

## Reimagining Tourism: COVID-19 and the Potential of Virtual Tourism in South Africa

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### Abstract

The COVID-19 pandemic resulted in massive degrowth of tourism economies, undoing years of progress in destinations around the world. The initial inability of tourists to travel and subsequent fall out from border closures, vaccination hurdles, the changing needs of tourists to travel targeted the very core of tourism. Despite the tourism sector being renowned for its resilience in relation to previous crises, the prolonged and unprecedented nature of this crisis has tested the most resilient of sectors. As part of South Africa's tourism sector recovery plan, the domestic tourism sub-sector of the industry has been prioritised. However, even before the pandemic induced crisis, the performance of the domestic tourism sector called for attention. Thus, although disruptive, this crisis provides an opportunity for innovation within the sector. While innovations of virtual tourism could be suitable, an investigation into the willingness of tourists to engage in virtual tourism needs to be undertaken. The current paper seeks to address this gap. A quantitative research design was employed, with a total of 110 online surveys being completed by domestic tourists in South Africa. Key finds reveal that virtual tourism could assist in the promotion of a destination, particularly in the decision making processes of potential tourists, which had been affected by the COVID-19 pandemic. The study found that virtual tourism could increase the exposure and accessibility of tourism attractions in South Africa. Moreover, the results of the study reveal that while virtual tourism could enhance the tourist experience at the destination, it cannot replace traditional tourism. Recommendations emanating from this study relate to the inclusion of virtual tourism components as add ons to tourism attractions.

**Keywords:** Virtual tourism, COVID-19, South Africa, domestic travel

### Introduction

The tourism industry is considered one of the most significant sectors of the twentieth and early twenty-first centuries, owing to its major growth over the years and its contribution to the world's economy (Everingham & Chassagne, 2020; Mofokeng & Matima, 2018). The industry plays a significant role in the global economy, as well as in the social and environmental spheres. Its importance is evident in the numerous advantages it brings to the host communities through job creations, cultural and heritage preservation, conservation of the natural environment, and local economic development. Prior to the COVID-19 pandemic, the global tourism sector experienced consecutive years of growth in most world regions. As a result, many countries located within the global south fostered tourism sectors as strategic national

priorities to spur on socio-economic growth and development (Sigala, 2020; Siakwah, Musavengane & Leonard, 2019). However, the onset of the COVID-19 pandemic saw massive degrowth within the global tourism sector, which filtered down to national sectors in all destination countries (Kwok & Koh, 2020). Countries located in the global south, largely reliant on the tourism sector, bore the brunt of this degrowth and continue to do so as the pandemic continues.

The restrictions on the movement of people, countries being placed on red lists for travel, issues related to vaccines, and the changing needs and motivations for tourists to travel have impacted sectors severely (see Helble, Park & Won, 2021; Wang, Kunasekaran & Rasoolimanesh, 2021; Kaewkitipong, Chen & Ractham, 2021; Bama & Nyikana, 2021). In many cases, the consequences of these occurrences are absorbed by tourism service providers within destinations. In an effort to withstand this prolonged pandemic, the use of technology has become central to the survival strategies employed by tourism businesses and stakeholders across the world (Lu, Xiao, Xu, Wang, Zhang & Zhou, 2021; Lu & Xu, 2021; El-Said & Aziz, 2021). Although traditional tourism is based on the movement of people, the use of various forms of virtual tourism have become a popular way to supplement tourists' experiences at attractions through virtual or augmented reality technologies. The onset of the pandemic and associated restrictions saw virtual tourism being used as a replacement for physical, traditional tourism to try and keep tourists' motivation and interest to travel piqued, as well as an attempt to ensure the survival of tourism businesses (Chirisa, Mutambisi, Chivenge, Mbasera, Sidambe, Muchenje, Mukwashi, Mabaso, Ncube & Zengeni, 2020). These strategies have been successful in countries with capabilities to engage in such a form of tourism and where tourists have access to technology to partake in it. However, within destinations located in the global south, where tourists and tourism service providers experience constraints on the availability of technology or on the ability to use technology, the use of virtual tourism may not always be suitable. This is a longstanding constraint within the realm of virtual tourism that has been previously noted (Mofokeng & Matima, 2018).

The COVID-19 pandemic took a toll on the tourism industry all over the world, all forms of travel had to be restricted as a means to mitigate the spread of the virus resulting in a great decline in international arrivals and general financial loss (World Travel and Tourism Council [WTTC], 2021; King, Iba & Clifton, 2021). Within the South African context, domestic travel is said to be the critical driver of recovery in the short to medium term, as it can provide a much-required boost to assist in the survival of tourism businesses (National Department of Tourism [NDT], 2020). According to the WTTC (2021), the tourism sector contributed approximately 6.9% to the national economy in 2019, which dropped to 3.7% in 2020. The spending of domestic tourists also drastically reduced from R160 billion in 2019 to R91.5 billion in 2020. Thus, a reimagining of the sector's offerings is needed. Destructive as it is, COVID-19 does present opportunities and possibilities to modify and rethink tourism (Everingham & Chassagne, 2020). Destinations were urged to critically assess their tourism policies and look for opportunities to not only recover post COVID-19 but to build resilience into the recovery, too (Organisation for Economic Co-operation and Development [OECD], 2020). Models of virtual tourism were debated as a means of survival, especially for the immediate and short term, as a 'means to an end' (El-Said & Aziz, 2021).

Within the South African context, the use of aspects of virtual tourism - especially virtual tours - was employed during the pandemic when the movement of people was restricted. Virtual game drives, tours of museums and townships, and deep sea diving tours were some of the popular virtual tours that were staged to keep tourists' interested and motivated to travel. The state of the pandemic and the implications for international travel meant that the South African tourism sector's survival and recovery plan became hinged on the domestic tourism

subsector. Reimagining domestic tourism in South Africa constitutes an opportunity to rethink ways that domestic tourism can bring maximum value to our economy as well as how to build resilience in the sector through encouraging digital transformation and development of human capital, which aids with destination (re)development in the changing landscape (Sigala, 2020). In doing so, the tourism sector in South Africa can also be better prepared to deal with the impacts of future crises and disasters that may arise in the future, thus ensuring that tourism businesses, people employed within the sector, as well as tourists, are able to bounce back from such crises.

Virtual tourism includes the use of virtual reality, virtual tours, digital identity controls and self-service check-ins (Sigala, 2020), with virtual reality and tours gaining prominence during the current time. Although there is vast literature endorsing virtual tourism (see Guttentag, 2010; Griffin, Giberson, Lee, Guttentag, Kandaurova, Sergueeva & Dimanche, 2018; Yung & Khoo-Lattimore, 2019; Pestek & Sarvan, 2021), much of it is dedicated to the use of virtual tourism for increasing sales of destinations, on its viability and utility as a marketing and promotional tool by destinations for sustainability. There has been a lack of research on the side of the consumers in the global south, focusing specifically on tourists' willingness to use or engage in virtual tourism. Therefore this paper seeks to address this gap by investigating the potential role of virtual tourism on domestic travel and its utility in the domestic tourism market in South Africa through an examination of the perceptions of domestic travellers towards virtual tourism in South Africa. This study was undertaken within the context of the COVID-19 pandemic.

## **Literature review**

The tourism industry, being an important global employer and contributing more to the GDP worldwide, and COVID-19 are the centre of attention of all international arguments and economies (Mair, Foster & Nicholl, 2020). Within these arguments, there is a unanimous call to look at this covid-19 crisis as a highlight of deficiencies in tourism existing systems and an opportunity to rebuild a more humane and resilient system that follows a more sustainable path, to not only recover but to also reimagine and rebuild the new normal and economic order for the industry (Sigala, 2020). This has resulted in destinations moving into the digital world and adopting virtual tourism, targeting domestic markets as they are projected to bounce back earlier than any other type of travel (Woyo, 2021). Therefore, this section reviews the debates around tourism and covid-19, virtual tourism, and domestic tourism in South Africa.

### ***COVID-19, tourism, and technology***

COVID-19 has a great variety of economic, social, and environmental impacts and, as such, has a huge impact on the sustainable development of tourism (Everingham & Chassagne, 2020). Due to the isolation of populations and closed borders across the world, the relationship between tourism and sustainable development, as shown by this COVID-19 crisis, has been proven in many ways (Sigala, 2020; Cohen, 2015). Initially, there were environmental improvements, including reduced pollution, greenhouse gas emissions, fall in the volume of air travel, and restricted mobility of people by vehicles which are usually brought by tourism due to its nature (Jones & Comfort, 2020). However, when conceptualized against the greater socio-economic and other environmental losses, these improvements were short-lived. Thus, the need to utilize COVID-19 as an opportunity to revamp the tourism industry to one that is more resilient to future shocks has been noted (Loannides & Gyimothy, 2020). An industry that is more reliant on the use of technology, for example (virtual reality applications, robot applications, mobility tracking technologies, virtual tours, digital identity controls used in

airports and self-service check-ins kiosks) as a safe way to direct human interactions, and to create tourism experiences that are innovative and digitalised (Lee & Chen, 2021).

Technologies have continuously been an enabler, a catalyst of development and change, a disruptor of tourism, as well as an equipment to construct tourism flexibility in a crisis. COVID-19 has assisted in upgrading the part of advances within the recovery and re-imagination of tourism, whereas it strengthens existing standards in tourism advancement (Sigala, 2020). When COVID-19 started to put an inevitable end to traditional travelling, radical and rapid adaptation was required, which meant investing in technological innovations; virtual tourism, particularly virtual tours (Merkx & Nawijn, 2021). Virtual tours have become the main product that cultural and heritage attractions can provide during this crisis (Lin & Kishore, 2021). Jones and Comfort (2020) are of the view that the success of newly developed virtual tours in this COVID-19 crisis may be shaped by, firstly the fact that many people avoid places that are crowded, and some do not want to withdraw from their homes altogether due to the fear of catching COVID-19 and secondly the extent to which people view these virtual tours as a safe alternative that will permit them to visit places. Relevant factors to the virtual tours experiences, including how easy it is to utilise these virtual tours, will not affect the individual's attitudes about them and their intentions of utilising them (Sigala, 2020).

### ***Reimagining tourism***

Reimagining tourism stems from needing to adapt to the rapidly changing world. The use of virtual tourism presents an innovative way to remain resilient in the face of change and crisis and secure the future of the industry post-pandemic. Virtual tourism most commonly includes the use of virtual tours through the application of virtual reality. However, virtual tourism and tours can also incorporate the use of augmented reality for a deeper and more immersive experience for the tourist (Fotiadis, Millett, D'Amico, Krieger, Sivashankar & Lee, 2021). The use of virtual tourism has allowed tourist destinations such as New York, Cape Town, and Harare to generate income and minimize job losses by promoting virtual tours during the current pandemic, thus illustrating its utility to an extent. Augmented reality and virtual reality are the new dimensions of technology that are seen as almost impracticable not to be utilised in the tourism industry as they provide a vast amount of marketing benefits, superior virtual experience, and thus a competitive advantage (Lu & Xu, 2021).

### ***Virtual and augmented reality***

Virtual reality allows tourists to virtually explore tourist attractions such as museums, historical sites, remote physical environments, and hotel rooms, and other such facilities (Likholetov, Lisienkova & Baranova, 2016). The rapid evolution of virtual reality technology strikes a redefinition and evolution within the tourism industry (Vasilina, 2016). Virtual reality is often used as an electronic tool for marketing tourism attractions and destinations through virtual tours. While Ehinger (2020) notes that it is unlikely to replace traditional tourism as a marketing tool, which is hinged on authentic tourist experiences, Chirisa et al. (2020) state that some may prefer to engage in virtual reality for reasons of convenience, finances, or safety and security. Fiocco et al. (2021) expand on this, noting the utility of virtual tourism for adults living in care facilities who are unable to but motivated to travel.

When used as a marketing tool, virtual reality allows for the development of products that are personalised and campaigns that enable tourists to experience a destination before they actually visit it, thereby stimulating the sales process. Virtual reality can also enhance tourist experiences at attractions such as museums or architectural and heritage sites and also has the potential of contributing to the environmental sustainability of mass tourism (Kwok & Koh, 2021; Guttentag, 2010). The link between virtual tourism and environmental sustainability is

premised on the destination or attraction being insulated from the ills of tourism while still being virtually available for tourists to experience (Lu et al., 2021). The sentiment of availability can be extended to include not only destinations that are fragile but also those that might be too far to visit, those considered to be unsafe, or those that are too costly to visit physically or that have barriers to entry (Guttentag, 2010). For example, the Karpova Cave in Russia, although closed in 2019, offers virtual tours to the visitors of the nature reserve (Vasilina, 2016). Under the current pandemic related restrictions, virtual tourism offers tourists an opportunity to virtually travel to destinations at lower costs and under safer conditions.

Hsu (2011) proposes that augmented reality includes virtual reality, and it is interactive in the real world and is applied in 3D. Within the tourism context, augmented reality can be used to recreate arranged construction projects and can make virtual objects in exhibitions and museums, theme parks, attractions, and books (Mair et al., 2020). Augmented reality could be used for a live direct and indirect view of real-world situations whose components are expanded by a sensory input generated through a computer (Hsu, 2011). Augmented reality technology is applied in integrating the real and virtual objects together to extend the depth of a virtual tourism experience (Yung & Khoo-Lattimore, 2019). Thus, the use of augmented reality in a virtual tourism experience can begin to tackle the problems of loss of authenticity that is associated with modes of virtual tourism, as well as with creating a more immersive experience that emphasises the reality in a virtual space (Guttentag, 2010).

### ***Virtual tourism and virtual tours***

Virtual tourism has experienced growth due to the consequential advancement of information and communications technology, increasing the accessibility to information of tourism regions for people (Sigala, 2020). Virtual tourism is defined as a digital form of tourism that appears in 3D space to combine computing systems and the behaviours of individuals towards virtual and surreal travel; those who intend to experience different places but are unable to travel physically to them get to experience attractions through virtual tourism (Huh & Singh, 2007). Virtual tourism holds many advantages, including reducing costs, enhancing the accessibility of attractions, as previously mentioned, but can also improve knowledge of tourists and tourism enterprises and the management of tourism sites (Paquet & Viktor, 2005; Guttentag, 2010). For example, virtual tourism can be used as an educational tool at historical sites and attractions, as in the case of the Cradle of Humankind. Known for the discovery of fossilised human remains, the Dinaledi Chamber Virtual Reality experience enables people to virtually discover old fossils in the caves in numerous languages, including Zulu, Spanish, Setswana, and Sesotho (Buthelezi, 2018). Virtual tourism may also benefit people who are differently abled and unable to access or interact with typical tourist sites (Guttentag, 2010; Giberson, 2017). Fiocco et al. (2021) elaborate on this, explaining that the purpose of virtual tourism is to provide opportunities to people who are old and disabled or who cannot travel traditionally due to time or financial constraints. Historical places and sacred cultures can be preserved and protected from the ill effects of tourism. Destinations or attractions that are usually off limits to the general public due to them being of a fragile status can be unlocked and made available for people to experience virtually. For example, tourists may be able to poke into archaeological sites and experience an up-close view of elegant artefacts and sit among endangered animals without disturbing any of these things in real life. Moreover, virtual tourism and all its facets can provide an opportunity for tourists to experience places that no longer exist.

### ***COVID-19, virtual tourism and domestic tourism in South Africa***

More recently, within the South African context, in response to COVID-19 induced travel restrictions, the Kruger National Park and other private game reserves offered free virtual tours



and game drives to maintain tourists' interest in the attractions (Thompson, 2020; Cocks & Tassiem, 2020). Tourist guides and travel agencies in the country also offered virtual tours of places tourists could not travel to under the prevailing lockdown restrictions. Such tours included township and deep sea diving tours (Schrandt, 2020). During this time, the use of virtual tours during this time illustrated the utility of virtual tours within the country, especially within the domestic tourism context.

Domestic tourism in South Africa is crucial to the success of the tourism sector and forms an important aspect of the sector's recovery plan from the current crisis (NDT, 2021). The drive to grow domestic tourism in the country was present prior to the onset of the pandemic, with South Africans engaging in various forms of domestic tourism. Campaigns such as the Sho't left campaign encouraged residents to explore the country. Travel operators also offered flexible savings options towards domestic travels, such as the option to participate in a travel stokvel (see Adinolfi, Harilal & Giddy, 2021). Considering the vulnerable socio-economic state of many within the country, flexible domestic travel options and saving mechanisms are essential to the sector's growth. However, despite these options and mechanisms, there are many South Africans who cannot afford to engage in domestic tourism. This is to be expected, given the unemployment rate of 34.4% in Q2 in 2021 in the country (Maluleke, 2021). In instances like this, the utility of virtual tourism can be illustrated to bridge the financial gap in the industry for those who are motivated to engage in domestic tourism but cannot afford to do so (Buthelezi, 2018).

Despite the opportunities for business continuity within the current context and the opportunity for inclusion within the broader context, the costs associated with establishing virtual tourism should not be underplayed. The growth of virtual tourism can be inhibited by its costly tools and infrastructure and the lack of tourist destinations that are digitised (Huang, 2011). Within the global south context, and specifically, the South African context, the lack of infrastructure, financial constraints, systemic problems with technology and the supply of electricity, and the lack of knowledge on how to use technology are serious constraints to the development of virtual tourism in the country (du Venage, 2020; Rogerson, 2015). These factors will have an influence on the extent to which tourists are willing to engage in virtual tourism activities and under what circumstances. The utility of virtual tourism as a type of supplemental tourism or as the primary form of tourism has been established. However, to maximise this utility, it is important to gauge tourists' perceptions of this type of tourism. This is especially important within the South African case, where, under the current circumstances, the reimagining of the tourism sector provides an opportunity for tourists to engage with this type of tourism and have informed points of view. Hence, this paper focuses on understanding the perceptions of domestic tourists in South Africa on the use of virtual tourism. Understanding these perceptions will shed light on the possibility of incorporating virtual tourism as a growth re-ignition strategy into the domestic tourism sector in the country.

## **Methodology**

A quantitative research design was employed in the current study. This particular research design was deemed appropriate and relevant for this study, given the broad aim - to understand the nature of domestic tourism in South Africa and the perceptions of domestic travellers towards virtual tourism. The sample population of this study included domestic travellers in South Africa, who were selected through the use of purposive and snowball sampling techniques. The use of purposive sampling allowed the researchers to target domestic travellers in South Africa. This was done through the researchers sending the link to the survey directly to possible respondents and sharing the link on social media platforms to try and reach a wider audience. Thereafter, a snowball sampling technique was employed, where initial respondents

were asked to share the survey link with other domestic travellers. This technique allowed an array of domestic travellers to participate in the study.

The applicable population to this study is domestic travellers in South Africa. Based on the scope of this study, as well as the limited time available for data collection, the achieved sample size was 110 domestic travellers in South Africa, based on their availability through social media. Following the COVID-19 crisis regulations in South Africa, an online survey for this study was designed as a research instrument to collect primary data. The Google Forms functionality was used in this regard, with the link to the form distributed to the targeted population by the researchers through social media platforms including WhatsApp, Twitter, Facebook, and Instagram. Primary data collection for this study occurred during July and August 2021. At the end of the data collection process, a total of 110 surveys were completed.

The survey used to collect data for the current study consisted of four sections. Sections A, B, and C were aimed at collecting data on the state of domestic tourism in South Africa, including the impact of COVID-19. These sections of the survey were aimed at achieving the first objective of this study – unpacking the nature of domestic tourism in South Africa. Section D of the survey focused on gauging the perceptions of domestic travellers on virtual tourism and was linked to the second objective of this study. Sections A, B and C of the survey focused on constructing a brief demographic profile of the respondents and understanding the respondents domestic travel behaviour pre-COVID-19 pandemic, as well as during the current time. This was done to understand domestic travellers' behaviours and motivations for travel and how this might have changed with the onset of the pandemic related restrictions. The type of questions used in these sections was closed ended questions, where respondents chose from a pre-populated list of possible answers. The questions on the demographic profile included age, the highest level of education achieved, employment status, and monthly earnings after tax deductions, as well as the respondent's respective province of residence. Questions in section B and C focused on whether the respondents engaged in domestic travel during the COVID-19 crisis, how often they partake in domestic travel, and their reasons for engaging and not engaging during COVID-19.

The last section of the survey, Section D, consisted of questions on virtual tourism activity during COVID-19. More specifically, the questions included in this section focused on whether domestic travellers in South Africa are aware of virtual tourism, their level of participation in it during COVID-19, how they feel about it, and whether they approve and would engage in it. The types of questions used in this section included closed ended and Likert scale questions. The use of the Likert scale enabled respondents to rank their level of agreement to disagreement with statements on the use of virtual tourism. This was done through the use of a five-point scale, where 1 = strongly agree; 2 = agree; 3 = neutral; 4 = disagree and 5 = strongly disagree. The data collected for this study were captured onto an excel spreadsheet via Google Forms, where basic descriptive statistics and tables were generated to aid in understanding the data.

## **Results and discussion**

### ***Overview of socio-demographic profile***

In interpreting the study findings, an overview of the socio-demographic profile of the participants is presented in Table 1 below. As illustrated in the table, the majority of the participants (68.2%) were between the ages of 18 to 25 years. Following, most of the participants had completed a higher education qualification (79.1%), with a third having obtained a postgraduate qualification. The table further demonstrates that most of the participants are students (40%), and almost a quarter of the participants (25.5%) had indicated that they are working full time. Such findings, coupled with those of their monthly earnings

also highlighted in the table, suggest the ability (and potential) for domestic travel amongst the participants. Finally, most of the study participants were found to reside in Gauteng. Evidently, from the socio-demographic profile, the findings presented in the following subsections are skewed towards the views, experiences, and opinions of a younger generation, most of them still in university (or other higher learning institutions) or working. The findings could also be underscored by the respondents' use of and interaction with various forms of technology in their daily lives.

**Table 1. Demographic profile of the respondents**

Demographic profile	Key findings
Age	18-25 years (68.2%); 26-35 years (26.7%); 36-45 years (5.5%)
Level of education	No matric (3.6%); Matriculation (17.3%); certificate or diploma (16.4%) Obtained degree (32.7%); postgraduate degree (30%)
Employment status	Unemployed (15.5%); Students (40%); Working full time (25.5%); Working part time (9%); Self-employed (10%)
Monthly income (before tax)	R3000 and less (54.5%); R3001 – R5000 (6.4%); R5001 – R10000 (8.2%) R10001 – R15000 (10%); R15001 – R25000 (9.1%); R25001 – R35000 (4.5%); R35001 and higher (7.3%)
Province	Gauteng (66.4%); Eastern Cape (12.7%); KwaZulu Natal (1.8%); Western Cape (10.9%); Limpopo (4.5%); Mpumalanga (0.9%); Free State (1.8%); North West (0.9%)

### *Domestic travel during COVID-19*

In understanding the potential for virtual tourism in South Africa, it became imperative to examine the nature of domestic travel in the country during COVID-19. Domestic tourism has been postulated to restart the recovery of the tourism industry (NDT, 2021). As presented in Table 2, the study found most of the participants (67.3%) had only travelled within the country at least twice since the pandemic, while 24.5% of the respondents had travelled between three or four times a year. Just over a sixth of respondents, 6.4%, engaged in domestic travel between five to seven times and very few (1.8%) have travelled frequently. The frequency with which respondents engaged in domestic travel indicates their willingness to travel during the pandemic.

**Table 2. Frequency of domestic travel during COVID-19 (since March 2020 to present)**

Frequency of domestic travel	In %
Once or twice this year	67.3
Three to five times	24.5
Five to seven times	6.4
I have travelled frequently (more than seven domestic trips)	1.8

The information contained in Table 3 provides further insight into this, presenting the responses of respondents on the factors that motivated their travel. This was a multiple response question.

**Table 3. Motivating factors for engaging in domestic tourism during COVID-19**

Reason	In %
Financially viable compared to international travel	37.3
Visiting family and friends who reside in different regions	70
Wanting to explore and experience South Africa as a destination	58.2
Needing to travel for business or work purposes	11.8

Most respondents (70%) engaged in domestic travel for reasons related to visiting friends and relatives (VFR) - a form of domestic travel which has been noted to be a popular type of travel in the country (Rogerson & Rogerson, 2020). Other popular motivations for travel included wanting to engage in leisure tourism - exploring South Africa as a destination (58.2%) and opting to travel within the country due to affordability (37.3%). Although business travel is a

popular reason for travel, many businesses were unable to fully operate during the hard lockdown restrictions. Thus, the low percentage of respondents (11.8%) that engaged in business travel is unsurprising.

From the few respondents who did not engage in domestic travel, some cited reasons were related to financial constraints (57.3%), not enough leisure time (31.8%), transportation constraints (22.7%), and the desire not to travel alone (18.2%). Understandably, financial constraints may long remain to be a strong deterrent against leisure travel due to the economic toll of the pandemic to the country. Rogerson, Lekgau, Mashapa and Rogerson (2021) argue that while COVID-19 had led an increase focus on domestic travel, the effect of the pandemic on the financial state of the population strongly determines the decision to partake in domestic travel, and for which type.

**Table 4. Reasons why respondents did not partake in domestic tourism activities**

Reasons for not engaging in domestic tourism	%
Financial constraints	57.3
Transportation constraints	22.7
High crime rates at a destination	10
Lack of leisure time	31.8
Did not want to travel alone	18.2
Unable to engage in domestic travel	12.7

Moreover, slightly more than half of the study participants (55.5%) had indicated that they are not comfortable in travelling during COVID-19, while the remaining 44.5% had stated that they are comfortable in partaking in domestic travel. Such results illustrated that the domestic market may be divided between those individuals who have resumed their travel plans since the ease of domestic travel regulations and individuals not willing to travel due to the risk perceptions now related to the economic activity. Understandably, in such cases present the unique opportunity to examine the utility of virtual tourism in this market.

### *Awareness and perceptions of virtual tourism*

In order to measure the perceptions towards virtual tourism and its potential utility within the domestic market, the study sought to unpack respondents' understanding of virtual tourism. As displayed in Table 5, most respondents associated virtual tourism with virtual tours of tourist places (60.9%), and virtual reality as part of the tourism experience at the destination (55.5%). Interestingly, respondents did not view virtual promotion (via social media) of a destination as part of virtual tourism (28.2%). This could suggest that virtual tourism is associated with the use of technology to stimulate virtual experiences of tourism destinations and attractions. Indeed, some studies on virtual tourism, distinguish virtual tourism applications (such as VR and AR) from videos and even television, stating the former to provide opportunities for sensory immersion and greater interactivity (Bec, Moyle, Timmsc, Schaffera, Skavronskayaa & Little, 2019; Rao & Krantz, 2020; Mura, Tavakoli & Sharif, 2017). The findings thereby suggest that domestic tourists may hold similar understandings of this type of tourism.

**Table 5. Understanding of virtual tourism**

Virtual tours of a place	60.9%
Virtual reality as part of the experience at the destination	55.5%
Promotion of a destination (e.g on social media)	28.2%

When asked whether they have engaged in virtual tourism, a majority of the participants (70.9%) had indicated no. The few respondents had that indicated that they had (29.1%) had presented museum and city tours as the types of virtual tourism activities that they had engaged



with. Such results may have emerged as a result of the increase in virtual tourism experiences offered during COVID-19, as a means for tourism business to maintain some operations and continuity through the pandemic. From the major share of the respondents that had not engaged in virtual tourism, Table 6 shows that some of the major reasons had related to the lack of opportunity (51.8%), lack of awareness of virtual tourism offerings (35.4%), lack of resources required (10.9%), and that virtual experiences are expensive (9.0%). Interestingly, only a few respondents (8.1%) had mentioned that they are not interested in virtual tourism. Such results suggest that virtual tourism could be an emerging alternative form of tourism, particularly should it become more accessible.

**Table. 6 Reasons for not engaging in virtual tourism**

Reason for not engaging in virtual tourism	In %
I had not had the opportunity to do so	51.8
I was not aware that virtual tourism existed	35.4
I do not have the resources (internet and device) to do so	10.9
Virtual tourism experiences are too expensive	9.0
I am not interested in virtual tourism	8.1

In examining the potential role of virtual tourism for domestic travel in South Africa, it became pertinent to unpack domestic market's perceptions towards this form of tourism. As displayed in Table 7, there is some question as to whether virtual tourism is an authentic tourism experience (mean=3.21). Understandably, tourism has been predominantly been a live, interactive and social experience. Only in the past decade (with the emergence of new technology which provide a wide range of opportunities to daily lives) had there been a substantial increase in the utilisation of technology to improve tourism operations and enhance the tourist experience (Merkx & Nawijn, 2021; Huang, Backman & Backman, 2010; Bec et al., 2021). In fact, the current study shows that domestic market is of the view that virtual tourism is a cost effective means of partaking in tourism (mean=3.70). Indeed, while virtual tourism does require stable internet connectivity and smart devices, some of the costs related to traditional tourism (such as transportation and accommodation), are removed. Accordingly, this could potentially be a more affordable way of experiencing some tourism experiences. In fact, study participants affirmed that this form of tourism is effective in enabling exposure of historical or previously inaccessible places (mean=3.90) as well as attractions not widely known (mean=4.09). Such findings point to the ability of virtual tourism to increase the use of domestic tourism product, as well as aiding in diversifying tourism demand from the popular attractions and destinations (such as Johannesburg, Durban and Cape Town), to lesser known areas. This falls in line with the goals of the country in geographically spreading tourism demand, so that tourism growth and development is (relatively) equitable in the country (NDT, 2012). Also, accessibility of certain tourism attractions (such as national parks) are viewed as inaccessible (sometimes due to the road which require 4x4 cars). Virtual tourism could thereby assist in enabling access to these areas. Moreover, it is important to consider the nature of domestic tourism in the country, in that, virtual tourism could be instrumental in promoting a travel culture amongst South Africans, particularly the younger generation who have been identified as designated focus in the South African Domestic Tourism Strategy (Adinolfi et al., 2021).

The study finds that while engaging in virtual tourism at tourism attractions and destinations enhances the experience (mean=3.48), it only does so as an add on, rather than replacing the traditional tourism (mean=3.70). This coincides with some writings on the prominence of virtual tourism, citing that ability of technological devices to provide multisensory experiences enhances the attraction and experience derived (Martins, Goncalves, Branco, Barbosa, Melo & Bessa, 2017; Beck & Egger, 2018; Merckx & Nawijn, 2021; Rao &

Krantz, 2020). However, while these studies concur that there are significant opportunities for technology in tourism, and that the potential application within the industry has yet to be realised, there is an overwhelming contention that virtual reality cannot replace traditional tourism. In particular, Mura et al. (2017) notes two important points, with the first being that the current technological devices are not able to provide multi-sensory experiences that can replicate real-life experiences, and the second recalling that tourism experiences evoke emotions and memories (animated by souvenirs and pictures). Such assertions support the views brought forth by the current study participants, who concur that virtual tourism cannot replace traditional tourism (mean=3.98). Specifically to the two forms of tourism prevalent in South Africa, the study finds that videocalls cannot be a replacement to visiting of friends and relatives (mean=2.97), however, business travel can be replaced by virtual means (mean=3.90). VFR travel is one of the dominating forms domestic tourism and is less susceptible (and thereby more resilient) to economic downturns (Rogerson, 2017). Indeed, the current study finds that it is one which cannot be easily replaced by technology. In the same light, business travel is highly vulnerable and often amongst the first company expenditure to be cut in times of crises. Currently, this form of tourism has had a major transition to the virtual space (Lekgau & Tichaawa, 2021).

**Table 7. Perceptions towards virtual tourism**

V#	Perceptions towards virtual tourism	Mean	Std. Deviation
V1	Virtual tourism is an authentic tourism experience	3.21	1.07841047
V2	Virtual tourism is a cost effective way of engaging in tourism	3.70	0.932053613
V3	Engaging in virtual tourism at attractions enhances the experience	3.48	1.081383909
V4	Virtual tourism is a good alternative for tourists during times of crises (try before you buy)	4.00	0.84592927
V5	Virtual tourism enables touring historical or previously inaccessible places	3.90	0.851824319
V6	Virtual tourism would be effective in exposing me to attractions or experiences I was not aware of	4.09	0.830004472
V7	I prefer to engage in virtual tourism from my home due to health and safety reasons	3.50	1.072983105
V8	I prefer to engage in virtual tourism at the attraction site, to enhance the experience (not replace my experience)	3.70	0.934064807
V9	I do not think virtual tourism is a replacement for traditional tourism	3.98	0.918533116
V10	Virtual tourism experiences have motivated me to engage in traditional travel	3.51	0.955254116
V11	I would be willing to engage in virtual tourism post COVID-19 pandemic as a part of the experience at the destination	3.50	1.098334473
V12	Travelling to visit friends and relatives can be replaced by video calls	2.97	1.330372721
V13	Travelling for business purposes can be replaced with virtual methods of communication	3.90	1.079801668

The COVID-19 pandemic has resultantly changed the nature of tourism demand in the country. In their study Rogerson and Rogerson (2021) aver that COVID-19 has increased the perceived risk in travelling which not only affects their decision (to travel) but their perceptions on the destination. Such views are shared by other studies as well (Sanchez-Canizares, Cabeza-Ramírez, Muñoz-Fernández & Fuentes-García, 2021; Jahari, Yang, French & Ahmed, 2021). Such assertions have been supported by the current study as well. Further, as shown in the table below, virtual tourism is good alternative during times of crises (mean=4.00). This is due to the fact that this form of tourism allows for tourists to have some experience of the attraction or destination, before they actually travel. This could take away some of the uncertainty in travelling, thereby aiding in the travel decision process. Huang et al. (2010) tourists increasingly seek information about the experience at the destination and the attraction, rather than only objective facts. In fact, some studies have noted that certain destinations (and attractions) have been using virtual reality experiences as means to promote the destination using the try-before-use method (Martins et al., 2017; Merckx & Nawijn, 2021; Beck & Egger,



2018). Similarly, respondents had indicated that engaging in virtual tourism could be related to health and safety reasons (mean=3.50). In unpacking the advantages of virtual tourism, Rao and Krantz (2020) underline that such experiences can be consumed in stances where tourists feel unsafe to travel due the risk of acquiring (or transmitting) viruses or infections. Understandably, the pandemic has introduced new travel behaviours, influenced by tourists' self-protection responses (Rogerson & Rogerson, 2021).

### ***Potential utility of virtual tourism***

As the use of technology in tourists attractions, is increasing incrementally in South Africa, the current study measures the participants' potential utility for virtual tourism. Firstly, it was important to examine the adaptability of the domestic market. In this regard, an overwhelming percentage of the respondents (78.2%) had noted no difficulties in adapting to new technology. This could be owed to that many of the social activities carried out by the wider population are online (mostly social media) (Mura et al., 2017). Following, the findings presented in the table below illustrates that virtual tourism could be effective in the promotion of destinations, particularly in purchasing decisions related to domestic travel. In this regard, a significant portion of the respondents hold the view that virtual tourism is able to help in deciding on whether or not to visit a destination (90.0%) as well as viewing the accommodation before making the booking decisions (86.3%).

Furthermore, the study findings show that the use of the virtual tourism can assist in planning for the trip, as suggested by 90.0% of the respondents. This is due to that many tourism businesses have increased their online presence and virtual experiences (Cenni & Vasquez, 2021) thereby providing more information for potential tourists in planning their trips. Also, many of the respondents had noted that engaging in virtual tourism before the trip could enhance the experience (81.8%) and guide the spending at the destination (80.9%). Accordingly, the findings reveal that virtual tourism could be an effective add-on to domestic travel. Engaging in virtual tourism minimises the inherent uncertainty around travelling and the subsequent risk, if utilised effectively by domestic tourism suppliers. However, it is important to consider the supply-side challenges in virtual tourism. For instance, there is still much to be achieved in attaining stable network connectivity in many parts of the country, and that creating virtual tours and experiences require skilled individuals as well as monetary investments. Many tourism businesses are facing economic downturns due to the regulations implemented to manage COVID-19 (Rogerson et al., 2021). Still, it is important to consider the potential benefits of such investments for the domestic market as it could provide more opportunities for domestic travel in the country.

**Table 8. Potential utility of virtual tourism (in percentages)**

V#	Potential utility for virtual tourism	Yes	No
V1	Do you find it difficult to adapt to new technology?	21.8	78.2
V2	Do you think that virtual tourism could help you decide on a destination to visit?	90.0	10.0
V3	Would you use or have you used virtual tourism to view accommodation before booking?	86.3	13.7
V4	Have you or would you use virtual tourism to help plan your trip (which route or tours to take)?	90.9	9.1
V5	Do you think that engaging in virtual tourism for a destination before physical travel would enhance your tourism experience?	81.8	18.2
V6	Do you think that engaging in virtual tourism before your trip could guide your spending at the destination?	80.9	19.1
V7	Do you think that forms of virtual tourism should become part of tourist attractions?	20.9	79.1
V8	Can virtual tourism replace traditional (contact) tourism?	21.8	78.2

Finally, the study sought to examine the likelihood of choosing virtual tourism experiences rather than live experiences. As seen in Table 9, activities most likely to be preferred in their virtual alternative had included watching a sport event (75.4%) and touring heritage sites



(52.7%). Activities such as theme park rides and adventure tourism activities were highly unlikely to be preferred in their virtual component, as indicated by 65.5% and 60% of the respondents, respectively. This could be to that these activities often evoke an adrenaline rush that cannot be replicated online, particularly with the current availability of virtual experiences and capacities (Mura et al., 2017; Bec et al., 2019). Moreover, while the respondents opting for virtual tourists of cities and natural attractions are less than half of the respondents (being 46.3% and 42.7% of respondents respectively), these figures demonstrate that there are possibilities of using these virtual experiences as add on, promotional material and temporary replacements in periods where domestic travel is disrupted.

**Table 9. Likelihood of choosing virtual tourism over traditional tourism (in percentages)**

V#	Statements	Likely	Unlikely
V1	Watching a sport event	75.4	24.6
V2	Touring a museum, historical or cultural attraction	52.7	47.3
V3	Touring a city	46.3	53.7
V4	Viewing natural attractions (wildlife/marine/environments/outdoor)	42.7	57.3
V5	Theme park rides	34.5	65.5
V6	Adventure tourism activities	40.0	60.0

## Conclusion

The current study investigated the potential role of virtual tourism in the South Africa domestic travel market. The perceptions of domestic travelers were thus examined in this regard. This study found that virtual tourism could be advantageous to South Africa’s tourism industry, as it could be used to enhance the travel culture amongst the domestic market, particularly the youth generation. The use of technology in tourism and travel by youth travelers has been explored in previous studies by Chai-Arayalert (2020), Veríssimo and Costa (2018) and Femenia-Serra, Perles-Ribes and Ivars-Baidal (2018), with each of these studies highlighting the utility of technology in travel and the willingness of these travellers to use different forms of technology in their tourism activities.

Enhancing travel culture within the youth traveler segment could be done by virtually exposing this population group to lesser travelled attractions and destinations, thereby motivating their physical travel to these places. Largely, the study concludes that virtual tourism has the potential to enhance the tourism experiences and could thus be leveraged to aid in the promotion of destinations. Through the means of virtual tours and experiences, potential tourists could gain further insight into the domestic tourism offering, thereby encouraging future travel intentions. More so, partaking in these virtual experiences assists in the travel decisions taken as it removes the uncertainty and risk often associated with tourism as a service product. Moreover, the use of virtual tourism before (and during) the trip has been postulated to enhance the overall tourism experience (Kwok & Koh, 2021; Guttentag, 2010). The significance of these findings, when considered against the background of the current situation in the South African tourism sector, should not be under-estimated. The use of virtual tourism could prove to be a highly effective strategy in motivating people to engage in domestic travel, which is key to the sector’s recovery. Furthermore, the use of virtual tourism could also provide a lower cost way for people to engage in travel in a time where financial constraints are dominant for many. Given the limited scope of the current study, the supply side considerations to virtual tourism offerings have not been examined. However, this study does illustrate the willingness of travelers to engage in various forms of virtual tourism and therefore the potential utility of this type of tourism in the domestic market.

Undeniably, COVID-19 has fast tracked the digital transformation of business and society owing to the initial regulations that had been imposed to restrict travel and gatherings (Everingham & Chassagne, 2020; Sigala, 2020). In addition, it had drastically changed, or led

to the rethinking of tourism development. Indeed, the pandemic has shown the importance of adaptability, resilience, and innovation for survival and sustainability in the tourism space (NDT, 2021). This brings into question the future direction of the industry. It is in this regard that the current study provides a modest theoretical contribution, in exploring the potential of virtual tourism for South Africa, considering the demand perspective. The study could provide a starting point for future research seeking to understand the use of virtual tourism (impact and implications of) within South Africa, as well as in other developing nations.

## References

- Adinolfi, M.C., Harilal, V. & Giddy, J.K. (2021). Travel Stokvels, Leisure on Lay-by, and Pay at Your Pace Options: The Post COVID-19 Domestic Tourism Landscape in South Africa. *African Journal of Hospitality, Tourism and Leisure*. 10(1), 302-317.
- Bama, H.K.N. & Nyikana, S. (2021). The effects of COVID-19 on future domestic travel intentions in South Africa: A stakeholder perspective. *African Journal of Hospitality, Tourism and Leisure*, 10(1): 179-193.
- Bec, A., Moyle, B., Timms, K., Schaffera, V., Skavronskayaa, L. & Little, C. (2019). Management of immersive heritage tourism experiences: A conceptual model. *Tourism Management*, 72, 117-120.
- Beck, J. & Egger, R. (2018). Emotionalise Me: Self-reporting and Arousal Measurements in Virtual Tourism Environments. In *Information and Communication Technologies in Tourism*. Edited by: Stangl, B. & Pesonen, J. Springer International Publishing: Vienna.
- Buthelezi, T. (2018). Explore the Dinaledi Chamber in Virtual Reality; Cradle of Humankind World Heritage site.
- Cenni, I. & Vasquez, C. (2021). Early adopters' responses to a virtual tourism product: Airbnb's online experiences. *International Journal of Culture, Tourism and Hospitality Research*. DOI: 10.1108/IJCTHR-12-2020-0289.
- Chai-Arayalert, S. (2020) Smart application of learning ecotourism for young eco-tourists. *Cogent Social Sciences*, 6(1), 1-17.
- Chirisa, I., Mutambisi, T., Chivenge, M., Mbasera, M., Sidambe, M., Muchenje, B., Mukwashi, T., Mabaso, E., Ncube, R. & Zengeni, D. (2020). Scope for virtual tourism in the times of COVID-19 in select African destinations. *Journal of Social. Sciences*, 64(1-3), 1-13.
- Cocks, T. & Tassiem, S. (2020). South Africa 'virtual safaris' liven up lockdown with jackals and leopard cubs. *Reuters*. Available at <https://www.reuters.com/article/us-health-coronavirus-safrica-virtual-sa-idUSKBN22I14B> [Retrieved 07 November 2021].
- Cohen, E. (2015). Tourism Mobilities Approach to Tourism from Emerging World Regions. *Current Issues in Tourism*. 18(1), 11-43.
- du Venage, G. (2020). South Africa Comes to Standstill With Eskom's Load Shedding. *Engineering and Mining Journal*, 221(1), 18-18.
- Ehinger, B. (2020). Breaking The Boundaries Of Time & Space. *Travel Trend*. Available at <https://www.trvltrend.com/technology/virtual-tourism/> [Retrieved 14 November 2021].
- El-Said, O. & Aziz, H., (2021). Virtual Tours a Means to an End: An Analysis of Virtual Tours' Role in Tourism Recovery Post COVID-19. *Journal of Travel Research*. DOI: 10.1177/0047287521997567.
- Everingham, P. & Chassagne, N. (2020). Post COVID-19 ecological and social reset: moving away from capitalist growth models towards tourism as Buen Vivir, *Tourism Geographies*. DOI: 10.1080/14616688.2020.1762119

- Femenia-Serra, F., Perles-Ribes, J. F. & Ivars-Baidal, J. A. (2018). Smart destinations and tech-savvy millennial tourists: hype versus reality. *Tourism Review*, 74(1): 63-81.
- Fiocco, A.J., Millett, G. D'Amico, D., Krieger, L., Sivashankar, Y. & Lee, S.H. (2021). Virtual tourism for older adults living in residential care: A mixed methods study. *PLoS ONE*, 16(5): e0250761
- Fotiadis, A., Polyzos, S. & Huan, T.C.T. (2021). The good, the bad and the ugly on COVID-19 tourism recovery. *Annals of Tourism Research*, 87, 103 - 117
- Giberson, J. (2017). Generation Y, Virtual Reality and Tourism. *Travel and Tourism Research Association: Advancing Tourism Research Globally*. 10. Available at [https://scholarworks.umass.edu/ttra/2017/Grad\\_Student\\_Workshop/10](https://scholarworks.umass.edu/ttra/2017/Grad_Student_Workshop/10) [Retrieved 01 November 2021].
- Griffin, T., Giberson, J., Lee, S.H., Guttentag, D., Kandaurova, M., Sergueeva, K. & Dimanche, F. (2017). Virtual Reality and Implications for Destination Marketing. *Travel and Tourism Research Association: Advancing Tourism Research Globally*. 29. Available at [https://scholarworks.umass.edu/ttra/2017/Academic\\_Papers\\_Oral/29](https://scholarworks.umass.edu/ttra/2017/Academic_Papers_Oral/29) [Retrieved 01 November 2021].
- Guttentag, D.A. (2010). Virtual reality: Applications and implications for tourism. *Tourism Management*, 31(5), 637-651.
- Helble, M., Park, C.Y. & Won, H.C. (2021). Can Vaccination Help Restart Tourism?. *ADB Briefs*. 186, 1-12.
- Hsu, C. (2011). The Feasibility of Augmented Reality on Virtual Tourism Website. *Fourth International Conference on Ubi-Media Computing*, 5(3), 253-256.
- Huang, Y.C. (2011). *Virtual tourism: Identifying the factors that affect a tourist's experience and behavioral intentions in a 3D virtual world*. Doctoral dissertation. Clemson University: USA.
- Huang, Y.C., Backman, S.J. & Backman K.F. (2010). The Impacts of Virtual Experiences on People's Travel Intentions. In: *Information and Communication Technologies in Tourism*. Edited by Gretzel U., Law R., Fuchs M. Springer, Vienna.
- Huh, C. & Singh, A.J. (2007). Families Travelling with a Disabled Member: Analysing the Potential of an Emerging niche market segment. *Tourism and Hospitality Research*, 7(3-4), 212-229.
- Jahari, S.A., Yang, I.M., French, J.A. & Ahmed, P.K. (2021). COVID-19 and Beyond: understanding travel risk perception as a process. *Tourism Recreation Research*. DOI: 10.1080/02508281.2021.1937450.
- Jones, P. & Comfort, D. (2020). The COVID-19 crisis, tourism and sustainable development. *Athens Journal of Tourism*, 7(2), 75-86.
- Kaewkitipong, L., Chen, C. & Ractham, P. (2021). Examining Factors Influencing COVID-19 Vaccine Tourism for International Tourists. *Sustainability*, 13(22), 12867 - 12885.
- King, C., Iba, W. & Clifton, J. (2021). Reimagining resilience: COVID-19 and marine tourism in Indonesia. *Current Issues in Tourism*, 24(19), 2784-2800.
- Kwok, A.O.J. & Koh, S. G. M. (2021). COVID-19 and Extended Reality (XR). *Current Issues in Tourism*, 24(14), 1935-1940.
- Lee, C.C. & Chen, M.P. (2021). Ecological footprint, tourism development, and country risk: international evidence. *Journal of Cleaner Production*, 279, 123671.
- Lekgau, R. J. & Tichaawa, T.M. (2021). Adaptive strategies employed by the MICE sector in response to COVID-19. *GeoJournal of Tourism and Geosites*, 38(4), 1203–1210.
- Likholetov, V.V., Lisenkova, L.N. & Baranova, E.V. (2016). Virtual tour as a marketing instrument in tourism. *Economics and Innovations Management*, 1, 136-138.

- Lin, X. & Kishore, R. (2021). Social media-enabled healthcare: a conceptual model of social media affordances, online social support, and health behaviors and outcomes. *Technological Forecasting and Social Change*, 166, 120574.
- Loannides, D. & Gymothy, S. (2020). The Covid-19 Crisis as an Opportunity for Escaping the Unsustainable Global Path. *Tourism Geographies*, 22(3), 624-32.
- Lu, J., Xiao, X., Xu, Z., Wang, C., Zhang, M. & Zhou, Y. (2021). The potential of virtual tourism in the recovery of tourism industry during the COVID-19 pandemic. *Current Issues in Tourism*. DOI: 10.1080/13683500.2021.1959526.
- Lu, J. & Xu, Z. (2021). Can virtual tourism aid in the recovery of tourism industry in the COVID-19 pandemic?. *Travel and Tourism Research Association: Advancing Tourism Research Globally*. Available at [https://scholarworks.umass.edu/ttra/2021/research\\_papers/67](https://scholarworks.umass.edu/ttra/2021/research_papers/67) [Retrieved 01 December 2021].
- Mair, F.S., Foster, H.M.E. & Nicholl, B. (2020). Multimorbidity and the Covid-19 pandemic: An Urgent Call to Action. *Journal of Multimorbidity and Comorbidity*, 10, 1-2.
- Maluleke, R. (2021). Quarterly Labour Force Survey (QLFS) Q2:2021. Statistics South Africa. Available at [http://www.statssa.gov.za/publications/P0211/Presentation%20QLFS%20Q2\\_2021.pdf](http://www.statssa.gov.za/publications/P0211/Presentation%20QLFS%20Q2_2021.pdf) [Retrieved 15 November 2021].
- Martins, J., Goncalves, R., Branco, F., Barbosa, L., Melo, M. & Bessa, M. (2017). A multisensory virtual experience model for thematic tourism: A Port wine tourism application proposal. *Journal of Destination Marketing & Management*, 6, 103-109.
- Merkx, C. & Nawijn, J. (2021). Virtual reality tourism experiences: Addiction and isolation. *Tourism Management*, 87, 1-3
- Mofokeng, N.E.M. & Matima, T.K. (2018). Future tourism trends: Virtual reality based tourism utilizing distributed ledger technologies. *African Journal of Hospitality, Tourism and Leisure*, 7(3): 1-14.
- Mura, P., Tavakoli, R. & Sharif, S.P. (2017). ‘Authentic but not too much’: exploring perceptions of authenticity of virtual tourism. *Information Technology Tourism*, 17, 145-159.
- National Department of Tourism (NDT). (2012). *Domestic Tourism Growth Strategy 2012-2020*. Available at <https://www.tourism.gov.za/AboutNDT/Branches1/domestic/Documents/Domestic%20Tourism%20Growth%20Strategy%202012-%202020.pdf> [Retrieved June 18 2020]
- National Department of Tourism (NDT). (2020). *Tourism Industry Survey of South Africa: COVID-19: Impact, Mitigation and the Future*. Available at [https://www.tourism.gov.za/CurrentProjects/Tourism\\_Relief\\_Fund\\_for\\_SMMES/Documents/Tourism%20Industry%20Survey%20of%20South%20Africa%20-%20%20COVID-19.pdf](https://www.tourism.gov.za/CurrentProjects/Tourism_Relief_Fund_for_SMMES/Documents/Tourism%20Industry%20Survey%20of%20South%20Africa%20-%20%20COVID-19.pdf) [Retrieved 31 May 2020].
- National Department of Tourism NDT. (2021). Tourism Sector Recovery Plan COVID-19 Response. Available at <https://www.tourism.gov.za/AboutNDT/Documents/Tourism%20Sector%20Recovery%20Plan.pdf> [Retrieved 13 August 2020].
- Organisation for Economic Co-operation and Development [OECD]. (2020). *Rebuilding tourism for the future: COVID-19 policy responses and recovery*. Paris: OECD.
- Paquet, E. & Viktor, H.L. (2005). On the Application of 3D Technologies to the Framework of Cultural Heritage. *Annals of Telecommunications*, 60(11), 1379-1393.
- Pestek, A. & Sarvan, M. (2020). Virtual reality and modern tourism. *Journal of Tourism Futures*, 7(2), 245-250.

- Rao, A.S.R.S. & Krantz, S.G. (2020). Data Science for Virtual Tourism Using Cutting-Edge Visualizations: Information Geometry and Conformal Mapping. *Patterns*, 1, 1-4.
- Rogerson, C.M. (2015). Restructuring the geography of domestic tourism in South Africa. *Bulletin of Geography. Socio-economic Series*, 29, 119–135.
- Rogerson, C.M. (2017). Visiting friends and relatives travel matters for sub-Saharan Africa. *African Journal of Hospitality, Tourism and Leisure*, 6(3), 1-10.
- Rogerson, C.M. and Rogerson, J.M. (2020). COVID-19 and tourism spaces of vulnerability in South Africa. *African Journal of Hospitality, Tourism and Leisure*, 9(4), 382-401.
- Rogerson, C.M. & Rogerson, J.M. (2021). COVID-19 and changing tourism demand: Research review and policy implications for South Africa. *African Journal on Hospitality, Tourism and Leisure*, 10(1), 1–21.
- Rogerson, J. M., Lekgau, R. J., Mashapa, M. M. & Rogerson, C. M. (2021). Covid-19 and local business responses: Evidence from South Africa’s most tourism-dependent locality. *African Journal of Hospitality, Tourism and Leisure*, 10(1), 388-405.
- Sánchez-Cañizares, S.M., Cabeza-Ramírez, L.J., Muñoz-Fernández, G. & Fuentes-García, F.J. (2021) Impact of the perceived risk from Covid-19 on intention to travel. *Current Issues in Tourism*, 24(7), 970-984.
- Schrandt, L. (2020). Virtually explore captivating Cape Town. *USA Today, 10 Best*. Available at <https://www.10best.com/interests/explore/cape-town-south-africa-virtual-tour/> [Retrieved 20 November 2021].
- Siakwah, P., Musavengane, R. & Leonard, L. (2019). *Tourism Governance and Attainment of the Sustainable Development Goals in Africa*. *Tourism Planning & Development*, 17(4), 355-383.
- Sigala, M., (2020). Tourism and Covid-19; Impacts and Implications for Advancing and Resetting Industry Research. *Journal of Business Research*, 117, 312-21.
- Thompson, A. (2020). Mountains, waves and watering holes: The best South African live streams to watch during lockdown. *Business Insider*. Available at <https://www.businessinsider.co.za/best-webcams-south-africa-2020-4> [Retrieved 02 December 2021].
- Vasilina, D.S. (2016). Virtual Museum as a phenomenon of modern culture; *International Journal of Cultural Studies*, 3(24): 96-102.
- Veríssimo, M. & Costa, C. (2018). Do hostels play a role in pleasing Millennial travellers? The Portuguese case. *Journal of Tourism Futures*, 4(1), 57-58.
- Wang, M., Kunasekaran, P. & Rasoolimanesh, S.M. (2021). What influences people’s willingness to receive the COVID-19 vaccine for international travel?. *Current Issues in Tourism*. DOI: 10.1080/13683500.2021.1929874.
- World Travel and Tourism Council (WTTC). (2021). South Africa 2021 Annual Research: Key Highlights. Available at <https://wttc.org/Research/Economic-Impact/moduleId/704/itemId/204/controller/DownloadRequest/action/QuickDownload> [Retrieved 29 November 2021].
- Woyo, E. (2021). The Sustainability of using domestic tourism as a post-COVID-19 Recovery strategy in a distressed destination. In *Information and Communication Technologies in Tourism 2021* (pp. 476-489). Springer, Cham.
- Yung, R. & Khoo-Lattimore, C. (2019). New realities: a systematic literature review on virtual reality and augmented reality in tourism research. *Current Issues in Tourism*, 22(17), 2056-2081.