**Collected data and Example of Choice Experiment**

**Attributes and Levels**

|  |  |
| --- | --- |
| **Attributes** | **Levels** |
| **1) Reintroduction of Carnivore Species** | 1. No Introduction 2. Reintroduce a few Cheetahs into the park 3. Reintroduce a pride of Lions into the park |
| **2) Restore the ecosystem:**  ***Removing species not indigenous to the Mokala region*** | 1. Remove threatened species not indigenous to the Mokala area, such as the sable antelope 2. Remove non-threatened species not indigenous to the Mokala area, such as the waterbuck, impala and nyala 3. Do not remove threatened and non-threatened species that live within the park that did not originally occur in the area |
| **3) Protect Local Endangered Animals by Boosting Numbers** | 1. No New Introduction 2. Introduce more Black rhinos, to bolster their population 3. Introduce more Roan antelope, to bolster their population 4. Introduce more Tsessebe, to bolster their population |
| **4) Park Entry Fee** | 1. R50 2. R70 3. R100 4. R130 |

Table : Simplified table of all the attributes and their current and potential management alternatives

*Primary data collected by author*

**Example of choice set**

|  |  |  |  |
| --- | --- | --- | --- |
| **Example** | | | |
| **Attribute** | **Option A** | **Option B** | **Option C (Status Quo)** |
| **Reintroduce Carnivore Species** | Zebras and gazelles drinking water  Description automatically generated with low confidence  **No Carnivore introduction** | A cheetah standing in a field  Description automatically generated  **Reintroduce Cheetah** | Zebras and gazelles drinking water  Description automatically generated with low confidence  **No Carnivore introduction** |
| **Restore Ecosystem:**  ***Removing species not indigenous to the Mokala region*** | **Remove Non-threatened** species like:  **Impala, Waterbuck and Nyala** | **Do not Remove Species**  that are not indigenous to the Mokala region | **Do not Remove Species** that are not indigenous to the Mokala region |
| **Protect Local Endangered Animals by Boosting Numbers** | Rhino | Species | WWF  **Introduce more**  **Black Rhino** | Roan Antelope | Mount Etjo Safari Lodge  **Introduce more**  **Roan antelope** | A picture containing outdoor, sky, grass, tree  Description automatically generated  **No Specific Introduction** |
| **Park Entry Fee** | **1 Individual = R130**  ***2 Individuals = R260***  ***4 Individuals = R520*** | **1 Individual = R70**  ***2 Individuals = R140***  ***4 Individuals = R280*** | **1 Individual = R50**  ***2 Individuals = R100***  ***4 Individuals = R200*** |
| **Q: A** |  |  |  |

Table : Example of a choice set

**Summary Statistics**

Table 4: Socio-demographic characteristics of respondents

|  |  |  |  |
| --- | --- | --- | --- |
| **Variable** | **Number of responses (n)** | **Grouping** | **Percentage (%)** |
| **Gender** | 286 | Male | 69.58 |
| Female | 30.42 |
| **Age** | 287 | 18-24 | 1.05 |
| 25-34 | 3.48 |
| 35-49 | 15.68 |
| 50-60 | 26.48 |
| 61-64 | 18.47 |
| 65 + | 34.84 |
| **Home Language** | 288 | Afrikaans | 50.52 |
| English | 44.25 |
| Other | 5.23 |
| **Married** | 286 | Yes | 82.52 |
| No | 17.48 |
| **Travel Partner** | 288 | Alone | 5.21 |
| As a couple | 59.03 |
| Friends | 6.25 |
| Family | 25.00 |
| Organised Group | 1.39 |
| Other | 3.13 |
| **Wild card membership** | 288 | Yes | 89.58 |
| No | 10.42 |
| **Highest level of education attained** | 287 | Primary School | 0.00 |
| Grade 12 | 10.10 |
| Diploma/ National Certificate | 23.34 |
| Undergraduate Degree | 19.51 |
| Postgraduate Degree | 43.55 |
| Other | 3.48 |
| **Profession** | 288 | Employed full-time/ part-time | 33.68 |
| Self-employed | 16.32 |
| Unemployed/ Looking for work | 0.35 |
| Retired | 46.88 |
| Student | 0.69 |
| Other | 2.08 |
| **Monthly Personal Income** | 272 | < R20000 | 10.29 |
| R20000 – R40000 | 34.93 |
| R40000 – R60000 | 23.53 |
| > R60000 | 31.25 |
| **Province, you reside in** | 288 | Northern Cape | 3.82 |
| Freestate | 11.81 |
| Western Cape | 30.21 |
| Eastern Cape | 3.47 |
| Gauteng | 32.99 |
| Mpumalanga | 3.47 |
| Limpopo | 0.69 |
| KwaZulu-Natal | 6.94 |
| North West | 2.43 |
| Other | 4.17 |
| **Distance you live from the park** | 288 | < 50km | 0.35 |
| 50 – 100 km | 2.08 |
| 100 – 250 km | 11.81 |
| > 250km | 85.76 |

*The author collected primary data*

**Different tables of data**

Table 13: Willingness to Pay to see a type of species in a national park

|  |  |  |  |
| --- | --- | --- | --- |
|  | WTP Carnivore species | WTP Endangered species | WTP Iconic species |
| Mean | R 137.62 | R 140.42 | R 127.49 |
| Std. dev. | 70.339 | 72.124 | 71.126 |

*The author collected primary data*

Table 12: Preference if the park’s area should be doubled

|  |  |  |  |
| --- | --- | --- | --- |
| **Variable** | **Number of responses (n)** | **Grouping** | **Percentage (%)** |
| Double the Area | 287 | Yes | 88.85 |
| No | 11.15 |

*The author collected primary data*

Table 11: Opinions about the quality of the MNP

|  |  |  |  |
| --- | --- | --- | --- |
| **Variable** | **Number of responses (n)** | **Grouping** | **Percentage (%)** |
| Quality of Park Facilities | 288 | Poor | 2.08 |
| Average | 15.97 |
| Good | 63.89 |
| Excellent | 18.06 |

*The author collected primary data*

Table 10: Results for the amount of times visited MNP

|  |  |  |  |
| --- | --- | --- | --- |
| **Variable** | **Number of responses (n)** | **Grouping** | **Percentage (%)** |
| Times Visited | 289 | 1 | 35.29 |
| 2 | 17.65 |
| 3 | 16.26 |
| 4 | 10.73 |
| 5 | 4.84 |
| > 5 | 15.22 |

*The author collected primary data*

Table 9: Seasonal preference to visit MNP

|  |  |  |  |
| --- | --- | --- | --- |
| **Variable** | **Number of responses (n)** | **Grouping** | **Percentage (%)** |
| Best Season to Visit | 289 | Summer (Dec-Feb) | 28.37 |
| Autumn (Mar-May) | 63.32 |
| Winter (Jun - Aug) | 33.91 |
| Spring (Sept - Nov) | 55.71 |

*The author collected primary data*

Table 8: Reasons for visiting MNP

|  |  |  |  |
| --- | --- | --- | --- |
| **Variable** | **Number of responses (n)** | **Grouping** | **Percentage of participants (%)** |
| Reasons for Visit | 289 | Mammal diversity | 61.62 |
| Bird Diversity | 57.44 |
| View and enjoy the natural scenery | 71.28 |
| Break from the city | 22.49 |
| Rest and relaxation | 43.94 |
| To experience nature in its natural state | 80.28 |

*The author collected primary data*

Table 7: Preference to have High Ambition Coalition enacted

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Variable** | **Number of responses (n)** | **Grouping** | **Frequency (f)** | **Percentage (%)** |
| HAC - 30x30 | 289 | Yes | 258 | 89.27 |
| No | 31 | 10.73 |

*The author collected primary data*

Table 6: Respondents' preferences to visit a national park with the Big 5 and their preference to visit a park if endangered species are present

|  |  |  |  |
| --- | --- | --- | --- |
| **Variable** | **Number of responses (n)** | **Grouping** | **Percentage (%)** |
| Preference to visit a national park if Iconic Big 5 Species are present | 288 | Yes | 48.96 |
| No | 51.04 |
| Preference to visit a national park if Endangered Wildlife are present | 289 | Yes | 87.54 |
| No | 12.46 |

*The author collected primary data*

Table 5: Rewilding preferences for non-indigenous species in a national park and prioritising the rewilding of the Big 5 into a national park

|  |  |  |  |
| --- | --- | --- | --- |
| **Variable** | **Number of responses (n)** | **Grouping** | **Percentage (%)** |
| Preference to introduce non-Indigenous species into a park | 288 | Yes | 29.51 |
| No | 70.49 |
| Prioritise introducing the Big 5 into a park above other species | 287 | Yes | 61.32 |
|  |  | No | 38.68 |

*The author collected primary data*

Table 4: Sightings during most recent visit

|  |  |  |  |
| --- | --- | --- | --- |
| **Variable** | **Number of responses (n)** | **Grouping** | **Percentage (%)** |
| Roan | 289 | Yes | 76,47 |
| No | 23,53 |
| Rhino | 289 | Yes | 19,72 |
| No | 80,28 |
| Tsessebe | 287 | Yes | 87,80 |
| No | 12,20 |
| Sable | 287 | Yes | 61,32 |
| No | 38,68 |

*The author collected primary data*

**Latent Class Model**

**Table 15: Comparisons of global fitness of the models from two to five classes.**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Latent Class Model and Classes Covariables:**  **Visit Frequency, Afrikaans Home Language and Age above 50 years** | | | | | |
| **Class number and distribution** | **Log-likelihood** | ***R2 adj.*** | **Parameters** | **AIC** | **BIC** |
| 2 Classes  Class 1 0.824 Class 2 0.176 | -1340.64 | 0.1546 | 22 | 2725.28 | 2845.06 |
| 3 Classes  Class 1 0.298 Class 2 0.167 Class 3 0.535 | -1311.15 | 0.165 | 35 | 2692.29 | 2882.84 |
| 4 Classes  Class 1 0.307 Class 2 0.413 Class 3 0.162 Class 4 0.118 | -1277.04 | 0.1779 | 48 | 2650.07 | 2911.39 |
| 5 Classes  Class 1 0.290 Class 2 0.041 Class 3 0.144 Class 4 0.244 Class 5 0.281 | -1259 | 0.181 | 61 | 2639 | 2971 |

*The author collected primary data*

**Table 16: Description of the variables used in LCM and their mean values**

|  |  |  |
| --- | --- | --- |
| **Variables** | **Mean** | **Definition** |
| ***Socio-demographic variables*** |  |  |
| Afrikaans as their home language | 0.503 | 0 = Respondents’ home language is not Afrikaans 1 = Respondents’ home language is Afrikaans |
| Experienced visits | 0.469 | 0 = Less than 3 visits  1 = 3 or more visits |
| Age above 50 years old | 0.792 | 0 = Respondents’ age is below 50 years  1 = Respondents’ age is above 50 years |

*The author collected primary data*

**Table 17: Conditional logit model and Latent class model**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Variables** |  | **Latent Class Model Classes** | | | |
| **Explanatory Attributes** | **CLM** | **Class 1** | **Class 2** | **Class 3** | **Class 4** |
| Status Quo (no Change) | -1.076\*\*\*  (0.362) | -1.404\*  (0.920) | -2.660\*\*\*  (0.750) | -2.450\*  (2.135) | 0.007\*\*  (2.186) |
| Reintroduce Lion | 0.753\*\*\*  (0.165) | 2.883\*\*\*  (0.474) | -1.854\*\*\*  (0.436) | 2.950\*\*  (1.202) | 2.312  (1.165) |
| Reintroduce Cheetah | 1.473\*\*\*  (0.168) | 1.957\*\*\*  (0.437) | 0.617\*  (00.315) | 5.594\*\*\*  (1.478) | 2.226\*\*  (1.000) |
| Remove Non-native, Threatened species (Sable antelope) | -0.668\*\*\*  (0.142) | -1.119\*\*\*  (0.387) | -1.616\*\*\*  (0.334) | -3.506\*\*\*  (1.072) | 1.787  (0.997) |
| Remove Non-native,  Non-threatened species (Impala, nyala and waterbuck) | -0.236\*\*  (0.142) | -0.890\*\*  (0.370) | -0.802\*\*  (0.317) | -4.531\*\*\*  (1.433) | 3.053\*\*  (1.127) |
| Boost population of Roan antelope | 0.429\*\*\*  (0.172) | 0.042  (0.472) | -0.072  (0.372) | 1.036  (1.012) | 1.321  (1.005) |
| Boost population of Black Rhino | 0.752\*\*\*  (0.204) | 1.160\*\*  (0.533) | 0.167  (0.384) | 0.386\*  (1.219) | 2.205  (1.259) |
| Boost population of Tsessebe | 0.191  (0.176) | 0.282  (0.419) | -0.388  (0.372) | -0.046  (1.273) | 1.330  (1.261) |
| Park Fees | -0.0059\*\*\*  (0.002) | -0.014\*\*  (0.005) | -0.007\*\*  (0.003) | -0.019\*  (0.014) | 0.006  (0.012) |
|  |  |  |  |  |  |
| **Group Membership characteristic** |  |  |  |  |  |
| Visit (more than 3 times before) | - | 0.000 | 0.954\*\*  (0.410) | 1.660\*\*  (0.653) | 0.176  (0.762) |
| Age (above 50 years old) | - | 0.000 | 1.078\*\*  (0.442) | 1.621\*  (0.910) | 1.569  (0.762) |
| Afrikaans (main language) | - | 0.000 | -1.116\*\*\*  (0.426) | -1.888\*\*\*  (0.609) | -1.998\*\*\*  (0.662) |
| Constant | - | 0.000 | -0.238\*\*  (0.505) | -1.769  (0.925) | -1.254  (1.16) |
| **Distribution of classes** | - | Class 1 0.307 | Class 2 0.413 | Class 3 0.162 | Class 4 0.118 |
| **Model Characteristics** |  |  |  |  |  |
| Log-likelihood | -1429 | -1277.04 | - | - | - |
| Adjusted rho-squared, p | 0.108 | 0.178 | - | - | - |
| AIC |  | 2650.07 | - | - | - |
| BIC |  | 2911.39 | - | - | - |
|  |  |  |  |  |  |
| The figures denoted in between brackets represent the standard error.  Statistical significance is denoted by “\*\*\*”, “\*\*”,”\*” at 1%, 5%, and 10% levels, respectively. | | | | | |

*The author collected primary data*

**Willingness To Pay Model**

**Table 19: Class Marginal WTP for the different attributes**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Marginal Willingness to Pay for Changes** | | | | | |
| **Variables** | **CLM** | **LCM Class** | | | |
| **Attributes** |  | **Class 1** | **Class 2** | **Class 3** | **Class 4** |
|  |  |  |  |  |  |
| Status Quo (No Change) | -181.20\*\*\*  (41.53) | -98.03\*\*  (47.71) | 374.00\*\*\*  (140.8) | -124.00\*  (76.99) | N/A |
| Reintroduce Lion | 126.90\*\*\*  (54.74) | 201.40\*\*  (102.4) | -260.00\*\*  (129.8) | 149.30\*  (96.66) | N/A |
| Reintroduce Cheetah | 248.20\*\*\*  (83.05) | 136.70\*\*  (75.33) | N/A | 283.10\*  (178.3) | N/A |
|  |  |  |  |  |  |
| Restore ecosystems: Remove Non-native, threatened species | -112.60\*\*\*  (24.22) | -78.13\*\*\*  (30.3) | -226.90\*\*  (111.6) | -177.40\*  (110.2) | N/A |
| Restore ecosystems: Remove Non-native, non-threatened species | -39.85\*\*  (21.99) | -62.13\*\*  (37.48) | -112.70\*\*  (65.7) | -229.30\*  (138.2) | N/A |
|  |  |  |  |  |  |
| Boost population of Roan antelope | 72.27\*\*  (41.04) | N/A | N/A | N/A | N/A |
| Boost population of Black Rhino | 126.7\*\*  (55.46) | 81.00\*  (53.35) | N/A | N/A | N/A |
| Boost population of Tsessebe | N/A | N/A | N/A | N/A | N/A |
| The figures denoted in between brackets represent the standard error.  Statistical significance is denoted by “\*\*\*”, “\*\*”,”\*” at 1%, 5%, and 10% levels, respectively. N/A represents figures that were insignificant. All figures are denoted in Rands. | | | | | |

*The author collected primary data*