**Frequencies**

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| --- | --- | --- |
| **Notes** |  |  |
| Output Created |  | 21-MAY-2024 12:34:52 |
| Comments |  |  |
| Input | Data | C:\Users\64211\OneDrive\Documents\mom\Assessment of methods of reclamation of problematic soils in road construction in Zimbabwe.csv\assessment meth recla.sav |
| Active Dataset | DataSet1 |
| Filter | <none> |
| Weight | <none> |
| Split File | <none> |
| N of Rows in Working Data File | 44 |
| Missing Value Handling | Definition of Missing | User-defined missing values are treated as missing. |
| Cases Used | Statistics are based on all cases with valid data. |
| Syntax |  | FREQUENCIES VARIABLES=role serviceterrm projects frequency typesofsoils identificationofsoils lamationmethods effectivenessscale effectiveness1 effectiveness2 ness3 challenge1 challenge2 challenge3 challenge4 soilcharacter1 soilcharacter2 frequency2 frequency3 frequency4 frequency5 /ORDER=ANALYSIS. |
| Resources | Processor Time | 00:00:00.00 |
| Elapsed Time | 00:00:00.02 |

[DataSet1] C:\Users\64211\OneDrive\Documents\mom\Assessment of methods of reclamation of problematic soils in road construction in Zimbabwe.csv\assessment meth recla.sav

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| --- | --- | --- | --- | --- | --- | --- |
| **Statistics** |  |  |  |  |  |  |
|  |  | role | service term | location of projects done | frequency of clay soils | types of problematic soils |
| N | Valid | 18 | 18 | 44 | 18 | 20 |
| Missing | 26 | 26 | 0 | 26 | 24 |

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| **Statistics** |  |  |  |  |  |  |
|  |  | identification of soils | reclamation methods | effectiveness of mechanical stabilation | effectiveness of chemical stabilation | effectiveness of geosynthetics |
| N | Valid | 21 | 44 | 7 | 11 | 6 |
| Missing | 23 | 0 | 37 | 33 | 38 |

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| **Statistics** |  |  |  |  |  |  |
|  |  | effectiveness of soil replacement | increased cost challenge scale | delay in completion | challenge in road stability | increased maintainance |
| N | Valid | 8 | 17 | 18 | 17 | 17 |
| Missing | 36 | 27 | 26 | 27 | 27 |

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| **Statistics** |  |  |  |  |  |  |
|  |  | soil characterisation | soil properties in characterisation | frequency of sandy soils | frequency of lateritic soils | frequency of acid sulphate soils |
| N | Valid | 34 | 44 | 12 | 8 | 6 |
| Missing | 10 | 0 | 32 | 36 | 38 |

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| **Statistics** |  |  |
|  |  | frequency of sodic soils |
| N | Valid | 5 |
| Missing | 39 |

**Frequency Table**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **role** |  |  |  |  |  |
|  |  | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | civil engineer | 15 | 34.1 | 83.3 | 83.3 |
| facility manager | 1 | 2.3 | 5.6 | 88.9 |
| consultant | 2 | 4.5 | 11.1 | 100.0 |
| Total | 18 | 40.9 | 100.0 |  |
| Missing | System | 26 | 59.1 |  |  |
| Total |  | 44 | 100.0 |  |  |

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| --- | --- | --- | --- | --- | --- |
| **service term** |  |  |  |  |  |
|  |  | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | less than 5 years | 3 | 6.8 | 16.7 | 16.7 |
| between 5 and 15 years | 9 | 20.5 | 50.0 | 66.7 |
| between 15 and 25 years | 5 | 11.4 | 27.8 | 94.4 |
| more than 25 years | 1 | 2.3 | 5.6 | 100.0 |
| Total | 18 | 40.9 | 100.0 |  |
| Missing | System | 26 | 59.1 |  |  |
| Total |  | 44 | 100.0 |  |  |

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| --- | --- | --- | --- | --- | --- |
| **location of projects done** |  |  |  |  |  |
|  |  | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid |  | 26 | 59.1 | 59.1 | 59.1 |
| Bulawayo-Nkayi | 1 | 2.3 | 2.3 | 61.4 |
| Bulawayo-Tsholotsho | 1 | 2.3 | 2.3 | 63.6 |
| Harare-Chirundu | 3 | 6.8 | 6.8 | 70.5 |
| Harare-Domboshava | 1 | 2.3 | 2.3 | 72.7 |
| Harare-Gweru | 1 | 2.3 | 2.3 | 75.0 |
| Harare-Hwedza | 1 | 2.3 | 2.3 | 77.3 |
| Harare-Masvingo | 3 | 6.8 | 6.8 | 84.1 |
| Kadoma-Mamina | 1 | 2.3 | 2.3 | 86.4 |
| Lupane-Nkayi | 1 | 2.3 | 2.3 | 88.6 |
| Murambinda-Birchenough | 1 | 2.3 | 2.3 | 90.9 |
| New Parliament road | 1 | 2.3 | 2.3 | 93.2 |
| Ngundu-Tanganda | 1 | 2.3 | 2.3 | 95.5 |
| Norton-Murombedzi | 1 | 2.3 | 2.3 | 97.7 |
| Tokwe Mukosi | 1 | 2.3 | 2.3 | 100.0 |
| Total | 44 | 100.0 | 100.0 |  |

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| **frequency of clay soils** |  |  |  |  |  |
|  |  | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | always | 2 | 4.5 | 11.1 | 11.1 |
| often | 9 | 20.5 | 50.0 | 61.1 |
| sometimes | 5 | 11.4 | 27.8 | 88.9 |
| rarely | 1 | 2.3 | 5.6 | 94.4 |
| never | 1 | 2.3 | 5.6 | 100.0 |
| Total | 18 | 40.9 | 100.0 |  |
| Missing | System | 26 | 59.1 |  |  |
| Total |  | 44 | 100.0 |  |  |

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| --- | --- | --- | --- | --- | --- |
| **types of problematic soils** |  |  |  |  |  |
|  |  | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | clay with high shrink-swell potential | 11 | 25.0 | 55.0 | 55.0 |
| sandy soils with low bearing capacity | 6 | 13.6 | 30.0 | 85.0 |
| Lateritic soils | 2 | 4.5 | 10.0 | 95.0 |
| acid sulphate soils | 1 | 2.3 | 5.0 | 100.0 |
| Total | 20 | 45.5 | 100.0 |  |
| Missing | System | 24 | 54.5 |  |  |
| Total |  | 44 | 100.0 |  |  |

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| **identification of soils** |  |  |  |  |  |
|  |  | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | DCP | 5 | 11.4 | 23.8 | 23.8 |
| CBR | 6 | 13.6 | 28.6 | 52.4 |
| atterberg limits | 5 | 11.4 | 23.8 | 76.2 |
| insitu survey | 5 | 11.4 | 23.8 | 100.0 |
| Total | 21 | 47.7 | 100.0 |  |
| Missing | System | 23 | 52.3 |  |  |
| Total |  | 44 | 100.0 |  |  |

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| --- | --- | --- | --- | --- | --- |
| **reclamation methods** |  |  |  |  |  |
|  |  | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | mechanical stabilation | 15 | 34.1 | 34.1 | 34.1 |
| chemical stabilation | 13 | 29.5 | 29.5 | 63.6 |
| geosynthetics | 2 | 4.5 | 4.5 | 68.2 |
| soil replacement | 13 | 29.5 | 29.5 | 97.7 |
| precollapsing | 1 | 2.3 | 2.3 | 100.0 |
| Total | 44 | 100.0 | 100.0 |  |

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| --- | --- | --- | --- | --- | --- |
| **effectiveness of mechanical stabilation** |  |  |  |  |  |
|  |  | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | moderate | 1 | 2.3 | 14.3 | 14.3 |
| agree | 5 | 11.4 | 71.4 | 85.7 |
| strongly agree | 1 | 2.3 | 14.3 | 100.0 |
| Total | 7 | 15.9 | 100.0 |  |
| Missing | System | 37 | 84.1 |  |  |
| Total |  | 44 | 100.0 |  |  |

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| --- | --- | --- | --- | --- | --- |
| **effectiveness of chemical stabilation** |  |  |  |  |  |
|  |  | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | moderate | 1 | 2.3 | 9.1 | 9.1 |
| agree | 5 | 11.4 | 45.5 | 54.5 |
| strongly agree | 5 | 11.4 | 45.5 | 100.0 |
| Total | 11 | 25.0 | 100.0 |  |
| Missing | System | 33 | 75.0 |  |  |
| Total |  | 44 | 100.0 |  |  |

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| --- | --- | --- | --- | --- | --- |
| **effectiveness of geosynthetics** |  |  |  |  |  |
|  |  | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | strongly disagree | 1 | 2.3 | 16.7 | 16.7 |
| moderate | 4 | 9.1 | 66.7 | 83.3 |
| strongly agree | 1 | 2.3 | 16.7 | 100.0 |
| Total | 6 | 13.6 | 100.0 |  |
| Missing | System | 38 | 86.4 |  |  |
| Total |  | 44 | 100.0 |  |  |

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| **effectiveness of soil replacement** |  |  |  |  |  |
|  |  | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | disagree | 2 | 4.5 | 25.0 | 25.0 |
| moderate | 1 | 2.3 | 12.5 | 37.5 |
| strongly disagree | 5 | 11.4 | 62.5 | 100.0 |
| Total | 8 | 18.2 | 100.0 |  |
| Missing | System | 36 | 81.8 |  |  |
| Total |  | 44 | 100.0 |  |  |

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| --- | --- | --- | --- | --- | --- |
| **increased cost challenge scale** |  |  |  |  |  |
|  |  | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | moderate | 1 | 2.3 | 5.9 | 5.9 |
| agree | 7 | 15.9 | 41.2 | 47.1 |
| strongly agree | 9 | 20.5 | 52.9 | 100.0 |
| Total | 17 | 38.6 | 100.0 |  |
| Missing | System | 27 | 61.4 |  |  |
| Total |  | 44 | 100.0 |  |  |

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| --- | --- | --- | --- | --- | --- |
| **delay in completion** |  |  |  |  |  |
|  |  | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | strongly disagree | 2 | 4.5 | 11.1 | 11.1 |
| moderate | 2 | 4.5 | 11.1 | 22.2 |
| agree | 9 | 20.5 | 50.0 | 72.2 |
| strongly agree | 5 | 11.4 | 27.8 | 100.0 |
| Total | 18 | 40.9 | 100.0 |  |
| Missing | System | 26 | 59.1 |  |  |
| Total |  | 44 | 100.0 |  |  |

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| **challenge in road stability** |  |  |  |  |  |
|  |  | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | strongly disagree | 4 | 9.1 | 23.5 | 23.5 |
| disagree | 2 | 4.5 | 11.8 | 35.3 |
| moderate | 6 | 13.6 | 35.3 | 70.6 |
| agree | 3 | 6.8 | 17.6 | 88.2 |
| strongly agree | 2 | 4.5 | 11.8 | 100.0 |
| Total | 17 | 38.6 | 100.0 |  |
| Missing | System | 27 | 61.4 |  |  |
| Total |  | 44 | 100.0 |  |  |

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| --- | --- | --- | --- | --- | --- |
| **increased maintainance** |  |  |  |  |  |
|  |  | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | strongly disagree | 3 | 6.8 | 17.6 | 17.6 |
| disagree | 5 | 11.4 | 29.4 | 47.1 |
| moderate | 5 | 11.4 | 29.4 | 76.5 |
| agree | 3 | 6.8 | 17.6 | 94.1 |
| strongly agree | 1 | 2.3 | 5.9 | 100.0 |
| Total | 17 | 38.6 | 100.0 |  |
| Missing | System | 27 | 61.4 |  |  |
| Total |  | 44 | 100.0 |  |  |

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| --- | --- | --- | --- | --- | --- |
| **soil characterisation** |  |  |  |  |  |
|  |  | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | in-situ | 7 | 15.9 | 20.6 | 20.6 |
| laboratory test | 9 | 20.5 | 26.5 | 47.1 |
| geological survey and maps | 6 | 13.6 | 17.6 | 64.7 |
| combination of the above | 12 | 27.3 | 35.3 | 100.0 |
| Total | 34 | 77.3 | 100.0 |  |
| Missing | System | 10 | 22.7 |  |  |
| Total |  | 44 | 100.0 |  |  |

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| --- | --- | --- | --- | --- | --- |
| **soil properties in characterisation** |  |  |  |  |  |
|  |  | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid |  | 20 | 45.5 | 45.5 | 45.5 |
| moisture content | 4 | 9.1 | 9.1 | 54.5 |
| bearing capacity | 2 | 4.5 | 4.5 | 59.1 |
| grain size distribution | 12 | 27.3 | 27.3 | 86.4 |
| atterberg limits | 6 | 13.6 | 13.6 | 100.0 |
| Total | 44 | 100.0 | 100.0 |  |

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| --- | --- | --- | --- | --- | --- |
| **frequency of sandy soils** |  |  |  |  |  |
|  |  | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | often | 3 | 6.8 | 25.0 | 25.0 |
| sometimes | 3 | 6.8 | 25.0 | 50.0 |
| rarely | 2 | 4.5 | 16.7 | 66.7 |
| never | 4 | 9.1 | 33.3 | 100.0 |
| Total | 12 | 27.3 | 100.0 |  |
| Missing | System | 32 | 72.7 |  |  |
| Total |  | 44 | 100.0 |  |  |

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| --- | --- | --- | --- | --- | --- |
| **frequency of lateritic soils** |  |  |  |  |  |
|  |  | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | sometimes | 1 | 2.3 | 12.5 | 12.5 |
| rarely | 1 | 2.3 | 12.5 | 25.0 |
| never | 6 | 13.6 | 75.0 | 100.0 |
| Total | 8 | 18.2 | 100.0 |  |
| Missing | System | 36 | 81.8 |  |  |
| Total |  | 44 | 100.0 |  |  |

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| --- | --- | --- | --- | --- | --- |
| **frequency of acid sulphate soils** |  |  |  |  |  |
|  |  | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | sometimes | 1 | 2.3 | 16.7 | 16.7 |
| never | 5 | 11.4 | 83.3 | 100.0 |
| Total | 6 | 13.6 | 100.0 |  |
| Missing | System | 38 | 86.4 |  |  |
| Total |  | 44 | 100.0 |  |  |

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| --- | --- | --- | --- | --- | --- |
| **frequency of sodic soils** |  |  |  |  |  |
|  |  | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | sometimes | 1 | 2.3 | 20.0 | 20.0 |
| never | 4 | 9.1 | 80.0 | 100.0 |
| Total | 5 | 11.4 | 100.0 |  |
| Missing | System | 39 | 88.6 |  |  |
| Total |  | 44 | 100.0 |  |  |