Supplementary Materials

Beyond Universal AI Models: A Comparative Analysis of Vision-Driven (GCC) vs. Regulation-Driven (EU) Adoption Frameworks

Appendix A: Detailed Survey Demographics

Table A1. Respondent Distribution by Country

Country	Count (n)	Percent (%)
Saudi Arabia	34	16.7%
UAE	35	17.2%
Qatar	33	16.3%
Bahrain	34	16.7%
Kuwait	35	17.2%
Oman	32	15.8%
Total	203	100.0%

Appendix B: Item-Level Descriptive Statistics

Table B1. Descriptive Statistics for All Survey Items

Constructs	Item	Mean	Std. Dev.	Min	Max
Technical Infrastructure (TI)	Q2	3.56	1.005	1	5
	Q3	3.61	1.035	2	5
	Q4	3.58	1.008	1	5
Organizational Readiness (OR)	Q5	3.46	1.035	2	5
	Q6	3.39	.908	2	5
	Q7	3.50	1.045	1	5
Governance Environment (GE)	Q8	3.25	1.049	2	5
	Q9	3.18	1.058	1	5
AI Outcomes (AIO)	Q10	3.66	.889	2	5
	Q11	3.68	.891	2	5
	Q12	3.65	.886	2	5

Appendix C: Clustering Diagnostics

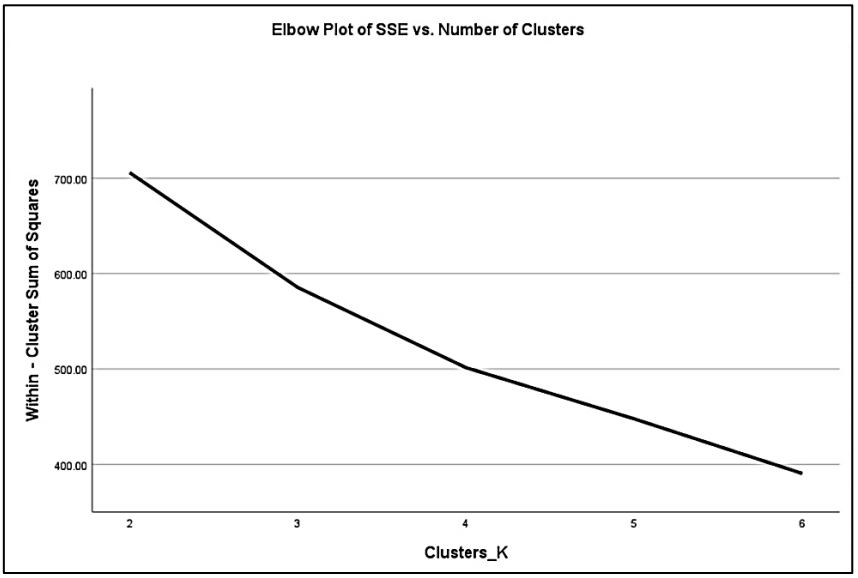

Figure C1. Elbow Plot for K-Means Clustering *(This figure illustrates the within-group sum of squares for k=2 to k=6. The "elbow" at k=2 indicates the optimal number of clusters)*

Table C2. Detailed Cluster Centers (Likert Scale 1-5)

	Cluster 1	**Cluster 2**
(TI) (Q2)	5	3
(TI) (Q3)	5	3
(TI) (Q4)	5	3
(OR) (Q5)	5	3
(OR) (Q6)	4	3
(OR) (Q7)	5	3
(GE) (Q8)	4	3
(GE) (Q9)	4	3
(AIO) (Q10)	5	3
(AIO) (Q11)	5	3
(AIO) (12)	5	3

Appendix D: Principal Component Analysis (PCA) Details

Table D1. KMO and Bartlett's Test

Measure	**Value**
Kaiser–Meyer–Olkin (KMO)	0.937
Bartlett's Test of Sphericity	$p < .001$

Table D2. Total Variance Explained (Initial Eigenvalues)

Component	**Total**	**% of Variance**	**Cumulative %**
1	8.495	77.231	77.231
2	.880	8.003	85.234
3	.476	4.326	89.560
4	.223	2.027	91.587
5	.209	1.901	93.489
6	.183	1.659	95.148
7	.153	1.390	96.537
8	.132	1.203	97.740
9	.117	1.064	98.804
10	.082	.741	99.545
11	.050	.455	100.000

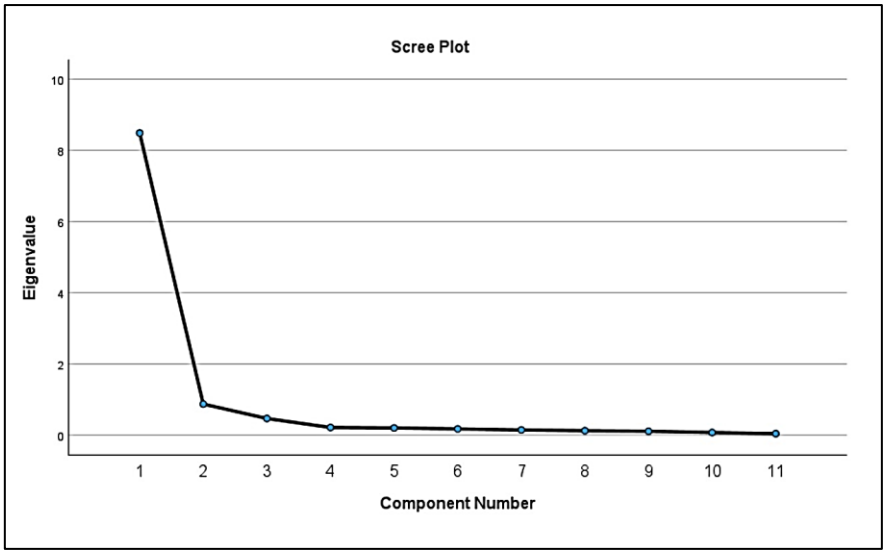

Figure D1. Scree Plot *(Visual confirmation of the single-factor solution extracted in Table D2)*

Table D3. Component Matrix (Extraction Method: PCA)

Item	Component 1 Loading
Q2 (TI)	0.875
Q3 (TI)	0.903
Q4 (TI)	0.888
Q5 (OR)	0.892
Q6 (OR)	0.871
Q7 (OR)	0.937
Q8 (GE)	0.874
Q9 (GE)	0.865
Q10 (AIO)	0.874
Q11 (AIO)	0.852
Q12 (AIO)	0.811

Appendix E: Extended Structural Model Diagnostics

Table E1. Coefficient of Determination (R^2) and Effect Sizes (f^2)

Predictor Path	Effect Size (f^2)	Interpretation
TI → AIO	0.414	Large Effect
GE → AIO	0.029	Small/Moderate Effect
OR → AIO	0.000	Negligible Effect