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Introduction: setting the necessity and parameters for tourism COVID-19 research

The COVID-19 (declared as a pandemic by WHO, 12 March 2020) of significantly impacts the global economic, political, socio-cultural systems. Health communication strategies and measures (e.g. social distancing, travel and mobility bans, community lockdowns, stay at home campaigns, self- or mandatory-quarantine, curbs on crowding) have halted global travel, tourism and leisure. Being a highly vulnerable industry to numerous environmental, political, socio-economic risks, tourism is used to and has become resilient in bouncing back (Novelli et al., 2018) from various crises and outbreaks (e.g. terrorism, earthquakes, Ebola, SARS, Zika). However, the nature, the unprecedented circumstances and impacts of the COVID-19, demonstrate signs that this crisis is not only different, but it can have profound and long-term structural and transformational changes to tourism as socio-economic activity and industry. Indeed, the global and huge scale, the multidimensional and interconnected impacts challenging current values and systems and leading to a worldwide recession and depression are the most distinctive characteristics of this pandemic.

COVID-19 tourism impacts will be uneven in space and time, and apart from the human tool, estimates show an enormous and international economic impact: international tourist arrivals are estimated to drop to 78% causing a loss of US$ 1.2 trillion in export revenues from tourism and 120 million direct tourism job cuts representing seven times the impact of September 11, and the largest decline in the history (UNWTO, 2020). Being one of the most important global employer (1 in 10 jobs are directly related to tourism, UNWTO, 2020) and the major GDP contributor for several countries, tourism and COVID-19 are the epicenter of all international discussions and economies.

Within the burgeoning industry discussions and research about tourism and COVID-19, there is an unanimous call to see and use the pandemic as a transformative opportunity (Mair, 2020). Industry should not only recover but also reimagine and reform the next normal and economic order (McKenzie, 2020), while researchers should not solely use COVID-19 as another context to replicate existing knowledge for measuring and predicting tourism impacts (Gössling et al., 2020; Hall et al., 2020). Although such studies are important for managing the pandemic, they do not advance knowledge and/or guide the industry to a step beyond. Moreover, because of the interlinked socio-cultural, economic, psychological and political impacts of COVID-19 of this

magnitude, unforeseen trajectories instead of historical trends are expected and the predictive power of 'old' explanatory models may not work. Moreover, there is enough evidence to claim that both the tourism industry and research have matured to a good extent providing sufficient knowledge about how to study and effectively: 1) design and implement crisis recovery and response strategies (e.g. McKercher & Chon, 2004); 2) build resilience to address future crises (Hall et al., 2017). What is still lacking is knowledge about how crisis can foster industry change, how companies can convert this crisis disruption into transformative innovation and how to conduct research that can enable, inform and shape the rethinking and resetting of a next normal.

Crises can be a change trigger, but none crisis has been so far a significant transition event in tourism (Hall et al., 2020). Crises have also been used as a political tool to stabilize existing structures and diminish the possibility of collective mobilization (Masco, 2017). As change can be selective and/or optional for the tourism stakeholders (e.g. tourists, operators, destination organisations, policy makers, local communities, employees), the nature and degree of crises-led transformations depend on whether and how these stakeholders are affected by, respond to, recover and reflect on crises. Consequently, to better understand, predict but also inform and shape change, tourism COVID-19 research should provide a deeper examination and understanding of the tourism stakeholders' (behavioural, cognitive, emotional, psychological and even ideological) drivers, actions and reactions to their COVID-19 impacts. Research should also examine and understand the stakeholders' lived and perceived COVID-19 experiences as well as their consciousness, mindfulness, capabilities and willingness to understand and act (pro-actively and re-actively) to the pandemic, as all these can equally influence their attitudes, behaviours and change potential.

COVID-19 tourism research should also advance our knowledge for informing, fostering, shaping or even leading such crises-enabled transformations. Otherwise, we will simply experience one crisis after the other (Lew, 2020). Responding to the mushrooming euphoria of COVID-19 tourism related research, Gretzel et al. (2020) also plead for transformative e-tourism research that can shape tourism futures by making value systems, institutional logics, scientific paradigms and technology notions visible and transformable. To achieve scientific paradigm shifts, e-tourism research should embrace historicity, reflexivity, transparency, equity, plurality and creativity (Gretzel et al., 2020). To avoid the bubble of the COVID-19 research orgasm and advance tourism research, others have also suggested to adopt inter-disciplinary (Wen et al., 2020), multi-disciplinary (Gössling et al., 2020; Hall et al., 2020) or even anti-disciplinary (Sigala, 2018) research to enable out-of-the-box, creative and flexible thinking that challenges and goes beyond existing pre-assumptions and mindsets.

To address these needs and gaps, this paper aims to critically review past and emerging literature to help professionals and researchers alike to better understand, manage and valorize both the tourism impacts and transformational affordance of COVID-19. To achieve this, first, the paper discusses why and how the COVID-19 can be a transformational opportunity by discussing the circumstances and the questions raised by the pandemic. By doing this, the paper identifies the fundamental values, institutions and pre-assumptions that the tourism industry and academia should challenge and break through to advance and reset the research and practice frontiers. The paper continues by discussing the major impacts, behaviours and experiences that three major tourism stakeholders (namely tourism demand, supply and destination management organisations

and policy makers) are experiencing during three COVID-19 stages (response, recovery and reset). This analysis is useful because it provides an overview and understanding of the type and scale of the COVID-19 tourism impacts, while it also demonstrates that the way in which stakeholders and researchers understand, react and behave in each stage may form and set the next (new) normal in the post COVID-19 era. Responding to the call for transformative research, discussions are developed based on the rational that tourism research should go beyond replicating and reconfirming existing knowledge within the COVID-19 context; instead tourism COVID-19 research should *see new things and see them differently* to inform and guide tourism futures. Hence, the paper suggests potential new research areas and theoretical lenses that can be used for advancing and resetting industry practice and research. The paper does not aim to provide a fully comprehensive and inclusive analysis of all the impacts, theories, topics and tourism stakeholders that COVID-19 tourism research can examine. Instead, it aims to provide practical and theoretical implications on how to better research, understand, manage and transformative valorize COVID-19 tourism impacts.

COVID-19 circumstances and tourism: shifting the research focus to challenge, reset and contradict institutional logics, systems and assumptions
Research investigating, measuring and predicting the COVID-19 tourism impacts is important in order to eliminate 'casualties', draft, monitor and improve response strategies (i.e. you cannot manage what you cannot measure). However, research focusing on the features and impacts of crises instead of their structural roots tends to conceal and stabilize the conditions and corollary social structures through which crises are produced (Barrios, 2017: 151). Investigating the real roots of COVID-19 may go beyond the boundaries and scope of tourism research. Yet, the latter needs to look into and challenge the tourism 'circumstances' and structures that have enabled and sometimes accelerated the global spread and impact of COVID-19. Unfortunately, the economists downplay the pandemic as a purely natural event originating and operating outside of the economic system (Nowlin, 2017). But, treating COVID-19 as an exogenous shock and phenomenon that has nothing to do with socio-economic structures and values, can perpetuate and strengthen the pandemic roots during the post COVID-era as well as constrain change and transformational processes.

COVID-19 is a crisis of the economized societies rooted in the growth-paradigm (Ötsch, 2020). COVID-19 is also a result of the intersection of broader processes of urbanisation, globalisation, environmental change, agribusiness and contemporary capitalism (Allen et al., 2017). The nature of tourism (requiring traveling) and its evolution and growth paradigms are a significant contributor to such circumstances and the current socio-economic system accelerating the spread and impact of this contagious and infectious virus. Tourism is a result but also responsible for: our highly interconnected and global world; pollution, waste and climate change; global, national and regional economic development and growth; superiority of capitalism values in people's and business decision-making but also policy and politics formulations. As climate change increases the frequency of pandemics and outbreaks, pandemics are expected to become more common in the future (World Economic Forum, 2019), which in turn highlights the interwoven nature and vicious circle forces between the biological, physical and socio-economic systems.

Moreover, the economic system and mindset contributing to the COVID-19 has also been guiding and shaping the COVID-19 response and recovery strategies of governments, institutions,

businesses and people alike. This can significantly perpetuate and repeat crises as we are treating their symptoms and not their roots. For example, economic priorities for maintaining business continuity and jobs, resume and recovering to the old 'economic success growth', have been driving governments' policies and practices such as: economic support (e.g. subsidies, tax reliefs) to tourism businesses and employees; debates for relaxation of restrictions for re-opening and re-starting economies at the expense of a second way and human lives. Similarly, people have engaged in panic buying and (over)-consumption of online experiences (e.g. virtual entertainment, dining, drinking, traveling) during lock-downs, that demonstrate their persistence, preference and fear of loosing to their 'consumerism' traditional lifestyles deemed essential for their success and happiness. Early COVID-19 tourism research also reinforces a similar mindset, e.g. many studies trying to measure the economic impacts of COVID-19 trading them off to socio-cultural and biological impacts, studies aiming to predict and measure when tourists will start traveling again and when we can reach the old tourism targets. As governments race to minimise economic losses, and be the first to reopen borders and (tourism) businesses, and financial markets, investors, cash liquidity and financial survival are equally pressing multinational and small tourism enterprises, they are all also looking for tourism research that can 'feed' and 'reconfirm' their mindset and help them resume operations based on the old paradigms and business models they are founded. Debates and research are based on trading between economic benefits and losses in exchange of human rights, lives, morals and ethics. There is no discussion why trade-offs are the best methodology and mindset to decide, no one has re-imagined 'solutions' enabling co-existence or regenerative forces between these concepts.

Overall, research, education and our socio-economic and political system (which they shape and are shaped by each other), have all framed our mindset on how we research, measure, understand, respond and aim to recover from the COVID-19. Consequently, we have converted COVID-19 from a biological virus contagion to a financial crisis contagion and recently, an economic race to re-build our old financial competitiveness. To avoid such perpetuations, tourism research should assume more responsibility in informing, driving and leading sustainable futures. To that end, COVID-19 tourism research should not be solely seen, conducted and used as a useful tool to help resume old states. Instead, COVID-19 tourism research should also challenge our growth-paradigms and assumptions that have led to the current situation and enable us to reimagine and reset tourism (e.g. Ioannides & Gyimóthy, 2020; Gössling et al., 2020; Hall et al., 2020; Higgins-Desbiolles, 2020). To achieve this, COVID-19 tourism research should criticize ontological and epistemological foundations and assumptions that underpin the current science and growth paradigms (Brodbeck, 2019). It should also deconstruct and challenge the mechanisms and systems that sustain the deleterious unsustainable tourism evolution (Higgins-Desbiolles, 2020). But to regenerate and transform tourism and its socio-economic system, tourism research should not only support new ways and perspectives of researching, knowing and evolving. COVID-19 tourism research should also inspire, motivate and inform all tourism stakeholders alike to adopt new ways of being, doing and politicising. For example:

At a macro-level, COVID-19 tourism research should generate dethinking, rethinking and unthinking of pre-assumptions and mindsets including (Higgins-Desbiolles, 2020): globalisation as an unstoppable force; neoliberal capitalism as the best system and decision-making tool for organizing and allocating resources; growth as the sole way for development and success. It should

also challenge the 'surveillance capitalism', whose institutionalisation and normalisation is perceived as inevitable and unstoppable because of forces including (Zuboff, 2015): institutionalised facts (e.g. data collection, analytics and mining); leading tech and disrupting companies being respected and treated as emissaries of a better future solving the "faults of capitalism" (e.g. sharing economy platforms 'democraticing' micro-entrepreneurship); and people seeing technologies as a necessity requirement for social and civic participation, securing employment and addressing the increasingly stressful, competitive, and stratified struggle for effective life. The COVID-19 is accelerating the institutionalisation and acceptance of this algorithmic governance, management and society, previously contested as violations of human rights, privacy and laws (Zysman, 2006), but now becoming normalised in the name of health and common good.

Technology is at the core of solutions for combating the COVID-19 and re-opening tourism and the economy (e.g. mobility tracing apps, robotised-AI touchless service delivery, digital health passports and identity controls, social distancing and crowding control technologies, big data for fast and real time decision-making, humanoid robots delivering materials, disinfecting and sterilizing public spaces, detecting or measuring body temperature, providing safety or security), while technology is seen as a panacea to our COVID-19 driven-needs to normalise surveillance, to ensure health and safety, to collect and analyse personal data for fast decision-making. Although COVID-19 tourism research cannot stop these technological advances, it should fight this digital trojan horse from the inside by questioning and resetting their purposes, designs and affordances, interpretations and application ethics. Technologies are constituted by unique affordances, whose development and expression are shaped by the institutional logics in which technologies are designed, implemented, and used (Zuboff, 2015). COVID-19 tourism research could simply investigate and advance our information and technological capabilities to collect, analyse and use (big) data for better knowing, predicting, controlling, and modifying human behavior (e.g. tourists and employees behaviour) as a means to produce revenue and market control (Zuboff, 2015). But such research will simply further support the making of everydayness qua data imprints an intrinsic component of organizational and institutional life and a primary target of commercialization strategies (Constantiou & Kallinikos, 2014). Technologies have always been an enabler, a catalyst of innovation and change, a disruptor of tourism, as well as a tool to build tourism resilience in crisis (Hall et al., 2017). The COVID-19 has further enhanced the role of technologies in the recovery and reimagination of tourism, while it reinforces existing paradigms in the e-tourism evolution. Developmental trends and adoption of smart destinations and tourism services, AI, robotics and other digital advances are now accelerated to combat the COVID-19 tourism implications. COVID-19 tourism research should reimagine and re-shape the purposes, usage and means of such technological advances that significantly form how our societies and economies are being transformed, how tourism is being practiced, managed and evolves with the help and/or because of the COVID-19.

At a micro-level, COVID-19 tourism research should question and reset why tourism is viewed, practiced and managed as a way to 'escape', 'relax', 'socialise', 'construct identities/status', 'learn' and reward themselves from a routine, unpleasant and meaningless life. Why tourism should be researched and practiced as an escape from a boring life, instead of life being rewarding

and meaningful itself? Why people have to travel thousands of miles away from home to 'learn' and 'be happy'? Why companies have to commercialize and commoditize communities, people and their tangible and intangible resources as tourism attractions 'please' the tourists' needs and drive economic development? Tourism paradigms and mindsets like this, have led and intensified crises like COVID-19 and this cannot be sustainable for much longer. Consumerism and tourism should not be seen as the sole way to achieve happiness, self-expression, and (economic) development. COVID-19 tourism research should inspire tourists, businesses and destinations alike to re-imagine and reset new mindsets, frontiers and behaviours such as: how to use and develop tourism to valorize and not consume tourism resources, to generate well-being, sustainability and transformational learning; how to study and practice environmental/sustainable management not as a legal necessity for lobbying and formulating policies, not as marketing tool to build brands' and people's identities, not as an expense to be minimized, but as a mindful business investment and personal lifestyle for a responsible future.

Overall, COVID-19 tourism research should not only be the mean to overcome the crisis and resume previously chartered economic growth trajectories. It should lead the refocusing, repurposing, reframing and re-interpretation of research questions, methodologies and outcomes, so that tourism stakeholders can in turn re-direct their actioning, conduct and evolution. To that end, COVID-19 tourism research will be benefited by embedding, adapting, reflecting and expanding the theoretical lenses and perspectives of a much greater plurality of disciplines and constructs to guide and implement research. Transformative (service) research, philosophy, criminology, ethics, law, anthropology, behavioural and religious studies, political science and diplomacy, governance, bioethics, rhetoric. Researching within unchartered waters, COVID-19 tourism research may also need to apply new methodological approaches and tools that are capable to combat roots and not symptoms of tourism crises and use the latter as transformational opportunity to reset research agendas and re-imagine and re-shape unthinkable tourism futures. Due to the newness of the field qualitative approaches such as (cyber)ethnography and the need for urgent, fast and real-time research processes and outcomes, COVID-19 tourism research may also need to intensify and advance "new" methods of (big) data collection, analysis and interpretation/visualization, such as participatory sensing (i.e. using tourists as sensors for data collection).

Paradox research, as a meta-theory and/or methodology, can also be very instrumental for informing and supporting COVID-19 tourism research. Originating in philosophy and psychology (e.g. Aristotle, Confucius, Freud), paradox research (also frequently requiring multi-disciplinarity) has helped to inform, advance and transform management science research (Schad et al., 2016) and organisations (Cameron & Quinn, 1988) alike. As a meta-theory, paradox research offers a powerful lens for enriching extant theories and fostering theorizing processes in management science, because it provides deeper understanding and conceptualisation of constructs, relationships, and dynamics surrounding organizational tensions. By investigating contradictions between interdependent elements that are seemingly distinct and oppositional, one can better unravel how one element actually informs and defines the another, tied in a web of eternal mutuality. As a methodology, the paradox lens encourages researchers to approach organizational paradoxes paradoxically (Cameron & Quinn, 1988). Incorporating paradox research into COVID-19 research may also be inevitable, as the COVID-19 circumstances, impacts and debates have uncovered and intensified existing paradoxes, but also generated new ones. Paradox research is

also paramount to COVID-19 tourism research, if the latter is to become innovative and transformative. These are because (adapted by Schad et al., 2016):

- Interruptions in socio-economic life can reveal structural contradictions and paradoxes, and by studying and understanding them, one can make the crisis positive and transformative
- paradoxes intensify, grow and intensify, as contemporary organizations and their environments become increasingly global, fast-paced, and complex; the evolution and circumstances of tourism and COVID-19 are a strong evidence of a highly interconnected, fast paced and complex world
- paradox is a powerful meta-theorizing tool: opposing theoretical views may enable vital insights into persistent and interdependent contradictions, fostering richer, more creative, and more relevant theorizing
- paradox identifies and challenges our pre-assumptions: as antinomies, theoretical paradoxes remain perplexing, even paralyzing, when researchers are confined by the past and/or assumptions
- paradox help us think creatively and out-of-the box, because contradictions provoke established certainties and tempts untapped creativity

Paradox research is limitedly used within tourism research, but its applicability, versatility and value are shown already in investigating: macro-level tourism and destination management issues (Williams & Ponsford, 2009); business operations (Sigala et al., 2004) and tourism demand (Mawby, 2000). However, as the present and post COVID-19 era is a fertile ground of persistent and new paradoxes in tourism, tourism researchers should seriously consider adopting a paradox lense. For example, the circumstances of COVID-19 (e.g. stay at home lockdowns, social distancing) have necessitated and accelerated the use of technologies by both tourists (e.g. information about travel restrictions, online crisis communication, online COVID-19 alerts and hygiene measures) and businesses (e.g. online food delivery, virtual dining, virtual wine experiences, festivals/events, virtual visits of museums, destinations). However, persistent 'paradoxes' (e.g. increase use of social media and loneliness, democratisation of information accessibility and information darkness, technology and (small) business empowerment/equalizing competition rules) are questioning the effectiveness of such technology solutions and have fuelled debates on whether they are a 'cure' or a 'fertiliser' and "diffuser' of the pandemic. Not everyone has access to technology and those that they have do not necessarily have the capabilities and knowledge to effectively use the technology tools and information. The persistent digital divide found in consumers and businesses (which mainly represents a socio-economic divide of citizens and size of businesses), has converted the pandemic to an infodemic (e.g. lack or mis-information, diffusion of fake COVID-19 news and advices, emotional contagion of global depression and mental health) and a tool deepening the economic divide and competitive gap between larger and smaller tourism operators. Digital inequalities in tourists potentiated their vulnerability to COVID-19 (e.g. putting themselves and their loved one in health risk while traveling or willing to travel during and after the COVID-19), while COVID-19 vulnerability potentiate to enlarge the digital inequalities [e.g. those who have the tools and means to easier go through the COVID-19 impacts will also be the only ones who can pay and access virtual tourism experiences, who will be well informed on how, where and when travel and who will be able to afford to travel in the future, as increased (hygiene and technology) operating costs and transportation oligopolies may increase costs of tourism]. Similarly, digital inequalities in tourism businesses potentiate COVID-19 vulnerability (as larger operators that were technology ready and 'inherited' by size resilience ,

were the first and maybe the only ones to be able to virtualise operations and experiences for maintaining business liquidity, surviving, re-opening and recovering post COVID-19), while COVID-19 vulnerability increases digital and economic inequalities in the tourism competitive landscape (e.g. larger companies/destinations which are characterised by greater cash liquidity, know-how, technology readiness and resilience and so, have lower COVID-19 vulnerability, will be the ones to survive and thrive post COVID-19). Paradox research that can investigate such contradictions between the abovementioned distinct and oppositional, but also elements interdependent elements can better define, understand, manage and address their concepts and the dynamics of their web of eternal mutuality.

The COVID-19 fortified and generated many other paradoxes, which are also identifiable at all tourism management levels (macro, meso and micro) and COVID-19 tourism research can investigate for advancing and transforming research. Table 1 provides some ideas for applying such paradoxes in COVID-19 tourism research.

Table 1. Paradox Research: advancing and transforming COVID-19 tourism research

Paradoxes	Examples of fields for applying paradox research in COVID-19 tourism research
privacy and obscurity	• Technology adoption by tourists (e.g. mobility tracking applications and other surveillance systems) • Design and ethics of tourism technology applications
novelty and usefulness	• Innovating from necessity: types, processes, capabilities, facilitators and/or inhibitors of 'innovation' adopted by tourism firms to ensure business continuity and survival during COVID-19
cooperation and competition	• Practices and strategies of destinations and policy makers to combat and re-open their economies, e.g. Inter- governmental and destinations initiatives and bilateral, multilateral (biosecurity) agreements to create 'travel bubbles' for re-opening tourism across countries (e.g. Australia-NZ, China-Taiwan-S.Korea, HK, Greece-Cyprus, Baltic States)
global and local	• Configuration of tourism supply chains (e.g. local Vs global sourcing of food supplies, human resources, capital resources) • design of transportation – travel mobilities: e.g. airport and destination hubs, airline route design • Tourism policies and strategies, e.g. allocation of governmental interventions and subsidies between national and international firms to enable them to survive the COVID-19
self-focus and other-focus	• Tourists' decision-making, quality evaluations and satisfaction from destinations and tourism providers under COVID-19 settings and conditions whereby self-presentation and self-safety may prevail over others' and common good
stability and change	• Type and processes of change (of tourism firms, destinations and tourists) supported and led by the COVID-19 • Factors inhibiting and / or facilitating change due to COVID-19
self-preservation and self-actualisation	• motivations driving tourists'/human motivation and behaviour • tourists' engagement with local communities and employees within a COVID-19 setting • employees' engagement and behaviour towards tourists and organisations within a COVID-19 setting
high-tech and high-touch tourism services and experiences,	• Re-engineering of service delivery operations to make them touch free but highly personalised and human-centred experiences • re-design of travellers' journeys and experiences

profits and purpose	- aims and scope of response and recovery strategies of tourism operators and destinations within COVID-19 - Social Corporate Responsibility of tourism operators and destinations within COVID-19 settings - Resetting of tourism strategies in the post COVID-19 era - Tourism sustainability policies, strategies and practices in the post COVID-19 era

COVID19: dismantling and re-mantling tourism in three stages

It is widely accepted that crisis management needs to be implemented before, during and after a crisis. Table 2 provides an overview of the impacts and implications of COVID-19 on three major stakeholders (tourism demand, tourism operators, destinations and policy makers) under three stages (representing the respond, recovery and restart stage from the pandemic) to incorporate a transformational stage envisioned in the post COVID-19 era. COVID-19 tourism research does not have to address issues in the last stage in order to be transformative. It can equally be transformative if it re-examines 'existing' issues and relations but through new theoretical lenses and/or methodological approaches by embedding a plurality of 'new' disciplines into the research designs. By doing this, one can significantly unravel unknown issues and dynamics, provide a better explanatory power and understanding of concepts and relations as well as identify and test new 'remedies'.

Table 2. COVID-19 and tourism in three stages: major impacts and some ideas of research fields

	Respond Stage		Recovery stage		Restart, reform and reset reimagine	
	Impacts	Research fields	Impacts	Research fields	Impacts	Research fields

Tourism Demand	Tourists' and/or their loved ones affected by COVID-19 and experiencing traumatic tourism experiences
	• Trip cancelations
	• Loss of money paid for travel-tourism
	• Trip disruptions
	• Loss of travel loyalty benefits and points
	• Quarantines and social distancing / lockdowns
	
	Travellers reading and viewing traumatic COVID-19 tourism experiences lived by others (media communication and user-generated content)
	
	Travel restrictions and travel bans
	
	Use of technology for crisis alerts and communication
	
	Panic buying and stockpiling
		Experience of trauma on tourists' travel attitudes, future intentions, decision – making and experiences
		
		Impact of crisis communication on tourists' perceived risks, decision-making, future travel intentions and service quality evaluations
		
		Impact of fake news and misinformation on tourists' perceived risks and destination image
		
		Impact of booking restrictions and firms' cancelation policies on tourists' attitudes and behaviour towards booking restrictions and booking patterns
			• Social distancing
			• Lockdowns and stay at home
			• Choosing self-isolation
			• (excess) Use of technology (apps) for contactless services:
			    ○ Shopping
			    ○ Working
			    ○ Information updates
			    ○ Studying
			• Experiencing a global travel slow down resulting in reduced environmental pollution and overtourism phenomena
			• Multi-functional homes: remote working, home schooling, virtual social behaviours:
			• Virtual entertainment
			• Virtual social drinks
			• Virtual parties
			• Virtual events/festivals
			• Virtual dining
			• Virtual visitation of destinations and attractions
				• Impact of safety and health concerns on tourists' attitudes, decision-making, and behaviours
				• Impact of reflecting on personal values, lifestyles and priorities on tourists' behaviour (tourism segmentation strategies and criteria)
				• issues of social isolation and excess use of social media/technology, on mental and psychological health, tourists' attitudes, travel intentions and behaviours
				• Increased priority in localism and impacts on geographies and mobilities of travel behaviour and preference
				• Tourists' understanding of tourism's impact on climate change and overtourism problems
					Experiencing a new tourism service and experience:
					• digital health passport and certifications
					• Digital identity apps
					• Travellers' mobility tracing apps
					• Crowd and social distancing technology solutions and restrictions
					• Contactfree travellers' journey management solutions
					• New hygiene standards
					• Social distancing redefining service etiquettes
					
					Setting new priorities determining tourists' selection, evaluation of services and consumption behaviour, e.g.: Self-care, safety, hygiene
					
					• Tourists recalibrating priorities, changing lifestyles, e.g.
					    ○ Re-assessing what is essential for happiness
					    ○ Deepening personal relations
					    ○ Embracing a health-first mindset
					    ○ New criteria for decision making
						• Understanding the (new) tourists' (motivation, profile, decision-making, behaviour):
						e.g.
						• Travel better not less
						• Travel for a purpose-meaning
						• Experience the other side of the common destinations
						• Redefinition of luxury tourism to include hygiene first, well-being?
						
						• Impact of COVID-19 economic recession on tourism demand
						• Impact of COVID-19 depression on tourism demand
						• Investigating the impact of the new psychology and behaviour of tourists on:
						    ○ Pricing strategies
						    ○ Booking patterns
						    ○ Segmentation and promotion strategies
						• Tourists' attitudes, use, adoption and satisfaction from virtual tourism experiences
						• Tourists' acceptance and use of (new) technologies

Tourism operators	Managing the safety and health of tourists and employees Handling customer communication and requests for: • changing travel itineraries and bookings • Cancelations of booking • Refunds and compensations	• Engagement with tourists for ensuring: individual safety, security and stability (e.g. distress, emotional support), promoting and shifting customers to online channels and virtual experiences, building emotional bonds, trust and brand values • Employee communication and care for ensuring health, emotional stability and engagement • Ensuring cash liquidity (negative revenues: no income cash returns)	Ensure business continuity and building resilience • Repurpose of resources, e.g. staff, space and food-cleaning supplies • Innovation from necessity, e.g.: virtualisation of experiences, remote working, innovation of business models • Acceleration of digital adoption • Customer engagement • Employee engagement • Mitigate crisis impacts • Brand communication for building brand values, e.g. messages like '*we are all together*'	• Digital and economic divide within the industry • Re-skilling and up-skilling of employees • Loyalty programs: rebuilding customer trust and redesigning their value propositions and business models	Resetting the new business normal • Re-opening: learnings from essential healthcare operators • New cleaning and hygiene protocols: protective equipment, masks, sanitizers, disinfecting wipes • crowd management and social distancing practices • Re-design and re-imagine the customer journey to make it contactless • Redesign of tourism experiences • Redesign of workspace and servicescape • Re-engineering business operations • Rethink of business ecosystems and partnerships • Contact free business models • mobility tracing apps for employees and customers • Technology solutions for hygiene, health and safety control. • Lead with purpose: association of brands with good • Update and redesign of booking forecasting, revenue management and pricing systems • Capture new demand • Accelerate digital and data analytics	• New competitors • Virtual tourism experiences: a substitute or a complement of tourism experiences? (blended operating business models?) • New start-ups and disruptors in the tourism value chain • Digital and economic divide • Surviving the COVID-19 recession and new operational standards, costs and requirements • Abilities to address the sophisticated and new tourists market segments • Impact of COVID-19 economic recession on the tourism industry and structure

Destinations and policy makers						
	• Ensuring health and safety of tourists • Managing repatriation of citizens • Interventions to support vulnerable employees and tourism businesses • Crisis communication	• Accountability, effectiveness and fairness of increased public expenditure • Politics – pressures and lobbying for resource allocation • Impact of crisis communication and user-generated-content on destination brand image • Securing and building the destination image	• Keeping tourists informed and interested: Promotion and visibility of destinations • Virtual visits of destinations • Engaging with destination partners and stakeholders • Provision of training and business consulting services to tourism operators e.g. Tourism Greece #GreecefromHome https://www.greecefromhome.com • Interventions to support tourism industry and jobs • Crisis communication: promote a positive and uplifting message, build and associate destination brands with good values, e.g. #traveltomorrow by UNWTO World Travel & Tourism Council (WTTC) has launched its new **#TogetherInTravel** http://www.togetherintravel.com/ Visit Portugal "we're-all-in-this-together" #CantSkipHope social media campaign https://www.youtube.com/watch?v=70tcUNgd8IM&feature=emb_logo	• Impact and effectiveness of governmental interventions on building resilience and recovery abilities • impact of crisis communication on tourists' attitudes, travel intentions and destination image perceptions	• Reimagine the new types of sustainable and responsible tourism • Setting safety and health regulations and safety standards • Develop strategies for staged re-opening: relaxation of travel restrictions, creation of travel bubbles, re-opening of tourism businesses • Promotion and motivation to tourists, e.g. travel vouchers and incentives • Health passports and health identities	- Re-nationalisation of tourism infrastructure, superstructure and tourism operators (e.g. airlines, ferry companies, train operators) - Global cooperation for addressing climate change and sustainability issues - Impact of public interventions on functioning and structure of tourism industry - Impact of public spending and interventions on austerity measures

Tourism Demand

Tourists have experienced themselves, through their loved ones and/or through the shared experiences of others (e.g. user-generated-content) significant disruptions and health-risks in their travel and bookings plans. The tourists' experiences and/or exposure to others' experiences (that are also magnified through the emotional contagion and information diffusion of the social media) can have a significant impact on their travel attitudes, intentions and future behaviours. Psychiatric research investigating the impact of traumatic experiences on people's life, behaviours and experiences of places and services (e.g. Baxter & Diehl, 1998) can provide a useful theoretical lenses for understanding the travel behavior and attitudes of tourists that have been exposed to own or others' COVID-19 travel trauma. Tourism research has mainly focused on studying how tourists develop their perceived risk and the impacts of the latter on tourists' decision-making processes, future intentions and segmentation profiles (e.g. Dolnicar, 2005; Aliperti. & Cruz, 2019; Araña, J. & León, 2008). Others have also examined the impact of the tourists' perception of crisis management preparedness certification on their travel intentions (e.g. Pennington-Gray et al. 2014). Such research is important, as risk perceptions are important for predicting future tourism demand and drafting appropriate recovery strategies (Rittichainuwat and Chakraborty, 2009). It is also relevant for COVID-19 tourism research because of the new COVID-19 standards and certification rules that companies are now required to adopt. Research has shown that perceptions of risks may differ between tourists with different origin-country, final destination, age, sex and the typology of travel (Rittichainuwat and Chakraborty, 2009). However, the impact of crisis communication and social media on perceived risk has been totally ignored. Some research is done for examining the impact of social media use on tourists' mental health (Zheng et al. 2020) and crisis information systems and communication – social media (Sigala, 2012; Yu et al., 2020), however, given the increasing role and impact of social media on crisis communication and people's health and risks perceptions, this is an area where more research is granted. As a vaccine for COVID-19 may take long to be developed and travelers may need to live with it, tourism research might benefit from medical and health research investigating how people behave, live and cope with chronic and lifestyle-related diseases (e.g. AIDS).

During lockdowns, people have experienced and become familiar with virtual services and tourism experiences. Research in technology adoption would claim that increased technology familiarity and trialability will increase its adoption. But will this apply for the controversial technologies introduced by COVID-19? Political economy and law research explaining how people react and accept human rights 'violations' (e.g. surveillance measures, freedom of speech, lockdowns) under conditions of 'state of exception' like terrorism or the COVID-19 (Carriere, 2019; Bozzoli & Müller, 2011) can provide a new lenses for studying adoption of the COVID-19 controversial technologies and restrictions Research on political ideologies could further enlighten why people's ideologies and political values may further perplex their reactions and behaviours to such interventions in their human rights.

It is claimed that while experiencing low pace, new lifestyles and working patterns, people are reflecting and recalibrating their priorities and social values. Is that true in relation to their travel behavior? Would people require and expect greater responsibility and sustainability from tourism operators and destinations? Would they be motivated to travel more but for a meaningful purpose? Or would people go back to their previous travel behaviours and preferences? Past research (Pieters, 2013) has shown that consumers face a "material trap" in which materialism fosters social

isolation and which in turn reinforces materialism. This might explain why during lockdowns people increased their online shopping and consumption of virtual entertainment and probably they might not have reflected and reset their values. Is that true and what is its impact on tourists' behaviours? Consumer psychology and behavioural science explaining how people wish to align the time they spend with their values (congruence theory) can provide useful insights into such investigations. In addition, religion and spirituality studies can further enlighten the impact of COVID-19's living conditions on tourists' tourism sustainability preferences and attitudes as well as responses to tourism operators' and destination sustainability practices and communications. This is because religion and spirituality is found to play an important role in influencing individuals' thoughts and behaviors (Laurin, Kay, and Fitzsimons, 2012).

Social distancing imposed by COVID-19 includes actions such as, reducing social contact, avoiding crowded places, or minimizing travel. Social distancing can significantly impact how people experience and evaluate leisure and travel activities like hiking, outdoor activities and nature-based tourism or even personal services like spas, dining, concierge services. Social distancing or better physical distancing may influence tourists' perceptions of health hazards, insecurity and unpleasant tourism experiences. But how 'far' away is enough for tourism employees and other customers to be from each other without compromising sociality, personal service and perceptions of social distancing measures? Social distancing has not been studied before in service provision, while law and criminology research on 'sexual' consent may provide a different perspective on how people define social space and the 'invasion' or not of others into it.

Tourism is heavily a hedonic and sensorial experience. Servicescape design plays a major role in tourism experience by influencing customers' emotions, behaviors, attitudes and service evaluations. However, COVID-19 operating standards require servicescapes to be redesigned eliminating or inhibiting sensorial elements and 'changing' tourism experiences, e.g.: smell of cleanliness instead of fragrance; social distancing and number of co-presence of clients in restaurants, festivals and other tourism settings will influence new standards of psychological comfort and acceptable levels of perceived crowdness; raised voices may generate a wider "moist breath zone" increasing viral spread; warmer temperatures create relaxing environments encouraging customers to stay and spend more, but poorly ventilated or air-conditioned indoor spaces may spread COVID-19. Would tourists and tourism firms change their behaviour and attitudes towards these new COVID-19 servicescapes? What new service etiquettes, customer expectations, behaviours and experiences would COVID-19 determined servicescapes and operational procedures may generate?

These and many other fields of research have been raised due to COVID-19 conditions, and as explained a plurality of theoretical lenses can be beneficial to provide a better understanding of these new concepts introduced in tourism research.

Tourism supply – businesses
Tourism businesses have been racing to ensure the safety of their employees, customers, brand image and cash liquidity. To re-start, tourism companies are re-designing experiences (e.g. winery experiences, museum visits, tours, sports events, in-room dining and entertainment instead of hotel facilities) to feature smaller groups of tourists, outdoor activities and/or private experiences

complying with social distancing and gathering restrictions and travellers' expectations. Tourism companies have already upgraded their cleaning procedures by adopting new standards and restraining staff. Many of companies promote their hygiene certifications accredited by health expert associations. Tourism professionals are being trained to become 'contact tracers' obtaining relevant certifications confirming their skills to identify cases, build rapport and community with cases, identify their contact and stop community transmission. Restaurants, hotels, airports, public spaces are re-engineering their operations to make them contact-free or contactless. Mobile apps (for check-in, check-out, room keys, mobile payments, bookings-purchases), self-service kiosks, in-room technologies for entertainment and destination e-shopping (e.g. virtual reality for destination virtual visits to museums, attractions and destinations, movies), robots (for reception and concierge services, food delivery museum guides), artificial intelligence enabled websites and chatbox for customer communication and services, digital payments (e.g. digital wallets, paypal, credit cards). In addition, the new operating environment enforced by COVID-19 measures require firms to adopt new technologies and applications to ensure management of crowds and number of people gathered in public spaces (e.g. airports, shopping malls, museums, restaurants, hotels), human disinfectors and hand sanitiser equipment, applications identifying and managing people's health identity and profiles.

Research can conduct a reality check and benchmarking of the effectiveness of the various respond and recovery strategies adopted by tourism operators. Research can also investigate the role and the way to build resilience to fast develop and implement such strategies. However, such research is useful and important but probably not enough for investigating the resetting of the next tourism industry normal. Transformative COVID-19 research should help industry to reimagine and implement an operating environment that is human-centred and responsible to sustainability and well-being values.

Destination management organisations and policy makers
Governments and destinations have been providing stimulus packages and interventions (e.g. tax reliefs, subsidies, deferrals of payments) to ensure the viability and continuity of tourism firms and jobs. Governments have intervened in mobility restriction and closures of businesses. Because of these, COVID-19 has resulted in a greater intervention of governments in the functioning and operations of the tourism industry. The government has also become a much bigger actor in the tourism economy (e.g. re-nationalisation of airlines and other tourism firms and tourism infrastructure like airports). This is very unique for COVID-19, as previous crises have generated research and institutional interest, but they did not have policy impact, specifically in tourism (Hall et al. 2020). Would such government interventions and role sustain in the future? How will this influence the structure and functioning of the industry at a national and global level? Debates have already started questioning the effectiveness of such interventions, their fairness and equal distribution amongst tourism stakeholders (Higgins-Desbiolles, 2020), their long-term impacts in terms of austerity and cuts of public expenditures. Future research looing into these issues is highly warrantied. In their CIVID-19 reactions and responses governments and destinations seem to have acted individually and nationalistic and recently selectively (e.g. bilateral and multilateral agreements amongst tourism bubbles). However, systems theory and crisis management, would argue that crises need to be addressed collectively. What would be the impact of such governmental behaviours on the future of tourism and destinations tourism policy making and strategies? As it

seems, COVID-19 has raised political, geopolitical and governance issues that frameworks and concepts from these disciplines would need to be used to enlighten such research.

Conclusions: what is more and what is next

COVID-19 resulted in numerous socio-cultural, economic and psychological impacts on various tourism stakeholders, some of them for years to stay. Consequently, the pandemic has created a 'fertile' new context whereby tourism researchers can conduct research with valuable end-user benefits. However, COVID-19 tourism research should try to avoid the *'publish or perish'* old mantra that has been driving and mushrooming tourism research (Hall, 2011). Although studies conducting a reality check of impacts, predicting tourism demand, and benchmarking good and best practices are very useful and contextually interesting to assess COVID-19 impacts on various geographies sectors and stakeholders, they potentially offer limited scope to advance our knowledge on crisis management as well as to potentiate the pandemic's affordance to reset our research agendas and expand the contribution and frontiers of tourism research and industry. It is the aim of this paper to inspire tourism scholars to view and use the COVID-19 as a transformational opportunity for reforming their mindsets in designing and conducting research and for the tourism institutions to reset their standards and metrics for motivating and evaluating the purpose, role and impact of tourism research. In addition, crises also accelerate technology innovation and change (Colombo et al., 2016). However, these should not be viewed as inevitable, unquestionable and impossible to re-shape and re-adjust to serve real needs and meaningful values. It is the responsibility scholars to ensure that COVID-19 tourism research can ensure the latter.

The present analysis is not exhaustive in terms of the COVID-19 impacts, while impacts may not be uniform across all the actors of the same tourism stakeholder group. For example, the COVID-19 has different impacts on tourism operators based on their characteristics such as, the nature of the tourism sector (intermediaries, event organizers transportation, type of accommodation or attraction provider), their size, location, management and ownership style. Similarly, the highly heterogenous tourism demand (e.g. leisure and business travelers, group and independent tourists, special interest tourists such as religious, gay & lesbian, corporate travelers) also means that different COVID-19 impacts and implications are anticipated and worthy to be investigated for different market segments. COVID-19 tourism research should not only disclose such differentiated COVID-19 impacts, but it should also provide an enriched explanatory power about the roots of such disparities with the scope to envision and/or test any suggestions on how to address any inequalities and disadvantages that they may cause to various groups of tourism stakeholders. The analysis did not also include other major tourism stakeholders such as tourism employees, local communities, tourism entrepreneurs and tourism education (scholars, students and institutions alike). Recent developments and pressures faced by some of these tourism stakeholders were further strengthen by the COVID-19, which in turn place them in a more disadvantaged situation. COVID-19 research related to these stakeholders is equally important.

For example, COVID-19 has worsen the already difficult situation (e.g. high labour flexibility but at the expense of low salaries, lack of job security, insurance and other benefits) faced by an increasing number of tourism micro-entrepreneurs (e.g. food delivery people, 'Uber taxi drivers', "Airbnb hoteliers") (Sigala & Dolnicar, 2017). Algorithmic management, increased pressure and work stress are some of the negative impacts of the gig economy, which become more evident and fortified due to the COVID-19 (e.g. food delivery employees have no health insurance or coverage of lost salaries in case they get infected while working; 'micro-hoteliers' risk loosing their homes,

as they cannot collect 'accommodation fees' to pay off home mortgages). Being an unofficial and sometime black economy/employment, gig tourism workers may not even be entitled to governmental subsidies provided to COVID-19 vulnerable employees or businesses. As the COVID-19 is expected to continue and reinforce contemporary paradigms and trends of this 'causalisation' of tourism employment (due to the upcoming economic recession and greater operating costs of tourism firms), COVID-19 tourism research needs to urgently investigate issues of employee psychological, mental and physical health, engagement, working conditions (e.g. remote working, virtual teams and virtual leadership) and other human resource issues within the COVID-19 setting. For example, traditional leadership, recruitment, management, and motivational incentives may not inspire, engage, motivate, and attract employees who have recalibrated their personal values and priorities during the COVID-19 lockdown and remote working.

The COVID-19 impacts on tourism employment create further pressures on tourism education that has severely affected by the pandemic. Apart from the virtualization of teaching and learning processes, tourism students and graduates have to also address the halt of industry interships, recruitment and questionable career paths. Tourism programs and universities are faced with reduced students' intakes, industry and government sponsorship and research funding. Tourism researchers need to find new ways and sources for conducting research addressing social distancing, respecting the mental health and privacy issues of COVID-19 affected stakeholders. Investigating pedagogical issues such as how to make the design and delivery of tourism curricula more 'resilient', agile and updated to develop graduates with flexible and transferable skills to other industries is also equally important. For example, new online and offline courses and certifications have already emerged training graduates to become professional 'contact tracer' possessing the technical, emotional/social and ethical skills to manage customers and employees in situations of contact tracing, isolation, and quarantine (e.g. how contact tracing is done, how to build rapport with cases, identify their contacts, and support both cases and their contacts to stop transmission in their communities (https://uh.edu/medicine/education/contact-tracer/, https://www.coursera.org/learn/covid-19-contact-tracing?edocomorp=covid-19-contact-tracing, https://sph.uth.edu/news/story/trace). However, is that just an opportunistic educational offering and/or a new 'skill and qualification standard' that tourism industry and demand would expect alike?

Many other specialized topics also warrant research within the domain of COVID-19. For example, the social entrepreneurship has been booming in tourism during the last decade (Sigala, 2019) for several reasons including the 2008 economic recession. COVID-19 has boosted such tourism social ventures aiming to create social value, solve social problems created by the COVID-19 and provide help to people in need (e.g. marketplaces enabling the repurposing of various tourism unutilized resources such as labour, hotel and function space, food, cleaning material, e.g. HospitalityHelps.org). The mushrooming of COVID-19 related tourism social ventures provides many opportunities to study and better understand this phenomenon within new and various ecosystems, stakeholders and circumstances.

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