Table A1. Sample structure in Hessen.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | **Hessen** | |  | **Sample** | | |
|  |  | *N* | *%* |  | *N* | *%* | *% (RR)* |
| **Spatial**  **distribution** | Districts (NUTS II) |  |  |  |  |  |  |
| Darmstadt (South) | 184 | 43.6 |  | 97 | 45.1 | 52.7 |
| Giessen (West) | 101 | 23.9 |  | 47 | 21.9 | 46.5 |
| Kassel (North) | 137 | 32.5 |  | 71 | 33.0 | 51.8 |
| *Total* | *422* | *100.0* |  | *215* | *100.0* | *51.0* |
|  | *p-value of Pearson chi-square = 0.7766* | | | | | | |
| **Demographic distribution** | Population size |  |  |  |  |  |  |
| ≥ 100.000 | 5 | 1.2 |  | 5 | 2.3 | 100.0 |
| 50.000-99.999 | 7 | 1.7 |  | 6 | 2.8 | 85.7 |
| 20.000-49.999 | 47 | 11.1 |  | 31 | 14.4 | 66.0 |
| 10.000-19.999 | 112 | 26.5 |  | 58 | 27.0 | 51.8 |
| 5.000-9.999 | 133 | 31.5 |  | 68 | 31.6 | 51.1 |
| < 5.000 | 118 | 28.0 |  | 47 | 21.9 | 39.8 |
| *Total* | *422* | *100.0* |  | *215* | *100.0* | *51.0* |
|  | *p-value of Pearson chi-square = 0.1164* | | | | | | |

*Note:* RR: Response rate.

Table A2. Sample structure in Finland

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | **Finland** | |  | **Sample** | | |  | **Non-response sample** | |  | **Total sample** | | |
|  |  | *N* | *%* |  | *N* | *%* | *% (RR)* |  | *N* | *%* |  | *N* | *%* | *% (RR)* |
| **Spatial distribution (NUTS II/2005)** | Southern Finland | 89 | 29,0 |  | 36 | 37,5 | 40,4 |  | 9 | 15,0 |  | 45 | 29,0 | 50,6 |
| Eastern Finland | 52 | 17,0 |  | 18 | 18,8 | 34,6 |  | 8 | 13,3 |  | 26 | 17,0 | 50,0 |
| Western Finland | 93 | 30,0 |  | 34 | 35,4 | 36,6 |  | 12 | 20,0 |  | 46 | 29,0 | 49,5 |
| Northern Finland | 59 | 19,0 |  | 6 | 6,3 | 10,2 |  | 24 | 40,0 |  | 30 | 19,0 | 50,8 |
| Åland | 16 | 5,0 |  | 2 | 2,1 | 12,5 |  | 7 | 11,7 |  | 9 | 6,0 | 56,3 |
| *Total* | *309* | *100* |  | *96* | *100* | *31,1* |  | *60* | *100* |  | *156* | *100* | *50,5* |
|  | *p-value of Pearson chi-square = 0.992* | | | | | | | | | | | | | |
| **Population** | < 10.000 | 212 | 68,6 |  | 45 | 46,9 | 21,2 |  | 51 | 85 |  | 96 | 62 | 45,3 |
| 10.000-50.000 | 76 | 24,6 |  | 35 | 36,5 | 46,1 |  | 9 | 15 |  | 44 | 28 | 57,9 |
| > 50.000 | 21 | 6,8 |  | 16 | 16,7 | 76,2 |  | 0 | 0 |  | 16 | 10 | 76,2 |
| *Total* | *309* | *100* |  | *96* | *100* | 31,1 |  | *60* | *100* |  | *156* | *100* | 50,5 |
| *p-value of Pearson chi-square = 0.009* | | | | | | | | | | | | | |
| *Note:* RR: Response rate. | | |  |  |  |  |  |  |  |  |  |  |  |  |

Table A3. Hessian survey questions

|  |  |  |
| --- | --- | --- |
| **Question** | | **Scale** |
|  | |  |
| (13) All in all, what motivated your municipality to become active in the area of climate adaptation. Please rate the possible motivations according to their importance. | | Very important, important, neither nor, not important, not important at all |
|  |  | |
|  | Past extreme weather events | |
|  | Scientific projections about climate change | |
|  | To lead by example | |
|  | To foster the economic development | |
|  | To alleviate social inequalities | |
|  | To not to fall behind other municipalities | |
|  | To foster urban/municipal development | |
|  | To receive additional funds/staff (e.g. from Hessen, the federal government, the EU) | |
|  | To improve the health of the citizens | |
|  | To improve the quality of life in the municipality | |
|  | To have an economic advantage over other municipalities | |
|  | To make the municipality more attractive for new citizens | |
|  | To become more attractive for investors/employers | |
|  | Success of other municipalities with adaptation measures | |
|  | Local political pressure (e.g. parties, representatives, ENGOs, businesses, etc.) | |
|  | International efforts (e.g. the Paris agreement) | |
|  | European efforts (e.g. European adaptation strategy) | |
|  | Efforts of the federal government (e.g. German adaptation strategy) | |
|  | Efforts of the state of Hessen (e.g. Hessian adaptation strategy) | |
|  | Efforts of the county (e.g. adaptation concept of the county) | |
|  |  | |
|  | |  |
| (7) Are there factors that impede the adaptation policy in your municipality? Multiple choices possible (yes/no) | | Yes/No |
|  |  | |
|  | Local political problems | |
|  | Unclear responsibilities | |
|  | Limited cooperation between concerned actors | |
|  | Lacking financial resources | |
|  | Lacking human resources (suitable professionals) | |
|  | Uncertainties about climate change impacts | |
|  | Lacking information (e.g. socio-economic or climatic data) | |
|  | Lacking support from the state of Hessen | |
|  | Lacking support from the federal government | |
|  | Lacking support from the county | |
|  | Conflictive views and interests | |
|  | Uncertain legal framework | |
|  | Others: | |
|  | No barriers experienced | |
|  |  | |
|  | |  |
| (27) Has your municipality oriented itself on others while designing its adaptation policies/measures? | |  |
|  |  | |
|  | Yes, with all policies/measures | |
|  | Yes, with a majority of policies/measures | |
|  | Yes, with some policies/measures | |
|  | Yes, but only with a few policies/measures | |
|  | No, there was no orientation on other municipalities | |
|  |  | |
|  | |  |
| (27.2) Why has your municipality oriented itself on others while designing its adaptation policies/measures. Please rate the possible motivations according to their importance | | Very important, important, neither nor, not important, not important at all |
|  |  | |
|  | Similar climate impacts and vulnerability profile | |
|  | Geographical proximity (neighbourhood) | |
|  | To become/remain competitive | |
|  | Similar government and political majorities | |
|  | Leadership role of the other municipality in adaptation policy | |
|  | Successful adaptation policy of the other municipality | |
|  | Personal contacts and networks | |
|  |  | |
|  | |  |
| (28) Are there any factors in your municipality, which are hindering the orientation on the adaptation experiences of other municipalities? How important are the following factors? | | Very important, important, neither nor, not important, not important at all |
|  |  | |
|  | Lacking access to knowledge about other municipalities | |
|  | Lacking support from the state of Hessen | |
|  | Lacking awareness about the necessity of adaptation | |
|  | Lacking awareness about the urgency of adaptation | |
|  | Lacking networks with other municipalities | |
|  | Lacking administrative capacities to inform oneself | |
|  | Lacking adaptation experience in the neighbourhood | |
|  |  | |

Table A4. Finnish survey questions

|  |  |  |
| --- | --- | --- |
|  | **Question** | **Scale** |
|  | |  |
| (12) Which factors have markedly motivated the climate action of your municipality? Please choose the three most important ones. | | Yes/no |
|  |  |  |
|  | Willingness to set an example for people and businesses in the municipality | |
|  | Climate action will enhance the image of the municipality | |
|  | Possibility to obtain savings in the municipality | |
|  | Expectations of the municipality's citizens | |
|  | Possibility to acquire financial contribution from the state or the EU | |
|  | Municipalities’ great impact on the Finnish emissions | |
|  | Possibility to create new markets and economic activity into the municipality | |
|  | Examples from other municipalities | |
|  | Positive impact on the wellbeing of the municipality’s citizens | |
|  | Responsibility of the decisionmakers to mitigate climate change | |
|  | Nothing has motivated my municipality to advance climate action | |
|  | Other: | |
|  |  | |
|  | |  |
| (32) Which factors have hindered the planning and implementation of adaptation in your municipality? Please choose the three most important ones. | | Yes/no |
|  |  | |
|  | Political leadership does not consider adaptation to be important | |
|  | Administrative leadership does not consider adaptation to be important | |
|  | Adaptation is nobody's responsibility | |
|  | There are no resources for adaptation | |
|  | There is no data available on region specific climate change impacts | |
|  | There is no data available on adaptation measures applicable in the municipality | |
|  | It is not clear how to initiate adaptation work | |
|  | Adaptation is not a legal obligation | |
|  | Adaptation needs are difficult to identify because of lacking internal cooperation | |
|  | Citizens of the municipality do not consider adaptation to be important | |
|  | Businesses in the municipality do not consider adaptation to be important | |
|  | There is no need for specific adaptation measures in the municipality | |
|  | Other: | |
|  |  | |
|  | |  |
| (35) Where do the ideas for the municipality’s adaptation work come from? Please choose the three most important ones. | | Yes/no |
|  | |  |
|  | Neighbouring municipalities | |
|  | The municipality's own networks | |
|  | International cooperation | |
|  | Wider municipal collaboration with the Association of Finnish Local and Regional Authorities | |
|  | Regional work | |
|  | National adaptation plan | |
|  | Through guidance of the sectoral ministries and authorities | |
|  | Information from the media | |
|  | Active information collection by the municipality | |
|  | Collaboration with research institutes, universities and higher education institutions | |
|  | Elsewhere: | |
|  |  | |