

SUPPLEMENTARY MATERIAL

Table S1: Aggregated decision matrix using FFGDWA operator ($a=1$ and $b=1$)

Criteria	A1	A2	A3	A4
C1	<0.8344,0.4660>	<0.6868,0.6535>	<0.7913,0.5134>	<0.6967,0.6383>
C2	<0.5921,0.7411>	<0.7524,0.5770>	<0.8052,0.4914>	<0.7433,0.5886>
C3	<0.6712,0.6659>	<0.6407,0.6812>	<0.6991,0.6431>	<0.5139,0.7816>
C4	<0.7495,0.5768>	<0.7064,0.6215>	<0.7112,0.6234>	<0.7060,0.6273>
C5	<0.7770,0.5307>	<0.7002,0.6278>	<0.7991,0.4865>	<0.6811,0.6644>
C6	<0.6378,0.6924>	<0.6323,0.6939>	<0.7754,0.5507>	<0.8437,0.4373>
C7	<0.5192,0.7879>	<0.8600,0.4071>	<0.6244,0.6999>	<0.8463,0.4311>

Table S2: Modified assessment outcomes

Criteria	Expert 1				Expert 2			
	A1	A2	A3	A4	A1	A2	A3	A4
C1	AI	I	SU	I	I	F	VVI	F
C2	SU	I	I	I	U	SI	VVI	SI
C3	F	F	I	SU	SU	U	SI	F
C4	F	I	I	F	I	F	SI	SI
C5	I	I	AI	VU	VI	F	VI	U
C6	I	F	SI	I	F	F	I	SI
C7	VU	AI	F	I	VVU	SI	F	AI

Criteria	Expert 3				Expert 4			
	A1	A2	A3	A4	A1	A2	A3	A4
C1	I	VU	I	U	AI	SI	SI	SI
C2	F	U	U	I	I	SI	I	F
C3	I	SI	F	F	SI	F	VI	VU
C4	VI	F	U	U	I	VVI	F	I
C5	SI	SI	SI	U	VVI	SU	VI	SI
C6	F	U	SI	AI	U	I	I	SI
C7	U	SI	I	SI	SU	I	U	AI

Table S3: Modified aggregated decision matrix FFGDWA operator ($a=1$ and $b=1$)

Criteria	A1	A2	A3	A4
C1	<0.8933, 0.3464>	<0.6868, 0.6535>	<0.7913, 0.5134>	<0.6967, 0.6383>
C2	<0.5921, 0.7411>	<0.7524, 0.5770>	<0.7935, 0.5162>	<0.7433, 0.5886>
C3	<0.6712, 0.6659>	<0.6407, 0.6812>	<0.7763, 0.5337>	<0.5139, 0.7816>
C4	<0.7495, 0.5768>	<0.7574, 0.5526>	<0.7112, 0.6234>	<0.7060, 0.6273>
C5	<0.8359, 0.4368>	<0.6811, 0.6564>	<0.8840, 0.3469>	<0.5969, 0.7412>
C6	<0.6378, 0.6924>	<0.6323, 0.6939>	<0.7754, 0.5507>	<0.8437, 0.4373>
C7	<0.3694, 0.8818>	<0.8600, 0.4071>	<0.6244, 0.6999>	<0.9020, 0.3232>

Table S4: SRCC values corresponding to weight variations of C1

Alternative	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	Original
A1	4	4	4	4	3	3	3	3	2	2	3
A2	3	3	3	3	4	4	4	4	4	4	4
A3	2	2	2	2	2	2	1	1	1	1	2
A4	1	1	1	1	1	1	2	2	3	3	1
SRCC Value	0.8	0.8	0.8	0.8	1	1	0.8	0.8	0.4	0.4	

Table S5: SRCC values corresponding to weight variations of C2

Alternative	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	Original
A1	3	3	3	3	3	3	3	3	3	4	3
A2	4	4	4	4	4	4	4	4	4	3	4
A3	2	2	2	2	2	2	2	2	2	2	2
A4	1	1	1	1	1	1	1	1	1	1	1
SRCC Value	1	1	1	1	1	1	1	1	1	0.8	

Table S6: SRCC values corresponding to weight variations of C3

Alternative	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	Original
A1	3	3	3	3	3	3	3	3	3	3	3
A2	4	4	4	4	4	4	4	4	4	4	4
A3	1	1	1	1	2	2	2	2	2	2	2
A4	2	2	2	2	1	1	1	1	1	1	1
SRCC Value	0.8	0.8	0.8	0.8	1	1	1	1	1	1	

Table S7: SRCC values corresponding to weight variations of C4

Alternative	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	Original
A1	3	3	3	3	3	3	3	3	3	3	3
A2	4	4	4	4	4	4	4	4	4	4	4
A3	2	2	2	2	2	2	2	2	2	2	2
A4	1	1	1	1	1	1	1	1	1	1	1
SRCC Value	1	1	1	1	1	1	1	1	1	1	

Table S8: SRCC values corresponding to weight variations of C5

Alternative	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	Original
A1	3	3	3	3	3	3	3	3	3	3	3
A2	4	4	4	4	4	4	4	4	4	4	4
A3	2	2	2	2	2	2	1	1	1	1	2
A4	1	1	1	1	1	1	2	2	2	2	1
SRCC Value	1	1	1	1	1	1	0.8	0.8	0.8	0.8	

Table S9: SRCC values corresponding to weight variations of C6

Alternative	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	Original
A1	3	3	3	3	3	3	3	3	3	3	3
A2	4	4	4	4	4	4	4	4	4	4	4
A3	1	2	2	2	2	2	2	2	2	2	2
A4	2	1	1	1	1	1	1	1	1	1	1
SRCC Value	0.8	1	1	1	1	1	1	1	1	1	

Table S10: SRCC values corresponding to weight variations of C7

Alternative	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	Original
A1	2	3	3	3	3	3	4	4	4	4	3
A2	4	4	4	4	4	4	3	3	3	3	4
A3	1	1	1	1	2	2	2	2	2	2	2
A4	3	2	2	2	1	1	1	1	1	1	1
SRCC Value	0.4	0.8	0.8	0.8	1	1	0.8	0.8	0.8	0.8	

Table S11: Results by FF-TOPSIS method (Senapati and Yager, 2020)

Alternative	Weighted distance from IDS	Weighted distance from AIDS	Relative closeness coefficient
A1	0.108174	0.099790	0.4798422
A2	0.122813	0.087412	0.4158011
A3	0.100639	0.113770	0.5306200
A4	0.098139	0.109507	0.5273733

Table S12: Results by FF-MARCOS method (Sari and Sargin, 2021)

Alternative	UDw.r.tAIDS	UDw.r.t IDS	Utility value w.r.tAIDS	Utility value w.r.tIDS	Final utility value
A1	1.238872	0.346384	0.218503	0.781496	0.326441
A2	1.390574	0.388799	0.218503	0.781496	0.366414
A3	1.809158	0.505834	0.218503	0.781496	0.476710
A4	5.408044	1.512070	0.218503	0.781496	1.425012

Table S13: Results by FF-COPRAS method (Saraji et al., 2021)

Alternative	Scores in relation to benefit criteria	Scores in relation to cost criteria	UD
A ₁	0.643497	0.919973	1.547935
A ₂	0.559264	0.911756	1.471852
A ₃	0.626827	0.951236	1.501540
A ₄	0.601589	0.867698	1.560514