

Research article

Climate risk perceptions in urban tourist destinations of Zimbabwe

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ABSTRACT

Questions surrounding climate change and responses in urban tourism destinations are attracting a growing scholarship. Perception studies provide valuable insights into the behavioural dynamics of stakeholders, and improved understanding of the risk perceptions of tourism stakeholders is seen as critical in confronting the challenges posed by climate change in urban destinations. This study presents results from a semi-structured questionnaire administered to 160 tourism businesses in Bulawayo, Zimbabwe's second city, about perceptions of climate change risk. Key research findings reinforce the notion that climate risk perception in urban tourism is multi-dimensional. Water shortages, damage to heritage sites and urban attractions, heat discomfort and disruptions to electricity supply were perceived by tourism businesses as the most severe impacts of climate change. The novelty of this paper is in contributing to the limited literature concerning climate change and urban tourism in the Global South and situated geographically in a context that is identified as one of the major knowledge gaps concerning international research on climate risk.

KEYWORDS

climate change; risk perceptions; urban tourism; Global South; Zimbabwe

Introduction

As Gabric (2023: 1) articulates, the multiple threats caused by the impacts of anthropogenic climate change “are now thought to constitute a global emergency with potentially catastrophic consequences for humanity”. Climate change has evolved from being a distant threat into a present-day reality with multiple crises that challenge everyday spheres of human life and existence (Balan, 2022; Gössling & Scott, 2025a, 2025b; Loehr & Becken, 2025). For Maslin (2014), arguably, climate change is the most critical and controversial issue facing the world in the 21st century. An unprecedented crisis exists as a result of climate change, from cyclones to hurricanes, rising sea levels, flooding, melting ice caps, heatwaves, droughts, receding coastlines, beach erosion and ocean warming (Chapungu et al., 2024; Dube et al., 2024; Ley et al., 2024; Rawat et al., 2024). Accordingly, calls have been sounded for all countries, especially the major global polluters, to cut their carbon footprint to keep temperature increases in this century below 2 °C pre-industrial levels in line with the Paris Climate Agreement (Gössling et al., 2024; Scott & Gössling, 2025). Despite such calls to action, there is a growing consensus that the world will miss its climate targets and that temperature increases may exceed 3.1 °C in this decade if carbon emissions continue at the current trajectory (UNEP, 2024).

Climate change, therefore, has evolved into an existential global environmental crisis at a time when tourism emissions are still on the increase (Peeters et al., 2024; Akbulut et al., 2025). As pinpointed recently by Wang & Wu (2025) in the context of addressing climate change, the issue of carbon emissions and leakages from the tourism industry has garnered increasing attention. Moreover, the imperative for evidence-based planning for climate action and decarbonization planning has been highlighted (Ito & Higham, 2025; Sun et al., 2025). According to Sun et al. (2024: 1), “tourism has a critical role to play in global emissions pathway”. Indeed, it is estimated that between 8-10% of global carbon emissions emanate from tourism, with transport and accommodation the major contributors (Tourism Panel on Climate Change, 2023). As destinations face numerous risks (Kimaro & Saarinen, 2025), there is increased pressure from all sub-sectors

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of the tourism industry to make climate change a major policy issue. In this context, urban tourist destinations are seen as hotspots for climate variability, making them vulnerable to climate change risks (Yazar et al., 2022). Cities are responsible for over 70% of GHG emissions due to the high concentration of energy-consuming economic activities (Salvia et al., 2023; Shereni & Rogerson, 2025). Accordingly, in the coming decades, it is considered that climate change will be one of the most critical challenges facing urban areas (Balan, 2022).

Over recent years, the science of climate risk has progressed greatly, and one direction in scholarly research has been the turn to investigate perceptions of climate change and climate risk (Pandy & Rogerson, 2020, 2021). Arguably, perception studies afford valuable insights into the behavioural dynamics of stakeholders in response to climate change and their ability to respond to new circumstances (Smith et al., 2024). Nevertheless, whilst knowledge on the varying impacts on destinations and different subsectors of tourism and attractions has advanced, only limited evidence exists that implementation on the ground and policy actions to address key challenges, such as decarbonization, have been taken. It is essential to appreciate that climate change impacts urban destinations differently due to varied socioeconomic factors, resulting in divergent stakeholders' perceptions about climate risks (Yazar et al., 2022). Climate change risk perception is regarded as a key determinant of voluntary adaptation behaviours (Jiang et al., 2025). Therefore, an improved understanding of the risk perceptions of tourism stakeholders is seen as a critical issue in confronting the challenges posed by climate change at a local level (Pandy & Rogerson, 2020, 2021).

In a recent international review, Gössling & Scott (2025a) observe that because the majority of climate change researchers in tourism are based in high-income countries, there are knowledge gaps relating to climate, carbon risks in tourism that exist for many less well-resourced countries in the world, including much of sub-Saharan Africa. Also, in their recent review of scholarship concerning knowledge production about African cities, Croese & Wood (2024: 2486) highlight that "too few papers" are centred on the environment and the challenge of climate change. It is against this background that this study seeks to close a small part of this gap by investigating tourism business stakeholders' perception of climate change risks in one urban tourist destination in Zimbabwe. The focus case is Bulawayo, the second-largest city in Zimbabwe and one of the two metropolitan provinces in the country.

Literature review

The climate change-urban tourism nexus

Currently, urban tourist destinations globally are confronted with numerous challenges that include population growth, ageing infrastructure, poor service delivery, inequalities, unemployment and urban sprawl development (Bixler et al., 2021; Leonard et al., 2020). Growing threats from climate change compound these challenges, reducing urban liveability and threatening infrastructure (Lin et al., 2021; Shereni & Rogerson, 2025). Statistics show that more than half of the world population is currently living in cities, and a projected 70% of the world population will be city residents by 2050 (Almulhim & Cobbinah, 2023; Rezapouraghdam & Hidalgo-García, 2024). This expected increase in urban population will see more people getting exposed and becoming more vulnerable to the impacts of climate change (Tapia et al., 2017). The level of vulnerability is expected to be high in sub-Saharan Africa due to the region's low adaptive capacities (Dube et al., 2024). Cobbinah & Finn (2023) further argue that most African cities are categorised as "extreme risks" in the climate vulnerability index. Therefore, population growth poses several challenges, especially considering the limited climate-adaptation planning mechanism in place in urban areas in sub-Saharan Africa (Cobbinah & Finn, 2023). This prompted the adoption of comprehensive adaptation and mitigation measures to cushion urban inhabitants from the ramifications of climate change (Teller & Saarinen, 2024).

Urban areas serve both as a source of GHG emissions and also offer potential for carbon sequestration through green spaces and infrastructures (Pandey & Ghosh, 2023). This underscores an intricate relationship between climate change and urban tourism (Pandy & Rogerson, 2019). Understanding this relationship is vital in creating sustainable and resilient cities (Donkor & Mearns, 2020). Across the Global South, urban areas are regarded as multifunctional in nature and characterised by strong economic and commercial functions which serve both residents and non-residents differently (Rogerson & Rogerson, 2021). It is as a result of a concentration of these activities that GHG emissions are on the increase (Aall & Koens, 2019). Consequently, some cities have begun incorporating climate planning into their policy frameworks (Mi et al., 2019; Jiang et al., 2025).

Tourism in general is one of the major economic activities which is significantly threatened by the ramifications of climate change (Landauer et al., 2018; Becken & Loehr, 2025; Loehr & Becken, 2025; Murima & Saarinen, 2025). In the context of tourism, people travel to urban areas for different purposes that include leisure, business, visiting friends and relatives (VFR) and health purposes, among others (Rogerson

& Rogerson, 2021). Cities offer a number of attractions that drive different types of tourism, including cultural heritage tourism, retail tourism, slum tourism, adventure tourism and coastal tourism, among others (Fitchett, 2021). Clearly, all these types of tourism activities are under threat from climate risks, which may significantly affect the economic, social and environmental sustainability of urban tourist destinations.

Climate change risks in urban destinations

To effectively construct and implement adaptation measures, it is important to first understand the climate risks faced by businesses and tourist destinations (Pandy & Rogerson, 2018). The IPCC 5th assessment report defines climate risk as the potential for adverse consequences on lives, livelihoods, health, infrastructure, ecosystems and species, economic, social and cultural assets and services, and such consequences in the context of uncertain outcomes (IPCC, 2014). The report further notes that there are three core components of climate risks, which are hazards, vulnerability and exposure. Climate change impacts are not uniform, which makes climate risks facing urban tourist destinations different and context-specific (van Staden, 2020). Certain climate change impacts will be more severe than others due to the nature of the tourist destination and the climatic characteristics of a specific location (Hoogendoorn & Fitchett, 2018). In this regard, risks faced by coastal or riverine cities are different from those in terrestrial cities (Pandy & Rogerson, 2019). It is therefore important to understand specific climate risks facing particular destinations to develop suitable adaptation and mitigation measures with consideration of the local conditions.

Fitchett (2021) argues that climate change events posing noticeable threats to tourism in urban environments include, but are not limited to, flooding, droughts, heatwaves and sea level rise in coastal cities. Such extreme weather events affect human health, disrupt biodiversity and ecological processes, impacting the sustainability and resilience of urban ecosystems (Pandey & Ghosh, 2023). The IPCC 6th assessment report noted that climate change risks expected in the near term include heat-related human mortality and morbidity, biodiversity loss, an increase in diseases, food insecurity and flooding in coastal and low-lying areas (IPCC, 2023). Also, flooding causes damage to urban properties and infrastructure, at the same time reducing the aesthetic appeal of urban tourist destinations (Ebhuoma & Leonard, 2020; Torabi et al., 2024). Atanga & Tichaawa (2020) further observe that coastal cities are most vulnerable to flooding, which results in damage to tourism attractions, destruction of infrastructure, disruption of business and tourism events and causing losses to businesses.

Donkor & Mearns (2020) highlighted that recurrent droughts in most sub-Saharan African countries will see urban tourist destinations experiencing water scarcity in the future, and this is compounded by high water demand from tourism activities. Also, Pandy & Rogerson (2019) confirm that some of the climate risks cities face include an increase in water shortages, natural disasters, storm surge and heat waves as a result of climate change. Increased climate risks and associated hazards such as flooding, rising sea levels and storms make destinations unsuitable to visit, thus threatening the viability of tourism (Chapungu et al., 2024; Hoogendoorn & Fitchett, 2018). For example, temperature increases make tourists uncomfortable, while an increase in precipitation makes it difficult to engage in certain outdoor activities (Caldeira & Kastenholz, 2018). This potentially results in reduced tourist arrivals due to itinerary changes and cancellation of bookings (Atanga & Tichaawa, 2020). Overall, considering the strong link between climate and tourism, there is no doubt that adverse climatic conditions in urban destinations can deter tourists (Caldeira & Kastenholz, 2018).

Stakeholder climate risk perceptions in urban destinations

As cities increasingly grapple with climate change risks, it is acknowledged that there is significant variation in the way that stakeholders perceive climate risks (Yazar et al., 2022). Understanding climate change risk perceptions is critical in developing successful response measures (Hu et al., 2022). This has seen growing literature debates around climate change perceptions to gain insights on how stakeholders in different geographical locations perceive the climate change tourism nexus (Chapungu et al., 2024). Climate change risk perception depends on individual experience of events and is shaped by factors that include media, socio-cultural conditions, expertise, as well as moods and emotions (Jiang et al., 2025). Mwadzingeni et al. (2025) further add that personal emotion constructs like fear, anxiety and outrage significantly impact individuals' risk perceptions.

Bixler et al. (2021) posit that individuals' ability and willingness to adapt to climate change largely depend on past experiences and perceptions of the risk. Risk perception entails people's instinctive judgement and interpretation of potential risks and their consequences, shaped by individuals' indirect and direct experiences (Bixler et al., 2021). Dube & Nhamo (2020) argued that perception is a construct of factors that include education, beliefs, events, political background and religious affiliation. In the tourism context, risk perception studies have been employed to gain insight into how tourists and tourism stakeholders perceive and respond to climate change (Pandy & Rogerson, 2019). This is out of the realisation that the

way climate change is perceived by individuals and decision makers affects the extent to which adaptation and mitigation measures are adopted (Lee & Hughes, 2017; Dube, 2018). The research conducted in South Africa by Pandy & Rogerson (2020; 2023) points to an existing gap between the climate policy environment and the perceptions and actions of key tourism stakeholders. As highlighted by Jiang et al. (2025), low concern about climate change issues results in less support for climate change policies and low willingness to adapt. While a critical understanding of stakeholders' climate risk perception is important, there is a notable limited literature on climate risk perceptions in cities (Yazar et al., 2022). This is despite the fact that understanding climate risk perceptions guides the development of adequate adaptation and mitigation policies (Chapungu et al., 2024).

It has been argued that experiences of climate change phenomena like floods, heat waves, droughts, cyclones and rising sea levels heighten people's perceptions about climate change and encourage the adoption of sustainability practices (Torabi et al., 2024). In this regard, Yazar et al. (2022) suggest that people are more likely to support policies and actions that address a problem they believe to be real. For example, individuals who have experienced flooding before have a higher perceived probability of flooding and are more likely to support adaptation and mitigation measures to reduce flooding (Li et al., 2022). In coastal tourist destinations which are visibly impacted by climate change, tourism operators have an elevated awareness of climate change issues and often strongly support efforts to address it (Pandy & Rogerson, 2019). Mwadzingeni et al. (2025) pointed out that rural communities perceive drought as more impactful than urban residents due to their overreliance on natural ecosystems that are susceptible to environmental changes.

In general, while most businesses are aware of climate change risks, there is still scepticism about climate change leading to a lack of adaptation strategies (Hu et al., 2022). Fitchett (2021) highlights that tourism operators that lack concern about climate change are unlikely to put in place infrastructural and managerial changes to limit the impacts of climate change. Hoogendoorn & Fitchett (2018) observe that in most developing countries, climate change is not seen as a priority, with issues like service provision, housing, poverty reduction and economic growth considered most pressing challenges requiring immediate attention. This, according to Zhou (2024), scuttles efforts to institute early intervention measures to address climate-related challenges.

Methodology

The study was carried out in Bulawayo, the second largest city in Zimbabwe, situated in the south-western part of the country. The city is regarded as the cultural capital of Zimbabwe, with vibrant urban tourism assets based mainly on existing cultural heritage resources. Soon after independence in 1980 and before the economic crisis that engulfed the country at the turn of the millennium, Bulawayo was an economic hub of the country, with diverse industries contributing significantly to the GDP of Zimbabwe. With industrial decline, currently the tourism sector is regarded as one of the key economic activities in the city. The city's assets for tourism development include attractions such as colonial historic buildings within the city, and outside the city boundaries of Matobo National Park, where Cecil John Rhodes was buried and Khami ruins (Nyoni et al., 2025). Further, Bulawayo is a gateway to other major tourist attractions in Zimbabwe, including the iconic Victoria Falls and Hwange National Park. In the past, the city has faced the ramifications of climate change mainly in the form of recurrent droughts, which have seen the depletion of dams supplying water to the city. This has resulted in incessant water cuts, which impact both residents and businesses (Shereni & Rogerson, 2025). As is documented by several scholars, in Zimbabwe, the imperative is for tourism businesses to respond directly to the serious threats from climate change and climate variability (Dube & Nhamo, 2020; Shereni & Rogerson, 2023; Shereni, 2024; Shereni & Rogerson, 2024; Sauriri & Shereni, 2025; Shereni & Rogerson, 2025).

A quantitative research design was adopted to gain insights into the climate change risk perceptions of tourism stakeholders in the study context. A survey was done with randomly sampled tourism business operators that include hotels, lodges, tour operators, travel agents, car rentals and restaurants, among others. The sample was selected from the database of designated tourism operators in Bulawayo compiled by the Zimbabwe Tourism Authority. In total, 160 tourism businesses were selected to participate in the study. Data was collected using a semi-structured questionnaire that elicited responses on the climate change impacts as well as the climate change risk perceptions by the tourism business operators. The questionnaire was administered both online through the Google Forms platform and physically through the pick-and-drop method. The reliability of the research instrument was evaluated using the Cronbach's Alpha Coefficient. All the constructs were above the 0.7 Cronbach's alpha threshold after removing items with a corrected item-total correlation of less than 0.30 (Pallant, 2007). The construct climate change impacts on urban tourist destinations had a Cronbach's Alpha coefficient of 0.841, and climate change risk perception was 0.845.

Descriptive statistics and Exploratory Factor Analysis (EFA) were further done with the aid of the Statistical Package for Social Sciences (SPSS 30).

Results

This section presents results on respondents' characteristics, perceived climate change impacts, and climate change risk perceptions in urban tourist destinations. The following tourism businesses were sampled to participate in the study: hotels (22), guest houses (61), hunting operators (26), restaurants (20), travel agents (11), car rentals (8), tour operators (5), safari operators (4) and visitor activities (3). Additionally, 146 of the respondents cited that they are involved in climate change and environmental initiatives, and 133 indicated that they have experienced climate-related impacts in the past, signalling high awareness and knowledge about climate change issues among the participants.

Perceived climate change impacts in urban tourist destinations

Table 1 presents the perceived climate change impacts by tourism businesses in the study context. All the items on this construct have mean scores ranging between 3.65 and 4.06 in the agree range, indicating that there is consensus that climate change adversely impacts urban tourism developments. Specifically, the respondents highlighted water shortages as having the highest impact on tourism facilities with a mean score of 4.06. This is not surprising considering that Bulawayo faces critical water shortages attributed to recurrent droughts and erratic rainfall. This results in water cuts to residential and business areas by the local authorities to conserve the scarce resource, leading to heightened perception that water shortages are due to climate-related events.

Table 1. Perceived climate change impacts in urban tourist destinations (n=160)

Perceived climate change impacts	N	Mean	SD	Kruskal-Wallis Test (P-Values)
				Type of Tourism Business
Water shortages are increasingly affecting urban tourism facilities in my city.	160	4.06	.564	.712
Climate change has damaged heritage sites and urban attractions in my city.	159	3.99	.509	.187
High temperatures in my city make it difficult for tourists to do outdoor activities	157	3.97	.593	.633
Disruptions to electricity supply have increased during extreme weather events.	156	3.96	.726	.412
Extreme weather events have disrupted tourism operations in my city in recent years.	160	3.94	.590	.022*
Infrastructure (roads, drainage, airports, etc) in urban areas is failing under climate stress.	157	3.88	.559	.381
Health risks (e.g., heat stress, disease outbreaks) threaten urban tourists in my city.	160	3.86	.581	.302
Climate change increases the cost of doing business for tourism establishments in my city.	158	3.85	.555	.991
Tourism events are being cancelled or rescheduled due to climate variability.	157	3.67	.702	.496
There is a decline in visitor numbers during the hot or rainy season in my city.	159	3.65	.722	.387

Responses based on a 5-point Likert scale range from 1 (Strongly Disagree) to 5 (Strongly Agree); *Kruskal-Wallis Test is significant at $p < 0.05$; (Source: Author Survey)

The results also reveal several climate change impacts that respondents perceive affect tourism operations negatively. They agree that climate change has damaged heritage sites and urban attractions in the city ($M=3.99$), high temperatures make it difficult for tourists to do outdoor activities ($M=3.97$), disruptions to electricity supply have increased during extreme weather events ($M=3.96$), and that extreme weather events have disrupted tourism operations in recent years ($M=3.94$). Additionally, there is a low perception that tourism events are being cancelled or rescheduled due to climate variability ($M=3.67$) and that there is a decline in visitor numbers during the hot or rainy season ($M=3.65$), based on the mean scores in the weak agree range. The Kruskal-Wallis H Test was run to determine if there is any statistically significant difference in perception across the different tourism businesses that participated in this study. The results show that there is a statistically significant difference on only one item out of the ten measuring the perceived climate change impacts. The item "extreme weather events have disrupted tourism operations in my city in recent years" shows a statistically significant difference at $P < 0.05 = 0.002$. This implies that certain tourism businesses experienced disruptions more than others, reflecting sector-specific exposure to climate hazards.

Climate change risk perceptions in urban tourist destinations

Exploratory factor analysis was carried out on the construct climate risk perceptions to identify the underlying dimensions. The Kaiser-Meyer-Olkin (KMO) and Bartlett's test of Sphericity were done to measure sample adequacy and suitability to run exploratory factor analysis. The results reveal a KMO value of 0.79 and a statistically significant Bartlett's test of Sphericity (< 0.001 at $P < 0.05$ significance level), signifying the suitability of the sample to run Exploratory Factor Analysis. The number of factors extracted was based on eigenvalues greater than 1, and only items with factor loadings above 4 were retained. The results of the EFA produced three factors explaining 61.74% of the variance. The factors are named as follows: Factor 1: Severity of climate change; Factor 2: Business vulnerability; Factor 3: Governance and preparedness.

Table 2. Climate change risk perceptions (n=160)

Climate Risk Perceptions	Factor loadings	Eigen Values	Variance explained	Mean
Factor 1: Severity of climate change		4.58	38.15%	3.95
I believe climate change is a serious issue affecting tourism in my city	.871			
I am concerned about the long-term effects of climate change on tourism in my city.	.857			
Climate change will likely reduce the appeal of attractions in my city.	.726			
Climate change will change the nature of the tourism product offering in my city.	.501			
Climate risks (e.g., floods, droughts) are increasing in frequency and severity in my city	.448			
Factor 2: Business vulnerability		1.57	13.11%	3.92
The local climate has changed noticeably in the last 10 years.	.884			
Climate change poses financial risks to tourism businesses in this city.	.738			
Tourism businesses in my city underestimate the risks posed by climate change.	.639			
Factor 3: Governance and preparedness		1.26	10.49%	3.78
The national policy documents have set goals for a low carbon tourism sector.	.795			
The majority of tourism players in my city have limited engagement with climate change issues	.742			
Climate change has a differential set of impacts across different tourism sectors in my city	.704			
There is insufficient communication about climate risks from the authorities in my city.	.604			

Extraction Method: Principal Component Analysis; Rotation Method: Varimax with Kaiser Normalisation; Rotation converged in 5 iterations.

Factor 1: Severity of climate change

This factor reflects respondents' perceptions about the severity of climate impact in urban tourist destinations. Based on the factor loadings on the items retained on this factor, the tourism operators believe climate change is a serious issue affecting tourism in the city, and there is concern about the long-term effects of climate change on urban tourism. Also, there is a perception that climate change will reduce the appeal of attractions in urban areas and that climate change will alter the nature of the tourism products offered. Additionally, the respondents believe that the frequency and severity of climate change risks are on the increase. Overall, this factor highlights that there is a perception that climate change is a major risk that is increasingly facing urban tourism destinations, and its long term impacts will adversely impact the appeal of urban tourist attractions.

Factor 2: Business vulnerability

This factor highlights the perceptions about climate change impacts on tourism business in the urban landscape. The respondents highlighted that the local climate has changed noticeably in the last decade, indicating that they are aware of environmental changes in their city. They further perceived that climate change poses financial risks to tourism businesses in their city. Regardless of the awareness of environmental shifts and knowledge of perceived financial risks, there is a perception that the tourism businesses in the study context underestimate the risks posed by climate change. This factor underscores the view that tourism businesses are exposed and financially vulnerable to climate change risks, even though they underestimate the risks they face.

Factor 3: Governance and preparedness

On this Factor, the respondents show their perception of climate change governance frameworks and the preparedness of tourism businesses. There is an agreement that there is availability of national policy documents with set goals for a low-carbon tourism sector. However, there is a perception that the majority of tourism players in the city have limited engagement with climate change issues. The respondents also strongly believe that climate change differently affects tourism sectors and perceive insufficient communication about climate risks from the authorities in the city. Overall, the respondents acknowledge the existence of climate change policies, albeit with limited engagement with these policies and gaps in communicating climate risks facing tourism businesses.

Discussion

The results of this study disclose that water shortages, damage to heritage sites and urban attractions, heat discomfort and disruptions to electricity supply were perceived to be the most severe impacts of climate change facing urban tourist destinations. Infrastructure damage, health risks and an increase in the cost of doing business were considered to be moderate impacts. The cancellation of events and decline in visitor numbers were perceived to have low impacts. The EFA test further reveals three categories of climate change risk perceptions in urban tourist destinations as; severity of climate change perceptions, business vulnerability perception, and governance and preparedness perceptions. Consistent with the findings of this study, Mwadzingeni et al. (2025) observe that Zimbabwe is among the countries in Southern Africa facing serious threats of climate change, such as heatwaves, floods, cyclones, hailstorms and droughts. Relatedly, in a study on urban mountain national parks in South Africa, Dube and Nhamo (2025) note that drought results in water scarcity and affects the visual appeal of tourist destinations. The study further concludes that temperature increases as a result of climate change hinder certain outdoor activities and pose serious health risks, particularly for tourists with underlying conditions. In this regard, Fitchett (2021) concurs that the

growing risks of droughts globally impact water supply in urban tourist destinations, and this is compounded by excessive water usage in tourism facilities, water wastage from leaking pipes and a high water consumption rate per square meter of land in urban areas.

In addition, climate change affects the comfort and leisure of tourists as well as the appeal of tourist destinations (Chapungu et al., 2024). In the context of Europe, León-Cruz et al. (2025) projected that increased frequency of heatwaves will reduce the number of tourists visiting summer tourist destinations as tourists start preferring destinations with cooler temperatures. There is no doubt that climate change affects the attractiveness and nature of tourism products, which potentially reduces the number of visitors to a destination. For example, Dube et al. (2024) indicated that climate variability in the context of Africa affects flora and fauna, which form the core of African tourism. Importantly, several studies have also noted that tourism infrastructure, such as roads, bridges and tourist facilities, comes under intense stress from the threats of climate change (Caldeira & Kastenholz, 2018; Lin et al., 2021; Gössling & Scott, 2025b). While infrastructures such as roads in developing countries like Zimbabwe are in a bad state due to disrepair, climate change exacerbates the situation (Zhou, 2024).

Gössling & Scott (2025a) maintain that the severity of physical risks is likely to increase in the future as a result of accelerated extreme weather events caused by climate change. In the geographical context of Zimbabwe, Mwadzingeni et al. (2025) argue that there is a perception that flooding and droughts have increased in severity in the past 10 years and that climate change is projected to be a pressing challenge facing urban destinations in the future. Fitchett (2021) also pointed out that urban tourism is less sensitive to climate change as compared to beach tourism, adventure tourism and nature-based tourism, among others; however, there is no doubt that it increases the financial costs for tourism businesses. In this regard, Pandey & Rogerson (2023) contend that tourism businesses in South Africa delay climate action until the impacts of climate change become visible. These authors further stress that coastal tourism business stakeholders in South Africa do not consider climate change to be a serious issue as compared to other pressing challenges such as government regulations, infrastructural deficit and human resource developments (Pandey & Rogerson, 2020, 2021).

Conclusion

According to Gössling & Scott (2025a: 642), as evidenced by the increasing occurrence of extreme weather events such as heatwaves and heavy rainfall, climate change “is no longer in the future, it is an evolving business and policy reality for tourism”. These authors elsewhere aver that “climate change is becoming increasingly impactful on global tourism including climate patterns and weather extremes, degraded and lost assets (snow, water, biodiversity, beach), business disruption and damage, rises in travel and hospitality cost, as well as deteriorating socio-economic stability” (Gössling & Scott, 2025b: 1). Arguably, the contradiction between climate change and tourism development has become increasingly evident and most especially in urban tourism destinations (Luo et al., 2025). The new realities of a changing climate signify an urgent need for strategic assessments of the risks to tourism businesses and destinations (Gössling & Scott, 2025b).

It is against this backdrop that the study sought to investigate tourism business stakeholders’ perception of climate change risks in urban Zimbabwe. The survey of tourism businesses underscores the varied impacts faced by urban tourism businesses under different climate scenarios. The climate risk perception reveals an awareness of climate change risks posing vulnerability challenges to tourism businesses operating in urban environments. Overall, the research makes a number of novel contributions to the scholarship of climate risk perceptions in the context of urban tourism destinations. First, it contributes to the growing body of knowledge on climate change and urban tourism in the Global South, where nature-based tourism, rural tourism and coastal tourism dominate the existing scholarly discourse. Second, the research is set in the geographical environment of one of the ‘knowledge gaps’ for research on climate risk as identified by Gössling & Scott (2025a). Third, the study reinforces the notion that climate risk perception in urban tourism is multi-dimensional. Indeed, the research recognises climate change risk perceptions into three dimensions, which are the severity of climate change, business vulnerability, and governance and preparedness.

Arguably, the findings of the study have practical implications that have a bearing on climate action planning in urban tourism destinations, most importantly in the environment of resource-poor destinations such as much of sub-Saharan Africa. The high mean scores on climate change impacts show that climate change is perceived as a current and urgent challenge in urban tourism destinations. This calls for policymakers, local and national authorities to prioritise focused adaptation strategies. Also, the finding that national policy documents have set goals for a low-carbon tourism sector, yet tourism businesses have limited engagement with climate change, calls for comprehensive collaboration efforts between

policymakers and tourism stakeholders to ensure implementation of climate change policies. The study also shows that there is insufficient communication about climate change issues by the local authorities in the study context. This points to the need for an improved communication strategy to raise awareness of climate change amongst tourism stakeholders.

This research is not without limitations. First, it is contextualised to one city, Bulawayo in Zimbabwe, therefore, caution should be exercised when generalising the findings to a different context. Second, data was collected from tourism businesses stakeholders only, excluding other stakeholders such as tourists, local communities, business stakeholders beyond the tourism industry and the local authorities. Future studies can explore climate risk perceptions in a different urban context with different governance structures and climatic conditions. This helps to generate new insights from a different context and allows comparisons of perception differences to be done. Future investigations can also employ qualitative research approaches with different stakeholders in order to develop a more holistic understanding of climate change risk perceptions.

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