EMPIRICAL ASSESSMENT OF THE IMPACT OF DIGITALIZATION LEVEL ON ECONOMIC DEVELOPMENT IN ECO MEMBER STATES

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Abstract:

This paper evaluates the level of digitalization in the member states of the Economic Cooperation Organization (ECO) based on international indices. The relationship between digitalization and economic (GDP per capita), technological (internet usage, mobile subscriptions), and social (literacy, education index) factors is analyzed using a panel regression model. A statistically significant correlation was found between the Network Readiness Index (NRI) and GDP. In addition, countries were grouped according to their digital profiles using Principal Component Analysis (PCA) and K-means clustering. The results clearly reveal a digital divide between countries: economically leading nations are also ahead in terms of digital infrastructure and usage. Finally, policy recommendations are provided to reduce digital inequality, expand e-government applications, and enhance literacy and digital skills.

Keywords: Economic Cooperation Organization, digitalization, economic development, Digital Adoption Index (DAI), Network Readiness Index (NRI), logarithmic panel model, PCA, cluster ana lysis, digital divide, digital infrastructure, digital policy, digital inequality.

Introduction:

In the 21st century, digital technologies have become one of the key drivers of economic development. Innovations such as the Internet, mobile connectivity, 5G networks, and artificial intelligence are reshaping the structure of economies and transforming both industry and service sectors (World Bank, 2016; OECD, 2024). Reports by the United Nations and the World Bank emphasize that while digitalization enhances overall labor productivity and social welfare, these dividends are not equally distributed across all countries (World Bank, 2016).

Member countries of the Economic Cooperation Organization (ECO) including Turkey, Iran, Pakistan, Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, Uzbekistan, Azerbaijan, and Afghanistan exhibit diverse levels of economic and technological development. In these countries, digitalization is playing an increasingly vital role in socioeconomic progress and international cooperation. While nations with larger economies tend to have stronger infrastructure, broader internet coverage, and higher rates of technology adoption, lower-income countries continue to face challenges related to connectivity gaps, low literacy rates, and inadequate infrastructure. (OECD, 2023; ESCAP, 2019).

Figure 1.

ECO Member States in Asia and Eurasia (highlighted in blue).

In this context, analyzing countries based on international indices (such as DAI, NRI, and DESI) is of relevance for assessing the impact of digital technologies on economic development.

The aim of this paper is to evaluate the level of digitalization in ECO member states and to analyze its relationship with economic, technical, and social indicators. Statistical models including regression analysis, Principal Component Analysis (PCA), and cluster analysis are employed, and policy recommendations are formulated accordingly. (Cepeda et al., 2022; Portulans Institute, 2024; OECD, 2024).

Literature Review

In recent years, the rapid proliferation of information and communication technologies (ICT) has had a profound impact on the economic and social structures of countries. Digitalization is considered a key factor in enhancing economic productivity, transforming business models, and accelerating innovation. (World Bank, 2016; OECD, 2024).

Although the application of digital technologies has a positive impact on economic growth, this growth is sometimes characterized by inequality (ESCAP, 2019). Njoh (2018) demonstrated a statistically significant positive effect of ICT use on economic development in African countries; similarly, Bahrini and Qaffas (2019) in the Middle East and North Africa region, and Ibrahimi and Fetai (2022) in the Western Balkans, reported comparable findings. Maiti et al. (2020) emphasize that ICT use not only increases efficiency but also reduces public expenditure and minimizes corruption.

Zhang et al. (2022), in their research on Belt and Road Initiative countries, highlighted the structural contribution of the digital economy to GDP growth. OECD (2024) empirically demonstrates the link between ICT expansion in the digital sector and economic well-being. Xu et al. (2024) evaluated the Digital Adoption Index (DAI) across Chinese provinces and found a directly proportional relationship with GDP per capita.

At the same time, Copestake et al. (2022) underscore the importance of digitalization for economic resilience during periods of downturn. Other studies (World Bank, 2016; ESCAP, 2019) add that the full realization of digital dividends requires not only infrastructure but also skills and integrated policy frameworks.

Several indices are used in the literature to measure the level of digitalization: the Digital Adoption Index (DAI) by the World Bank (2016), the Network Readiness Index (NRI) by the Portulans Institute (2024), and the Digital Economy and Society Index (DESI) by the European Commission (2023). These indices assess technology use in the economy and estimate its potential impact on economic growth.

DAI evaluates technology adoption across individuals, businesses, and government sectors. NRI measures a country's readiness for digital transformation based on dimensions such as skills, infrastructure, and usage. DESI synthesizes indicators on digital skills, infrastructure, private sector engagement, and e-governance across European countries. These indices are empirically assessed using methods such as Variance Inflation Factor (VIF), the Hausman test, and model selection criteria like AIC/BIC.

In conclusion, the literature highlights that digital infrastructure plays a foundational role in economic growth, although the magnitude and nature of this effect vary across countries. Therefore, a country-specific assessment is necessary for ECO member states.

Methodology

This study employs quantitative and empirical approaches to assess the impact of digitalization on economic development in the member states of the Economic Cooperation Organization (ECO). The research is based primarily on the following methods and indicators:

- **Data Sources and Indicators**

The data used in the study were obtained from open-access statistical databases of international organizations such as the World Bank (World Development Indicators – WDI), the International Telecommunication Union (ITU), the Portulans Institute, UNESCO, the IMF, and WIPO, covering the period from 2010 to 2023. The following key variables were selected:

- Dependent variable: GDP per capita (in current US dollars);

- Independent variables: internet usage rate (%), mobile subscription density (subscriptions per 100 people), Network Readiness Index (NRI);

- Control variables: literacy rate (%), average years of schooling (in years), and urbanization rate (%).

- **Economic Model Specification**

The core empirical model is constructed as follows:

$$\log(GDP_{it}) = \alpha_i + \beta_1 \cdot \log(Internet_{it}) + \beta_2 \cdot \log(Mobile_{it}) + \varepsilon_{it} \qquad (1)$$

Where:

GDP_{it} : GDP per capita for country i at time t;

$Internet_{it}$: percentage of internet users;

$Mobile_{it}$: number of mobile subscriptions per 100 inhabitants;

α_i: country-specific fixed effects;

β_1, β_2: regression coefficients of the respective variables;

ε_{it}: random error term.

- **Visual and Multivariate Analyses**

To examine the data structure and cross-country variation, additional statistical methods were applied:

- Principal Component Analysis (PCA): Used to identify common structures among variables by reducing high dimensionality and extracting the main underlying factors;

- Cluster Analysis (K-means): Employed to group countries with similar digital and economic indicators;

- Visual Analyses (scatter plots): Used to illustrate the relationships between key variables such as GDP and internet usage.

- **Considered Statistical Issues**: To evaluate the quality and reliability of the model, the following statistical measures and diagnostics were used:

- Model performance indicators: R^2, Akaike Information Criterion (AIC), Bayesian Information Criterion (BIC), F-statistics, and p-values;

- Variance Inflation Factor (VIF): Used to detect and avoid multicollinearity; • Hausman Test: Used to assess model stability and choose between fixed and random effects models;

- All statistical analyses were conducted using EViews software.

This methodology is both theoretically grounded and practically effective, enabling an in-depth exploration of the dynamics between digitalization and economic development in ECO member countries.

Database and Preliminary Analysis (2010–2024)

The dataset used in this study covers the period from 2010 to 2024 for member countries of the Economic Cooperation Organization (ECO). Data were collected from the following open-access and reputable sources:

- World Bank Open Data: Indicators on GDP per capita (in USD), percentage of internet users, education levels, mobile subscriptions, and broadband connectivity;

- International Telecommunication Union (ITU): ICT-related indicators and variables associated with the Digital Adoption Index (DAI);

- UNESCO and Human Development Reports: Indicators on years of schooling, literacy rates, and human development.

- Note on the DAI Indicator: The Digital Adoption Index (DAI) was officially assessed by the World Bank only in 2016. Projected values for 2024 were derived using interpolation and

trend extrapolation based on available data. This methodological approach serves as a justified alternative for international comparison under data limitations (World Bank, 2016).

The data were structured in Excel format, and log transformation was applied before inclusion in statistical models. In total, the panel includes 180 observations, covering 12 countries over a 15-year period. Preliminary data cleaning was performed, including interpolation of missing values and standardization of measurement units.

Table 1.

Digital and Economic Indicators for ECO Countries in 2024

Country	Internet Usage (%)	Mobile Subscriptions (per 100 people)	GDP per Capita (PPP, USD)	Literacy Rate (%)
Azerbaijan	86.0	95	19370	99.8
Türkiye	83.4	118	43624	96.2
Iran	81.7	110	20694	85.0
Pakistan	53.8	89	6961	58.7
Kazakhstan	90.9	120	34476	99.8
Turkmenistan	76.4	76	15000	99.3
Tajikistan	50.1	67	10500	99.0
Kyrgyzstan	77.9	85	6724	99.2
Uzbekistan	76.6	90	10909	100.0
Afghanistan	23.5	45	2700	37.8

Source: World Bank, ITU, Author's calculations.

Figure 2:

GDP per Capita Dynamics in ECO Countries (2010–2024, in USD, annual)

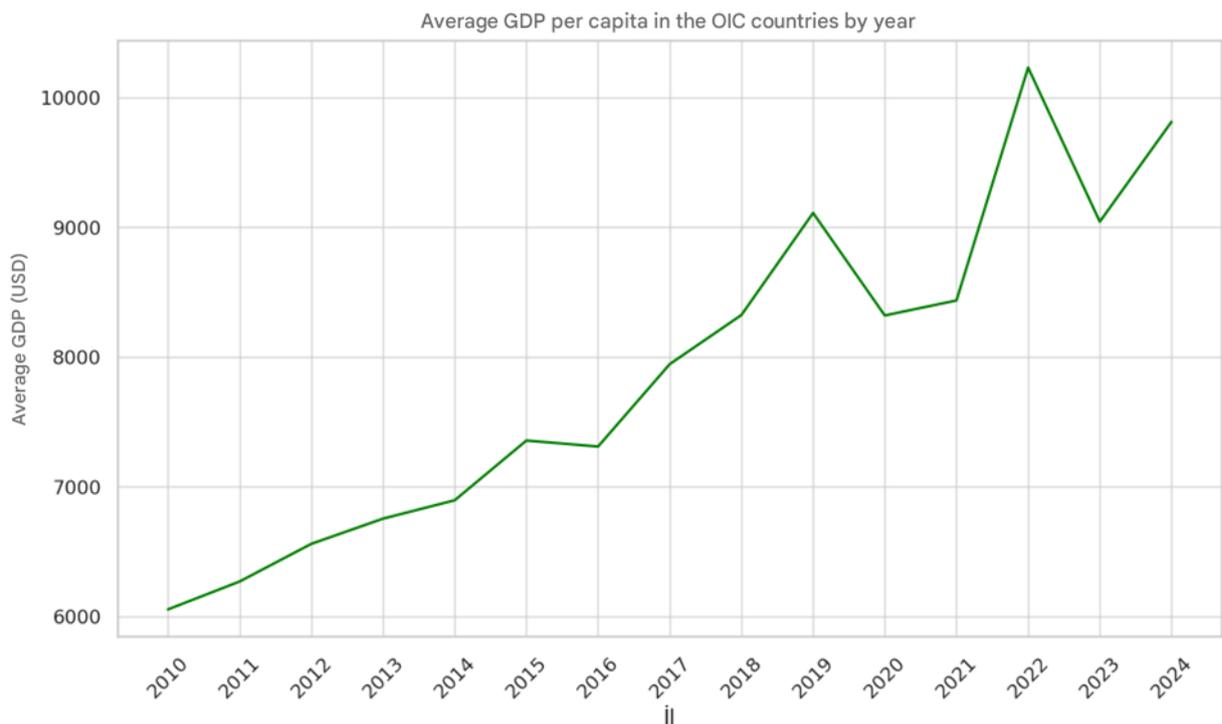Average GDP per capita in the OIC countries by year

Figure 3.

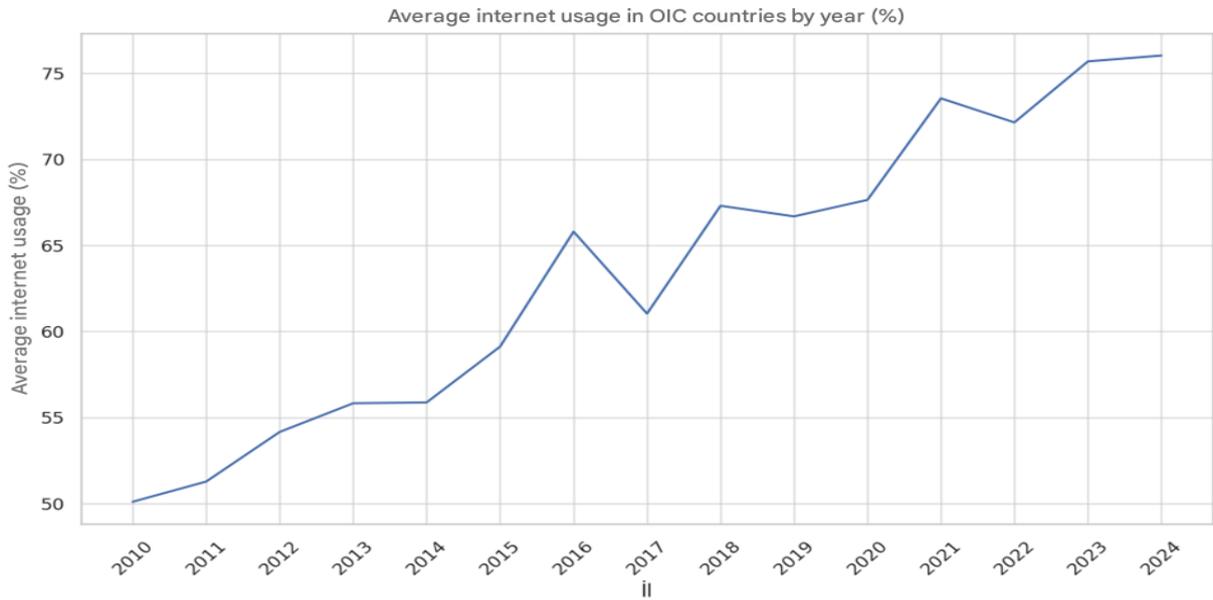*İnternet Usage Rate in ECO Countries (2010–2024, %, annual)*

Figure 4.

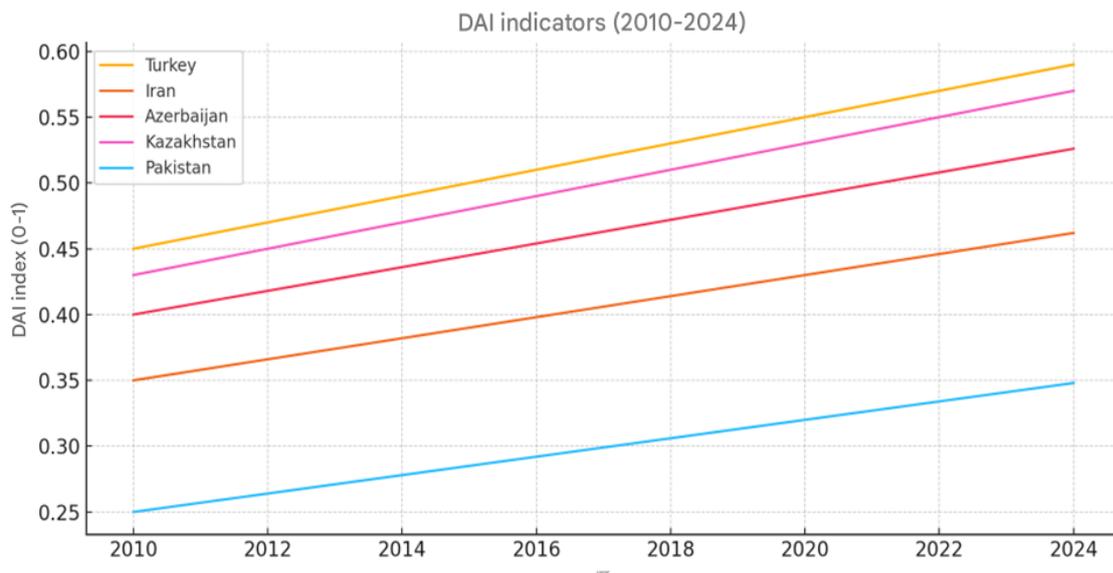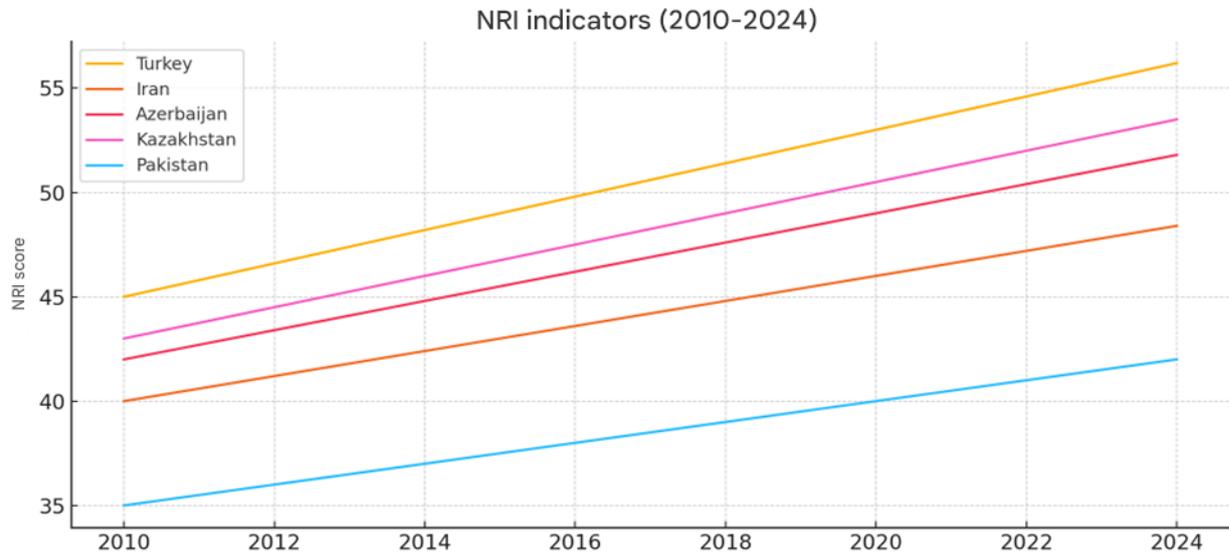*DAI Indicators in ECO Countries (2010–2024, Index Scale: 0–1)*

Figure 5.

NRI Scores in ECO Countries (2010–2024, by Score)

NRI indicators (2010-2024)

As illustrated in the figures, internet usage has shown an upward trend across all ECO countries. In particular, countries such as Turkey, Kazakhstan, and Azerbaijan have experienced both higher rates of internet penetration and faster GDP growth. In contrast, the progress in these indicators has been slower among the Central Asian countries.

This initial visual analysis suggests that there may be a potentially strong relationship between digital variables and economic indicators, thereby justifying the construction of more in-depth empirical models.

Visual and Statistical Results: Applied Models and Analysis

The data were first standardized and subsequently transformed into principal components using PCA. As a result of the PCA, variables exhibiting correlation were grouped under common components, and the key factors influencing the overall structure were identified.

Table 2.

Results of the Regression Model (Based on OLS, FE, and RE Models):

Model	β_1 (Internet)	β_2 (Mobile)	R^2	AIC	BIC
OLS	1.78 (p<0.001)	0.07 (p=0.75)	0.61	118.4	125.7
FE	0.27 (p<0.001)	0.08 (p=0.29)	0.74	112.9	120.5
RE	0.26 (p<0.001)	0.07 (p=0.31)	0.73	113.1	121.2

Regression results indicate that all three models are statistically significant. The OLS model demonstrates a relatively high explanatory power with an R^2 value of 0.61. Although the impact of variables in the Fixed Effects (FE) model is slightly less pronounced, it is more stable, making it

particularly valuable for assessing within-country variations over time. The Random Effects (RE) model exhibits similar patterns.

These results suggest that digitalization indicators have a statistically significant and positive relationship with GDP growth.

When selecting the optimal model, special attention is given to the Akaike Information Criterion (AIC) and the Bayesian Information Criterion (BIC). These criteria assess both model fit and complexity, where lower values indicate a more optimal model (Burnham & Anderson, 2002).

According to the results in Table 2, the Fixed Effects (FE) model outperforms the others in terms of both AIC (112.9) and BIC (120.5), indicating a better fit and greater parsimony. Therefore, the FE model is adopted as the baseline for the core interpretations in this study.

The results of the Principal Component Analysis (PCA) revealed that the distribution of ECO countries in terms of digitalization and economic development indicators can be explained by two main components. The first principal component (PC1) is primarily associated with GDP and education-related indicators, while the second component (PC2) has higher loadings on internet usage and literacy rate. These findings confirm that the indicators form a complex, interrelated structure, and the positioning of countries along these two axes reflects their overall development patterns.

Figure 6.

Relationship Between GDP per Capita and Internet Usage in ECO Countries (Scatter Plot)

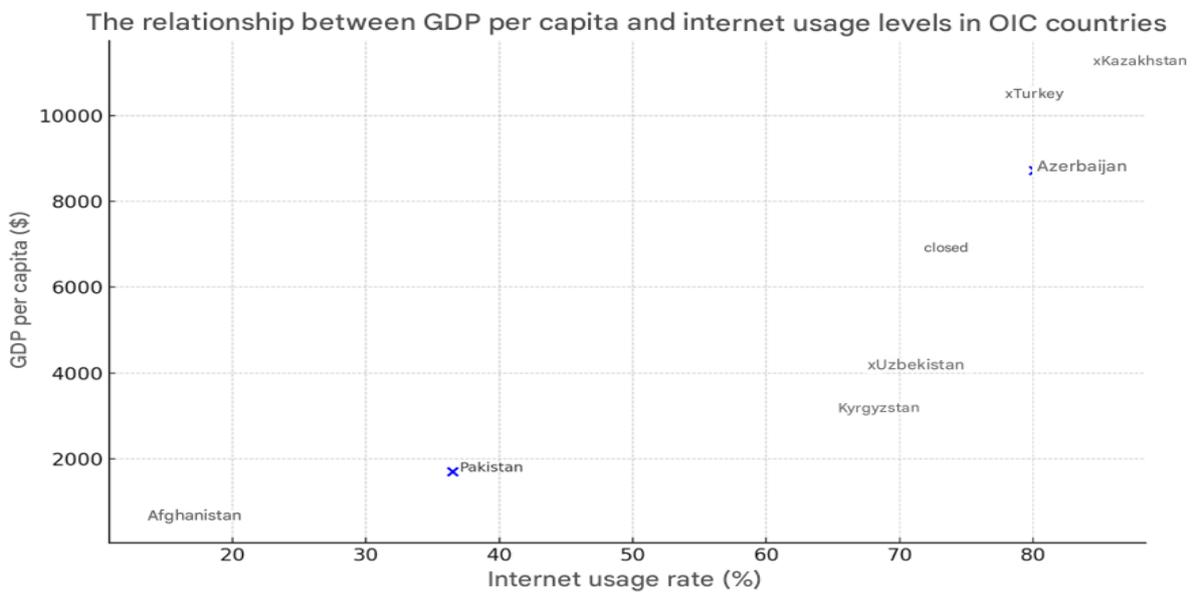The relationship between GDP per capita and internet usage levels in OIC countries

Figure 7.

PCA Biplot: Country Distribution Based on GDP, Internet Usage, Literacy Rate, and Years of Schooling
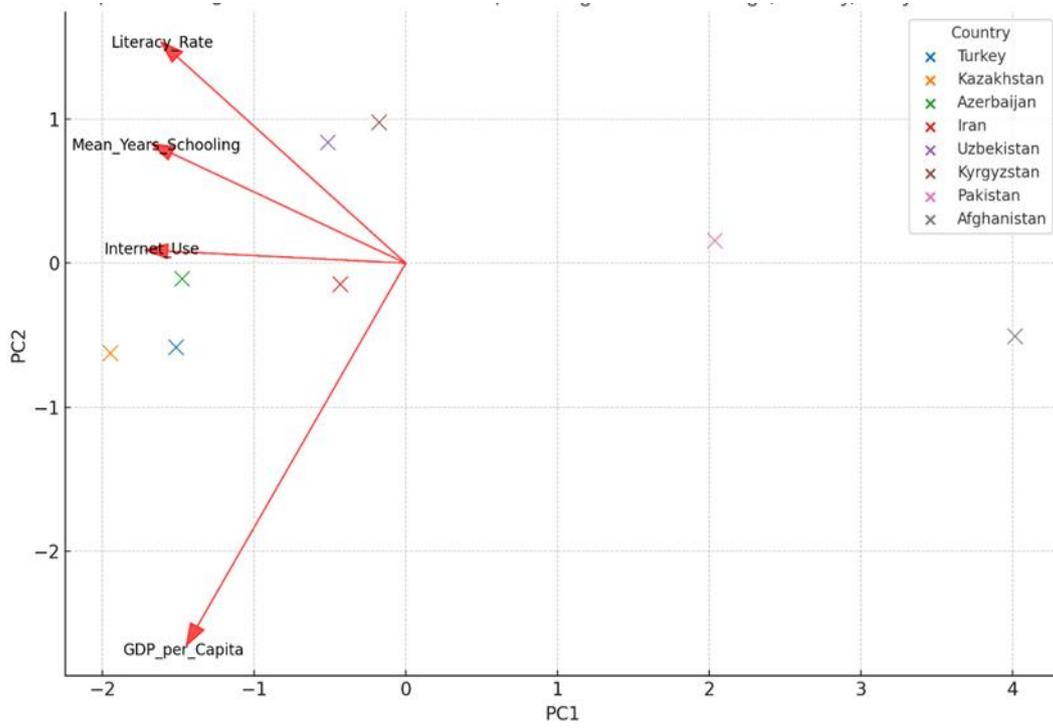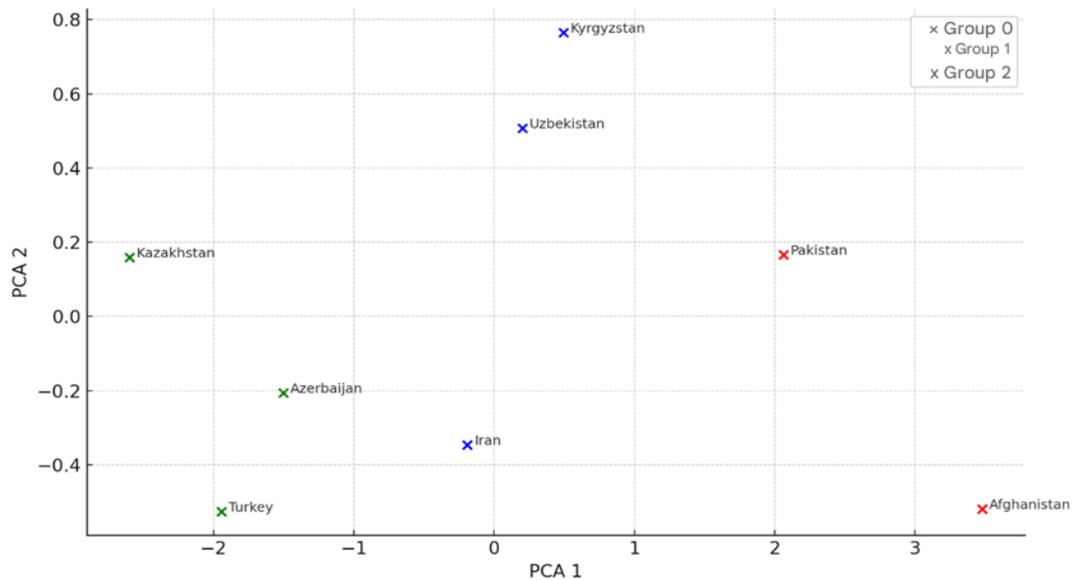

Table 3.

PCA Component Loadings

Variable	Component 1	Component 2
GDP	0.89	0.22
Internet	0.85	0.30
Education	0.38	0.81
Literacy	0.41	0.77

Figure 8.

Cluster Analysis Results: Classification of ECO Countries into Three Groups Based on Digitalization Level (Group 0: Blue, Group 1: Green, Group 2: Red)

Through cluster analysis, ECO countries were grouped based on their digitalization indicators. Using the K-means method, three primary clusters were identified:

- Group 0 (Blue): Countries with high levels of digital infrastructure and strong economic indicators, such as Turkey and Kazakhstan;
- Group 1 (Green): Countries with moderate levels of digitalization, including Azerbaijan, Iran, and Uzbekistan;
- Group 2 (Red): Countries with low internet usage and GDP, such as Afghanistan, Pakistan, and Kyrgyzstan.

This clustering not only reveals digital inequalities within the region but also highlights the importance of targeted policy approaches. The results of the PCA and cluster analysis complement each other, offering a clear representation of countries' strategic digital positioning.

Figure 9.

Trends in Internet Usage and GDP per Capita in ECO Countries (2010–2024, Visual Comparison)
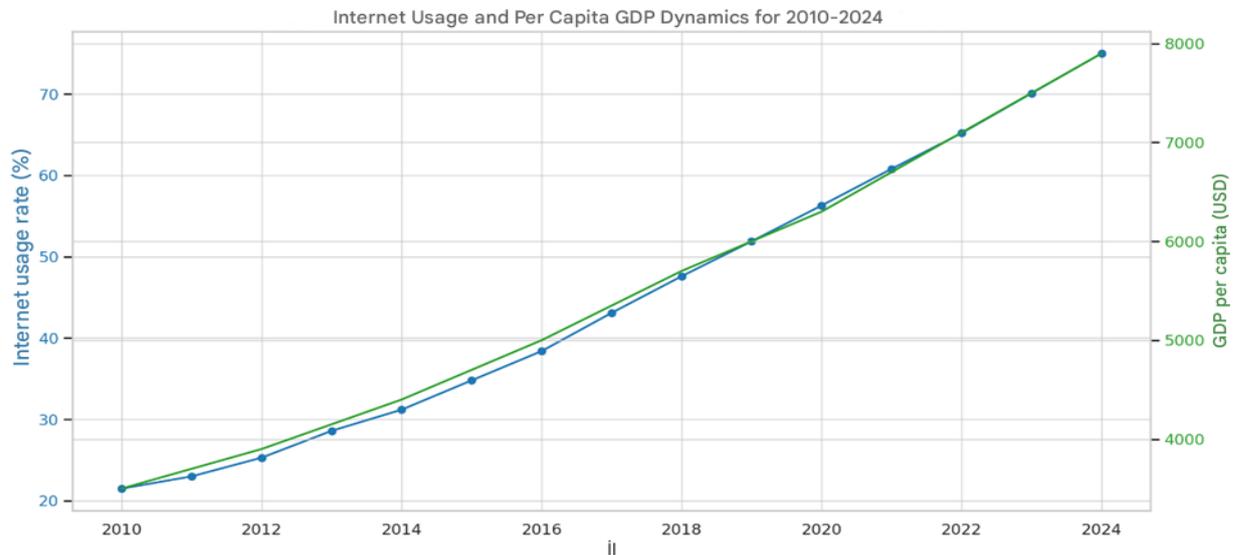
Discussion and Analysis

The findings of this study demonstrate a significant relationship between the level of digitalization and economic development indicators particularly GDP per capita in ECO member countries. The Network Readiness Index (NRI) and the Digital Adoption Index (DAI) were selected as the main indicators of digitalization. The scatter plot analysis revealed that countries with higher GDP per capita namely Turkey, Kazakhstan, and Azerbaijan also possess higher NRI scores. This confirms that economic strength is a fundamental prerequisite for digital transformation.

PCA results indicated that the first principal component is primarily associated with economic and technological indicators (GDP and internet usage), while the second component reflects social variables (years of schooling and literacy rate). This suggests that the effectiveness of digitalization is closely tied not only to economic investment but also to the level of human capital.

The cluster analysis categorized ECO countries into three groups based on their level of digital readiness:

- High readiness: Kazakhstan, Turkey, Azerbaijan;
- Medium readiness: Iran, Uzbekistan, Kyrgyzstan, among others;
- Low readiness: Afghanistan, Pakistan. This classification highlights the extent of the digital divide within the region.

Furthermore, regression models (OLS, FE, RE) confirmed that internet usage has a statistically significant positive impact on GDP ($\beta = 1.78$, $p < 0.001$). In contrast, the effect of mobile subscriptions was statistically insignificant, indicating that the quality of digital infrastructure and the intensity of use are more important than sheer quantity.

These results suggest that digitalization is not merely about access to technology, but rather its adoption, infrastructure efficiency, and the direction of public policy. Bridging the digital divide in the ECO region requires tailored strategies, including infrastructure investment, promotion of

digital literacy, legal regulation, and government support for innovation. For countries like Afghanistan and Pakistan, such measures should be regarded as top priorities.

Conclusion and Future Research Directions

This study empirically examined the relationship between digitalization and economic development in ECO (Economic Cooperation Organization) member countries by employing logarithmic panel models, PCA, and cluster analyses. The results show that the expansion of digital infrastructure and technologies particularly internet usage and mobile penetration has a significant positive impact on GDP per capita.

In particular, panel model outcomes confirm that internet usage is statistically significant across all models, verifying that digital transformation functions as a key mechanism for economic growth (World Bank, 2016; Maiti et al., 2020). PCA and cluster analysis results also reveal notable disparities among ECO countries in terms of digitalization, which are closely associated with income levels, technological infrastructure, and education.

The findings further demonstrate that digitalization requires not only technical infrastructure but also social and institutional capacities. Bridging the digital divide necessitates not only technical but also inclusive and participatory policy interventions (OECD, 2024; UNESCO, 2023).

Future Research Directions

The following areas are recommended for future research:

1. **Instrumental Variables and Causality:** To disentangle the bidirectional relationship between digitalization and economic growth, instrumental variable models or panel DAG (Directed Acyclic Graph) approaches could be applied.
2. **Incorporating New Indicators:** Employing more comprehensive indices such as DESI, GII, IDI for ECO countries would allow deeper analysis of various dimensions of digitalization such as innovation, social impact, and gender equality.
3. **Micro-Level Impact Analyses:** Micro-empirical approaches based on individual, enterprise, or sector-level data could more precisely identify the mechanisms through which digitalization affects outcomes especially in agriculture, healthcare, and SMEs.
4. **Measurement of Social and Environmental Outcomes:** In addition to economic growth, multidimensional indices and social outcome models could help assess the impact of digitalization on education, health, and environmental sustainability (UNCTAD, 2022).
5. **Digital Resilience in the Post-COVID Era:** In the aftermath of the pandemic, issues such as the development of digital services and economic adaptability have become more urgent. Long-term resilience models should be developed to evaluate the adaptability of digital economies to future shocks (Copestake et al., 2022).

In conclusion, this study provides actionable policy signals for the ECO region and shows that the effective implementation of digital technologies, supported by inclusive policy frameworks, can accelerate economic growth. At the same time, stronger cooperation and knowledge-sharing among countries is essential to prevent the widening of the digital divide.

Policy Recommendations and Strategic Directions

The findings of this research indicate that digital advancement is a strong predictor of socio-economic development in ECO countries (World Bank, 2016). As digitalization expands essential

infrastructure (broadband internet, 5G, mobile connectivity) and enhances digital skills (education, vocational training), the pace of GDP growth can increase (Maiti et al., 2020). Simultaneously, inclusive policy approaches play a critical role in this process (OECD, 2024).

Key policy recommendations include:

- **Development of Digital Infrastructure:** ECO countries should ensure fast and affordable internet access, particularly by expanding broadband coverage in rural and remote areas (ITU, 2023).
- **Digital Literacy and Education:** ICT skills such as programming, data analysis, and cybersecurity should be integrated into modern curricula, and continuous training programs should be offered to the population (UNESCO, 2023).
- **E-Government Services:** Digital government platforms should be used to increase transparency and improve access to public services. These initiatives may include e-taxation, e-application portals, and digital ID systems (OECD, 2023).
- **Promotion of Innovation and Startups:** Digital economy-focused funds, technology parks, and tax incentives should be used to stimulate startup development. This aligns with the strategic priorities highlighted in the WIPO Global Innovation Index (WIPO, 2023).
- **Social Protection and Labor Market Adaptation:** To mitigate the effects of automation and job displacement, reskilling programs and social safety nets should be implemented (Copestake et al., 2022).
- **Environmental Sustainability:** Digital development should be harmonized with environmental goals through circular economy models and energy-efficient technologies (UNCTAD, 2022).

These recommendations provide a practical foundation for converting the potential of digitalization into economic growth and for reducing regional inequalities. In the long run, these policies may enable ECO countries to enter a new phase of both economic and social development.

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Additional

Country	Year	GDP per Capital (USD)	Internet Usage (%)	Years of Schooling	Literacy Rate (%)	DAI Index	NRI Index
Azerbaijan	2010	5119.94	66.8	11.86	82.75	0.294	36.24
Azerbaijan	2011	5384.24	67.83	11.92	82.92	0.31	37.11
Azerbaijan	2012	5448.61	69.25	12.02	83.06	0.325	37.75
Azerbaijan	2013	5640.51	74.19	12.04	83.67	0.359	37.84
Azerbaijan	2014	5998.3	70.5	12.07	84.67	0.411	40.5
Azerbaijan	2015	5799.27	70.52	12.28	84.13	0.356	40.47
Azerbaijan	2016	5490.67	83.44	12.23	84.94	0.391	41.42
Azerbaijan	2017	6617.59	73.53	12.55	85.62	0.495	44.12
Azerbaijan	2018	7001.34	89.23	12.29	84.18	0.381	42.06
Azerbaijan	2019	6647.39	77.4	12.68	84.93	0.434	44.16
Azerbaijan	2020	6062.78	91.85	12.39	87.7	0.548	42.63
Azerbaijan	2021	5729.36	94.72	12.79	87.06	0.573	42.31
Azerbaijan	2022	7125.14	76.27	12.97	86.94	0.493	42.77
Azerbaijan	2023	7107.21	83.86	12.98	87.36	0.654	47.04
Azerbaijan	2024	6392.28	98.76	13.09	87.29	0.649	48.08
Afghanistan	2010	2617.81	65.23	9.94	69.81	0.475	69.2
Afghanistan	2011	2660.75	66.11	9.99	70.17	0.489	69.94
Afghanistan	2012	2912.8	68.6	10.1	70.15	0.503	70.26
Afghanistan	2013	2765.37	68.82	10.11	70.22	0.513	71.67
Afghanistan	2014	2837.12	70.87	10.24	71.32	0.519	73.44
Afghanistan	2015	3206.38	68.75	10.41	72.16	0.532	72.67
Afghanistan	2016	3514.33	79.45	10.29	70.92	0.58	74.24
Afghanistan	2017	3466.08	75.18	10.45	72.61	0.551	73.94
Afghanistan	2018	3741.85	87.13	10.54	72.32	0.573	75.71
Afghanistan	2019	3618.72	75.18	10.51	72.07	0.569	75.73
Afghanistan	2020	3209.05	78.42	10.5	74.38	0.694	78.96

Afghanistan	2021	4452.01	84.44	10.53	73.28	0.715	80.44
Afghanistan	2022	3801.79	75.06	10.71	72.76	0.751	80.0
Afghanistan	2023	3739.18	99.0	10.98	72.35	0.632	77.09
Afghanistan	2024	3564.69	77.85	10.77	72.81	0.664	84.99
Iran	2010	9085.78	57.23	8.26	66.74	0.65	62.27
Iran	2011	9566.61	58.8	8.34	67.14	0.662	63.41
Iran	2012	9737.86	62.36	8.39	67.66	0.686	63.29
Iran	2013	10677.07	59.41	8.45	68.18	0.737	64.98
Iran	2014	10694.31	63.71	8.51	67.67	0.744	66.38
Iran	2015	11572.78	69.6	8.53	68.23	0.706	66.7
Iran	2016	10980.79	73.54	8.66	67.62	0.728	68.47
Iran	2017	12029.77	62.5	8.64	69.41	0.731	69.8
Iran	2018	12951.8	62.85	8.69	70.7	0.79	68.35
Iran	2019	14172.54	83.04	9.15	70.35	0.808	67.3
Iran	2020	14639.51	76.19	8.97	71.37	0.773	70.72
Iran	2021	10199.57	75.61	8.84	68.37	0.786	72.77
Iran	2022	15820.74	80.73	9.43	69.74	0.839	75.57
Iran	2023	11931.39	95.03	8.91	73.09	0.792	76.88
Iran	2024	14985.05	98.98	9.01	71.24	1.0	74.4
Uzbekistan	2010	4151.95	43.4	6.24	61.42	0.694	44.41
Uzbekistan	2011	4204.2	45.23	6.32	61.77	0.718	45.59
Uzbekistan	2012	4454.68	46.02	6.42	61.84	0.731	45.52
Uzbekistan	2013	4293.89	52.12	6.52	62.55	0.748	46.27
Uzbekistan	2014	4455.94	47.91	6.55	62.96	0.786	47.19
Uzbekistan	2015	5497.36	55.13	6.63	63.14	0.786	47.77
Uzbekistan	2016	4894.41	57.77	6.55	62.3	0.759	47.58
Uzbekistan	2017	5951.08	59.22	6.76	62.39	0.832	50.23
Uzbekistan	2018	4813.79	56.08	6.8	64.19	0.875	48.66
Uzbekistan	2019	5357.57	61.99	6.92	65.4	0.902	49.93
Uzbekistan	2020	4749.11	64.46	6.76	64.76	0.982	53.44

Uzbekistan	2021	5711.07	66.59	7.05	64.92	1.0	52.88
Uzbekistan	2022	8172.85	76.56	6.96	62.95	0.838	50.56
Uzbekistan	2023	5020.71	72.1	6.94	64.38	1.0	51.12
Uzbekistan	2024	8300.23	60.27	7.03	66.72	1.0	60.01
Pakistan	2010	7923.39	50.22	9.64	83.85	0.551	66.05
Pakistan	2011	8112.51	51.19	9.71	84.09	0.572	66.6
Pakistan	2012	8881.22	56.15	9.81	84.48	0.583	68.19
Pakistan	2013	9022.1	52.94	9.92	85.13	0.638	69.07
Pakistan	2014	9293.18	56.41	10.02	85.63	0.594	68.12
Pakistan	2015	9133.02	62.86	10.13	84.65	0.66	69.88
Pakistan	2016	11144.11	65.86	10.19	85.57	0.66	70.19
Pakistan	2017	8662.29	68.86	10.27	87.35	0.76	72.27
Pakistan	2018	11568.86	73.12	10.38	85.44	0.703	70.77
Pakistan	2019	13127.52	68.36	10.19	87.17	0.752	72.8
Pakistan	2020	9257.01	72.01	10.4	87.94	0.755	77.01
Pakistan	2021	11891.01	71.15	10.67	86.72	0.69	71.77
Pakistan	2022	13868.74	74.83	10.66	86.07	0.703	72.17
Pakistan	2023	11278.1	75.9	10.54	87.42	0.916	75.72
Pakistan	2024	12947.42	84.65	10.61	88.73	0.932	82.35
Kazakhstan	2010	10904.6	46.15	8.71	73.27	0.636	65.88
Kazakhstan	2011	11344.29	46.67	8.77	73.64	0.646	66.5
Kazakhstan	2012	11736.35	50.61	8.88	73.65	0.684	67.22
Kazakhstan	2013	11786.76	53.25	8.96	74.59	0.705	68.58
Kazakhstan	2014	11559.33	51.83	8.97	74.06	0.753	68.99
Kazakhstan	2015	14225.03	56.54	9.16	74.78	0.743	70.11
Kazakhstan	2016	12263.18	59.99	9.1	73.93	0.773	69.63
Kazakhstan	2017	16076.83	66.35	9.38	75.01	0.708	73.93
Kazakhstan	2018	13965.54	69.48	9.5	76.8	0.763	72.04
Kazakhstan	2019	17290.98	57.78	9.24	76.17	0.894	74.77
Kazakhstan	2020	15910.63	53.58	9.52	78.23	0.764	74.51

Kazakhstan	2021	19420.53	72.02	9.65	77.46	0.825	73.65
Kazakhstan	2022	19688.1	76.45	9.83	78.85	0.878	76.1
Kazakhstan	2023	20540.56	73.78	9.82	78.71	0.997	75.46
Kazakhstan	2024	16222.58	56.44	9.82	74.87	0.906	78.2
Kyrgyzstan	2010	1882.57	39.09	9.28	97.33	0.267	45.91
Kyrgyzstan	2011	1988.88	40.99	9.36	97.54	0.293	46.55
Kyrgyzstan	2012	1982.45	42.22	9.43	97.72	0.292	47.77
Kyrgyzstan	2013	2023.95	44.95	9.46	98.21	0.329	47.52
Kyrgyzstan	2014	2092.89	42.44	9.5	99.0	0.333	50.18
Kyrgyzstan	2015	2106.5	50.11	9.72	99.0	0.364	49.86
Kyrgyzstan	2016	2214.62	56.04	9.83	99.0	0.342	51.98
Kyrgyzstan	2017	2773.56	45.76	9.66	99.0	0.418	53.54
Kyrgyzstan	2018	2154.17	59.0	9.76	98.65	0.374	54.48
Kyrgyzstan	2019	2756.03	55.36	9.89	99.0	0.428	55.56
Kyrgyzstan	2020	2578.5	53.52	10.01	99.0	0.517	54.43
Kyrgyzstan	2021	2381.72	69.33	10.04	99.0	0.577	56.22
Kyrgyzstan	2022	2273.42	73.29	10.26	99.0	0.421	58.58
Kyrgyzstan	2023	3174.17	62.93	10.51	99.0	0.437	55.25
Kyrgyzstan	2024	2567.96	72.13	10.01	99.0	0.621	61.51
Türkiye	2010	6750.06	32.79	6.2	64.1	0.219	55.46
Türkiye	2011	6894.78	33.48	6.27	64.26	0.247	56.52
Türkiye	2012	7324.33	38.15	6.38	64.45	0.275	57.21
Türkiye	2013	7822.35	41.01	6.4	64.53	0.263	57.85
Türkiye	2014	8232.93	43.4	6.4	65.32	0.292	58.08
Türkiye	2015	7307.38	39.51	6.69	65.25	0.321	60.42
Türkiye	2016	7974.92	50.37	6.79	65.3	0.339	59.72
Türkiye	2017	7982.26	36.94	6.77	66.21	0.296	60.32
Türkiye	2018	10391.74	41.58	6.66	66.47	0.457	60.81
Türkiye	2019	9911.51	54.43	6.76	67.62	0.375	63.94
Türkiye	2020	10153.98	51.18	6.75	68.44	0.383	61.76

Türkiye	2021	7699.74	54.54	7.13	65.27	0.442	62.7
Türkiye	2022	11092.1	44.02	7.22	67.16	0.564	62.61
Türkiye	2023	9550.29	42.98	7.45	69.96	0.416	67.96
Türkiye	2024	13518.93	59.22	7.27	66.85	0.385	71.25