

Insight into American tourists' experiences with weather in South Africa

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Abstract. Weather and climate are often important factors determining the success of a tourism destination and resultant satisfaction among tourists. This is particularly true for South Africa due the predominance of outdoor tourist attractions. Increasing numbers of international tourists have visited South Africa since the fall of apartheid, particularly those from the United States (U.S.), which is an important market for South African tourism. Therefore, this paper seeks to examine a sample of American tourists' experience with day-to-day weather and climatic conditions in South Africa. The results show that although respondents did not feel that climatic conditions were an important factor in motivations to visit the country, the day-to-day weather did often impact the enjoyment of their visit. Most notably, weather controlled their ability to participate in outdoor activities. In correlating accounts of unpleasant weather conditions with the meteorological records, a close association emerged, particularly for excessively high temperatures. This indicates that the experiences of American tourists are an accurate indication of climatic unsuitability for tourism, which poses threats to the South African outdoor tourism sector.

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1. Introduction

The climatic conditions and day-to-day weather experienced by tourists while traveling have the potential to serve as positive or negative advertising for a given location (Becken, Wilson, 2013). Adverse weather conditions potentially prevent outdoor attractions from taking place, resulting in direct losses to the tourism sector. Moreover, experiences of poor weather conditions at a destination will likely reduce the potential for return visits (Jeuring, Peters, 2013). Individual negative experiences of weather can also influence other potential visitors through word-of-mouth, social media, and online reviews (Jeuring, Peters, 2013; Tervo-Kankare et al., 2013). The adverse is also true: persistent good weather facilitates and encourages outdoor tourist activities, increases the probability of tourists returning to a location, and will improve the accounts shared by word of mouth (Mansfeld et al., 2007).

Weather plays a particularly important role in the South African tourism sector. First, the tourism sector comprises of many nature-based and outdoor attractions (Giddy, Webb, 2016). These attractions rely on good weather to encourage tourist participation, and can sustain considerable losses should adverse weather conditions persist over more than a few days (Becken, 2013). Furthermore, extreme events, such as floods, droughts, and fires can severely impact nature-based and outdoor tourism through damage to infrastructure (Fitchett et al., 2016). Second, the favorable climatic conditions and weather currently experienced in South Africa has been found to be an important factor in attracting

tourists (Saayman, Saayman, 2008). Third, as a developing country, South Africa has a much lower adaptive capacity than more developed countries, and consequently is less able to mitigate against and repair damages sustained during extreme weather events (Fitchett et al., 2016).

Concerns regarding the impacts of contemporary climatic conditions and day-to-day weather on the suitability of a location for tourism should also be viewed as an early-warning for the impacts of an increase in extreme weather on a local tourism sector. This includes increases in temperature, changes in rainfall amount and severity, shifts in seasonality, and increases in sea level rise (Hoogendoorn, Fitchett, 2016). Sensitivity of tourists to contemporary poor weather is indicative of the threats to tourism under conditions of more frequent occurrences of poor weather, and a greater severity of extreme events (Preston-Whyte, Watson, 2005; Mladenov et al., 2007).

This paper explores the climatic conditions and weather patterns that currently affect American (NB: The term 'American' refers to persons from the United States throughout the paper) tourists' enjoyment of their visits to South Africa. This paper, therefore, interrogates American tourists' experiences with weather while visiting South Africa, and their perceptions of the impacts of future meteorological and climatic changes on decisions to return to the country in the future. The American tourists' perceptions of poor weather conditions are correlated with meteorological data, and clustered by their location of origin, in order to assess the subjectivity of these views.

2. Weather and tourism: A conceptual framework

Weather patterns have been found to influence tourism experiences, perceptions of a destination, and the subsequent performance of tourism operators. Becken and Wilson (2013) found that variability in weather patterns often resulted in tourists to New Zealand altering travel plans within the country, which affected their overall satisfaction with the destination. In addition, weather has been shown to impact tourism operations that depend on activities. One study showed that mentions of experiences with weather and climate are prevalent in travel blog articles (Jeuring, Peters, 2013). Moreover, Day et al. (2013) found that weather patterns can significantly influence the economic performance of a tourism destination, even in cases where weather and climate are not a primary draw. The influence of weather on tourists' perceptions has important implications for the viability of a specific location as a desirable tourism destination. This type of information is also important due to the fact that these narratives are disseminated, and can, therefore, affect other potential tourists' perceptions of a particular destination. Understanding perceptions of changing weather patterns is crucial for developing strategies for the tourism industry to adapt to these changes.

Climate change is projected to result in changes in both mean climatic conditions and day-to-day weather, and such effects have already been detected for much of Europe (Easterling et al., 2000; Watts et al., 2015). Mean increases in temperature result, most notably, in a greater probability of warmer weather on a given day, and overall warmer conditions in a location than were previously experienced (Easterling et al., 2000). This, in the long run, is likely to compromise outdoor tourist attractions as human comfort levels will ultimately be exceeded. Climate change projections also indicate changes in precipitation. These are regionally specific, but both increases and decreases in temperature have the capacity to be a detriment to outdoor activities. Moreover, changes in the precipitation regime, in most cases, are associated with an increased probability of extreme events, such as flooding and droughts

(Easterling et al., 2000). The effects of these events are longer lasting, often resulting in considerable infrastructural damage, particularly in countries with a low adaptive capacity (Fitchett et al., 2016).

3. Weather and tourism in Southern Africa

Little research has addressed the impact of weather on tourism in Southern Africa. Some studies have briefly indicated that weather and climate are important factors motivating inbound travel to South Africa (Kim et al., 2000; Saayman, Saayman, 2008). In a review of literature on the effects of climate change on tourism in Africa, Hoogendoorn and Fitchett (2016) found that changes in weather events, such as precipitation, have the potential to negatively impact tourism in the region in a number of ways. This includes the negative effects of both increased and decreased precipitation, which are likely to impact tourist satisfaction. Furthermore, damage to tourism infrastructure caused by extreme weather is concerning. Fitchett et al. (2016) found that severe flooding as result of Tropical Storm Dando in 2012, caused major destruction to tourism operators in the Mopani district of South Africa, ranging on R58.92 million (USD1 = ZAR8.69 in 2012). This disastrous consequence of extreme weather on the tourism industry gives insight into the potential impacts of increased extreme weather patterns caused by climate change on the sustainability of tourism in South Africa.

Slightly more research has examined projections of future impacts caused by climate change in Southern Africa, including unfavorable weather. This includes a range of topics that have focused on specific destinations (Reid et al., 2007; Saarinen et al., 2012; Hoogendoorn et al., 2016). In addition, a few studies have examined the physical environmental impacts of climate change on tourism, such as projections for future possible consequences (Steyn, 2012; Fitchett, Grant, et al., 2016). Research has also covered the broader implications of climate change on the tourism industry, particularly the economic consequences (Reid et al., 2007; Steyn, Spencer, 2012; Rogerson, 2016). These studies have found that the impacts of climate change

on tourism will have serious consequences for the economies of countries in the region, which are increasingly dependent on the tourism industry. Research on the perspectives of tourism stakeholders in the region includes assessments of the perceptions of tourism operators and policy makers and has shown that although there is relatively widespread acknowledgement that climate change will impact the tourism sector in the future, little is currently being done to adapt to potential future impacts (Saarinen et al., 2012; Hambira, Saarinen, 2015). Furthermore, operators, in particular, do not necessarily attribute current climatic and weather issues to climate change (Saarinen et al., 2012). Overall, there appears to be some uncertainty in the current and potential ways climate change is and will affect tourism in the region.

4. The American tourism market

Nationality influences the motivations, perceptions and travel characteristics of tourists (Jönsson, Devonish, 2008). American tourists tend to be highly social and interactive, travel for longer periods of time, and often in larger groups (Pizam, Jansen-Verbeke, 1997). Americans also tend to spend more, with the second highest expenditure on international tourism in 2015 (The World Bank, 2016). Furthermore, research has shown that Americans seek new and unique experiences, in terms of tourism activities and selection of a destination, when traveling internationally (IPK International, 2014). Despite the importance of American tourism on the international tourism industry, little research has focused on this specific market of tourists. Existing research has examined American tourists' perceptions of specific destinations such as Europe, Mexico, Canada, and the Caribbean (Heroux, Church, 1998; Vanegas, Croes, 2000; Wilson, Latkova, 2016). Research on the American tourism market in Southern Africa is particularly lacking. One existing research paper by Wolf (1991) focused on American tourism in South Africa in the early 1900s (pre-World War II). It showed commonalities between Americans and white South Africans, as well as similarities in the landscape, which made South Africa an ideal destination for early American tourists.

5. Research methods

This study seeks to explore a sample of American tourists' experiences with weather while visiting South Africa. A mixed-method approach was used, based on two primary sources. An online survey was conducted in which a sample of Americans, who had visited South Africa during the last 10 years (2006–2015), were asked about their experiences with weather during their visit. Second, meteorological data from the times during which these visits occurred was interrogated to explore the relativity of the tourists' experiences. The meteorological data allows an assessment of whether the patterns of weather and climate experienced are extreme or unusual for that region during that period. This insight allows for the determination of the effects of extreme or unusual weather on the experiences of American tourists in South Africa, in essence scrutinizing perceptions versus reality.

The online survey involved a questionnaire that included both fixed-response and open-ended questions. The questionnaire was created using *Survey Planet* and distributed online to Americans via social media platforms which targeted, specifically, those who had been to South Africa recently. Respondents were also asked to snowball the survey. The survey was conducted in February of 2016. In order to obtain relevant information, the study was limited to Americans who have visited the country in the ten years prior to sampling. Authenticity was ensured through an analysis of the accuracy of the information obtained. A total of 57 usable questionnaires were collected. Due to the lack of data available on the number of American visitors to South Africa, specifically, the proportion of the population represented in the sample could not be calculated. However, the sample size was deemed sufficient due to the approach taken as the relatively small sample size allowed for comparison with meteorological data for the specific time periods in which visits occurred. Furthermore, the study is exploratory and therefore not meant to represent generalizations about the entire population.

Quantitative data from the questionnaire was primarily nominal and ordinal, and therefore basic frequencies were generated. Simple cross-tabulations were also used to draw out specific trends between

various components of the data. Open-ended questions were examined, themes highlighted, and the data was categorized. Due to the small sample size, the purpose of these analyses is not to draw conclusions or make generalizations, but rather used as an exploratory technique to investigate possible indicators of weather and climate perspectives among this sample of American tourists to South Africa.

Meteorological and climate data were also used in this study. The majority of the respondents (56, $n = 57$) had visited more than one destination, and had not specified which of the climate phenomena were experienced at each location. Due to the considerable differences in climate between the summer and winter rainfall zones of southern Africa, and the variation in climatic dependence for visits to coastal versus inland regions, it is therefore not possible to determine whether specific climate complaints were associated with particular tourist attractions or destinations. Experiences of specific climatic phenomena were compared, more generally, with extreme climatic conditions, specifically periods of El Niño-Southern Oscillation (ENSO) that affected South Africa. Perceptions of extreme heat and extreme cold were also compared with meteorological data. The actual temperatures experienced during the periods in which visits occurred were compared with perceptions of temperature. The data pertaining to historical temperatures were extracted from Weather Spark (2016). Comparisons were only possible when respondents indicated the exact month and year of their visit and only for the specific locations for which data could be found. High and low temperatures for each day are recorded and compared with average temperatures for a given day. These averages were obtained from Weather Spark (2016), which provided measures of average conditions for major cities based on climate data spanning the period 1949–2015. Weather Spark (2016) provides daily measures of whether conditions are above or below average, and the extent of this deviation. Therefore, experiences with above or below average temperatures are indicated in conjunction with participants' perceptions of excessive heat or excessive cold.

In addition, the climatic region of respondents' home states were compared with climatic complaints. This was done using the Köppen-Geiger climate classification (Peel et al., 2007). The climate

groups under which each location falls were extracted from climate-data.org (Schwarz, 2016). This allowed for indications as to whether or not perceptions of climate and weather are, perhaps, a result of the differences between respondents' home climate and the climate of South Africa.

6. Results

6.1. Profile and travel patterns of respondents

Due to the fact that research on the American tourism market in South Africa is lacking, it is worth briefly discussing the profile of respondents. The majority of respondents were female and between the ages of 20 and 39. Respondents were also found to be highly educated. Nearly all held university degrees (56, $n = 57$), while a slight majority also held postgraduate qualifications. They came from a wide range of professional backgrounds, such as education and medical sectors and a notable number were students. The income bracket of respondents varied with a mode of USD\$20,000–\$40,000 (13, $n = 57$), however, more than half of all respondents (30, $n = 57$) had an annual income of over USD\$40,000.

Information on permanent place of residence in the U.S. is particularly important when considering perceptions of weather, as their home climate could have a significant effect on how they perceive the weather and climate in other destinations. When categorized by geographic region, the majority of respondents were from the Northeast, however all geographic regions throughout the U.S. were represented. The most common metropolitan area represented was New York City, though a notable number were from the area around Washington, DC (including Virginia and Maryland) as well as many from various parts of California.

The travel patterns of the respondents showed that the majority (40, $n = 57$) have only been to South Africa once in the past ten years. The most common reasons for visiting South Africa were for leisure purposes (21, $n = 57$) or for exchange programs (16, $n = 57$). The latter should be noted as exchange programs are becoming increasingly significant in tourism markets, particularly for long-haul destinations (Llewellyn-Smith, McCabe, 2008).

The relatively long term duration of visits among exchange students will also influence their experiences.

The year and time of year traveled also has important implications for perceptions of weather. The most common time of year for travel was during the southern hemisphere summer (from November to February), though a significant number of respondents traveled over multiple seasons (18, n = 57). The year of visit was declared by 40 of the 57 respondents, and this classification captures many of the respondents who had visited for a period longer than a single season. The largest number of respondents visited South Africa during 2011 (11), followed by 2015 (10) and 2014 (8).

Nearly all respondents traveled within South Africa by car and plane. The fact that South Africa is a long-haul tourism destination for Americans, means that they would likely visit as many attractions as possible within a single visit, requiring the use of such forms of transport. Furthermore, two of the most popular destinations, Kruger National Park and Cape Town are on opposite sides of the country. Supporting that notion, the results show that nearly all respondents traveled to multiple destinations (56, n = 57). Most respondents traveled to Cape Town, while about half traveled to Johannesburg. Other common destinations were Port Elizabeth, Kruger National Park, and the Southern Cape coast in the Western Cape Province which includes towns such as Plettenberg Bay and Knysna.

This group of American tourists engaged in a number of different activities such as game drives/safaris, hiking, visiting cultural/historical sites, and wine tasting. It is noteworthy that three of the four top activities are largely dependent on weather and climatic conditions.

6.2. The impact of weather on the experiences of American tourists

In terms of the importance of climate in respondents’ decision to visit South Africa, they felt that climate was at most, moderately important, though many felt that it was of little importance (21, n = 57). However, weather did seem to influence their experiences upon arrival. Unfavorable weather conditions impacted a significant number of respondents’ ability to participate in various activities (21, n = 57). This finding has important implications for the impact of unfavorable weather on the experiences of tourists in South Africa, particularly since outdoor activities appear to play such an important role in tourism experiences.

Respondents most often cited excessive wind (21) and very hot temperatures (20) as negative experiences with weather during their stay in South Africa, see Fig 1. Others indicated that they had experienced constant rain (10), rough seas (9), high humidity (8) and very cold temperatures (7).

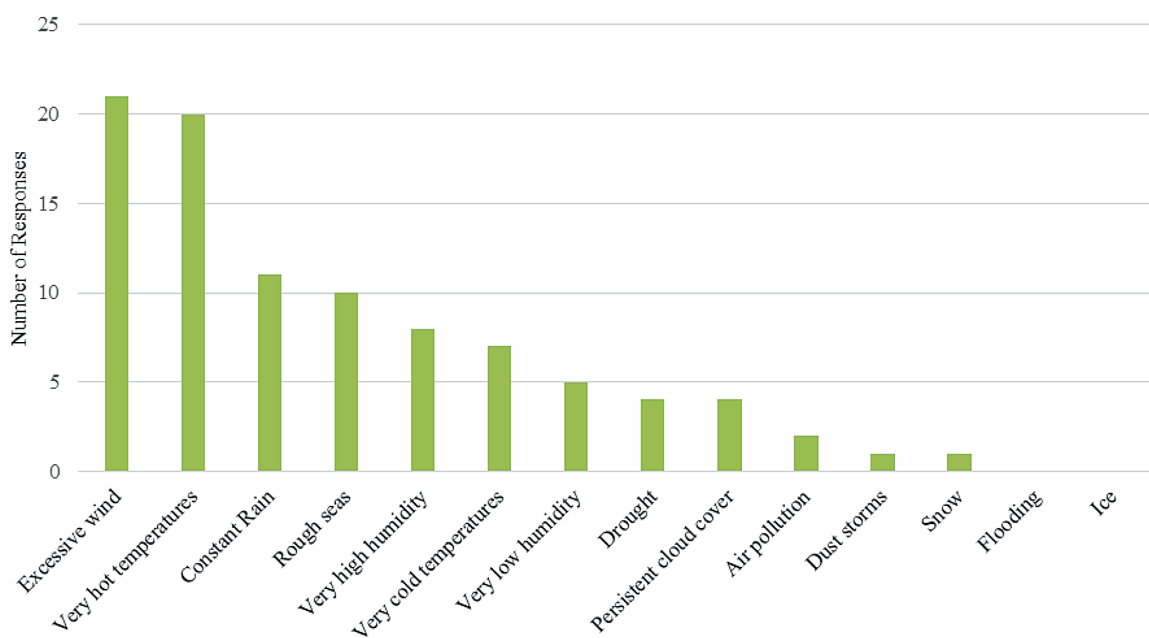


Fig 1. American tourists’ experiences with specific weather phenomena

Source: The Authors

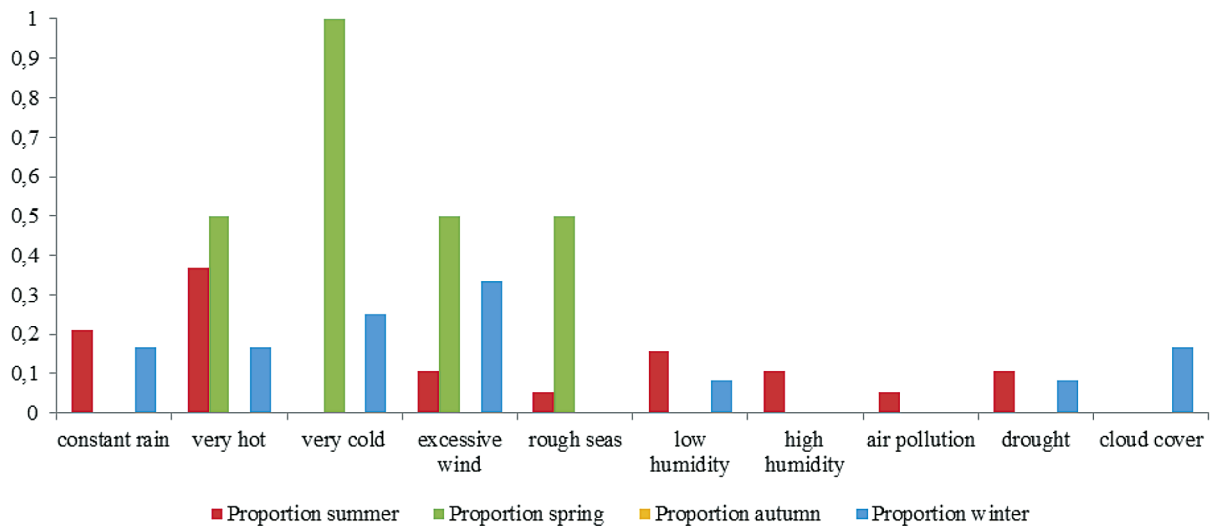


Fig 2. Proportion of weather phenomena experienced by season visited

Source: The Authors

A small proportion of respondents indicated that they had experienced notable low humidity, drought, cloud cover, air pollution, snow and dust storms during their visit. Some of these climate phenomena are limited to particular destinations. For example, experiences of rough seas require the respondent to have visited a coastal location, while air pollution is more likely to have been a problem in urban centers.

Broad patterns can, however, be detected on the basis of the proportion of climatic complaints within each season of the year, as demonstrated in Fig 2. Of the 57 respondents, 39 visited South Africa during only one season.

Most notable are patterns in complaints of very cold temperatures and rough seas, the greatest proportion of which are from respondents who visited in the spring (2, $n = 6$). Interestingly, very hot conditions were also noted by two of the respondents who visited during the winter ($n = 10$). This could be due to differences in perceptions of winter temperatures relative to respondents' home climate. With objectively mild temperatures year round, one might expect the winters to be considerably colder than they are, and hence feel too hot on occasion. Many of the climatic complaints are made by tourists visiting during summer or winter. The perceptions of tourists who visited during spring are particularly interesting, as they represent the largest proportion of mentions of very hot tempera-

tures, very cold temperatures, excessive wind, and rough seas, yet they make no mention of constant rain, low or high humidity, air pollution, drought or cloud cover. This may reflect the relative severity of the former four climate complaints. It may also be due to the transitional climatic conditions during this season, with relatively moderate humidity across the country, due to a decrease in rainfall and cloud cover in the winter rainfall zone and the end of spring onset of precipitation in the summer rainfall zone (Tyson, Preston-Whyte, 2000).

Air pollution was not frequently mentioned by respondents, but notably was mentioned only by those who visited in summer. This is of interest as air pollution is a more pressing issue during the winter months in much of the interior due to the dominant high pressure cell (Tesfaye et al., 2011). Both low humidity and constant rain were mentioned by respondents who visited during winter and summer, reflecting the influence of the winter and summer rainfall zones. It is then of interest that cloud cover was only mentioned by respondents who visited in winter, while high humidity was mentioned only by those who visited in summer.

The proportional number of mentions of climatic events per year has the potential to be driven by climatic cycles, such as ENSO. These may also be related to anomalous climatic events in the country. This is important to determine, as many tourists will only visit a particular country once, and future

visits of their friends and family can be influenced by their reports on the climate of the country. As shown in Fig. 3, mentions of very cold conditions

were predominate in 2010, with complaints of this from all three respondents who visited during this period.

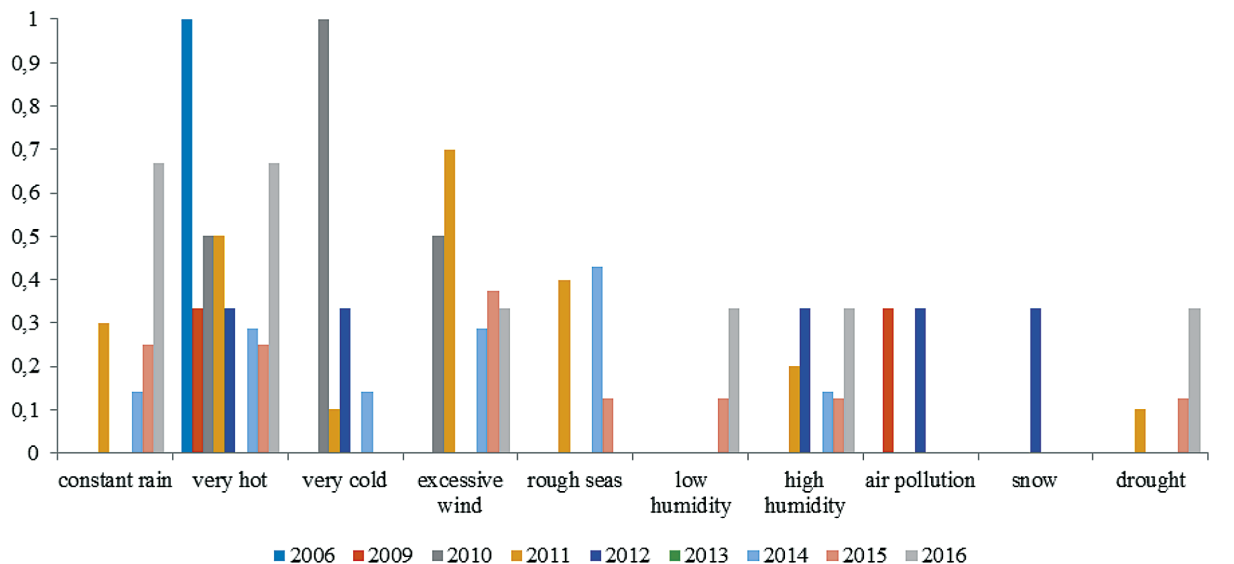


Fig 3. Proportion of weather phenomena experienced by year visited.

Source: The Authors

Notably, the highest proportion of mentions of constant rain, drought, low humidity and high humidity, and the second highest proportion of mentions of very hot conditions were in 2016. These values are skewed by the timing of this study, as all respondents would have visited during summer of 2016. However, as the worst drought in recorded history was experienced in South Africa and driven by ENSO conditions, these findings are notable (McPhaden, 2015). It is worth noting that 2015 does not stand out as having any particularly extreme climatic complaints, surprising as the ENSO had entrenched by June of that year.

More statistically robust are the findings of the greatest proportion of respondents indicating excessive wind in 2011. This is associated with the second highest number of respondents indicating rough seas, and the third highest proportion of mentions of constant rain. These findings are indicative of a strengthening of the westerlies, inducing more severe winds and rain along the southern coast (Tyson, Preston-Whyte, 2000). It is notable, however, that there were very few mentions of very cold conditions during this year, as strengthened westerlies are associated with an increased fre-

quency of mid-latitude cyclones and accompanying cold fronts. By contrast 2011 had a large number of mentions of hot conditions, likely driven by those visiting inland locations.

6.3. Subjectivity of weather complaints

6.3.1. Comparisons with meteorological data

Of the 57 respondents, 18 specified the month and year of their visit, enabling their perceptions of the climate in South Africa to be compared to climatic records for that period. A further ten respondents visited South Africa for a period of longer than a month, and specified the months or season of their visit with the particular year, enabling a similar comparison. Of the 18 respondents for which comparisons could be made, 5 travelled to South Africa during periods in which a particularly strong ENSO was experienced in the region (McPhaden, 2015). All of these respondents travelled during the recent ENSO period which effected South Africa from mid-2015 to mid-2016.

A slight majority of respondents (31) did not, at any point, feel that it was too hot when visiting

South Africa. Of those who did feel there was excessive heat, it was most often for less than five days. Similarly, most respondents (34) never felt it was too cold. Of those who did, however, the average number of days was higher, indicating they felt cold over longer periods of time. This could be related to the number of exchange students (18) included in this sample, who experienced the full winter season in South Africa and therefore felt cold over longer period. In addition, a few respondents indicated they only felt cold parts of the day (i.e. early mornings or late nights).

Many of the respondents who mentioned feeling too hot visited during summer months. Of those who ever felt too cold most visited South Africa over multiple seasons (10, n = 22), a confirmation of the influence of exchange students within this group. Among those who ever felt too cold, six visited over the summer (n = 22). However, South African temperatures are relatively hot over summer months throughout the country. One explanation could be that the hottest part of summer tends to begin around the end of January. Therefore, those visiting in the busy December tourism season may not experience temperatures as hot as might have been expected.

Of the respondents who, at any point, felt too hot (n = 23), 8 visited over a short period and indicated the months and year visited. Therefore, meteorological data of the actual temperatures during the periods visited is considered in these cases. When compared with real temperatures, nearly of those who felt excessive heat, did in fact experience above average temperatures in at least one destination visited (7, n = 8) with only one exception. Of the 7 who did experience above average temperatures, two experienced temperatures significantly above average.

Complaints of being too cold were also compared with meteorological data. Of the 22 respondents who ever felt too cold, nine visited South Africa during a single season and indicated the month and year of their visit. These could be directly compared with meteorological data. Six of the nine respondents who had complaints of being too cold experienced below average temperatures. However, among those six respondents, most (4) only experienced temperatures slightly below average while none experienced temperatures signif-

icantly below average. Furthermore, the remaining two remaining respondents who experienced below average visited during winter months. Most notable, however, are those who felt excessive cold when temperatures were above average. Of the nine cases discussed here, five experienced above average temperatures in at least one location visited. Therefore, although perceptions of excessive heat do, in fact, seem to be related to above average temperatures, feelings of excessive cold often do not appear to be directly related to extreme temperatures.

6.3.2. Comparisons with place of origin

Perceptions of weather phenomena will also likely vary depending on where the individual is from in the U.S. For this reason the climate of each person's home state is taken into consideration when assessing perceptions of weather. Of the 57 respondents, 23 felt too hot. As demonstrated in Table 1, of those who ever felt too hot, less than half (11, n = 23) were from relatively cold climates, the remaining were from relatively temperate climates.

Table 1. A comparison of the climate at tourists' place of origin with those who felt excessive temperatures

| Home Climate | Too Hot (n = 23) | Too Cold (n = 22) |
|---|------------------|-------------------|
| Temperate, humid, hot summer (n = 14) | 7 | 8 |
| Temperate, dry, hot summer (n = 4) | 3 | 3 |
| Temperate, dry, warm summer (n = 4) | 2 | 2 |
| Cold, humid, hot summer (n = 25) | 7 | 9 |
| Cold, humid, severe winter, warm summer (n = 7) | 4 | 2 |

Source: The Authors

There are two possible explanations for this. The first is that some of those from temperate climates who felt too hot could have experienced climates in South Africa that are relatively warmer. For example, much of the Kruger National Park is considered a hot arid climate, hotter than the climate of any respondents' home states (Schwartz, 2016). In addition, much of South Africa is relatively dry, while the vast majority of respondents were from humid

climates. They might, therefore, associate these dry regions with excessive heat. Another possibility is the fact that South Africa tends to have less infrastructure for regulating indoor temperatures, such as air conditioning, than exists in the U.S.

The results do show that among those who ever felt too cold, 12 were from warmer climates (n = 22). It is, however, only by a narrow margin compared with those who were from cold climates (10, n = 32). A possible explanation for the number of respondents who ever felt cold who were from colder climates could, again, be due to the lack of infrastructure for regulating indoor temperatures. South African houses and buildings are typically built for summer, made of concrete and lacking insulation features such as double glazed windows. In addition, very few establishments have indoor heating

mechanisms, which are very common through the U.S. and might account for these results.

When experiences with specific weather events are examined in the context of the individuals' home climate, some other trends emerge in Table 2. Those from cold, humid climates with hot summers made the least complaints about the weather conditions experienced during their visit to South Africa. The majority of respondents who reported very low humidity were from relatively humid climates (4, n = 5). However, perceptions of very high humidity were also most common among those from relatively humid climates (6, n = 8). When issues of precipitation are considered, half of those from hot dry climates complained of constant rain, however, those from dry climates only account for 3 of the 10 who had such a complaint.

Table 2. A comparison of the climate at tourists' place of origin with experiences with weather phenomena

| Home Climate | Constant rain (n = 10) | Very hot temperatures (n = 20) | Very cold temperatures (n = 7) | Excessive wind (n = 21) | Dust storms (n = 1) | Rough seas (n = 10) | Very low humidity (n = 5) | Very high humidity (n = 8) | Air pollution (n = 2) | Snow (n = 1) | Drought (n = 2) | Persistent cloud cover (n = 4) |
|--|---------------------------|-----------------------------------|-----------------------------------|----------------------------|------------------------|------------------------|------------------------------|-------------------------------|--------------------------|-----------------|--------------------|-----------------------------------|
| Temperate, humid, hot summer (n = 15) | 3 | 7 | 1 | 7 | | 3 | 2 | 2 | | | 2 | |
| Temperate, dry, hot summer (n = 4) | 2 | 2 | 0 | 2 | | 2 | | 1 | | | | |
| Temperate, dry, warm summer (n = 4) | 1 | 2 | 2 | 3 | 1 | 1 | 1 | 1 | | | | 2 |
| Cold, humid, hot summer (n = 27) | 3 | 6 | 3 | 5 | | 3 | 2 | 1 | 1 | | 1 | 2 |
| Cold, humid, severe winter, warm summer (n = 7) | 1 | 3 | 1 | 4 | | 1 | | 3 | 1 | 1 | 1 | |

Source: The Authors

Another common complaint was excessive wind. Nearly all respondents from dry climates (3, n = 4) reported experiences with excessive wind. In addition, a large proportion of those from cold humid climates with severe winters complained of excessive wind. This could be related to the fact that a signifi-

cant number of those from these climates were from areas quite far inland and therefore might have less frequent experiences with persistent coastal winds. Of those from temperate humid climates with hot summers, just under half also reported experiences with excessive wind and excessively hot tempera-

tures. Aside from these few connections with home climate, however, the majority of climatic complaints do not appear to be explainable by respondents' home climate.

6.4. Implications of changes in weather patterns and climate on future travel

The majority of respondents stated that they would change their travel plans within South Africa if there were 3–5 consecutive days of bad weather in one location (29, n = 57). Many respondents (11), however, said they would not change the travel plans within South Africa, despite bad weather conditions. When considering the number of consecutive days of bad weather that would cause respondents to end their trip early and return to the U.S., just under half said they would not return to the U.S. regardless of the number of days of bad weather (25, n = 57). Many stated they would try to find other places within South Africa to visit before considering returning to the U.S. This is likely

due to the distance and cost of a trip between the U.S. and South Africa.

Common responses indicated that individuals would only return to the U.S. if there were some kind of major safety issue caused by extreme weather. Those who would return to the U.S. most often reported it would take 6 or more days of consecutive bad weather for this to occur (20, n = 57). The most frequent source of information that would cause respondents to change or cancel their trip was an official state warning (39, n = 57). Other important sources of information were international news sources (37, n = 57) and warnings from friends (23, n = 57). Several respondents commented that it would take a number of different information sources to change or cancel their trip.

Of the 57 respondents, the most common weather patterns that would discourage future travel are shown in Fig. 4. They include constant rain (32), flooding (30), and tropical cyclones (29). Other weather patterns with a significant number of responses were air pollution (29) and dust storms (21).

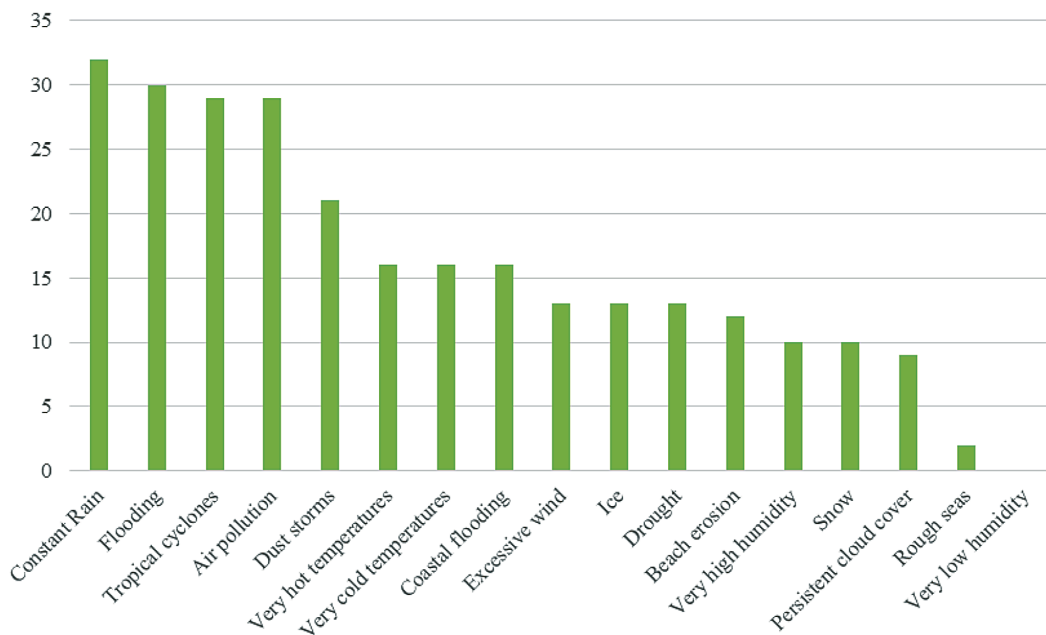


Fig 4. Weather phenomena that would discourage travel

Source: The Authors

The latter is noteworthy in relation to the high number of responses related to precipitation events and demonstrates that extreme weather patterns on either end of the spectrum are unfavorable.

In terms of weather patterns that would encourage future travel, the most common statements implied that respondents would not want the weather to change, meaning they were satisfied with the over-

all climate experienced. Of those who did indicate changes in weather that would encourage travel, the most notable were increased temperatures and less wind. Others mentioned that they would come at different times of year (i.e. those who traveled in the winter would rather come in the summer). Overall, however, there seemed to be relatively little indication that changes in weather would encourage travel in the future.

The majority of respondents stated that climate and weather were only moderately important (20) or of little importance (17) when considering future travel to South Africa. The relative insignificance of climate in the decision to visit the country in the future could be due to the fact that respondents were largely satisfied with the weather during their previous trips. Despite the relatively low significance of climate in motivations to visit South Africa and the possibility of future travel, respondents did feel that the South African tourism industry is highly dependent on good climate. These results could be related to the fact that although climate is not an important motivator for visiting the country, the numerous activities that formed a central part of most respondents' visits are largely dependent on specific climatic and weather patterns. Therefore, although the primary draw of South Africa for this group of Americans is not necessarily climate, the South African tourism industry is largely based on climate-dependent activities.

7. Conclusion

This study gives some initial insight into the reports from American tourists to South Africa regarding weather and climate. It is significant as it not only provides an understanding of the ways in which changing weather patterns are currently impacting the experiences of tourists to South Africa, it also addressed the potential influence of the increasing number of extreme weather events on travel to South Africa in the future. Moreover, this study investigated the perspectives of an important tourism market, that of American tourists to South Africa (Statistics South Africa, 2016). This market is largely unexplored, and has been given almost no attention in the South African context. As the

third largest incoming overseas market, understanding the perspectives of American tourists, and specifically their perceptions of weather and climate, is a critical issue for South African tourism, and is important to understand for purposes of future development of this market.

When experiences with weather are considered in conjunction with meteorological data only a small portion of negative experiences with weather appear to be correlated to periods of extreme weather caused by cyclical patterns such as ENSO, or severe events including tropical cyclones. However, among those who complained of feelings of excessive heat, nearly all did experience above average temperatures in at least one destination during their stay. This has important implications as temperatures in South Africa continue to rise due to climate change (Hoogendoorn, Fitchett, 2016). It was hypothesized that the disjunction between anticipated and experienced climate may be a result of the region of origin within the U.S., however results of such comparisons were not definitive. Some correlations were demonstrated in this regard, though they account for only a few of the climatic complaints.

Although patterns in the experiences of respondents could not be easily associated with specific climatic events, the detail of responses indicates that American tourists are not only conscious of the weather during their stay in South Africa, but that many of them remember these factors long after their stay. Furthermore, a significant number felt that weather limited their ability to participate in certain activities, which could affect the viability of a large number of tourism operations that depend on specific weather conditions. It also, likely, decreases overall satisfaction with the destination as demonstrated by Becken (2013). The predominance of outdoor tourist attractions in South Africa, and the marketing of the region oriented around nature-based tourism, results in a climate-sensitive tourism sector (Giddy, Webb, 2016). The continued relevance of word-of-mouth in encouraging tourists to visit a particular destination results in a significant decline in visitors, should a tourist return to their home country having experienced underwhelming conditions (Mansfeld et al., 2007). The concerns of tourists relating to the weather during their stay, and their perceptions of weather conditions that would dissuade them from visiting

a region in future should, therefore, be given urgent attention given projections for the increasing occurrence of extreme weather events.

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