

Appendix 2. The descriptive statistics of adverse effects impacted smart city governance objectives

Smart City Governance Objectives	Descriptive statistics	<i>Lack of policies & guidelines</i>	<i>Inadequate organizational structure & processes</i>	<i>Lack of Technical capacities</i>	<i>Lack of Human capacities</i>	<i>Lack of Financial capacities</i>	<i>Low data availability, quality & relevance</i>	<i>Low data sharing, discoverability & interoperability</i>	<i>Security & privacy breaches</i>	<i>Lack of legitimacy & public trust</i>	<i>Negative Ethical impact / Unethical use</i>	<i>Socio-economic inequalities</i>	<i>Undermining institutional power and reputation</i>	Cronbach's Alpha
<i>To implementing a citizen-centric approach</i>	Mean	2.16	2.13	1.84	2.25	1.66	2.00	2.16	2.00	2.25	2.03	1.91	1.75	0.7873
	Standard Deviation	0.95	0.83	0.85	0.88	1.07	0.84	0.95	0.98	0.84	1.06	0.89	0.95	
	Standard Error	0.17	0.15	0.15	0.16	0.19	0.15	0.17	0.17	0.15	0.19	0.16	0.17	
<i>To transform of processes and structures</i>	Mean	2.32	2.52	1.87	2.42	1.68	1.87	2.16	1.55	1.68	1.48	1.65	1.90	0.8790
	Standard Deviation	0.91	0.85	1.09	0.85	0.91	1.12	0.90	0.93	0.87	0.93	0.95	0.91	
	Standard Error	0.16	0.15	0.20	0.15	0.16	0.20	0.16	0.17	0.16	0.17	0.17	0.16	
	Mean	1.78	1.66	1.63	2.19	1.56	1.78	1.78	1.84	2.13	1.97	2.13	1.75	0.8290

Smart City Governance Objectives	Descriptive statistics	<i>Lack of policies & guidelines</i>	<i>Inadequate organizational structure & processes</i>	<i>Lack of Technical capacities</i>	<i>Lack of Human capacities</i>	<i>Lack of Financial capacities</i>	<i>Low data availability, quality & relevance</i>	<i>Low data sharing, discoverability & interoperability</i>	<i>Security & privacy breaches</i>	<i>Lack of legitimacy & public trust</i>	<i>Negative Ethical impact / Unethical use</i>	<i>Socio-economic inequalities</i>	<i>Undermining institutional power and reputation</i>	Cronbach's Alpha
<i>To support impact on society</i>	Standard Deviation	0.83	1.10	1.01	0.93	0.98	0.87	0.91	0.95	1.01	1.12	0.98	0.92	
	Standard Error	0.15	0.19	0.18	0.16	0.17	0.15	0.16	0.17	0.18	0.20	0.17	0.16	
<i>To realize urban sustainability and resilience in terms of resource availability and disaster response</i>	Mean	2.19	2.00	2.06	2.19	1.91	1.97	2.00	1.38	1.25	1.28	1.84	1.72	0.9080
	Standard Deviation	0.93	1.08	0.95	0.93	1.03	1.09	1.02	0.91	0.84	1.11	1.05	1.02	
	Standard Error	0.16	0.19	0.17	0.16	0.18	0.19	0.18	0.16	0.15	0.20	0.19	0.18	
<i>To build fair and efficient models of public service design, delivery and transactions</i>	Mean	2.00	2.22	2.00	2.16	1.78	2.06	2.09	2.00	2.03	1.81	1.75	2.22	0.8878
	Standard Deviation	0.92	0.87	0.84	0.92	1.10	1.01	1.06	0.88	1.00	0.93	0.98	0.94	
	Standard Error	0.16	0.15	0.15	0.16	0.19	0.18	0.19	0.16	0.18	0.16	0.17	0.17	

Smart City Governance Objectives	Descriptive statistics	<i>Lack of policies & guidelines</i>	<i>Inadequate organizational structure & processes</i>	<i>Lack of Technical capacities</i>	<i>Lack of Human capacities</i>	<i>Lack of Financial capacities</i>	<i>Low data availability, quality & relevance</i>	<i>Low data sharing, discoverability & interoperability</i>	<i>Security & privacy breaches</i>	<i>Lack of legitimacy & public trust</i>	<i>Negative Ethical impact / Unethical use</i>	<i>Socio-economic inequalities</i>	<i>Undermining institutional power and reputation</i>	Cronbach's Alpha
<i>To provide evidence-based decision making</i>	Mean	1.94	1.91	2.09	2.28	1.44	2.69	2.78	1.69	1.72	1.53	1.47	1.69	0.7910
	Standard Deviation	0.95	0.86	0.86	0.85	0.98	0.59	0.42	1.12	0.99	1.05	1.08	1.09	
	Standard Error	0.17	0.15	0.15	0.15	0.17	0.10	0.07	0.20	0.18	0.19	0.19	0.19	
<i>To support understanding of data (on events, conditions, problems and processes)</i>	Mean	1.63	1.63	1.84	2.28	1.03	2.53	2.53	1.56	1.47	1.31	1.31	1.63	0.8130
	Standard Deviation	0.75	0.87	0.88	0.92	0.93	0.72	0.51	0.95	0.92	1.03	1.03	1.13	
	Standard Error	0.13	0.15	0.16	0.16	0.16	0.13	0.09	0.17	0.16	0.18	0.18	0.20	
<i>To sustain innovation and creativity</i>	Mean	1.69	1.75	2.06	2.47	1.81	2.00	1.75	1.31	1.47	1.44	1.56	1.84	0.8672
	Standard Deviation	0.97	0.88	0.95	0.80	1.09	1.02	0.95	0.82	0.88	0.91	0.88	0.99	

Smart City Governance Objectives	Descriptive statistics	<i>Lack of policies & guidelines</i>	<i>Inadequate organizational structure & processes</i>	<i>Lack of Technical capacities</i>	<i>Lack of Human capacities</i>	<i>Lack of Financial capacities</i>	<i>Low data availability, quality & relevance</i>	<i>Low data sharing, discoverability & interoperability</i>	<i>Security & privacy breaches</i>	<i>Lack of legitimacy & public trust</i>	<i>Negative Ethical impact / Unethical use</i>	<i>Socio-economic inequalities</i>	<i>Undermining institutional power and reputation</i>	Cronbach's Alpha
	Standard Error	0.17	0.16	0.17	0.14	0.19	0.18	0.17	0.15	0.16	0.16	0.16	0.17	
<i>To use simulations and modelling as a decision support techniques</i>	Mean	1.56	1.78	2.31	2.22	1.88	2.59	2.50	1.63	1.59	1.34	1.25	1.59	0.7414
	Standard Deviation	0.91	1.04	0.82	0.75	1.01	0.61	0.72	0.87	1.04	1.10	0.95	0.98	
	Standard Error	0.16	0.18	0.15	0.13	0.18	0.11	0.13	0.15	0.18	0.19	0.17	0.17	
<i>To collect data or observations through search agents</i>	Mean	1.31	1.56	2.13	1.88	1.72	2.28	2.16	2.00	1.78	1.59	1.00	1.69	0.8703
	Standard Deviation	1.00	0.84	0.91	1.01	0.96	0.92	0.95	0.92	0.94	1.01	0.76	0.97	
	Standard Error	0.18	0.15	0.16	0.18	0.17	0.16	0.17	0.16	0.17	0.18	0.13	0.17	
	Mean	2.13	2.00	1.84	2.19	1.56	1.59	2.03	1.78	2.34	2.00	1.81	2.19	0.7414

Smart City Governance Objectives	Descriptive statistics	<i>Lack of policies & guidelines</i>	<i>Inadequate organizational structure & processes</i>	<i>Lack of Technical capacities</i>	<i>Lack of Human capacities</i>	<i>Lack of Financial capacities</i>	<i>Low data availability, quality & relevance</i>	<i>Low data sharing, discoverability & interoperability</i>	<i>Security & privacy breaches</i>	<i>Lack of legitimacy & public trust</i>	<i>Negative Ethical impact / Unethical use</i>	<i>Socio-economic inequalities</i>	<i>Undermining institutional power and reputation</i>	Cronbach's Alpha
<i>To increase e-Participation</i>	Standard Deviation	0.71	0.62	0.88	0.86	1.11	1.07	0.93	0.87	0.83	0.92	0.97	1.00	
	Standard Error	0.13	0.11	0.16	0.15	0.20	0.19	0.16	0.15	0.15	0.16	0.17	0.18	
<i>To enhance citizen e-Consultations</i>	Mean	2.09	2.00	1.94	2.09	1.44	1.78	1.59	1.81	2.03	1.88	1.91	2.00	0.7773
	Standard Deviation	0.86	0.67	0.84	0.82	1.05	0.91	0.91	0.90	0.90	1.01	1.00	0.98	
	Standard Error	0.15	0.12	0.15	0.14	0.18	0.16	0.16	0.16	0.16	0.18	0.18	0.17	
<i>To establish relationship with citizens and new channels of communication to government</i>	Mean	1.75	2.06	2.09	2.09	1.59	1.38	1.59	1.88	2.13	1.78	1.81	1.81	0.8623
	Standard Deviation	0.88	0.80	0.89	0.73	1.13	0.91	0.91	0.98	0.87	0.97	1.03	0.97	
	Standard Error	0.16	0.14	0.16	0.13	0.20	0.16	0.16	0.17	0.15	0.17	0.18	0.17	

Smart City Governance Objectives	Descriptive statistics	<i>Lack of policies & guidelines</i>	<i>Inadequate organizational structure & processes</i>	<i>Lack of Technical capacities</i>	<i>Lack of Human capacities</i>	<i>Lack of Financial capacities</i>	<i>Low data availability, quality & relevance</i>	<i>Low data sharing, discoverability & interoperability</i>	<i>Security & privacy breaches</i>	<i>Lack of legitimacy & public trust</i>	<i>Negative Ethical impact / Unethical use</i>	<i>Socio-economic inequalities</i>	<i>Undermining institutional power and reputation</i>	Cronbach's Alpha
<i>To ensure privacy and security</i>	Mean	2.38	2.03	2.19	2.22	1.66	1.53	1.66	2.47	2.56	2.22	1.56	1.81	0.8904
	Standard Deviation	0.94	1.00	0.97	0.97	1.10	1.08	1.04	0.95	0.84	1.04	1.05	1.15	
	Standard Error	0.17	0.18	0.17	0.17	0.19	0.19	0.18	0.17	0.15	0.18	0.18	0.20	
<i>Provide e-democracy and advance democratic expression, and e-Voting</i>	Mean	2.19	2.00	2.00	1.94	1.44	1.56	1.63	2.31	2.31	1.91	1.81	1.84	0.8353
	Standard Deviation	0.90	0.80	0.92	0.88	1.01	1.08	1.01	0.90	0.93	1.12	1.06	1.11	
	Standard Error	0.16	0.14	0.16	0.16	0.18	0.19	0.18	0.16	0.16	0.20	0.19	0.20	
<i>To increase governance accountancy, transparency,</i>	Mean	2.06	2.28	1.72	1.88	1.38	2.06	2.19	2.03	2.41	1.88	1.63	1.75	0.9031
	Standard Deviation	0.95	0.77	1.05	0.91	1.04	1.01	0.97	1.00	0.98	1.10	1.04	1.14	

Smart City Governance Objectives	Descriptive statistics	<i>Lack of policies & guidelines</i>	<i>Inadequate organizational structure & processes</i>	<i>Lack of Technical capacities</i>	<i>Lack of Human capacities</i>	<i>Lack of Financial capacities</i>	<i>Low data availability, quality & relevance</i>	<i>Low data sharing, discoverability & interoperability</i>	<i>Security & privacy breaches</i>	<i>Lack of legitimacy & public trust</i>	<i>Negative Ethical impact / Unethical use</i>	<i>Socio-economic inequalities</i>	<i>Undermining institutional power and reputation</i>	Cronbach's Alpha
<i>effectiveness, and trust</i>	Standard Error	0.17	0.14	0.19	0.16	0.18	0.18	0.17	0.18	0.17	0.19	0.18	0.20	
<i>To establish and manage public-private collaboration</i>	Mean	1.94	2.13	1.56	2.09	1.41	1.47	1.66	1.63	1.97	1.41	1.53	1.78	0.9182
	Standard Deviation	0.91	0.91	1.05	0.73	0.91	0.98	1.00	1.01	1.00	1.07	1.08	0.91	
	Standard Error	0.16	0.16	0.18	0.13	0.16	0.17	0.18	0.18	0.18	0.19	0.19	0.16	
<i>To ensure social equality</i>	Mean	1.84	1.50	1.50	1.44	1.31	1.31	1.50	1.41	1.75	1.94	2.13	2.03	0.8606
	Standard Deviation	1.08	1.05	1.05	0.98	1.03	1.00	1.14	0.98	0.98	1.11	1.01	0.97	
	Standard Error	0.19	0.19	0.19	0.17	0.18	0.18	0.20	0.17	0.17	0.20	0.18	0.17	
	Mean	1.78	2.03	2.19	1.97	1.84	2.16	2.47	2.03	1.69	1.22	1.25	1.19	

Smart City Governance Objectives	Descriptive statistics	<i>Lack of policies & guidelines</i>	<i>Inadequate organizational structure & processes</i>	<i>Lack of Technical capacities</i>	<i>Lack of Human capacities</i>	<i>Lack of Financial capacities</i>	<i>Low data availability, quality & relevance</i>	<i>Low data sharing, discoverability & interoperability</i>	<i>Security & privacy breaches</i>	<i>Lack of legitimacy & public trust</i>	<i>Negative Ethical impact / Unethical use</i>	<i>Socio-economic inequalities</i>	<i>Undermining institutional power and reputation</i>	Cronbach's Alpha
<i>To provide integration and storage of data</i>	Standard Deviation	0.94	1.03	0.82	0.97	1.02	0.92	0.62	1.00	1.18	0.97	1.05	1.00	0.8733
	Standard Error	0.17	0.18	0.15	0.17	0.18	0.16	0.11	0.18	0.21	0.17	0.19	0.18	
<i>To administer policies and procedures</i>	Mean	2.16	2.28	1.47	2.06	1.16	1.44	1.72	1.63	1.56	1.44	1.38	1.59	0.9015
	Standard Deviation	0.95	0.81	1.05	0.88	1.11	0.98	0.99	1.04	1.08	1.11	0.98	0.91	
	Standard Error	0.17	0.14	0.19	0.16	0.20	0.17	0.18	0.18	0.19	0.20	0.17	0.16	
<i>To build new style of leadership</i>	Mean	1.75	1.97	1.31	2.19	1.16	1.16	1.19	1.13	1.75	1.63	1.75	2.06	0.8550
	Standard Deviation	1.05	1.03	1.03	0.82	0.92	1.05	1.00	0.94	1.02	0.91	0.98	1.05	
	Standard Error	0.19	0.18	0.18	0.15	0.16	0.19	0.18	0.17	0.18	0.16	0.17	0.18	