawing attention to the environmental causes that activists engaged with. Furthermore, although the young research participants recognised the possibilities for engaging in disruptive radical online activism, such as flooding the IP addresses of targeted corporations, concern was raised that such actions carry serious repercussions for activists, including possible arrest and criminal conviction.

5.5. Young Activists' Perspectives—The Link between the COVID-19 Pandemic and Activism

For some young activists, the vacuum created by less schoolwork and little to no employment opportunities has provided more time for activism. The range of activities that the participants discussed were varied in nature, including participation at educational events and planning meetings; engagement in national and regional networking on platforms such as Slack and Zoom; continuing with plans for direct action in physical spaces; and for some, working on more electoral forms of engagement, such as youth councils. Many of the participants reported their involvement in self-educating activities, both collectively and individually.

Through the course of these shared activities, the young activists participating in the project revealed a sophisticated understanding of what they considered to be clear links between the COVID-19 pandemic, capitalism and climate change. For instance, discussions with the young XR activists revealed that they felt that the health risks presented by the pandemic itself were not the most important barrier to environmental activism for young people. Instead, they recognised that the laws and policies that have been put in place by political, economic and corporate power holders are of greater concern. Concurrently, they saw the pandemic itself being a direct result of industrial agriculture, instigating a greater need for environmental activism in opposition to its consequences. They cited in particular, the deregulation of companies and the exploitation of workers that culminated in profiteering for many corporations [55]. They explained this process as a cycle which begins with the pandemic creating increased profit opportunities for corporations, which then results in perpetuating the environmental crisis, which activists then need to engage with.

However, in discussion with the research participants, some changes were recognised as a cause for optimism, including, for instance, the high-profile closure of some Shell and British Petroleum sites [56]. Nonetheless, the interactions also revealed that whilst the young activists considered that some positive steps have been made by some corporations, the economic downturn and impending recession in the UK represented an escalating threat to socioeconomic inequality in recent years, irrespective of the pandemic [57]. This

[1] A Twitter storm is characterised by a rapid surge of social media posts usually about controversial topics, often political in nature.

process was seen as exacerbated (not caused) by COVID-19, accelerating financial collapse and resulting in further deregulation, privatisation and the entrenchment of the capitalist agenda through exploitation of the opportunities of societal chaos. Such ideas of corporations and governments utilising crises as a means of capitalising on such events are mirrored in the work of Green New Deal advocates such as Naomi Klein [58]. In this way, some participants saw the pandemic instigating further supply and demand for private security in a further destabilised society which would affect young environmental activists through the 'weaponization of surveillance' on social media. Attention was also given to the macro issues that young activists experienced in this time. An example of this was the youth climate strikes and the challenge to young people's ability to strike from school when they were not attending school. This was perceived as a means by which power has been taken away from young climate strikers.

6. Discussion and Conclusions

Just as the pandemic cannot be a call to retreat online for researchers, the same is true for young activists who, under the COVID-19 lockdown and social distancing conditions at the time of writing, were already beginning to push back into physical spaces. The 2020 Black Lives Matter protests drew many of the research participants into engaging with the movement, a great number of them spoke of the link between racial capitalism, racial injustice and the causes of the environmental crisis. Despite the control regimes around the pandemic, many young people chose to face the risks of mass gatherings to have their voices heard. For some of the research participants, this was also the case. However, under such circumstances, the potential exists for the emergence of a researcher-participant gap until the time when academic institutions sanction the resumption of face-to-face research activities. During this period, ethnographic studies in general, and researchers' understandings of the lived experience of young environmental activists in particular, are likely to become somewhat diminished. Whilst some researchers may successfully assemble successful cases for a return to face-to-face fieldwork, many will not achieve such positive outcomes. This may lead such researchers to question their own invisibility in sites of environmental activism as ethnographers and how that may rupture their relationships with research participants and act as a barrier to their understandings of this emergent phenomenon.

Whilst online spaces can certainly be utilised, in the absence of face-to-face fieldwork, there is a case for greater co-creation with participants to gather more authentic understandings of their lived experiences. It is this endeavour that has been the focus of this article in critically reflecting on the process of co-production of the matrix of challenges and opportunities. However, ethnography is becoming increasingly inaccessible as a form of research—and especially for early career researchers—as access to the field becomes increasingly complex, particularly in relation to funding issues and matters of research ethics. This has served to privilege other methods in the field, and this pattern is now being further exacerbated by the pandemic. The hope is that more methodological research on this topic will present itself in time to provide the ethnographic community with an evidence base from which to challenge ethical review boards to support such forms of research in the future.

COVID-ized Ethnography

Ethnography by its nature embraces instability and change. Researchers embarking upon a process for embedding themselves in sites of academic interest often welcome uncertainty from a position of opportunity. Concurrently, the shifting socio-political and economic global landscape prior to the pandemic was already primed for disruption. That being said, the pandemic has impacted actors not only from the position of the researcher or activist, but also as individuals with complex identities outside of these roles.

One key issue has been emotional connection through online space, particularly on video calls. During these months of the pandemic, research has been conducted online,

connecting virtually the participant-researcher home spaces and, in so doing, developing a sense of trust and bonding. This has been an unexpected benefit of online interaction that can be used in future research design. However, it must also be remembered that online spaces can also be spaces of privilege. Whilst many of the young people participating in the research had access to laptops, smartphones and Wi-Fi, this was not the case for all. Some even carried out schoolwork on their smart phones and did not have access to unlimited internet data. This needs to be built into any research design, recognising the intersecting inequalities that young people experience [59]. Finally, whilst there are opportunities for online relationship-building during the pandemic, this comes at a price. The loss of nonverbal cues and the taken for granted interactions that ethnography reveals in physical settings must be considered by researchers.

From the investment in mutual well-being during the early days of the pandemic and lockdown, deeper and more honest relationships were built. This would not have been possible without both groups being forthcoming about well-being and mental health challenges over this time. This has been an important experience to reflect on as part of the research process. Despite the personal nature of the discussions here, this was necessary to share in this article as others may be experiencing similar tensions around what to share with their participants and how to share those experiences outwardly to the academic community. Fine and Abramson's [54] work has been particularly important in aiding self-reflection in this context. They write about the dilemmas and opportunities presented by the COVID-19 pandemic on ethnography, stating: 'If there is one profound truth about ethnography, it is that intimacy, and not distancing, is crucial'. They ask, 'what are the implications as we readjust our research at a moment defined by the wide-reaching effects of the novel coronavirus COVID-19?' (p. 1). One clear adjustment made through the experiences of the research process has been an opening up to participants and a sharing with them of the lived experience of the pandemic. This has served to add to the experience of researching and relationship-building. This is something that other researchers are encouraged to reflect on in their own decisions concerning how to build research relationships during such uncertain times.

Whilst this pandemic has forced researchers to rethink their methodological approaches, as well as the nature of data collection, ethics and access, it has by no means stopped ethnographic research in its tracks. Amongst the ethnographic collectives (such as that of the University of Massachusetts and its affiliates), workshops and methods, courses have been created to support researchers to learn from each other's transformed research designs. Prior to the COVID-19 pandemic, the plan in this research had been to meet young activists at demonstrations and actions across the UK, hearing chants, photographing placards and listening to impassioned speeches over megaphones. Instead, time has been spent in Slack and Zoom meetings and engaging in long discussions over Discord, Signal and Telegram. Despite disruption to the original research design, the opportunity has been to reflect on how the pandemic has impacted the research project and what learning can be taken from the fieldwork during the COVID-19 lockdown. This resulted in the development of a matrix which was then explored with participants through ethnographic interviews. The aim was, to an extent, to be able to co-create the methodological research findings with the research participants. Future research could explore this combination of ethnography and co-creation using ethnographic interviews as a means of creating innovations in a time of limited access to the field.

Fine and Abramson raise concerns in their reflections on the impact of the COVID-19 pandemic which they perceive as likely to result in fundamental ethical and practical challenges for ethnographers [54]. In this context, how researchers—and, in particular, ethnographers who have been removed from their field sites—conduct their research is of great concern. The matrix and the discussion outlined in this article do not advocate that ethnographers retreat to the safety of online space without weighing up the consequences of this for their research projects. This is particularly true for research focused on hard-to-reach groups that are now more difficult to reach as academic institutions have placed

robust limits on face-to-face research activities as a response to the pandemic. Engaging in face-to-face fieldwork would require a profound introspection by researchers around the safety of themselves and their participants. However, absence from the physical field has equally profound implications for youth voice and the role of academia in creating a platform for sharing and learning from young people's experiences.

Author Contributions: Conceptualization, D.A. and M.H.; methodology, D.A. and M.H.; validation, D.A. and M.H.; formal analysis, D.A.; investigation, D.A.; writing D.A. and M.H.; supervision, M.H.; project administration, D.A.; funding acquisition, M.H. All authors have read and agreed to the published version of the manuscript.

Funding: This research was funded by the Nottingham Trent University "Dr Ros Hague Scholarship".

Institutional Review Board Statement: The study was conducted according to the guidelines of the Declaration of Helsinki, and approved by the Ethics Committee of Nottingham Trent University (3rd April 2020).

Informed Consent Statement: Informed consent was obtained from all subjects involved in the study.

Data Availability Statement: Data will be made publicly available and will be deposited under an embargo until the final, approved version of Arya's doctoral thesis is submitted to the Nottingham Trent University IRep before the conferment of Arya's degree. Data will be made available to download from the Nottingham Trent University IRep and UK Data Service under CC-BY 4.

Conflicts of Interest: The authors declare no conflict of interest.

References

1. Evensen, D. The rhetorical limitations of the #FridaysForFuture movement. *Nat. Clim. Chang.* **2019**, *9*, 428–430.
2. Wahlström, M.; Kocyba, P.; De Vydt, M.; de Moor, J. Protest for A Future: Composition, Mobilization and Motives of The Participants in Fridays For Future Climate Protests on 15 March 2019 in 13 European Cities. Available online: https://osf.io/xcnzh/ (accessed on 7 April 2021).
3. World Health Organisation. Statement on the Second Meeting of the International Health Regulations (2005) Emergency Committee Regarding the Outbreak of the Novel Coronavirus (2019-ncov). Available online: https://www.who.int/news-room/detail/30-01-2020-statement-on-the-second-meeting-of-the-international-health-regulations-(2005)-emergency-committee-regarding-the-outbreak-of-novel-coronavirus-(2019-ncov) (accessed on 7 April 2021).
4. Grasso, M.T. Age, period and cohort analysis in a comparative context: Political generations and political participation repertoires in western Europe. *Elect. Stud.* **2014**, *33*, 63–76. [CrossRef]
5. Phelps, E. Understanding electoral turnout among British young people: A review of the literature. *Parliam. Aff.* **2012**, *65*, 281–299. [CrossRef]
6. Cammaerts, B.; Bruter, M.; Banaji, S.; Harrison, S.; Anstead, N. The myth of youth apathy: Young Europeans' critical attitudes toward democratic life. *Am. Behav. Sci.* **2014**, *58*, 645–664.
7. Henn, M.; Oldfield, B. Cajoling or coercing: Would electoral engineering solve the young citizen-state disconnect? *J. Youth Stud.* **2016**, *19*, 1259–1280. [CrossRef]
8. Stoker, G. Political Citizenship and the Innocence of Youth. In *Beyond the Youth Citizenship Commission: Young People and Politics*; Mycock, A., Tonge, J., Eds.; Political Studies Association: London, UK, 2014; pp. 23–26.
9. Copeland, L.; Boulianne, S. Political consumerism: A meta-analysis. *Int. Polit. Sci. Rev.* **2020**. [CrossRef]
10. Sloam, J.; Henn, M. *Youthquake 2017: The Rise of Young Cosmopolitans in Britain*; Palgrave Macmillan: Cham, Switzerland, 2019.
11. Schwartz, J. Court Quashes Youth Climate Change Case Against Government. *New York Times*, 17 January 2020.
12. Ares, E.; Bolton, P. The Rise of Climate Change Activism? Available online: https://commonslibrary.parliament.uk/insights/the-rise-of-climate-change-activism/ (accessed on 7 April 2021).
13. Bowman, B. Imagining future worlds alongside young climate activists: A new framework for research. *Fenn. Int. J. Geogr.* **2019**, *197*, 295–305. [CrossRef]
14. Walker, C. Uneven solidarity: The school strikes for climate in global and intergenerational perspective. *Sustain. Earth* **2020**, *3*, 5. [CrossRef]
15. Lawson, D.F.; Stevenson, K.T.; Peterson, M.N.; Sarah JCarrier, M.N.; Strnad, R.; Seekamp, E. Intergenerational learning: Are children key in spurring climate action? *Glob. Environ. Chang.* **2018**, *53*, 204–208. [CrossRef]
16. Beatfreeks. A National Youth Trends Report Understanding the Impact of Coronavirus on Young People in the UK. *National Youth Trends Take the Temperature*. 2020. Available online: https://beatfreeksyouthtrends.com/reads/take-the-temperature/ (accessed on 7 April 2021).
17. Bell, D.M.; Pahl, K. Co-production: Towards a utopian approach. *Int. J. Soc. Res. Methodol.* **2018**, *21*, 105–117. [CrossRef]

18. Tisdall, E.K.M. Conceptualising children and young people's participation: Examining vulnerability, social accountability and co-production. *Int. J. Hum. Rights* **2017**, *21*, 59–75. [CrossRef]
19. Barker, A. Co-production of Local Public Services London. In *Local Authorities Research Council Initiative, Co-Production: A Series of Commissioned Reports*; Research Councils: Swindon, UK, 2010.
20. Flinders, M.; Wood, M.; Cunningham, M. The Politics of Co-Production: Risks, Limits and Pollution. *Evid. Policy* **2016**, *12*, 261–279. [CrossRef]
21. Hart, R.A. *Children's Participation from Tokenism to Citizenship*; UNICEF Innocenti Research Centre: Florence, Italy, 1992.
22. Kara, H. Identity and power in co-produced activist research. *Qual. Res.* **2017**, *17*, 289–301. [CrossRef]
23. Flinders, M.; Wood, M. Ethnographic insights into competing forms of co-production: A case study of the politics of street trees in a northern English city. *Soc. Policy Adm.* **2019**, *53*, 279–294. [CrossRef]
24. Ekman, J.; Amnå, E. Political participation and civic engagement: Towards a new typology. *Hum. Aff.* **2012**, *22*, 283–300. [CrossRef]
25. Fine, G.A.; Abramson, C.M. Ethnography in the Time of COVID-19. *Footnotes Am. Sociol. Assoc.* **2020**, *48*, 8–9.
26. Banaji, S.; Mejias, S.; de la Pava Vélez, B. The significance of ethnography in youth participation research: Active citizenship in the UK after the Brexit vote. *Soc. Stud.* **2018**, *15*, 97–115. [CrossRef]
27. Alberro, H. Methodological considerations for the special-risk researcher: A research note. *Methodol. Innov.* **2019**, *12*. [CrossRef]
28. Onís, C.M.; Pezzullo, P.C. The Ethics of Embodied Engagement. Ethnographies of Environmental Justice. In *The Routledge Handbook of Environmental Justice*; Holifield, R., Chakraborty, J., Walker, G., Eds.; Routledge: London, UK, 2018.
29. Bisaillon, L. An Analytic Glossary to Social Inquiry Using Institutional and Political Activist Ethnography. *Int. J. Qual. Methods* **2012**, *11*, 607–627. [CrossRef]
30. Aguirre, A.; Moliner, L.; Traver, J.A. Autonomous participation. An activist ethnography in Maranya Youth Club. *Ethnogr. Educ.* **2020**, *15*, 190–206. [CrossRef]
31. Pelter, Z. Pandemic Participation: Youth Activism Online in the COVID-19 Crisis. 2020. Available online: www.unicef.org/globalinsight/stories/pandemic-participation-youth-activism-online-covid-19-crisis (accessed on 7 April 2021).
32. Pacheco-Vega, R.; Parizeau, K. Doubly Engaged Ethnography: Opportunities and Challenges When Working with Vulnerable Communities. *Int. J. Qual. Methods* **2018**, *17*. [CrossRef]
33. Mizen, P. The madness that is the world: Young activists' emotional reasoning and their participation in a local Occupy movement. *Sociol. Rev.* **2015**, *63*, 167–182. [CrossRef]
34. Hine, C. *Virtual Ethnography*; SAGE: Thousand Oaks, CA, USA, 2000.
35. Kozinets, R.V. *Netnography: The Essential Guide to Qualitative Social Media Research*, 3rd ed.; SAGE: Los Angeles, CA, USA, 2020.
36. Pink, S.; Horst, H.; Postill, J.; Hjorth, L.; Lewis, T.; Tacchi, J. *Digital Ethnography: Principles and Practice*; SAGE: Los Angeles, CA, USA, 2015.
37. Murthy, D. Emergent Digital Ethnographic Methods for Social Research. In *Handbook of Emergent Technologies in Social Research*; Hesse-Biber, S., Ed.; Oxford University Press: New York, NY, USA, 2011.
38. Joyce, M. *Digital Activism Decoded: The New Mechanics of Change*; International Debate Education Association: New York, NY, USA, 2010.
39. Góralska, M. Anthropology from Home. *Anthropol. Action* **2020**, *27*, 46–52. [CrossRef]
40. Gayle, D. Kill the Bill Protesters Rally across England and Wales. Available online: https://www.theguardian.com/uk-news/2021/apr/03/kill-the-bill-protesters-rally-across-england-and-wales-on-saturday (accessed on 7 April 2021).
41. Boulianne, S.; Theocharis, Y. Young People, Digital Media, and Engagement: A Meta-Analysis of Research. *Soc. Sci. Comput. Rev.* **2018**, *38*, 111–127. [CrossRef]
42. Pickard, S. *Politics, Protest and Young People: Political Participation and Dissent in 21st Century Britain*; Palgrave Macmillan: London, UK, 2019.
43. Karpf, D. Online Political Mobilization from the Advocacy Group's Perspective: Looking Beyond Clicktivism. *Policy Internet* **2010**, *2*, 7–41. [CrossRef]
44. Morozov, E. The Brave New World of Slacktivism. Available online: https://foreignpolicy.com/2009/05/19/the-brave-new-world-of-slacktivism (accessed on 7 April 2021).
45. Guest, G.; Namey, E.; Chen, M. A simple method to assess and report thematic saturation in qualitative research. *PLoS ONE* **2020**, *15*, e0232076. [CrossRef] [PubMed]
46. Sebele-Mpofu, F.Y. Saturation controversy in qualitative research: Complexities and underlying assumptions. A literature review. *Cogent Soc. Sci.* **2020**, *6*, 1838706. [CrossRef]
47. Mottee, L.; Sharkey, M.; Franco, M.L.; Scaffidi, F. Activist Researchers: Four Cases of Affecting Change. *plaNext* **2019**, *8*, 10–20. [CrossRef]
48. Federle, K.H. Do rights still flow downhill? *Int. J. Child. Rights* **2017**, *25*, 273–284. [CrossRef]
49. Owton, H.; Allen-Collinson, J. Close but not too close: Friendship as method(ology) in ethnographic research encounters. *J. Contemp. Ethnogr.* **2014**, *43*, 283–305. [CrossRef]
50. Checker, M. *Polluted Promises: Environmental Racism and the Search for Justice in a Southern Town*; NYU Press: New York, NY, USA, 2005.
51. Atkinson, D.J. Journey into Social Activism: Qualitative Approaches. *Eur. J. Commun.* **2017**, *32*, 631.

52. O'Connell Davidson, J. If no means no, does yes mean yes? Consenting to research intimacies. *Hist. Hum. Sci.* **2008**, *21*, 49–67. [CrossRef]
53. Schlembach, R. Undercover policing and the spectre of 'domestic extremism': The covert surveillance of environmental activism in Britain. *Soc. Mov. Stud.* **2018**, *17*, 491–506. [CrossRef]
54. Fine, G.A.; Abramson, C.M. Ethnography in the Time of COVID-19: Vectors and the Vulnerable. Available online: https://www.researchgate.net/publication/340680966_Ethnography_in_the_Time_of_COVID-19_Vectors_and_the_Vulnerable (accessed on 7 April 2021).
55. Reich, R. It's Morally Repulsive How Corporations Are Exploiting This Crisis. Workers Will Suffer. Available online: https://www.theguardian.com/commentisfree/2020/mar/22/large-corporations-exploiting-coronavirus-crisis (accessed on 7 April 2021).
56. Ambrose, J.; Makortoff, K. Ofgem's £25bn Plan Puts Climate Goals at Risk, Say Energy Firm. Available online: https://www.theguardian.com/business/2020/jul/09/energy-watchdog-unveils-25bn-uk-green-investment-drive (accessed on 7 April 2021).
57. Hay, C.; Hunt, T. The Coming Crisis, the Gathering Storm. In *The Coming Crisis*; Palgrave Macmillan: Cham, Switzerland, 2018; pp. 1–10.
58. Klein, N. *The Shock Doctrine: The Rise of Disaster Capitalism*; Penguin Books: London, UK, 2007.
59. Crenshaw, K. Mapping the Margins: Intersectionality, Identity Politics, and Violence against Women of Color. *Stanf. Law Rev.* **1991**, *43*, 1241–1299. [CrossRef]

societies

MDPI

Article

Accessibility in Inclusive Tourism? Hotels Distributed through Online Channels

Eva Martin-Fuentes [1,*], Sara Mostafa-Shaalan [1] and Juan Pedro Mellinas [2]

[1] Business Management Department, University of Lleida, 25001 Lleida, Spain; sarahamdy1997@gmail.com
[2] Business Management Department, Universidad Politécnica de Cartagena, 30201 Cartagena, Spain; losmellinas@yahoo.es
* Correspondence: eva@aegern.udl.cat

Abstract: There is a lack of comprehensive international studies on accommodations for people with disabilities; only small, local-level studies exist. This study aims to show the status of the tourist accommodation sector through the online distribution channel in terms of accessibility to offer more inclusive tourism. A descriptive analysis has been carried out with more than 31,000 hotels from the online travel agency Booking.com, in the 100 most touristic cities in the world. For the first time, an accurate picture of adaptation in the hotel sector for people with disabilities is presented. Results show that the adapted hotel infrastructures by countries are uneven. The main adaptations are those that help to avoid mobility barriers, and in contrast, hotels offer very few adaptations for sensory disabilities such as visual disabilities. Moreover, this study shows that, worldwide, countries with the highest income per capita, such as the United States of America, Canada, Ireland, Australia, New Zealand, Qatar or the United Arab Emirates, have the highest degree of hotel adaptation.

Keywords: inclusive tourism; accessibility; disability; Booking.com; hotels

Citation: Martin-Fuentes, E.; Mostafa-Shaalan, S.; Mellinas, J.P. Accessibility in Inclusive Tourism? Hotels Distributed through Online Channels. *Societies* **2021**, *11*, 34. https://doi.org/10.3390/soc11020034

Academic Editor: Sandro Serpa

Received: 27 February 2021
Accepted: 8 April 2021
Published: 12 April 2021

1. Introduction

Tourist activity has become a vital opportunity that contributes to the well-being of people [1]. It is also one of the economic, social and cultural mechanisms enjoyed by about 1.5 billion people around the world in 2019, according to the World Tourism Organization [2]. During the COVID-19 crisis, hotels around the world have shown their ability to adapt their facilities and services to the new health requirements of society. This adaptability could also be applied to groups such as people with functional diversity who desire to participate in tourism but may find more difficulties in accessing and enjoying these activities on their own. An important group is people who have some difficulty coping with their daily activities due to physical or sensory disability (e.g., visual disabilities) [3] that limits their mobility. This is an important group because one billion people, or 15% of the world's population, are diagnosed with some form of disability [4].

There are some initiatives to make tourism inclusive and accessible for everyone, and increasingly, both society and people involved in tourism management are becoming aware of the importance of offering tourist activities adapted to everyone. For instance, the UNWTO dedicated 2016 to *"Accessible Tourism for All: An Opportunity Within Our Reach"* [5]. The concept of accessible tourism for all *"is not about creating separated services for disabled people, it aims at full integration, or rather inclusion of people with special needs, in particular disabled and aged people, in the tourism sector"* [6].

Achieving a tourist activity with full integration of services for people with disabilities by providing products and environments adapted to everyone would be the ideal scenario. However, unfortunately, many people still cannot enjoy all tourism and leisure activities despite having the time and financial capacity to do so [7].

There are initiatives to offer accessible tourism from the point of view of both public administration and private companies [8]. Specialised travel agencies offer programmes tai-

lored to people with some kind of functional diversity, but what happens when these people want to travel on their own? Do they find hotel establishments adapted to their needs?

Increasingly, hotel establishments are offering facilities or infrastructure to overcome physical and mobility barriers, but there are many types and degrees of disability, and not all hotels offer a perfect adaptation to each disability. Hence, it is important to know if the accommodation sector is sufficiently adapted and prepared to accommodate and satisfy any need that may arise.

There are no public records on hotels with accommodations for people with disabilities, only a few locally focused studies that do not provide generalisable conclusions [9,10]. Thus, a large survey of hotels around the world would be the standard solution to achieve the proposed objectives. However, this procedure would require enormous financial resources to obtain a sample representing a very small percentage of hotels worldwide. There could also be biases derived from the possibility of a greater propensity to respond by the most socially responsible hotels (with the greatest number of adaptations) than responses from those hotels that ignore recommendations regarding accommodations for people with disabilities [11].

Therefore, the main objective of this work is to show the status of the hotel sector through the online distribution channel in terms of accessibility to offer more inclusive tourism. In this sense, this article tries to answer the following research questions: What are the hotel adaptations for people with disabilities in different regions and countries in the world? What countries around the world have more hotels adapted for people with disabilities? What types of adaptation needs are covered in the hotel sector?

To avoid the abovementioned drawbacks and limitations, and to achieve our goal, data have been collected from Booking.com, the world's leading company in the distribution of hotel beds [12]. The vast majority of accommodations in the world, especially in Europe and America, sell rooms using this distribution channel [13], which allows us to obtain a very representative sample of hotels for each destination. This website allows users to search for accommodation using a filter function called "Property accessibility", which was used in this study to find establishments adapted to each type of disability. Data obtained were filtered, and a descriptive analysis was performed to compare different hotels from countries around the world to learn their situation in terms of accessibility. In the end, we developed a database of adaptations implemented in eight categories for 76,832 accommodations (31,868 hotels) from Booking.com in 100 worldwide destinations in a short time and with reduced financial cost.

The results show that the vast majority of the world's hotel industry has serious deficiencies in accessibility, even in basic adaptations such as having wheelchair-accessible facilities. The adaptation percentages in each of the eight categories studied vary substantially by country and region, with America, especially the United States and Canada, the most aware of the adaptability in tourist accommodation infrastructures. The results suggest that there is still a long way to go in accommodation accessibility, not only in less-developed countries or budget hotels but also throughout the world.

2. Literature Review

People with disabilities want to do things, but attitudinal and environmental barriers in which they find themselves hinder their full and effective participation in society on an equal footing with others in travel, accommodation and other tourist services [14].

People with disabilities include those with physical, intellectual or sensory impairments. Other people included in this group who have problems accessing services and tourism products are people with temporary disabilities, people who use crutches temporarily, older adults and people of large or small size [15]. Tourism is a right, and everyone should be able to enjoy it without any obstacle or difficulty. The fact that some people with disabilities are excluded from enjoying tourism has a negative impact on their lives [16].

If we look for a classification, the most accepted and disseminated is the International Classification of Functioning, Disability and Health (ICF) completed by the World Health Organization (WHO) at the 54th Assembly in 2001 [17].

According to UNWTO, accessible tourism is a form of tourism that involves collaboration between stakeholders to enable people with special access needs (in different dimensions, among them mobility, vision, hearing and cognition) to function independently. This implies that these tourists must be treated with equality and dignity through a universally designed range of tourism products, services and environments [15].

The WHO is convinced that access to tourism facilities, products and services must be a central part of any sustainable and responsible tourism policy. Some data indicate that 70% of Europeans with accessibility needs have the physical and economic capacity to travel. In addition, they are part of a family or a group of friends; therefore, most of the time, they do not travel alone and will travel with an average of 1.5 companions per potential traveller [18]. Also, if they had more information about accessible destinations, this group would take more than a few holidays a year with family or friends [19] since their economic level is medium/high because they often receive benefits.

The development of public and private policies benefits not only people with disabilities but also the entities that implement these measures since they offer benefits to an enormous group of people who are normally accompanied. A destination that is concerned and implements measures to avoid architectural barriers and the presence of obstacles improves its quality and attracts potential users [20].

The accessible tourism market represents a great opportunity for the destinations [21] since the profile of a tourist with a disability is a person who tends to travel more frequently during the low season and has a pattern of less seasonal travel than the general population [22]. Another advantage of this type of client is the high degree of loyalty, mainly due to the difficulty they have in finding destinations suitable for their specific needs [22]. Normally accompanied or in groups, they make more journeys to the destination and, in some parts of the world, their average expenditures are higher [5].

Tourism is an activity that many people with disabilities are forced to sacrifice for the simple reason that it implies cooperation of physical, mental and social abilities [23]. People with disabilities have the same wishes as those who have the ability to travel, but it is certain that they are a more demanding group [23]. If a person with disabilities is in an accommodation and feels at home there, they will develop a physical bond to the place and a sense of identity of a place and, therefore, will be more predisposed to make more trips to that location [24].

Moreover, the most worrying issue is that accommodation providers perceive tourists with a disability as a "problem". Also, the accessible rooms are not very attractive for tourists without a disability [24]. There is extensive academic literature about disability and accessibility in tourism, but a lack of data in most countries in the world [25]. Most studies on disability and tourism use surveys of tourists, asking their perceptions about the level of adaptation and accessibility of the establishments in different formats, including conventional surveys [26], in-depth interviews and focus groups [23] or online questionnaires [27]. However, little attention has been paid to the great possibilities offered by online reviews in this area. Only one study has used reviews for the study of decision-making characteristics of disabled tourists [28].

Most hotels do not provide adequate facilities to be considered as barrier-free or adapted hotels [29]. Previous research identified a series of practices that help increase accessibility levels of hotel facilities [30]. Furthermore, Grady and Ohlin [31] recommended the vigorous use of communication channels to connect hotel guests with mobility impairments and hospitality service providers [31]. Disabled travellers place the heaviest weight on the accessibility of accommodation facilities to maximise their travel enjoyment and satisfaction [32].

Determining what elements are necessary to consider a hotel as adapted for people with physical limitations is complex; Israeli [33] proposes seven accessibility attributes for

wheelchair users or those using crutches as walking aids: staircases, elevators, parking areas, sidewalks, access ramps, paths, and restrooms.

Some studies in the accommodation sector differentiate difficulties and barriers linked to the human or physical environments, focusing on hotel rooms, hotel public areas, hotel restaurants, and staff attendance [34]. In this context, the concept of "universal design" arises, referring to products and environments designed to be used by everyone (including disabled people). Some hotels have adopted the features of the seven principles of universal design, [35] especially in new construction. These principles can help hoteliers in the operational management of facilities and reduction of operational costs [27].

Many hotels in the world are heavily dependent on dominant online travel agencies (OTAs) like Expedia and Booking.com [13,36]. Booking.com, created in 1996, is one of the largest e-commerce companies in the world [37]. Every day, more than 1.5 million room nights are booked through its platform, [12] and it is a leader in the sector. It has also served as a source of academic information in a large body of research focused on tourism and hospitality [38–44]. Booking.com has been active for many years and has been consolidating its position as a leader in the sector. Traditional hosting companies continue to be the first in terms of bookings and prices [45].

3. Methodology and Data Collection

As indicated in the introduction, we use the filter tools of Booking.com to get results on the number of accommodations that offer accessibility adaptations. This methodology allows access to information related to these facilities in thousands of hotels in the world quickly, accurately and free of charge.

In January 2019, hotel data were collected through Booking.com, as hotels are the main type of accommodation used in the world, from the 100 most touristic cities in the world as reported by Euromonitor International in 2017 [46]. Data were from hotels that had available rooms from 6 to 7 April 2019, since it was not high season, and therefore, better availability in the accommodations could be obtained. The data collection took place a few months before the COVID-19 pandemic, thus avoiding the distortions that would occur if the data were from 2020 or 2021 due to the temporary closures of accommodation during those years.

Expedia and TripAdvisor were other popular websites considered to have a large hotel database worldwide. However, TripAdvisor does not offer filters for disabled-accessible facilities. Although Expedia does have that filter, it only offers three adaptation categories and does not show the number of hotels that have implemented each adaptation. For this reason, it was more informative to use Booking.com, which offered eight adaptation categories in 2019 (11 in 2021), and each search indicates the number of adaptations each hotel has implemented.

This study is focused on hotels rather than other types of accommodations, as hotels are the most used accommodation worldwide [47]. However, in the collection of data through Booking.com, all the options offered by this platform were downloaded to search for those facilities and services that are adapted and what type of accessibility they offered at the time of the data collection:

- Wheelchair-accessible
- Toilet with grab rails
- Lower bathroom sink
- Higher-level toilet
- Emergency cord in bathroom
- Visual aids: Braille
- Visual aids: tactile signs
- Auditory guidance

The categories used by Booking.com are not exactly those used in other studies but are very similar to those used in several of them.

It should be noted that the results of hotels obtained from Booking.com are based on establishments that work with Booking.com. However, the level of use of Booking.com is enormous in most destinations in the world, especially in Europe and America, where it is very unusual for a hotel not to sell its rooms through the world leader in reservations [13]. In total, information from 76,832 accommodations in the 100 most touristic cities in the world was collected, distributed as follows.

Hotels are divided into countries and geographical regions America (AME), Asia and the Pacific (ASP), Europe (EUR) and the Middle East and Africa (MEA), as can be seen in Table 1, following the same criteria as other research [40,47,48].

Table 1. Total accommodations available on Booking.com by regions (100 cities 6–7 April 2019).

	Total	AME	%	ASP	%	EUR	%	MEA	%
Hotels	31,868	3116	9.78%	14,658	46.00%	12,049	37.81%	2045	6.42%
Apartments	27,110	2528	9.32%	10,052	37.08%	12,837	47.35%	1693	6.24%
Hostels	6028	313	5.19%	2740	45.45%	2659	44.11%	316	5.24%
Others	11,826	1572	13.29%	5674	47.98%	3472	29.36%	1108	9.37%
Total	76,832	7529	9.80%	33,124	43.11%	31,017	40.37%	5162	6.72%

Source: Authors' own elaboration from Booking.com.

4. Results

Focusing exclusively on the hotels that have at least one accessibility option on Booking.com, we broaden the vision and focus on a more in-depth approach to differentiate their different installations between continents. In these available hotels, 18,368 adaptations are applied to the accessibility filters offered by this platform:

- Wheelchair-accessible: 5873
- Toilet with grab rails: 3774
- Lower bathroom sink: 2507
- Higher-level toilet: 2232
- Emergency cord in bathroom: 1878
- Visual aids: Braille: 877
- Visual aids: tactile signs: 682
- Auditory guidance: 545

The total number of adapted hotels on Booking.com that offer rooms is 18,368 within the 100 cities analysed. This represents 23.91% of all the available accommodations on this platform, which includes other types of accommodation such as apartments, hostels, etc., and 57.6% of the total hotels that can be found. Therefore, it can be confirmed that almost six out of ten hotels on Booking.com have at least one accessible facility for people with disabilities.

In detail and related to the research question (hotel adaptations for people with disabilities), it can be seen that the adaptation of wheelchair access is the highest, followed by the toilet with handrails and the elevated washbasin. The adaptations related to sensory disabilities (Braille, tactile posters and audio guides) are a lower percentage, between three and five percent in all the dataset.

Moreover, and answering the research question regarding what countries and regions around the world have more hotels adapted for people with disabilities, Table 2 shows how accessible installations are distributed on each continent. For instance, wheelchair accessibility is more prevalent in Asia and the Pacific (38.87%) and Europe (35.09%) in absolute values. This tendency is maintained, to a greater or lesser extent, with the other installations except for Braille and tactile signs, which have a greater presence in America and Asia and the Pacific.

Table 2. Percentage of accessible facilities in hotels by region over the total adapted hotels.

	Wheel-Chair	Toilet with Grab Rails	Lower Sink	Higher-Level Toilet	Emergency Cord	Braille	Tactile Signs	Audio Guide
AME	13.37%	14.68%	14.12%	16.53%	4.63%	32.27%	30.21%	26.24%
ASP	38.87%	33.25%	30.20%	27.87%	30.51%	35.58%	36.22%	28.99%
EUR	35.09%	39.11%	43.84%	42.79%	52.61%	21.21%	20.82%	28.62%
MEA	12.67%	12.96%	11.85%	12.81%	12.25%	10.95%	12.76%	16.15%
Total	100%	100%	100%	100%	100%	100%	100%	100%

Source: Authors' own elaboration from Booking.com.

In Table 3, we can see the relative values by regional distribution of each installation. The Middle East and Africa and America are the most well-adapted regions. When we take into account the percentage of hotels analysed in each region, we can observe that America represents only 9.78% of the total dataset. For example, the adaptation for blind customers with information in Braille represents 32.27% of the total, which brings the region to most well-adapted. The Asia and Pacific region is the least adapted. Wheelchair accessibility predominates the most in all regions over the rest. Next, we find toilet with grab rails, higher-level toilet and lower sink. The other measures do not have as much presence, especially those related to some sensory disabilities.

Table 3. Percentage of accessible facilities in hotels by region over all the hotels.

	Wheel-Chair	Toilet with Grab Rails	Lower Sink	Higher-Level Toilet	Emergency Cord	Braille	Tactile Signs	Audio Guide
AME	25.19%	17.78%	11.36%	11.84%	2.79%	9.08%	6.61%	4.59%
ASP	15.58%	8.56%	5.16%	4.24%	3.91%	2.13%	1.69%	1.08%
EUR	17.11%	12.25%	9.12%	7.93%	8.20%	1.54%	1.18%	1.29%
MEA	36.38%	23.91%	14.52%	13.99%	11.25%	4.69%	4.25%	4.30%
Total	18.43%	11.84%	7.87%	7.00%	5.89%	2.75%	2.14%	1.71%

Source: Authors' own elaboration from Booking.com.

In-depth data regarding hotel adaptations for people with disabilities and the types of adaptation needs covered worldwide is next presented by continents and countries.

4.1. America

Data from America shows that the United States is above average in all the accessible facilities, except in the low sink, as can be seen in Table 4.

Table 4. Distribution of the accessible installations for the countries in AME.

Countries	Hotels	Wheel-Chair	Toilet with Grab Rails	Lower Sink	Higher-Level Toilet	Emergency Cord	Braille	Tactile Signs	Audio Guide
Argentina	187	20.43%	11.56%	6.18%	6.99%	1.88%	1.08%	1.61%	0.54%
Brazil	241	28.69%	23.51%	18.33%	11.95%	1.99%	7.17%	3.19%	1.20%
Canada	167	34.22%	21.39%	11.76%	13.90%	0.53%	3.74%	2.14%	1.60%
USA	1877	26.71%	18.20%	10.35%	11.18%	3.15%	9.93%	8.21%	6.60%
Mexico	178	14.17%	5.34%	4.52%	6.78%	1.23%	2.67%	1.44%	0.41%
Peru	121	16.04%	7.23%	5.03%	4.09%	1.26%	2.20%	1.57%	0.63%
Dominican Republic	10	10.87%	0.00%	0.00%	10.87%	0.00%	0.00%	0.00%	0.00%
Total	2781	23.49%	16.58%	10.59%	11.04%	2.60%	8.47%	6.16%	4.28%

Source: Authors' own elaboration from Booking.com.

In general, it is important to highlight the position of Canada and Brazil, which are above average in all the accessible facilities, except those for the sensory disabled. The countries that are mostly under the standards of the continent are Peru, Mexico, Argentina and the Dominican Republic.

4.2. Asia and the Pacific

Within the majority of countries that comprise the continent and are of tourist importance on an international scale, Table 5 shows the distribution by countries in ASP.

Table 5. Distribution of the accessible installations for the countries in ASP.

Countries	Hotels	Wheel-Chair	Toilet with Grab Rails	Lower Sink	Higher-Level Toilet	Emergency cord	Braille	Tactile Signs	Audio Guide
Australia	370	25.97%	19.11%	9.46%	7.98%	1.30%	2.78%	1.67%	0.37%
Cambodia	300	16.71%	5.14%	7.00%	6.00%	3.43%	1.14%	1.71%	1.71%
South Korea	518	24.68%	21.27%	6.49%	3.57%	7.14%	10.39%	8.12%	2.44%
Hong Kong	227	25.93%	16.67%	12.59%	8.52%	8.89%	5.19%	4.07%	2.22%
India	910	14.36%	6.27%	5.92%	5.18%	3.22%	1.48%	1.52%	1.65%
Indonesia	311	25.08%	9.60%	4.64%	4.64%	2.32%	0.62%	0.31%	0.93%
Japan	493	14.99%	11.97%	4.81%	3.49%	6.03%	3.68%	1.04%	0.47%
Macau	29	20.34%	13.56%	3.39%	3.39%	8.47%	0.00%	0.00%	0.00%
Malaysia	383	17.15%	7.77%	4.84%	3.43%	1.92%	1.31%	1.11%	1.11%
New Zealand	71	29.52%	21.90%	8.57%	6.67%	0.95%	0.00%	0.00%	0.00%
Singapore	198	21.20%	16.77%	7.28%	4.75%	7.28%	2.85%	2.22%	0.32%
Sri Lanka	85	32.14%	16.96%	10.71%	8.93%	2.68%	1.79%	1.79%	0.89%
Thailand	750	14.36%	5.83%	2.95%	3.00%	2.33%	0.92%	1.29%	0.54%
Taiwan	653	14.78%	12.66%	6.86%	5.31%	11.50%	6.38%	3.09%	2.51%
Vietnam	391	7.39%	2.60%	3.49%	3.75%	1.20%	0.52%	0.78%	0.62%
China	518	9.81%	5.28%	3.14%	1.94%	3.59%	0.60%	0.95%	0.50%
Total	6207	15.14%	8.32%	5.02%	4.12%	3.80%	2.07%	1.64%	1.05%

Source: Authors' own elaboration from Booking.com.

From here, we can affirm that the countries that stand out for having a greater number of facilities for people with disabilities in relation to the group are Hong Kong, South Korea, Sri Lanka, Australia and New Zealand, where tourism has increased in the last few years and has a large network of hotel establishments.

As we can see, most of the hotels focus, to a greater or lesser extent, on wheelchair accessibility, followed by a toilet with grab rails. Less considered are those adaptations related to sensory disabilities.

If we go deeper, we can see that the wheelchair access is 15.14% in the Asian continent; Sri Lanka (32.14%), New Zealand (29.52%), Australia (25.97%), Hong Kong (25.93%), Indonesia (25.08%), South Korea (24.68%), Singapore (21.20%), Macau (17.15%) and Cambodia (16.71%) are the countries at the bottom of the list.

If we look at toilets with grab rails, which has an average of 8.32%, we find the same countries except Japan and Taiwan, which are on the bottom, and Malaysia and Cambodia, which are below the middle. Regarding the other facilities, we observe that the behaviour of the countries is more or less maintained in the same characteristics.

4.3. Europe

As can be seen in Table 6, on the European continent, if we take wheelchair accessibility as a reference example, the countries that are above average are Ireland, Belgium, Spain, Portugal, France, Austria, Poland, the Netherlands, United Kingdom, Italy, Hungary and Turkey.

However, the layout of the facilities is different in each country. In Italy, the most outstanding feature is the emergency cord, at 19.22%, or in the Netherlands, where the toilet with grab rails (23.81%) is the main feature.

The countries that are least adapted in general terms are Russia, Austria, Greece and Denmark. Ireland is the region that stands out the most in all areas of accessible facilities, followed by the Netherlands, Portugal and Belgium.

Table 6. Distribution of the accessible installations for the countries in EUR.

Countries	Hotels	Wheel-Chair	Toilet with Grab Rails	Lower Sink	Higher-Level Toilet	Emergency Cord	Braille	Tactile Signs	Audio Guide
Germany	623	16.50%	14.85%	10.89%	10.78%	12.21%	1.32%	1.54%	0.44%
Austria	60	21.15%	2.88%	1.92%	0.96%	1.44%	0.00%	0.00%	0.48%
Belgium	157	29.95%	20.81%	12.69%	9.14%	6.09%	0.51%	0.51%	0.00%
Denmark	35	14.74%	8.42%	4.21%	3.16%	3.16%	1.05%	1.05%	1.05%
Spain	465	28.80%	14.72%	10.92%	6.96%	5.38%	3.96%	2.06%	0.79%
France	1170	21.30%	16.04%	12.87%	10.71%	2.15%	3.11%	2.09%	1.74%
Greece	154	10.47%	7.44%	5.35%	4.42%	6.74%	0.47%	0.93%	0.00%
Hungary	122	18.93%	10.70%	8.23%	5.35%	5.76%	0.82%	0.41%	0.00%
Ireland	118	30.33%	22.13%	15.57%	12.30%	15.57%	0.00%	0.82%	0.00%
Italy	1432	19.10%	16.20%	13.13%	14.34%	19.22%	1.69%	0.90%	1.69%
Netherlands	121	19.84%	23.81%	15.87%	12.70%	19.05%	2.38%	1.59%	0.79%
Poland	284	20.49%	18.31%	12.02%	12.02%	9.29%	1.09%	0.82%	3.55%
Portugal	187	25.47%	21.23%	7.55%	8.96%	20.75%	1.89%	1.42%	0.94%
Czech Republic	177	15.63%	10.34%	6.01%	6.25%	3.61%	0.00%	0.72%	0.00%
Russia	233	3.67%	2.42%	1.81%	1.11%	1.66%	0.50%	0.35%	0.20%
Sweden	83	15.92%	11.46%	3.18%	4.46%	12.74%	1.91%	1.27%	1.91%
Turkey	1063	18.21%	10.89%	9.16%	6.99%	7.05%	1.30%	1.36%	2.66%
United Kingdom	579	19.55%	14.73%	10.89%	7.80%	13.37%	1.86%	1.49%	1.98%
TOTAL	7063	17.06%	12.21%	9.09%	7.90%	8.18%	1.54%	1.18%	1.29%

Source: Authors' own elaboration from Booking.com.

4.4. The Middle East and Africa

As for the Middle East and Africa region, Table 7 shows that the country that stands out the most is the United Arab Emirates, followed by Qatar and Israel, which are generally found above the average of the continent. The countries that are below average in all areas are Morocco and Egypt.

Table 7. Distribution of the accessible installations for the countries in MEA.

Countries	Hotels	Wheel-Chair	Toilet with Grab Rails	Lower Sink	Higher-Level Toilet	Emergency Cord	Braille	Tactile Signs	Audio Guide
Saudi Arabia	711	18.87%	13.89%	9.20%	9.96%	5.27%	4.02%	3.54%	3.35%
Egypt	92	19.35%	9.68%	7.53%	5.91%	3.76%	1.08%	1.08%	1.08%
Israel	197	28.95%	17.11%	10.53%	10.53%	4.82%	3.51%	4.82%	6.14%
Morocco	65	17.01%	8.84%	8.84%	6.80%	2.04%	0.68%	0.00%	0.00%
Qatar	145	31.37%	18.30%	12.42%	9.80%	11.76%	6.54%	1.96%	2.61%
South Africa	119	24.11%	18.44%	12.77%	10.64%	7.80%	1.42%	4.96%	4.26%
UAE	988	33.57%	21.85%	11.22%	10.63%	12.41%	3.08%	2.68%	2.68%
Total	2317	25.60%	16.83%	10.22%	9.84%	7.91%	3.30%	2.99%	3.03%

Source: Authors' own elaboration from Booking.com.

Mostly, and as seen before, the feature that is more present in these countries is wheelchair accessibility, toilet with a grab rail and low sink.

5. Discussion

First, we observe that people with functional diversity do not have the same number of options for accommodation in their trips as the rest of the population since they do not have access to facilities adapted for people with some type of disability, and this reduces the number of options for this group enormously.

Tourism is an activity that many people with disabilities are forced to sacrifice for the simple reason that it implies a cooperation of physical, mental and social abilities, in line with what they require [7].

On the other hand, in cases where the facilities are adapted, a problem remains in the conception of the people, both by the workers and by the customers. People with disabilities are often perceived as a "burden" [24] and disfavoured or overlooked in terms of accommodation and service.

It is difficult to establish a series of standards or needs since each person is different and may require different attention or needs. In any case, it is clear that if people with disabilities travel on their own, they should be provided with some form of assistance or help.

Moreover, the international variation in regulations and traditions regarding hotels makes it difficult for people with disabilities to determine which establishment to choose. This is because although the hotel might state that it is adapted or accessible, it is not a guarantee it really is accessible or the adaptation was done properly [48].

This study confirms that countries and regions in the world are adapted unevenly and, in general, countries with the highest per capita income are those with the best-adapted hotels, such as the United States and Canada in America, Ireland in Europe, Qatar and the United Arab Emirates in the Middle East, or Australia, Singapore and New Zealand in Asia and the Pacific.

6. Conclusions

The great domain of the hotel market worldwide makes up the vast majority of the international hotel industry in the Booking.com database, especially in Europe and America. This large sample allowed us to identify, with great clarity and reliability, the situation regarding adaptations in the hotel industry. Different from previous studies focusing on specific countries or cities with relatively small samples, we worked with a sample of 31,868 hotels, in which we identify some type of adaptation in 18,368 hotels.

Despite the numerous recommendations by public and private authorities to promote the adaptation of hotels to people with functional diversity, this analysis of the situation in the most touristic cities in the world shows how accommodations with adaptations are still a minority. Even in the countries with the highest level of adaptation, wheelchair accessibility is only provided in 30% of hotels and more specific accommodations, such as Braille, tactile posters or audio guides, are offered in just 5% or less of cases.

These types of adaptations are easier to include in the case of new construction or extensive renovation of establishments. They are even required for new construction according to the legislation of some regions. However, if the society intends to improve the adaptation rates simply by forcing new construction to do so, it will take decades to see how the poor percentages observed in this study improve.

The profitability obtained by hotels after making these adaptations is relatively low, which would explain the low implementation of various considerations and alterations. Therefore, public policies are necessary to obligate and/or subsidize this type of adaptations.

If we look at the accessibility of Booking.com hotels, we can see that most of its filters refer to facilities for reduced mobility and very few for sensory disabilities. However, Booking.com includes at least some adaptation for sensory disabilities. These limitations could establish future lines of study. Moreover, although it considers some sensory disabilities, the facilities available may not be present or widespread enough for a person to enjoy them without first conducting difficult research.

Adapting buildings architecturally to improve accessibility is good, and it is something that is already planned by law in many countries. However, it is only in reference to facilities that remain accessible to people with reduced mobility, which only includes those who are physically disabled. So how are the needs of people with cognitive or sensory disabilities addressed?

The areas that are most aware of the adaptability of tourist accommodation infrastructures are largely America, especially the United States and Canada. However, countries on other continents that stand out from the rest are the United Arab Emirates.

The hotel industry around the world has shortcomings when it comes to achieving inclusive tourism. There are countries where legislation requires the provision of adapted accommodation for people with disabilities. However, it focuses mainly on physical and mobility disabilities and leaves aside other types of cognitive or sensory disabilities, which

makes it impossible for people to travel and stay on their own. The public sector should further promote the goal of having quality tourism in which no one is excluded.

7. Implications and Limitations

The diversity of people with disabilities is very large (especially compared to older people, who represent a great potential demand for the tourism market). Therefore, the sector has to take advantage of this fact and benefit by offering its services in an inclusive way. Despite the investment this could represent, the profit would be very large. The issue rests in the fact that if all companies made the issue a priority, the sector would improve in economic terms, especially in quality.

This study could serve as a source of information for the hotel sector when adapting its infrastructures to the different types of disabilities to offer a service adapted to the needs of each tourist.

It should be noted that the results of the hotels obtained by Booking.com are based on those establishments that work with Booking.com. It is one of the most important in the world and has a volume of hotels that exceeds the total of all the OTAs in the world. However, it does not reflect the entire hotel industry. Hotels that do not work with Booking.com are not represented in this study.

The hotels themselves provide the information on Booking.com; the information is not a result of a physical inspection by the platform. Thus, there might be hotels with adaptations that have not reflected this characteristic in their Booking.com profile and, conversely, hotels that really do not have an adaptation but have included it in their Booking.com profile. In any case, this limitation, and the possible inaccuracies it may cause, is not different from those that are produced in traditional survey research.

Future research could possibly analyse if there is a correlation between the hotel category and the available facilities and if it is similar in different regions of the world.

Author Contributions: Conceptualization, E.M.-F., S.M.-S. and J.P.M.; methodology, E.M.-F., S.M.-S. and J.P.M.; software, E.M.-F., S.M.-S. and J.P.M.; validation, E.M.-F. and J.P.M.; formal analysis, E.M.-F. and S.M.-S.; investigation, E.M.-F., S.M.-S. and J.P.M.; resources, E.M.-F.; data curation, E.M.-F. and S.M.-S.; writing—original draft preparation, E.M.-F. and S.M.-S.; writing—review and editing, E.M.-F. and J.P.M.; visualization, E.M.-F. and S.M.-S.; supervision, E.M.-F. and J.P.M.; project administration, E.M.-F.; funding acquisition, E.M.-F. All authors have read and agreed to the published version of the manuscript.

Funding: This research was funded by the Ministry of Economy, Industry and Competitiveness for the granting of the TURCOLAB project (ECO2017–88984–R) and research project (TIN2015-71799-C2-2-P).

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Not applicable.

Data Availability Statement: Not applicable.

Conflicts of Interest: The authors declare no conflict of interest.

References

1. Smith, M.K.; Diekmann, A. Tourism and wellbeing. *Ann. Tour. Res.* **2017**, *66*, 1–13. [CrossRef]
2. UNWTO. International Tourism Growth Continues to Outpace the Global Economy. Available online: https://www.unwto.org/international-tourism-growth-continues-to-outpace-the-economy (accessed on 20 May 2020).
3. Devile, E.; Kastenholz, E. Accessible tourism experiences: The voice of people with visual disabilities. *J. Policy Res. Tour. Leis. Events* **2018**, *10*, 265–285. [CrossRef]
4. Daries-Ramón, N.; Pal, A.; Martin-Fuentes, E.; Cristobal Fransi, E. Turismo accesible, una oportunidad de diferenciación para los destinos. In *Gobernanza y Participación en la Gestión Sostenible de los Destinos Turísticos*; López, D., Ed.; Tirant Lo Blanch: Valencia, Spain, 2017; pp. 727–745.
5. UNWTO. World Tourism Day 2016 "Tourism for All-promoting universal accessibility"—Good practices. In *Accessible Tourism Supply Chain*; UNWTO: Madrid, Spain, 2016.
6. Leidner, R. Tourism accessible for all in Europe 2006. Available online: http://www.rollingrains.com/archives/Tourism_for_all_in_Europe_Leidner_2006.pdf (accessed on 11 March 2021).

7. Neal, J.D.; Uysal, M.; Sirgy, M.J. The effect of tourism services on travelers' quality of life. *J. Travel Res.* **2007**, *46*, 154–163. [CrossRef]
8. Darcy, S.; Cameron, B.; Schweinsberg, S. Accessible tourism in Australia. *Best Pract. Access. Tour.* **2012**, *79*, 113.
9. Tantawy, A.; Kim, W.G.; Pyo, S. Evaluation of hotels to accommodate disabled visitors. *J. Qual. Assur. Hosp. Tour.* **2005**, *5*, 91–101. [CrossRef]
10. Dimou, E.; Velissariou, E. Tourism and accessibility, A satisfaction survey on tourists with disabilities in the Island of Crete. In Proceedings of the 11th MIBES Conference, Heraklion, Greece, 22–24 June 2016.
11. Sielschott, K.M. The Americans with Disabilities Act and Accessibility Standards for the Disabled Population in the Lodging Industry. Ph.D. Thesis, Miami University, Oxford, OH, USA, 2004.
12. Booking.com. About Booking.com. Available online: https://www.booking.com/content/about.en.html (accessed on 10 January 2018).
13. Martin-Fuentes, E.; Mellinas, J.P. Hotels that most rely on Booking.com—Online travel agencies (OTAs) and hotel distribution channels. *Tour. Rev.* **2018**, *73*, 465–479. [CrossRef]
14. Molina Hoyo, M.; Cánoves Valiente, G. Turismo accesible, turismo para todos: La situación en Cataluña y España. *Cuad. Tur.* **2010**, *25*, 25–44.
15. UNWTO. *Recomendaciones de la OMT por un Turismo Accesible para Todos*; CEDRO, Centro Español de Derechos Reprográficos: Madrid, Spain, 2014; ISBN 978-92-844-1599-1.
16. Pagán, R. The contribution of holiday trips to life satisfaction: The case of people with disabilities. *Curr. Issues Tour.* **2015**, *18*, 524–538. [CrossRef]
17. World Health Organization. *International Classification of Functioning, Disability and Health (ICF)*; World Health Organization: Geneva, Switzerland, 2001.
18. Vila, T.D.; Brea, J.A.F.; González, M.E.A. Turismo y accesibilidad. Una visión global sobre la situación de España. *Cuad. Tur.* **2011**, *28*, 23–45.
19. Buhalis, D.; Eichhorn, V.; Michopoulou, E.; Miller, G. *Accessibility Market and Stakeholder Analysis*; University of Surrey: Guildford, UK, 2005.
20. Mendez, N.M. Turismo accesible. Available online: https://www.turismoyderecho.com.ar/wp-content/uploads/2018/03/Turismo_Accesible_N\includegraphics[scale=1]{Definitions/S1.pdf}elida-Mabel-M\includegraphics[scale=1]{Definitions/S1.pdf}ndez.pdf (accessed on 1 March 2021).
21. Natalia, P.; Clara, R.A.; Simon, D.; Noelia, G.; Barbara, A. Critical elements in accessible tourism for destination competitiveness and comparison: Principal component analysis from Oceania and South America. *Tour. Manag.* **2019**, *75*, 169–185. [CrossRef]
22. Calvillo Mazarro, M. Orientaciones para el desarrollo y rentabilidad de productos turístico accesibles a partir del estudio de las necesidades y hábitos turísticos de las personas con discapacidad. In *Turismo y Desarrollo Económico: IV Jornadas de Investigación en Turismo*; idUS: Sevilla, Spain, 2011; pp. 537–565.
23. Yau, M.K.; McKercher, B.; Packer, T.L. Traveling with a disability: More than an access issue. *Ann. Tour. Res.* **2004**, *31*, 946–960. [CrossRef]
24. Boxall, K.; Nyanjom, J.; Slaven, J. Disability, hospitality and the new sharing economy. *Int. J. Contemp. Hosp. Manag.* **2018**, *30*, 539–556. [CrossRef]
25. Darcy, S.; McKercher, B.; Schweinsberg, S. From tourism and disability to accessible tourism: A perspective article. *Tour. Rev.* **2020**, *75*, 140–144. [CrossRef]
26. Piramanayagam, S.; Pritam, P.; More, B.A. Inclusive hotel design in india: A user perspective. *J. Access. Des. All* **2019**, *9*, 41–65.
27. Darcy, S. Inherent complexity: Disability, accessible tourism and accommodation information preferences. *Tour. Manag.* **2010**, *31*, 816–826. [CrossRef]
28. Zhang, Y.; Yang, Q. Assessing hotel decision-making of disabled guests: Satisfaction correlation study between online comments' credibility and perceived risk. *Electron. Commer. Res.* **2019**, 1–20. [CrossRef]
29. Bisschoff, C.A.; Breedt, T.F. The need for disabled friendly accommodation in South Africa. *Afr. J. Bus. Manag.* **2012**, *6*, 10534–10541.
30. Kim, W.G.; Stonesifer, H.W.; Han, J.S. Accommodating the needs of disabled hotel guests: Implications for guests and management. *Int. J. Hosp. Manag.* **2012**, *31*, 1311–1317. [CrossRef]
31. Grady, J.; Ohlin, J.B. Equal access to hospitality services for guests with mobility impairments under the Americans with Disabilities Act: Implications for the hospitality industry. *Int. J. Hosp. Manag.* **2009**, *28*, 161–169. [CrossRef]
32. Lyu, S.O. Which accessible travel products are people with disabilities willing to pay more? A choice experiment. *Tour. Manag.* **2017**, *59*, 404–412. [CrossRef]
33. Israeli, A.A. A Preliminary investigation of the importance of site accessibility factors for disabled tourists. *J. Travel Res.* **2002**, *41*, 101–104. [CrossRef]
34. Poria, Y.; Reichel, A.; Brandt, Y. Dimensions of hotel experience of people with disabilities: An exploratory study. *Int. J. Contemp. Hosp. Manag.* **2011**, *23*, 571–591. [CrossRef]
35. Burgstahler, S. *Universal Design of Instruction (UDI): Definition, Principles, Guidelines, and Examples*; Do-It: Seattle, WA, USA, 2009.
36. Fereidouni, M.A.; Kawa, A. Dark side of digital transformation in tourism. In Proceedings of the Asian Conference on Intelligent Information and Database Systems; Springer: Cham, Switzerland, 2019; pp. 510–518.

37. Martin-Fuentes, E.; Mateu, C.; Fernandez, C. The more the merrier? Numbers of reviews versus score on TripAdvisor and Booking.com. *Int. J. Hosp. Adm.* **2017**, *21*, 1–14. [CrossRef]
38. Martin-Fuentes, E. Are guests of the same opinion as the hotel star-rate classification system? *J. Hosp. Tour. Manag.* **2016**, *29*, 126–134. [CrossRef]
39. Mellinas, J.P.; Martínez María-Dolores, S.-M.; Bernal García, J.J. Booking.com: The unexpected scoring system. *Tour. Manag.* **2015**, *49*, 72–74. [CrossRef]
40. Mellinas, J.P.; Martínez María-Dolores, S.-M.; Bernal García, J.J. Effects of the Booking.com scoring system. *Tour. Manag.* **2016**, *57*, 80–83. [CrossRef]
41. Martin-Fuentes, E.; Fernandez, C.; Mateu, C.; Marine-Roig, E. Modelling a grading scheme for peer-to-peer accommodation: Stars for Airbnb. *Int. J. Hosp. Manag.* **2018**, *69*, 75–83. [CrossRef]
42. Abrate, G.; Viglia, G. Strategic and tactical price decisions in hotel revenue management. *Tour. Manag.* **2016**, *55*, 123–132. [CrossRef]
43. Nicolau, J.L.; Mellinas, J.P.; Martín-Fuentes, E. Satisfaction measures with monetary and non-monetary components: Hotel's overall scores. *Int. J. Hosp. Manag.* **2020**, *87*, 102497. [CrossRef]
44. Nicolau, J.L.; Mellinas, J.P.; Martín-Fuentes, E. The halo effect: A longitudinal approach. *Ann. Tour. Res.* **2020**, *83*, 102938. [CrossRef]
45. Cheng, M. Sharing economy: A review and agenda for future research. *Int. J. Hosp. Manag.* **2016**, *57*, 60–70. [CrossRef]
46. EuromonitorInternational. *100 City Destinations Ranking*; WTM London: London, UK, 2017.
47. Balagué, C.; Martin-Fuentes, E.; Gómez, M.J. Fiabilidad de las críticas hoteleras autenticadas y no autenticadas: El caso de TripAdvisor y Booking.com. *Cuad. Tur.* **2016**, *38*, 63–82. [CrossRef]
48. Wazzan, W. My accessible room is not accessible, applying human factors: Principals to enhance the accessibility of hotel rooms. *Procedia Manuf.* **2015**, *3*, 5405–5410. [CrossRef]

MDPI
St. Alban-Anlage 66
4052 Basel
Switzerland
Tel. +41 61 683 77 34
Fax +41 61 302 89 18
www.mdpi.com

Societies Editorial Office
E-mail: societies@mdpi.com
www.mdpi.com/journal/societies

MDPI
St. Alban-Anlage 66
4052 Basel
Switzerland

Tel: +41 61 683 77 34
Fax: +41 61 302 89 18

www.mdpi.com

ISBN 978-3-0365-3837-2