Virtual Reality: Saving Tourism in South Africa?

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Abstract

At the end of 2019, a new crisis emerged in the world - COVID-19 - which literally devastated the tourism industry worldwide. In order to try to minimise the spread of COVID-19, the government implemented a strict national lockdown, but this unfortunately had a negative impact on many sectors within the tourism industry. In the light of this, many scholars argued that technology such as virtual reality (VR), would contribute to the recovery of tourism. This article considers this phenomenon by filling a gap in the literature regarding the role of VR in the tourism industry in the global South by focusing on South Africa. The key question that arises, namely can VR save tourism in South Africa in the wake of COVID-19? To address this question, the study uses three methodological approaches: case studies, a conceptual research method and open-ended interviews. The results from the study showed that VR offers tourism numerous benefits, but at the same time poses a threat to the industry. Despite this, the study concludes that VR cannot save the tourism industry in South Africa currently as it faces certain critical obstacles in this context.

Keywords: benefits and barriers, COVID-19, virtual reality, tourism, South African tourism

Introduction

The Republic of South Africa (hereafter South Africa) has become an increasingly popular tourist destination since 1994. According to Statistics South Africa, in 2019, the country attracted approximately 4 657 450 tourists (Statistics South Africa, 2019). These tourists mainly came from neighbouring countries (eSwatini, Lesotho, Mozambique, Namibia, Swaziland and Zimbabwe), as well as, from Britain, Europe, North America and Asia (Saayman & Saayman, 2010; Visser, 2007). Tourists flocked to South Africa for three main reasons: first, it was regarded as a "safe-haven" destination after the 9/11 terrorist attacks in New York; second, the relative weakness of its currency (Rand) against strong international currencies (Allen & Brennan, 2004; Saayman & Saayman, 2010), such as the American Dollar, the British Pound and the European Euro, which made it financially attractive; and thirdly, it offers tourists a diversity of fauna and flora, as well as cultural and scenic environments.

The tourism industry is one of the biggest contributors to South Africa's economy and employment. In 2018, tourism generated ZAR R425.8 billion to the gross domestic product, which represents 8.6% of all economic activity in the country (Smith, 2019). Therefore, tourism has been described as the "new gold" (Harvey, 2008: 23). In terms of employment, in the same year, tourism contributed 4.5% of the total employment in the country (Statistics South Africa, 2021).

At the end of 2019, the tourism industry was exposed to a new crisis: Coronavirus disease 2019 (COVID-19). On 5 March 2020, South Africa reported the first confirmed COVID-19 case (Mkhize, 2020; Nhamo et al., 2020; Rogerson & Rogerson, 2020). In order to try to minimise the spread of COVID-19, on 15 March 2020, M.C. Ramaphosa, the President of South Africa, declared a National State of Disaster based on the *Disaster Management Act*, 57 of 2002. On 26 March 2020, Ramaphosa imposed a strict national lockdown, but he

subsequently started to ease the lockdown since 1 May 2020 by using a five-level COVID-19 alert system approved by the National Coronavirus Command Council (Nhamo et al., 2020; Rogerson & Rogerson, 2020; Times Live, 2020). On 18 December 2020, a new variant, Beta (501Y.V2), of the COVID-19 virus (SARS-CoV-2), was detected in the country by the KwaZulu-Natal Research Innovation and Sequencing Platform (Anon., 2021). Another variant, Omicron (B.1.1.529), was discovered in South Africa on 9 November 2021 and reported to the World Health Organisation on 24 November 2021 (Meldrum & Magome, 2021; World Health Organisation, 2021). Based on the latest statistics (January 2022) from the South African Resource Corona Virus Portal, there are currently, 3 559 230 confirmed cases; 93 364 deaths; and 3 371 004 recoveries (SAcoronavirus, 2022).

Tourism has experienced numerous crises, disasters, diseases, epidemics and pandemics during the last few years, but none has had a devastating impact on tourism as COVID-19 (Itani & Hollebeek, 2021; Rogerson & Rogerson, 2020). The tourism industry is extremely vulnerable to crises, disasters and diseases (Itani & Hollebeek, 2021; Gretzel et al., 2020; Rogerson & Rogerson, 2020). In fact, the former Minister of Tourism, M. Kubayi-Ngubane, stated that COVID-19 "has undeniably been devastating for the tourism sector" in South Africa (The South African Government, 2020) as the industry is not considered as an "essential service" (Rogerson & Rogerson, 2020: 1085). Countless sectors in tourism suffered tremendously as a result of the national lockdown, especially the aviation industry, the accommodation industry, the festival and event industry, the wine industry, as well as small and medium-sized enterprises (SMEs).

The aviation industry was hit hard by the national lockdown, especially airlines. South African Airways, a state-owned flag carrier airline of South Africa, had to apply for a bailout in order to repay debts caused by financial issues as well as pre-existing mismanagement. FlySafair, a low-cost airline, increased its prices, while Comair, the operator of British Airways in South Africa and the owner of the low-cost airliner kulula.com, filed for business rescue (Mchunu, 2020). Unfortunately, the International Air Transport Association predicts that approximately 298,000 people in the aviation industry in South Africa could lose their jobs as a result of the national lockdown (International Air Transport Association, 2021).

The national lockdown also impacted the accommodation industry in South Africa. A study conducted in a collaboration between the Department of Tourism, the Tourism Business Council of South Africa (TBCSA) and the International Finance Corporation in 2020, shows that the majority of accommodation firms reported that both their revenue and occupation levels were down by 50% compared to 2019 (TBCSA, 2020). As a result, many famous accommodation firms closed their doors in South Africa, such as Sun International, Hilton Hotel, Marriott and Tsongo Sun (Ngcobo, 2020).

Moreover, the event and festival industry also felt the devastating impact of COVID-19. The Klein Karoo Nasionale Kunstefees (the Klein Karoo Arts Festival), the Hermanus Whale Festival, the Comrades Marathon and the pilgrimage to the Zion Christian Church are some of the numerous popular events and festivals that had to be cancelled in 2020. For the locals, this has had a negative effect as they depend on the tourism revenue obtained from these events and festivals (De Beer, 2020; Fishing Industry News and Aquaculture, 2020; Hermanus Whale Festival, n.d.; Nhamo et al., 2020).

Another industry in South Africa that felt the blow of the national lockdown was the wine industry. At the beginning of the national lockdown, the government implemented a strict ban on the sale of alcohol in order to reduce the load of alcohol-related accidents in hospitals in view of increased COVID-19 hospitalisations. It is for this reason, that the wine industry reported a loss of ZAR R2.5 billion in tourism revenue between March 2020 and July 2020. In particular, this was a major issue for the Western Cape province as its tourism sector relies on

the wineries as a source of tourism revenue (Phakathi, 2020). Furthermore, SMEs in South Africa consist of 95% of enterprises in tourism. However, numerous SMEs were influenced by the national lockdown. The reason is that they often have limited cash reserves, a smaller client base and less capacity to manage commercial pressures, such as COVID-19. Researchers predict that 60% of SMEs will close their doors before the pandemic is over (Kalidas et al., 2020; Maylie, 2020; Rogerson & Rogerson, 2020).

Although governments have introduced various methods to try and assist with the recovery of tourism, this has unfortunately been slow (Helble et al., 2021). Therefore, tourism scholars state that technology will play a critical role in building resilience in tourism, as well as, help to recover the industry once the pandemic is over or has eased (Gretzel et al., 2020). In fact, Gretzel et al. (2020: 198) state that technology is the "indispensable *conditio-sine-qua-non*: without IT no tourism during and post-COVID-19". One such technology that will contribute to tourism's recovery is virtual reality (VR) (Akhtar et al., 2021; Gretzel et al., 2020). In light of the COVID-19 pandemic, a key question emerges in the literature, namely can the tourism industry in South Africa be saved by VR?

Virtual reality and South African tourism
Tourism scholars often rely on Guttentag's (2010) the well-known definition of "VR". According to Guttentag (2010: 638), the concept can be defined as:

> the use of a computer-generated environment [the virtual environment] that one can navigate [the ability to move and explore the virtual environment] and possibly interact [to the ability to select and move objects within the virtual environment] with resulting in real time simulation of one or more of the user's five senses.

It is difficult to define VR in terms of tourism (Beck et al., 2019). Based on Guttentag's (2010) definition, the concept can be adapted in the context of tourism. Ankomah and Larson (2017), and Maymand et al. (2012), define the concept of "VR" in tourism as a non-physical form of tourism that allows tourists to travel to a computer-generated destination without them having to physically go there. Examples of VR in tourism include the following: online guided tours of museums or heritage sites, panoramic photographs of a location and virtual tourist agencies (Ali & Frew, 2013; Ankomah & Larson, 2017).

According to Louw, the Chief Executive of VR Events, "VR emerged in South Africa during the 1990s" (Louw, 5 May 2021). However, COVID-19 has renewed people's interest in VR. Hence, tourism companies, organisations, attractions and destinations used VR as a way to entertain and attract tourists during the COVID-19 pandemic. For example, the Western Cape Tourism and Wesgro, a tourism and trade agency, launched the "One Day" campaign to encourage tourists to visit the province's famous attractions again "one day", in other words, after the pandemic. Tourists had the opportunity to virtually "visit" some of the attractions by using Google Street View and podcasts. It is estimated that the campaign reached over 8 million tourists (Bizcommunity, 2021; Moodley, 2020).

Furthermore, &Beyond, a luxury travel company, and WildEarth, a South African wildlife broadcaster, offered tourists the opportunity to virtually "partake" in live-stream safari game drives through real game reserves. With & Beyond and WildEarth, tourists had the chance to ask field guides questions by using YouTube, Twitter or virtually "book" a private session with an actual field guide. In fact, these live-stream safari game drives have become so popular that they are broadcasted on BBC, a British free-to-air television broadcasting channel; CGTN, a cable TV news service; SABC 3, a South African free-to-air television network; and

DSTV, a sub-Saharan African direct broadcasting satellite service (&Beyond, n.d.; & Beyond, 2020; Simpson, 2020; Taylor, 2020).

As mentioned, the national lockdown led to many festivals and events being cancelled. Therefore, these festivals and events turned to VR to allow tourists to still virtually "participate" in them. In 2020, Africa's Travel Indaba, which is held annually, was called off. Due to this, tourism companies and organisations did not have the chance to showcase their tourism products and services to tourists and tourism companies and organisations. This led the KwaZulu-Natal Tourism and the Southern Africa Tourism Services Association creating Virtual Fams, an online indaba. Virtual Fams showed tourists and trade partners the province's accommodation, scenery, tourist activities and food offers (Anon., 2020; Overport: rising sun, 2020).

Literature review

Tourism scholars began showing a keen interest in VR from the 1990s (Beck et al., 2019). Since then, tourism scholars have written extensively on VR and its impact on tourism. However, it appears that they have mostly addressed two main areas regarding VR and tourism, namely marketing and sustainability. The role of VR in tourism marketing is one of the most popular topics with a range of topics being focused on in terms of VR. Some of these include Second Life (SL), presence, comparing VR to conventional tourism media and the technology acceptance model (TAM). A topic favoured among tourism scholars is SL, an online virtual world. Huang et al. (2013) are some of the authors that use SL as a marketing tool for tourism. Based on their results, SL can be considered as a superior marketing tool to develop brand awareness and to gain a competitive advantage (Huang et al., 2013). Another area in marketing that tourism scholars have focused on is presence. Tussyadiah et al. (2016) addressed this area. In their article, they explore the roles of spatial presence in influencing attitude and behavioural intention to visit actual tourism destinations. Their results showed that participants felt varying levels of spatial presence during the experience and also recalled the moments of arrival (i.e., being in the virtual world) and departure (i.e., being transported) and the moments that generate a stronger sense of being there (Tussyadiah et al., 2016).

Tourism scholars have also compared VR to traditional tourism marketing media (i.e., brochures), such as Griffen et al. (2017). They utilised South Africa as part of their study in which participants viewed a video of South Africa produced by South African Tourism, the national tourism agency, through the Oculus Rift, a head-mounted display (HMD), or on the internet. Their results revealed that participants that viewed the VR content reported a better destination image, the tendency to visit, to seek information and recommend South Africa as a tourist destination (Griffen et al., 2017). Lastly, tourism scholars have also explored VR and marketing in terms of the TAM model. For example, Gibson and O'Rawe (2018) analyse the TAM model in VR marketing and their results were similar to Griffen et al. (2017). According to them, tourists tend to visit the real destination after they have experienced the virtual version of the destination (Gibson & O'Rawe, 2018).

Another area that tourism scholars have written much on is VR and its impact on sustainability. Even though countless tourism scholars have mentioned VR as a sustainable tool in their works, only two authors stand out, namely Bristow (1999) and Dewailly (1999). In his article, Bristow (1999) reveals that the internet allows tourists to become truly "green tourists" as it minimises the impact on the tourism environment. Dewailly (1999), another well-known author, mainly focuses on how VR can contribute and enhance sustainability in tourism. As VR developed in tourism, new areas began to emerge in the literature. One of these areas is VR as a substitute for conventional tourism. Numerous tourism scholars have addressed this topic, including: Guttentag (2010, 2020); Sarkady et al. (2021); Sussmann and Vanhegan

(2000). Sussmann and Vanhegan (2000) are of the opinion that VR will not substitute conventional tourism, but rather it will complement it. Guttentag (2010, 2020) adds that tourists might accept VR as a substitute for some tourist experiences, such as in the case of sustainability. However, Sarkady et al. (2021) disagree with the authors by stating that tourists will continue to use VR as a substitute after the pandemic.

With the recent COVID-19 outbreak, tourism scholars began shifting their attention to how VR could contribute to the recovery of tourism. Some authors that have focused on this area are Atsiz (2021), and Itani and Hollebeek (2021). Atsiz (2021) discusses how VR can overcome physical distancing (or social distancing) and still allow tourists to experience a destination. Itani and Hollebeek (2021) also pay attention to physical distancing by exploring how destinations are adapting to physical distancing. Their results reveal that physical distancing boosted tourists' intent to use VR tours during COVID-19 (Itani & Hollebeek, 2021).

Although much has been written on VR and tourism, tourism scholars have noted a gap in the literature. According to Loureiro et al. (2020); Wei (2019); and Wei et al. (2019), most of the research on VR and tourism is focused on global North countries, such as Europe, America, Australia and Asia. Therefore, it is noted that thus far, little has been written on VR's role in global South countries. Since the outbreak of COVID-19, tourism scholars have begun paying more attention to global South countries. Some of the authors are Chirisa et al. (2020); and Jude and Chike (2020). Chirisa et al. (2020) discuss how VR in tourism can contribute to the economy and sustainability in Zimbabwe during COVID-19. Jude and Chike (2020) address the benefits and barriers associated with VR and tourism in terms of Nigeria. However, tourism scholars have yet to address VR and its role in South Africa's tourism industry. For this reason, the study aims to contribute to the literature regarding global South countries by focusing on VR in the context of South Africa, a global South country.

Methodology

Three main methods were used to address the aim of the study – case studies, conceptual research approach and open-ended interviews. The case study approach is a popular research method among tourism scholars (Beeton, 2005). Yin (2018: 17) defines the case study approach as "an empirical method that investigates a contemporary phenomenon (the "case") in depth and within its real-world context, especially when the boundaries between phenomenon and context may not be clearly evident". Regarding tourism, cases can be tourists, local communities, countries, tourism companies and organisations, and places (Veal, 2018). Tourism scholars prefer the case study approach because it offers them high construct validity and in-depth insight into the study (Mouton, 2001). The case study approach is also flexible, which means that tourism scholars are able to adapt their research strategy at any time of their research (Veal, 2018). As mentioned, tourism scholars have neglected VR and how it impacts tourism in global South countries. For this reason, the case study is South Africa, which is considered a global South country.

The second research method used in the study is the conceptual research approach. With regards to tourism, the word "concept" "help us [to] understand complex ideas (e.g. responsibility) and propose novel juxtapositions of ideas (e.g. responsible tourism)" (Xin et al., 2013: 68). The conceptual research approach is different from empirical research due to the fact that it does not require tourism scholars to conduct "hypotheses testing or theory development" (Xin et al., 2013: 68). Tourism scholars mainly use the conceptual research approach to "develop new concepts or to reinterpret existing ones" (Xin et al., 2013: 72) or to answer difficult questions that cannot be addressed by empirical research (Xin et al., 2013).

Lastly, the interview method has become one of the most popular qualitative research methods in social sciences during the last 20 years (McGehee, 2012; Picken, 2017). This is because interviews allow tourism scholars to obtain more exploratory and in-depth research from different sources, such as stakeholders, governments, planning agencies, tourism companies and organisations and locals (Jennings, 2005; Su, 2016). The study also conducted open-ended interviews given that there is not much information on VR in terms of South African tourism. In order to obtain the necessary information on VR regarding South Africa's tourism industry, the author interviewed ten tourism attractions that used VR to entertain or attract tourists and ten VR companies. Due to the current COVID-19 pandemic, the author conducted virtual interviews by using emails, Zoom and WhatsApp.

Results and discussion
VR offers tourism numerous benefits, but it is also considered a threat to the industry. The section is divided into two parts. The first section discusses the benefits of VR and tourism in terms of the tourism industry in South Africa. The second section addresses the barriers associated with VR in tourism. However, only the benefits and barriers that apply to South African's tourism industry during COVID-19 will be focused on as this is the focus point of the study.

Benefits
Tourism scholars consider VR as a beneficial tool for tourism, especially in marketing; planning; sustainability; accessibility; education and entertainment. VR is often praised by tourism scholars as a superior sustainable tool. With VR, tourists gain access to sensitive and fragile destinations/attractions, for example, wetlands. This is because VR eliminates the negative impact of over-tourism and provides tourists with an alternative version of the sensitive or fragile destination/attraction (Cheong, 1995; Guttentag, 2010, 2020; Hobson & Williams, 1997). Thus, tourists are able to explore the destination/attraction virtually, knowing that the actual destination/site will not be harmed. VR can also be used in tourism planning. Local communities are often ignored in during the planning process. With VR, local communities can be included in the tourism planning phase as it can be used by planners to explain tourism-related plans in a less complex manner (Guttentag, 2010; Jacobius, n.d.). This section discusses the following benefits: marketing; entertainment; tourism revenue; health; physical distancing; and safety and security.

Tourism scholars regard VR as a supreme marketing tool as it has revolutionised tourism marketing (Guttentag, 2010; Pasanen et al., 2019; Williams & Hobson, 1995). Tourism is considered an intangible product that cannot be tangibly evaluated beforehand (Guttentag, 2020). With VR, tourists get a "try before buy" opportunity (Tussyadiah et al., 2017: 230; Tussyadiah et al., 2018: 141), a concept that enables tourists to experience a destination/attraction virtually before actually traveling to the real destination/attraction (Cheong, 1995). Research by Mura et al. (2017); and Tussyadiah et al. (2018) show that the "try before buy" concept has in fact been successful in encouraging tourists to travel to the real destination. Based on the authors' results, tourists travelled to the physical destination after they experienced the virtual version of the destination (Mura et al., 2017; Tussyadiah et al., 2018). It is argued, therefore, that the "try before buy" concept will play a critical role regarding COVID-19 because it may motivate tourists to travel again, for example, to South Africa, once the pandemic is over or has eased (Atsiz, 2021). For this reason, South African tourism companies and organisations used VR as a marketing tool during COVID-19 in order to market their destinations and attractions to potential tourists. For example, the above-mentioned,

&Beyond and WildEarth tried to get tourists to travel to South Africa again by giving them a "taste" of what the country has on offer through their live-stream safari tours.

Due to the national lockdown, tourists became extremely bored since they were forced to stay in their homes. Hence, tourism attractions and destinations began offering virtual tours as a form of entertainment. For instance, the Two Oceans Aquarium, in Cape Town, allowed tourists to virtually view the penguins while they were physically exploring the aquarium (Caboz, 2020). The University of Pretoria Campus Tours, a student-run business at the University of Pretoria, also provided entertainment to potential students through a virtual tour of the campus on Zoom (ATLAS, 2020).

Moreover, VR provides tourism-related companies, organisations, destinations and attractions in South Africa the opportunity to generate tourism revenue. The Voortrekker Monument, in Pretoria, allows tourists to make a financial contribution via the virtual version of the monument (Voortrekker Monument, n.d.). Another method used to receive tourism revenue is by enabling tourists to pay upfront before they can explore the virtual destination/attraction. For instance, in order to experience the "private" safari game drive with the field guide from &Beyond, tourists are obliged to pay before the session by using PayPal, an online payment method (&Beyond, n.d.). Once tourists have paid, they can book their session and enjoy their "own" private session with an actual field guide as if they were on a real safari trip. VR tourism-related games can also be used to generate tourism revenue. Tourists can first play the game free-of-charge before they decide if it is worth paying for. Once tourists decide to pay for the game, they are then able to customise their experience, move through levels quicker or eliminate advertisements. For instance, only 4.4% of gamers paid for the mobile game, "Clash of Clans", but it still generated a revenue of US$1.3 billion (Fink, 2020).

Furthermore, the national lockdown also affected South Africans' mental health. Research by the Human Sciences and Research Council shows that 33% of South Africans experienced depression, 45% fear and 29% felt lonely during the national lockdown (Nguse & Wassenaar, 2021). Unfortunately, it is predicted that COVID-19 might lead to other mental health issues among South Africans, including post-traumatic stress disorder, mood disorders, anxiety, phobias and obsessive-compulsive disorders (Nguse & Wassenaar, 2021). It is argued that VR is beneficial to the mental well-being of tourists during the national lockdown because it provides them with a temporary sense of escapism from COVID-19 (Atsiz, 2021; Sarkady et al., 2021; Siani & Marley, 2021). For example, tourists are able to temporarily "escape" COVID-19 by virtually "partaking" in a live-stream safari drive from &Beyond and WildEarth. To date, there is no cure for COVID-19. For this reason, governments around the world, including in South Africa, tried to minimise the spread of the pandemic by implementing non-pharmaceutical interventions, such as physical distancing or social distancing. However, physical distancing has a major impact on the tourist experience as it limits real interaction and presence between tourists, locals and other tourists. Therefore, tourism scholars believe that VR can be used to overcome this barrier. The reason is that VR eliminates real interaction and allows tourists to still be in the same environment while adhering to physical distancing regulations (Atsiz, 2021; Itani & Hollebeek, 2021; Rogers, 2020). For example, through the virtual safari tour at Kruger National Park, tourists can be "together" in the "same vehicle" without any concerns about physical distancing, as in the case of a real safari drive.

When traveling to other destinations, tourists often have to confront risks and they are usually ill-prepared as they do not always have the necessary precautions and medical care. This may lead to tourists feeling a sense of helplessness and anxiety towards future travelling. The issue is that tourists consider their safety and security as important components when choosing a destination. If tourists' fear is triggered due to a health crisis, for instance COVID-

19, they might not want to travel in order to reduce any risks (Reisinger & Mavondo, 2005; Rogerson & Rogerson, 2020; Zheng et al., 2021). Tourists have become afraid to travel to South Africa due to recent variants discovered in the country. For example, since Omicron was founded, the government in Britain, as well as in other countries, banned flights from South Africa. Sajid Javid, the Health Secretary of Britain, feared that Omicron "may be more transmissible" and "the vaccines that we [the world] currently have may be less effective" in fighting it (Meldrum & Magome, 2021). For this reason, it is argued that VR can overcome this problem by offering tourists a "safer" option (Nhamo et al., 2020), in other words, an alternative version of the destination. Moreover, tourists do not have to physically travel to the destination with VR, but they can explore it virtually from the safety and security of a safe destination (Ankomah & Larson, 2017; Jude & Chike, 2020), such as their home. Thus, tourists can virtually "visit" South Africa, knowing that they are safe from any COVID-19 related issues. This might motivate tourists to actually travel to the country by showing them that they do not have anything to fear in terms of COVID-19.

Barriers

For many tourism scholars, VR has many barriers to tourism. One such barrier is that VR is an individual activity that does not allow any physical interaction between tourists and locals. Physical interaction plays an important role in tourism because the industry is a social experience (Cheong, 1995). This section pays attention to other barriers associated with VR and South Africa: the loss of tourism revenue; technological issues; health concerns; access; the digital divide; and the tourist experience.

Tourism scholars agree that VR might lead to a loss in tourism revenue. As mentioned, tourists were unable to travel and had to stay at home during the national lockdown. In a sense, the home became the place where people could virtually travel from. Tourism scholars note that this is a major issue as VR might offer potential tourists a better and more immersive tourist experience compared to the conventional tourist experience. This could lead to tourists no longer having the desire to travel to the actual destination. For countries in the global South, this is detrimental because these countries often rely heavily on tourism revenue (Muslin & Pigel, 1994). In terms of South Africa, if fewer tourists want to travel to the country, it may contribute to the unemployment rate. In fact, the unemployment rate in South Africa has increased from 29% to 32.5% at the end of 2020 (EyeWitness News, 2021).

Another major issue that South Africa is currently facing in terms of VR is the supply of electricity. The Electricity Supply Commission, the main electricity supplier in South Africa, regularly implements load shedding (or load reduction) in order to try to protect the power system from a total blackout. Load shedding has a major impact on VR technology as some HMDs (i.e., the Oculus Rift) depend on electricity to function. In addition, once power returns after load shedding, usually after two hours, it comes with a momentary surge, which is more powerful and will damage VR technology (Ankomah & Larson, 2017; ESKOM, n.d.), such as HMDs. Another technological challenge in South Africa is the fact that the country has fallen behind regarding technological innovations. The reason for this is that South Africa lacks the necessary funds to purchase expensive VR technology (Ankomah & Larson, 2017; Swarbrooke, 1995). As a result of these technological issues, South Africa might lose tourists or opportunities to gain tourism revenue.

VR also has a negative impact on the physical and mental health of tourists (Williams & Hobson, 1995). In terms of physical health, research has shown that HMDs may lead to motion sickness, nausea and headaches if tourists wear the set for an extended period of time (Guttentag, 2020; Hobson & Williams, 1997). Regarding physiological and psychological issues, tourists may experience some form of mental trauma if they travel to dark tourism sites

(Hobson & Williams, 1997), for example, Robben Island, where the former President of South Africa, Nelson Mandela, was imprisoned. Another mental issue with VR is that it blurs the fine line between the real world and the virtual world as it creates a sense of comfort. As a consequence, tourists are unable to judge the risks and consequences of their actions in reality (Cheong, 1995; Guttentag, 2020; Hobson & Williams, 1997; Kaminski, 2017; Muslin & Pigel, 1994; Prideaux, 2005).

Some sites and destinations are restricted to tourists due to their sacred meanings to the indigenous communities. For example, the Vha-Venda, an indigenous community in the Limpopo province, forbids tourists to come near Lake Fundudzi due to its sacredness and religious legends. With VR, tourists gain access to sacred sites and destinations. According to Guttentag (2020), by allowing tourists to enter the sacred site or destination (i.e., Lake Fundudzi) poses as a threat to the indigenous community (i.e., the Vha-Venda), as it might induce a negative cultural change among them (Guttentag, 2020).

Another major barrier with VR is the so-called "digital divide". Unfortunately, South Africa has a huge "digital divide" in terms of access to the internet. Research has revealed that 39% out of the 7.9% of the White population has access to the internet, while only 5% out of the 80% of the Black South African population has internet access (Alexander, 2018; Blignaut, 2009; Ferreira, 2010). Thus, the majority of SMEs, specifically in rural areas and black-owned, are unaware of the benefits associated with the new technology (Rogerson, 2008). For SMEs, this is a barrier as they might lose out on the opportunity to attract potential tourists.

The last barrier of VR regards the tourist experience. As discussed earlier, the tourist experience is a vital component in tourism. There is no set definition for the concept "tourist experience" as it consists of different elements (Cutler & Carmichae, 2010). For Ma et al. (2017: 7), the tourist experience refers to "visitors [that] travel to a tourism setting, whether it be an attraction, hotel, destination or other type. There they perceive and attend to various stimuli within this setting or "experiencescape"". It can be argued that the tourist experience includes experiencing a destination and attraction through all of the five senses (i.e., hearing, touch, smell, taste and sight). In order for tourists to have an authentic and sensorial tourist experience as in the case of conventional tourism, it is vital to simulate all of the five senses. However, VR does not offer tourists the full sensorial tourist experience. It is currently impossible to simulate all five senses in VR, particularly smell and taste The reason is that VR technology is still in the early phases of development (Cheong, 1995; Guttentag, 2010).

Conclusion

South Africa was fast becoming a popular destination among tourists, until the COVID-19 pandemic outbreak in 2020. The national lockdown affected numerous sectors including the aviation industry, the accommodation industry, the festival and event industry, the wine industry, and SMEs. Due to the national lockdown, airlines had to either file for business rescue or increase their prices, while some accommodation firms closed their doors. The strict ban on the sale of alcohol prohibited wineries to host wine tastings and numerous festivals and events had to cancel. As a result, many people, especially SMEs, suffered economically as they depend directly on revenue obtained from tourism.

Tourism scholars struggle to predict the future of tourism in terms of the COVID-19 pandemic. Some scholars forecast that tourism will only begin to show signs of recovery from 2023, while others believe that COVID-19 might become "normalised", in other words, be part of everyday life (Hall et al., 2020; Helble et al., 2021), such as the case of the common flu. Hence, some tourism scholars emphasise that technology, such as VR, will contribute to the recovery of tourism.

Since the 1990s, tourism scholars have focused their attention on a select range of topics regarding VR and tourism. However, only a few tourism scholars have paid attention to how VR impacts the tourism industry of global South countries. Hence, the purpose of the study was to fill in this gap by determining if VR can be used as a tool to save the tourism industry in South Africa during and after COVID-19. For this reason, case studies, a conceptual research method and open-ended interviews were used to achieve the aim.

According to the results, VR offers South Africa's tourism industry numerous benefits, especially in marketing; entertainment; revenue; health; physical distancing; and safety and security. Off all the benefits mentioned, it can be noted that VR as marketing tool will play a crucial role during and after the COVID-19 pandemic. This is due to "try before buy" concept, which provides tourists the opportunity to experience the country virtually beforehand. As a result, tourists might be motivated to visit South Africa once the pandemic is over or has eased. While some scholars praise VR, others consider it as a threat to South Africa's tourism due to its many barriers. Some of these barriers include the loss of tourism revenue; technological issues; health concerns; access; the digital divide and the tourist experience. A major barrier of VR can give tourists a better and more immersive tourist experience compared to the conventional tourist experience. Hence, tourists VR might be discouraged from physically travelling to the country, which is detrimental as many tourism sectors rely on tourism revenue. Another major barrier is that tourists cannot experience the full authentic tourist experience in VR as in the case of conventional tourism. The reason is that it is currently difficult to simulate all five of the senses, such smell and taste.

Based on the results of this study, unfortunately, VR cannot save the tourism industry in South Africa as the country faces two key issues. The first issue is that some VR technology needs electricity, for example, the Oculus Rift. This is an issue as the Electricity Supply Commission implements load shedding on a regular basis. The problem is that once electricity returns, it might damage the technology because the surge is more powerful. Another technological challenge in South Africa is that the country lacks the funds needed to purchase VR technology. As a result, South Africa cannot attract new tourists.

The second major challenge is that South Africa has a huge "digital divide". Research shows that the majority of people in the country, especially those in rural areas, do not have access to the internet. As a result, these people are not aware of the benefits associated with the new technology. In order for VR to be able to save the tourism industry in South Africa in the future, it is crucial to address these issues.

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