

Appendix A. Response tables

The pairwise comparison (Best to others, i.e., o_{Bj} and Others to worst, i.e., o_{jW}) tables of health workers, Social workers, Academicians, and Common citizens.

DMs	Strategies	Comparison	ST1	ST2	ST3	ST4	ST5	ST6	ST7	ST8	ST9	ST10	
DM1	Best	ST1	o_{Bj}	1	3	2	4	7	7	5	8	5	9
	Worst	ST10	o_{jW}	9	7	5	4	3	4	5	3	5	1
DM2	Best	ST2	o_{Bj}	3	1	4	9	9	9	5	9	7	7
	Worst	ST8	o_{jW}	9	9	6	5	5	5	4	1	4	5
DM3	Best	ST2	o_{Bj}	3	1	5	7	5	8	4	7	5	8
	Worst	ST10	o_{jW}	7	9	7	4	5	5	3	3	3	1
DM4	Best	ST2	o_{Bj}	5	1	5	9	9	5	3	6	7	9
	Worst	ST10	o_{jW}	7	8	3	5	3	3	7	3	4	1
DM5	Best	ST7	o_{Bj}	3	3	3	5	7	2	1	8	7	1
	Worst	ST9	o_{jW}	8	7	4	1	2	6	9	4	1	5

Table A.9: Preference Comparisons by Health-workers

DMs	Strategies	Comparison	ST1	ST2	ST3	ST4	ST5	ST6	ST7	ST8	ST9	ST10	
DM6	Best	ST1	o_{Bj}	1	3	5	5	7	8	3	3	8	9
	Worst	ST10	o_{jW}	9	7	5	4	3	7	9	5	1	1
DM7	Best	ST6	o_{Bj}	3	2	3	6	6	1	2	5	9	7
	Worst	ST9	o_{jW}	8	8	7	5	2	9	7	5	1	3
DM8	Best	ST7	o_{Bj}	2	4	5	5	7	5	1	8	7	8
	Worst	ST8	o_{jW}	9	7	5	7	3	7	9	1	3	2
DM9	Best	ST7	o_{Bj}	3	3	5	4	8	5	1	7	9	9
	Worst	ST9	o_{jW}	7	5	5	5	1	5	8	3	1	1
DM10	Best	ST7	o_{Bj}	1	1	2	9	9	6	1	5	9	7
	Worst	ST9	o_{jW}	7	6	6	3	3	3	9	4	1	3

Table A.10: Preference Comparisons by Social Workers

DMs	Strategies	Comparison	ST1	ST2	ST3	ST4	ST5	ST6	ST7	ST8	ST9	ST10	
DM11	Best	ST1	o_{Bj}	1	4	5	5	7	8	3	3	9	7
	Worst	ST9	o_{jW}	9	7	5	6	3	7	7	5	1	3
DM12	Best	ST1	o_{Bj}	1	3	3	6	6	7	5	5	9	9
	Worst	ST10	o_{jW}	8	8	7	5	2	6	7	5	2	1
DM13	Best	ST1	o_{Bj}	1	3	5	5	7	7	3	8	7	8
	Worst	ST8	o_{jW}	9	7	5	7	3	7	6	1	4	4
DM14	Best	ST2	o_{Bj}	3	1	5	4	8	5	3	6	8	9
	Worst	ST10	o_{jW}	9	5	5	5	1	5	7	3	3	1
DM15	Best	ST1	o_{Bj}	1	5	2	9	9	8	1	3	5	8
	Worst	ST4	o_{jW}	8	6	6	1	3	3	5	4	3	3

Table A.11: Preference Comparisons by Academicians

DMs	Strategies	Comparison	ST1	ST2	ST3	ST4	ST5	ST6	ST7	ST8	ST9	ST10	
DM16	Best	ST1	o_{Bj}	1	3	5	4	5	5	3	5	5	9
	Worst	ST10	o_{jW}	9	7	7	3	3	5	8	7	3	1
DM17	Best	ST1	o_{Bj}	1	3	5	7	5	5	4	7	5	9
	Worst	ST10	o_{jW}	9	7	5	5	2	5	7	6	3	1
DM18	Best	ST1	o_{Bj}	1	4	4	7	9	9	5	7	9	7
	Worst	ST9	o_{jW}	9	8	7	5	2	3	5	3	1	3
DM19	Best	ST1	o_{Bj}	1	5	5	5	7	7	3	5	3	9
	Worst	ST10	o_{jW}	9	9	4	3	3	3	5	7	4	1
DM20	Best	ST1	o_{Bj}	1	2	3	5	9	5	3	4	3	9
	Worst	ST10	o_{jW}	9	7	5	4	3	5	5	3	3	1

Table A.12: Preference Comparisons by Common citizens

Appendix B. Mathematical formulation of models:

Model for Health workers:

$$\text{Min } \xi \tag{B.1}$$

subject to,

$$\xi \geq \xi_k \quad \forall k \in D_1 = \{1, 2, 3, 4, 5\} \tag{B.2}$$

$$W_B - W_j \times o_{Bj} \leq \xi_k, \quad W_B - W_j \times o_{Bj} \geq -\xi_k, \quad \forall j \in J, k \in D_1 \tag{B.3}$$

$$W_j - W_W \times o_{jW} \leq \xi_k, \quad W_j - W_W \times o_{jW} \geq -\xi_k, \quad \forall j \in J, k \in D_1 \tag{B.4}$$

$$\sum_j W_j = 1, \quad W_j \geq 0, \quad \forall j \in J \tag{B.5}$$

$$\xi_k \geq 0, \quad \forall k \in D_1. \tag{B.6}$$

$$\tag{B.7}$$

Model for Social workers:

$$\text{Min } \xi \tag{B.8}$$

subject to,

$$\xi \geq \xi_k \quad \forall k \in D_2 = \{6, 7, 8, 9, 10\} \tag{B.9}$$

$$W_B - W_j \times o_{Bj} \leq \xi_k, \quad W_B - W_j \times o_{Bj} \geq -\xi_k, \quad \forall j \in J, k \in D_2 \tag{B.10}$$

$$W_j - W_W \times o_{jW} \leq \xi_k, \quad W_j - W_W \times o_{jW} \geq -\xi_k, \quad \forall j \in J, k \in D_2 \tag{B.11}$$

$$\sum_j W_j = 1, \quad W_j \geq 0, \quad \forall j \in J \tag{B.12}$$

$$\xi_k \geq 0, \quad \forall k \in D_2. \tag{B.13}$$

$$\tag{B.14}$$

Model for Academicians:

$$\text{Min } \xi \tag{B.15}$$

subject to,

$$\xi \geq \xi_k \quad \forall k \in D_3 = \{11, 12, 13, 14, 15\} \tag{B.16}$$

$$W_B - W_j \times o_{Bj} \leq \xi_k, \quad W_B - W_j \times o_{Bj} \geq -\xi_k, \quad \forall j \in J, k \in D_3 \tag{B.17}$$

$$W_j - W_W \times o_{jW} \leq \xi_k, \quad W_j - W_W \times o_{jW} \geq -\xi_k, \quad \forall j \in J, k \in D_3 \tag{B.18}$$

$$\sum_j W_j = 1, \quad W_j \geq 0, \quad \forall j \in J \tag{B.19}$$

$$\xi_k \geq 0, \quad \forall k \in D_3. \tag{B.20}$$

$$\tag{B.21}$$

Model for Common citizens (Others):

$$\text{Min } \xi \tag{B.22}$$

subject to,

$$\xi \geq \xi_k \quad \forall k \in D_4 = \{16, 17, 18, 19, 20\} \tag{B.23}$$

$$W_B - W_j \times o_{Bj} \leq \xi_k, \quad W_B - W_j \times o_{Bj} \geq -\xi_k, \quad \forall j \in J, k \in D_4 \tag{B.24}$$

$$W_j - W_W \times o_{jW} \leq \xi_k, \quad W_j - W_W \times o_{jW} \geq -\xi_k, \quad \forall j \in J, k \in D_4 \tag{B.25}$$

$$\sum_j W_j = 1, \quad W_j \geq 0, \quad \forall j \in J \tag{B.26}$$

$$\xi_k \geq 0, \quad \forall k \in D_4. \tag{B.27}$$

$$\tag{B.28}$$

Appendix B.

Section 1	
Name (Optional)	<input type="text"/>
Gender	<input type="text"/>
Education	<input type="text"/>
Email Address	<input type="text"/>
Current City	<input type="text"/>
Country	<input type="text"/>
Profession	<input type="text"/>
Experience	<input type="text"/>

Section 2	
Q 1.	On a scale of 1 to 5 (where 1 being the least and 5 being the highest), how dangerous do you think is the Novel Corona Virus Epidemic (COVID-19) for mankind?
Less Impact --- <input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 --- High Impact	
Q 2.	As an expert, please select the most challenging area for authorities to control outbreak of COVID-19.
<input type="radio"/> Practicing Social Distancing <input type="radio"/> Availability of Man Power, ventilators and protective equipment in hospitals <input type="radio"/> Controlling Prices and ensuring delivery/availability of foods and medicines <input type="radio"/> Financial support to daily wagers or unemployed <input type="radio"/> Timely providing right information to public for awareness and precautions <input type="radio"/> Precisely measure the overall impact of COVID-19 <input type="radio"/> Complete lockdown for a suitable time period <input type="radio"/> Digital Surveillance of Infected/Doubtful People and their movement in community <input type="radio"/> Ensuring smooth functioning of economic growth engine <input type="radio"/> Support to Banks, Startups and MSMEs	
Q 3.	Reasons for selecting the most challenging area in Q2. (you can select multiple options)
<input type="checkbox"/> Survival of humanity is top-most priority <input type="checkbox"/> Feeding the poor and needy is very important <input type="checkbox"/> Readiness of hospitals and health centers very important <input type="checkbox"/> Checking against hoarding is important <input type="checkbox"/> Providing right information is very important to control panicking and fake news <input type="checkbox"/> Measuring the impact is very important to decide further steps <input type="checkbox"/> Complete lockdown is the only option to control community spread <input type="checkbox"/> In a large country, digital surveillance is the only option <input type="checkbox"/> Businesses and other economic activities must go on for the country to run <input type="checkbox"/> Any other please specify <input type="text"/>	
<p>This section consists of identified challenges and strategies that could directly impact to tackle the Covid-19 outbreak.</p> <p>Please follow the given Likert scale to rate the identified challenges and strategies based on your understanding and experience.</p> <p>Note: The goal of this survey is to get the response whether you consider given factors as challenging to</p>	

	tackle the Covid-19 or you disagree with them. Moreover, you can opt the intermediate category if you have doubt between the relationships of their importance.									
	EI = Equally Important, IEM = Intermediate, MI = Moderately Important, IMI = Intermediate, I = Important, IVI = Intermediate, VI = Very Important, IVE = Intermediate, EI = Extremely Important									
Q 4.	Please rate importance of the most challenging area selected in Q2 in comparison with other challenging areas. (Keep equal important while comparing most challenging area).	EI	IEM	MI	IMI	IM	IVI	VI	IVE	EI
1	Practicing Social Distancing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2	Availability of Man Power, ventilators and protective equipment in hospitals	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3	Controlling Prices and ensuring delivery/availability of foods and medicines	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4	Financial support to daily wagers or unemployed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5	Timely providing right information to public for awareness and precautions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6	Precisely measure the overall impact of COVID-19	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7	Complete lockdown for a suitable time period	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8	Digital Surveillance of Infected/Doubtful People and their movement in community	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9	Ensuring smooth functioning of economic growth engine	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10	Support to Banks, Startups and MSMEs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Section 3

Q 5. As an expert, please select the least challenging area for authorities to control outbreak of COVID-19. (Please select the option which is different from the most challenging area chosen in Q2).

- Financial support to daily wagers or unemployed
- Timely providing right information to public for awareness and precautions
- Precisely measure the overall impact of COVID-19
- Complete lockdown for a suitable time period
- Digital Surveillance of Infected/Doubtful People and their movement in community
- Practicing Social Distancing
- Support to Banks, Startups and MSMEs
- Ensuring smooth functioning of economic growth engine
- Availability of Man Power, ventilators and protective equipment in hospitals
- Controlling Prices and ensuring delivery/availability of foods and medicines

Q 6. Reasons for selecting the least challenging area in Q5. (you can select multiple options)

- Feeding the poor and needy is very important
- Checking against hoarding is important
- Providing right information is very important to check and panicking and fake news
- Measuring the impact is very important to decide further steps
- In a large country, digital surveillance is the only option
- Businesses and other economic activities must go on for the country to run
- Survival of humanity is top-most priority
- Readiness of hospitals and health centers very important
- Complete lockdown is the only option to control community spread
- Any other please specify

