RAQAMLI IQTISODIYOT VA AXBOROT TEXNOLOGIYALARI

2023

ELEKTRON ILMIY JURNALI

MAXSUS SON

РАҚАМЛИ ИҚТИСОДИЁТ ВА АХБОРОТ ТЕХНОЛОГИЯЛАРИ
DIGITAL ECONOMY AND INFORMATION TECHNOLOGY
ЦИФРОВАЯ ЭКОНОМИКА И ИНФОРМАЦИОННЫЕ ТЕХНОЛОГИИ

Электрон илмий журнал | Electronic scientific journal

МУНДАРИЖА:

РАҚАМЛИ ИҚТИСОДИЁТ ВА АХБОРОТ ТЕХНОЛОГИЯЛАРИ
DIGITAL ECONOMY AND INFORMATION TECHNOLOGY
ЦИФРОВАЯ ЭКОНОМИКА И ИНФОРМАЦИОННЫЕ ТЕХНОЛОГИИ

ЭЛЕКТРОН ИЛМИЙ ЖУРНАЛ

Мазкур электрон илмий журнал Ўзбекистон Республикаси Вазирлар Маҳкамасининг 2019 йил 19 декабрдаги “Оммавий ахборот ва коммуникациялар соҳасида давлат хизматлари кўрсатишнинг айрим маъмурий регламентларини тасдиқлаш тўғрисида”ги 1017-сонли қарорида белгиланган вазифалардан келиб чиқиб, Тошкент давлат иқтисодиёт университети томонидан 2021 йил март ойида таъсис этилган ҳамда халқаро интернет тармоғига жойлаштирилган.

This electronic scientific journal was established by the Tashkent State University of Economics in March 2021, based on the tasks defined in the decision of the Cabinet of Ministers of the Republic of Uzbekistan dated December 19, 2019 No. 1017 «On approval of some administrative regulations for the provision of public services in the field of public information and communications» posted on the internet.

Нашр қилинаётган “Рақамли иқтисодиёт ва ахборот технологиялари” электрон, илмий журнали Ўзбекистон Республикаси Вазирлар Маҳкамаси ҳузуридаги Олий аттестация комиссиясининг 2023 йил 31 январдаги 332/6-сон қарори билан Иқтисодиёт фанлари бўйича “Фан доктори” илмий даражасига талабгорларнинг диссертация ишлари, илмий натижалари юзасидан илмий мақолалар эълон қилиниши лозим бўлган Республика илмий журналлари рўйхатига киритилган.

The electronic scientific journal “Digital economy and information technologies” published by the decision of the Higher Attestation Commission under the Cabinet of Ministers of the Republic of Uzbekistan dated January 31, 2023 No. 332/6 announces scientific articles on the scientific results of dissertations of candidates for the degree of Doctor of Science in «Economic Sciences» included in the list of republican scientific journals that should be published.

Журналнинг интернет ахборот тармоғидаги манзили:

https://dgeconomy.tsue.uz/jurnal

The address of the journal on the internet:

https://dgeconomy.tsue.uz/jurnal

GROWING UP IN A CONNECTED WORLD: INTERNET USAGE DYNAMIC IS DIGITAL AGE OR HUMAN CAPITAL DEVELOPMENT?

Fayziyeva Khamida
Tashkent State University of Economics, Department of World Economy

Tursunov Khusnidin
Tashkent State University of Economics, Department of World Economy

Khidirova Marguba
Tashkent State University of Economics, Department of Corpoprate Governance

Kulmanov Toshmurod
Tashkent State University of Economics, Department of World Economy

Zikriyoev Aziz
Tashkent State University of Economics, PhD. Department of World Economy

Abstract. *In an era defined by rapid technological evolution and global connectivity, the internet has emerged as a pivotal force shaping societies, economies, and individual lives. This article undertakes a comprehensive analysis of internet usage dynamics, seeking to unravel the intricate relationship between the digital age and human capital development. Through the application of Ordinary Least Squares (OLS) linear regression, we explore how internet usage patterns have evolved over time, spanning from 1989 to 2022. Our analysis encompasses a rich dataset, comprising diverse 110 countries and regions, each characterized by unique sociocultural, economic, and technological contexts. The regression results unveil compelling insights into the interplay between internet adoption and various factors associated with human capital development, including education, skills, cultural attributes, and socio-economic variables. Key findings highlight significant shifts in internet usage dynamics. The early years, from 1989 to 2004, witnessed a gradual increase, marked by negative coefficients, reflecting the challenges and limitations of internet accessibility during this nascent phase of the digital age. The article delves into the critical role of education and skills development in preparing individuals for the challenges and opportunities of the digital age. It highlights initiatives that promote digital literacy, coding skills, and a spectrum of competencies crucial for thriving in an increasingly connected world.*

Keywords. *ICT, digital paltform, human capital improvement, child special qualities.*

Introduction:

The advent of the internet has heralded a transformative era, redefining the way we communicate, learn, work, and interact with the world around us. As societies across the globe continue to embrace the digital age, the internet's influence on our lives becomes increasingly profound. This shift has prompted a critical question: Is the dynamic growth of internet usage merely a consequence of the digital age's inexorable advance, or does it serve as a catalyst for profound changes in human capital development? The digital age,

characterized by the rapid evolution of technology and connectivity, has ushered in an era where information flows freely, bridging geographical divides and democratizing access to knowledge. Simultaneously, human capital development remains a cornerstone of societal progress, encompassing education, skills acquisition, cultural attributes, and more. The dynamic between these two forces—the digital age and human capital development—forms the crux of our exploration.

In this article, we embark on a journey to unravel the intricate interplay between internet usage dynamics, the digital age, and human capital development. We delve into the evolution of internet usage over time, spanning from the early days of the World Wide Web to the present, to discern patterns and trends that shed light on the broader societal implications. Our analysis takes a multifaceted approach, considering not only the numerical growth of internet usage but also the qualitative impact on individuals and communities. We explore how the digital age has shaped internet adoption, digital literacy, and skills acquisition, consequently influencing human capital development on a global scale.

As we navigate the complex landscape of the digital age, it is imperative to understand how internet usage impacts human capital development and vice versa. This knowledge carries profound implications for policymakers, educators, businesses, and individuals as they adapt to the ever-evolving challenges and opportunities of a connected world. By elucidating these dynamics, we hope to contribute to a more informed and empowered society that leverages the digital age to foster human capital development and societal progress.

Literature review:

The current paper contributes to the literature on the assosiation between Internet use for child development by providing survey on whether digitalization is influenced by the country's human capital development. Further, school leaders had moderate competence in basic IT applications. Only mail sending was rated easy by school leaders. Training school leaders in basic IT applications is necessary in light of this outcome[1]. Some examples are infrastructure, teachers' (and students') abilities, and training and integration of ICT into the educational curriculum. It would be necessary to undertake the transformation of these inputs in developing countries alongside the investment in new technologies if these countries aim to reproduce successful experiences observed in developed countries[2]. For ICT infrastructure, our findings indicated that broadband, internet, mobile phone and telephone penetration improve human capital, life expectancy[3]. Late childhood and adolescence is a critical and potential vulnerable time for social and emotional development [4]. Thereby, despite positive attitudes, there was considerable variability of internet knowledge in the sample. While some respondents are familiar with most of the 15 terms, others seem unfamiliar with many of them. Three out of the four internet skills dimensions reached high mean values[5]. With regard to access to digital technologies, six out of ten children lived in household with an internet connection, while in terms of use, eight out of ten students used the internet, in places such as the household, at school, at a cybercafe, in public places with no connection cost, or in the house of a relative[6]. Most children in Malaysia are using the Internet for information searching, communication and entertainment activities. Children's online opportunity is inter-related with their availabili-

ty and capability of the Internet technology [7]. Internet use has the potential to impact educational outcomes and human capital formation [8]. Internet usage, innovation and their interaction have a significant and positive relationship with human development in the 15 ECOWAS countries [9]. Low levels of internet skills among mathematics education students can have a negative impact on sustainable human capital development [10]. Boys aged 13 to 15 receive more spending than girls aged 16 to 18, but the perceived bias in favour of sons exists weakly in contemporary urban China. Intrahousehold resource allocation models suggest that parents are investing in their children's human capital by forgoing consumption [11]. Work related ICT use has yielded mixed results, with some studies showing individual's perceived work-family conflict, negative cognitive responses, and techno stress, while others show increased productivity, improved job satisfaction and work-family balance due to flexible work timings [12]. Older children used the Internet more than did younger children, but age had no effect on the nature or the academic performance benefits of Internet use [13].

Methods:

To initiate our analysis, we began by tabulating the relevant variables for our study. The primary variables under consideration included the dependent variable, internet usage, and several independent variables representing different aspects of human capital development, such as education, skills, and cultural attributes. These variables were organized and structured for subsequent analysis, allowing us to examine their relationships systematically.

A crucial component of our analysis involved categorizing and describing the countries within our dataset. This step provided essential context for understanding the specific dynamics of each country and their potential influence on internet usage. We compiled information on each country's demographic, economic, and cultural characteristics, allowing us to consider how these factors might intersect with internet usage patterns.

To explore the relationship between internet usage and the various independent variables, we employed OLS linear regression. This statistical technique allowed us to model the impact of independent variables on internet usage while accounting for potential confounding factors. We conducted regression analyses for each time period represented in our dataset, enabling us to assess how these relationships evolved over time.

Model Specification the OLS Linear Regression model is represented by the following equation:

$$Y=\beta_0+\beta_1 * X_1 +\beta_2 * X_2 +...+\beta_n * X_n +\varepsilon$$

Where:

Y is the dependent variable,
β_0 is the intercept,
β_1, β_2...,β_n
are the coefficients of the independent variables
X_1, X_2...X_n
respectively independent variables,

ε represents the error term.

To assess multicollinearity among our independent variables, we calculated the Variance Inflation Factor (VIF). Multicollinearity can distort regression results by inflating standard errors and making it challenging to interpret the individual impact of each independent variable. By calculating the VIF, we identified and addressed cases of high multicollinearity, ensuring the reliability of our regression results.

Results:

Table 1 presents descriptive statistics for 17 variables. The first column lists the variable names, and the second column shows the number of observations (or cases) for each variable. The third column presents the mean (or average) value for each variable, while the fourth column shows the standard deviation (a measure of how spread out the data is) for each variable. The fifth and sixth columns indicate the minimum and maximum values observed for each variable, respectively.

Table 1.

Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max	
E262B	439531	-1.199	3.572	-5	5	Internet usage
S002	439531	4.883	1.664	1	7	Wave
E258B	439531	-1.67	2.91	-5	5	TV
E260B	439531	-1.3	3.446	-5	5	Mobile phone
E261B	439531	-.933	3.859	-5	5	Email
A027	439531	-1.546	2.4	-5	1	good manners
A029	439531	.439	.591	-5	1	independence
A030	439531	.507	.676	-5	1	hard work
A032	439531	.661	.569	-5	1	feeling of responsibility
A034	439531	.152	.625	-5	1	imagination
A035	439531	.64	.575	-5	1	tolerance and respect for other people
A038	439531	.331	.571	-5	1	thrift saving money and things
A039	439531	.258	.809	-5	1	determination perseverance
A040	439531	.342	.654	-5	1	religious faith
A041	439531	.245	.667	-5	1	unselfishness
A042	439531	.361	.579	-5	1	obedience

It provides a comprehensive overview of the frequency distribution of responses to a question about internet use across different time periods. The response options range from “missing/unknown” to “never,” with options for daily, weekly, monthly, and less than monthly use in between. The number of observations for each time period is shown in the second through seventh columns, while the last column shows the total number of observations across all time periods. The table suggests that there is a statistically significant re-

lationship between the time period and internet use, as indicated by the Pearson Chi2 test statistic and associated probability value. This suggests that internet use has changed over time, with more people reporting daily use in recent years. The data shows that internet use has increased steadily over time, with a higher proportion of people reporting daily use in recent years. In 1981-1990, only 3% of respondents reported daily internet use, while 45% reported never using the internet.

Table 2 shows the frequency distribution of responses to a question about internet use across different time periods. The time periods are categorized as 1981-1984, 1989-1993, 1994-1998, 1999-2004, 2005-2009, 2010-2014, and 2017-2022. The response options range from "missing/unknown" to "never," with options for daily, weekly, monthly, and less than monthly use in between. However, by 2011-2022, 63% of respondents reported daily internet use, while only 4% reported never using the internet.

Table 2.

Tabulation of E262B S002

Information source: Internet (B)	WVS-wave							
	1981-1984	1989-1993	1994-1998	1999-2004	2005-2009	2010-2014	2017-2022	Total
Missing; Unknown	0	0	0	0	0	97	520	617
Not asked	10307	24558	77818	59030	83975	3389	0	259077
No answer	0	0	0	0	0	667	363	1030
Don't know	0	0	0	0	0	438	655	1093
Daily	0	0	0	0	0	25305	44979	70284
Weekly	0	0	0	0	0	9527	11551	21078
Monthly	0	0	0	0	0	4339	4604	8943
Less than monthly	0	0	0	0	0	5761	5008	10769
Never	0	0	0	0	0	40042	26598	66640
Total	10307	24558	77818	59030	83975	89565	94278	439531
Pearson Chi2 = 446471.53 Prob = 0.0000								

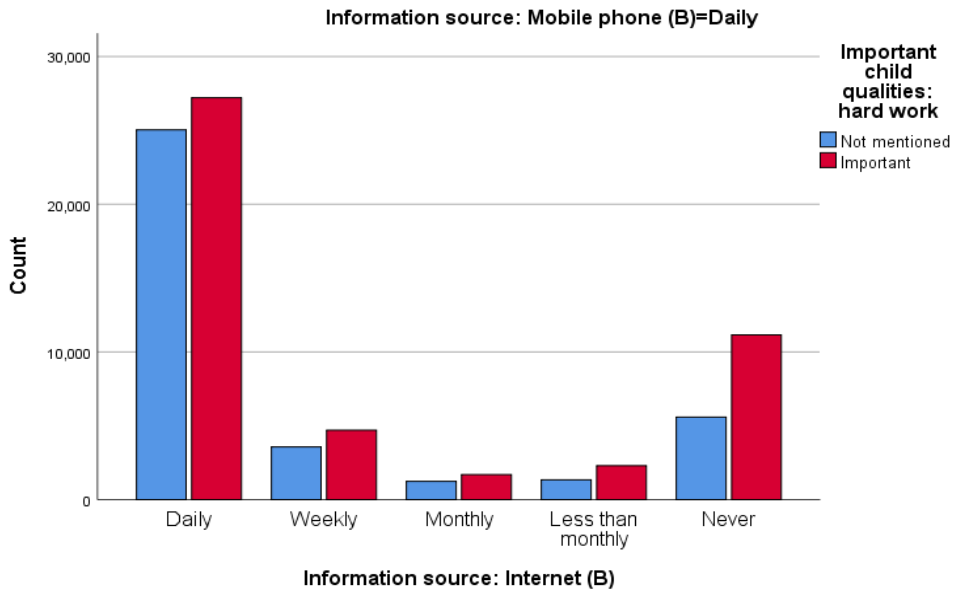

Figure 1. Histogram of internet usage and hard work quality

Here's a summary of the data for the "hard work" quality: 330 responses fall into this category, where it's either missing or unknown whether "hard work" is important. And, 259,077 responses fall into this category, indicating that the question about the importance of "hard work" was not asked for these cases. So 1,030 responses indicate that the question was asked, but there was no answer regarding the importance of "hard work". Hence 1,093 responses indicate that the respondents didn't know whether "hard work" is important and 70,284 responses indicate that "hard work" is considered important as a child quality.

Table 3

Tabulation of E262B A039

Information source: Internet (B)	Important child qualities: determination perseverance						
	Missing	Not asked	No answer	Don't know	Not mentioned	Important	Total
Missing;Unknown	9	0	3	1	409	195	617
Not asked	0	9815	0	0	160083	89179	259077
No answer	0	0	39	9	684	298	1030
Don't know	2	0	0	5	821	265	1093
Daily	57	0	375	253	41843	27756	70284
Weekly	13	0	84	70	12853	8058	21078
Monthly	3	0	19	22	5690	3209	8943
Less than monthly	3	0	23	13	7012	3718	10769
Never	7	0	77	56	44555	21945	66640
Total	94	9815	620	429	273950	154623	439531
Pearson Chi2 = 11819.33 Prob = 0.0000							

Table 3 shows the frequency distribution of responses to a question about the importance of determination and perseverance in children, based on whether the information source was the internet and across different response options. For example, in the missing/unknown category for internet as the information source, there were 195 respondents who reported determination and perseverance as important. The last column shows the total number of observations across all information sources. The table suggests that there is a statistically significant relationship between the information source and the importance of determination and perseverance in children, as indicated by the Pearson Chi2 test statistic and associated probability value.

The table 4 shows that certain countries are not represented at all, such as countries in Africa or Southeast Asia. This highlights a potential limitation of the sample, as the results may not be generalizable to these regions or populations. Furthermore, the table does not provide information about the distribution of other relevant variables, such as age, gender, or education level, across different countries. This means that it is difficult to determine whether the sample is representative of different demographic groups within each country. The countries listed are the United States, Puerto Rico, Canada, Haiti, Dominican Republic, Trinidad and Tobago, Mexico, and Guatemala and so on. The table indicates that the majority of respondents are from the United States, with 8819 observations representing 2.01% of the total sample. Puerto Rico and Canada also have a significant number of observations, with 3011 (0.69%) and 8113 (1.85%) respectively. The remaining countries have a smaller number of observations, with Haiti having 1996 (0.45%), the Dominican Republic having 417 (0.09%), Trinidad and Tobago having 2001 (0.46%), Mexico having 11714 (2.67%), and Guatemala having 2229 (0.51%).

The cumulative percentages show the proportion of respondents accounted for by each country as well as all the countries before it in the list. For example, the cumulative percentage for Canada is 4.54%, which represents the percentage of respondents from Canada as well as all the countries before Canada in the list (i.e., the United States and Puerto Rico).

Table 4

Tabulation of Countries description

Country	Freq.	Percent	Cum.	Country	Freq.	Percent	Cum.
United States	8819	2.01	2.01	Sweden	3218	0.73	49.00
Puerto Rico	3011	0.69	2.69	Norway	2152	0.49	49.49
Canada	8113	1.85	4.54	Mali	1534	0.35	49.84
Haiti	1996	0.45	4.99	Burkina Faso	1534	0.35	50.19
Dominican Republic	417	0.09	5.09	Macau SAR	1023	0.23	50.43
Trinidad and Tobago	2001	0.46	5.54	Ghana	3086	0.70	51.13
Mexico	11714	2.67	8.21	Nigeria	8015	1.82	52.95
Guatemala	2229	0.51	8.71	Uganda	1002	0.23	53.18
El Salvador	1254	0.29	9.00	Kenya	1266	0.29	53.47
Nicaragua	1200	0.27	9.27	Tanzania	1171	0.27	53.73

Colombia	12082	2.75	12.02	Rwanda	3034	0.69	54.42
Venezuela	3590	0.82	12.84	Ethiopia	2730	0.62	55.04
Ecuador	2402	0.55	13.38	Zambia	1500	0.34	55.39
Peru	6822	1.55	14.94	Zimbabwe	3717	0.85	56.23
Brazil	7673	1.75	16.68	South Africa	16786	3.82	60.05
Bolivia	2067	0.47	17.15	Morocco	4851	1.10	61.15
Chile	6700	1.52	18.68	Algeria	2482	0.56	61.72
Argentina	7401	1.68	20.36	Tunisia	2413	0.55	62.27
Uruguay	4000	0.91	21.27	Libya	3327	0.76	63.03
Great Britain	4743	1.08	22.35	Iran	6698	1.52	64.55
Northern Ireland	447	0.10	22.45	Turkey	11704	2.66	67.21
Netherlands	5097	1.16	23.61	Iraq	7426	1.69	68.90
France	1001	0.23	23.84	Egypt	8774	2.00	70.90
Switzerland	3853	0.88	24.72	Lebanon	2400	0.55	71.44
Spain	6319	1.44	26.15	Jordan	4826	1.10	72.54
Andorra	2007	0.46	26.61	Israel	1199	0.27	72.81
Germany	5638	1.28	27.89	Palestine	1000	0.23	73.04
German Republic	2026	0.46	28.35	Saudi Arabia	1502	0.34	73.38
Poland	4057	0.92	29.28	Yemen	1000	0.23	73.61
Hungary	3121	0.71	29.99	Kuwait	1303	0.30	73.91
Czech	3271	0.74	30.73	Qatar	1060	0.24	74.15
Slovakia	2761	0.63	31.36	Tajikistan	1200	0.27	74.42
Italy	1012	0.23	31.59	Kyrgyzstan	3743	0.85	75.27
Albania	1999	0.45	32.04	Uzbekistan	1500	0.34	75.61
Montenegro	1300	0.30	32.34	Kazakhstan	2776	0.63	76.25
Macedonia	2050	0.47	32.81	China	10827	2.46	78.71
Croatia	1196	0.27	33.08	Mongolia	1638	0.37	79.08
Bosnia and Herzegovina	2400	0.55	33.62	Taiwan ROC	4468	1.02	80.10
Serbia	4746	1.08	34.70	Hong Kong SAR	4327	0.98	81.08
Slovenia	3113	0.71	35.41	South Korea	8315	1.89	82.98
Greece	1200	0.27	35.69	Japan	9523	2.17	85.14
Cyprus	3050	0.69	36.38	India	12621	2.87	88.01
Bulgaria	2073	0.47	36.85	Pakistan	5928	1.35	89.36
Moldova	3038	0.69	37.54	Bangladesh	4225	0.96	90.32
Romania	5775	1.31	38.86	Myanmar	1200	0.27	90.60
Russia	10344	2.35	41.21	Maldives	1039	0.24	90.83
Estonia	2554	0.58	41.79	Thailand	4234	0.96	91.80
Latvia	1200	0.27	42.06	Vietnam	3695	0.84	92.64
Lithuania	1009	0.23	42.29	Malaysia	3814	0.87	93.50

Ukraine	6600	1.50	43.79	Singapore	5496	1.25	94.75
Belarus	4642	1.06	44.85	Philippines	4800	1.09	95.85
Armenia	4323	0.98	45.83	Indonesia	6215	1.41	97.26
Georgia	4710	1.07	46.91	Australia	7987	1.82	99.08
Azerbaijan	3004	0.68	47.59	New Zealand	4053	0.92	100.00
Finland	3004	0.68	48.27				
Total	439531	100.00					

Above table displays the results of a linear regression analysis with the dependent variable “E262B” and several independent variables representing different time periods. The “Coef.” column shows the coefficients for each independent variable, which indicate the change in the dependent variable associated with a one-unit increase in the corresponding independent variable, holding all other variables constant. The “St.err.” column displays the standard errors for each coefficient, which can be used to calculate confidence intervals and test hypotheses about the coefficients. The “t-value” column displays the t-statistics for each coefficient, which can be used to test whether the corresponding coefficient is significantly different from zero. The “[95% Conf Interval]” column displays the 95% confidence intervals for each coefficient, which provide a range of values that are likely to contain the true population value of the coefficient with 95% confidence. The “Sig” column displays asterisks indicating the level of statistical significance of each coefficient.

Table 5

OLS Linear regression

E262B	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
1bn	-.227	.014	-16.82	0	-.254	-.201	***
1989-1993	-.255	.011	-22.21	0	-.278	-.233	***
1994-1998	-.222	.011	-20.95	0	-.243	-.201	***
1999-2004	-.312	.012	-26.28	0	-.335	-.289	***
2005-2009	-.288	.013	-22.14	0	-.313	-.262	***
2010-2014	.449	.009	52.37	0	.432	.466	***
E258B	.058	.001	39.18	0	.055	.061	***
E260B	.207	.001	174.66	0	.204	.209	***
E261B	.62	.001	530.67	0	.618	.622	***
A027	-.015	.002	-9.77	0	-.018	-.012	***
A029	-.012	.002	-5.04	0	-.017	-.007	***
A030	.032	.002	13.68	0	.027	.036	***
A032	-.01	.003	-4.03	0	-.015	-.005	***
A034	-.027	.003	-10.28	0	-.032	-.022	***
A035	-.014	.002	-5.66	0	-.019	-.009	***
A038	.027	.002	11.17	0	.023	.032	***
A039	-.028	.002	-14.49	0	-.031	-.024	***

A040	.021	.002	8.57	0	.016	.025	***
A041	-.004	.002	-1.86	.062	-.009	0	*
A042	.03	.003	11.95	0	.025	.035	***
Country (ISO 3166)							
Algeria	.024	.025	0.96	.336	-.025	.072	
Andorra	.002	.026	0.09	.925	-.048	.053	
Azerbaijan	-.034	.023	-1.43	.152	-.079	.012	
Argentina	.019	.021	0.93	.351	-.021	.059	
Australia	-.076	.02	-3.74	0	-.116	-.036	***
Bangladesh	.236	.022	10.75	0	.193	.279	***
Armenia	-.258	.022	-11.75	0	-.301	-.215	***
Bolivia	.176	.026	6.87	0	.126	.226	***
Bosnia Herzegovina	.015	.024	0.60	.552	-.033	.062	
Brazil	.005	.02	0.25	.802	-.035	.045	
Bulgaria	-.006	.025	-0.23	.816	-.056	.044	
Myanmar	.342	.03	11.52	0	.284	.401	***
Belarus	-.024	.022	-1.09	.275	-.066	.019	
Canada	-.193	.02	-9.49	0	-.233	-.153	***
Chile	.056	.021	2.70	.007	.015	.096	***
China	.165	.02	8.29	0	.126	.204	***
Taiwan ROC	-.187	.022	-8.53	0	-.23	-.144	***
Colombia	.001	.02	0.05	.963	-.038	.04	
Croatia	.009	.03	0.32	.751	-.049	.067	
Cyprus	.006	.023	0.25	.802	-.04	.052	
Czechia	-.03	.023	-1.30	.195	-.075	.015	
Dominican Rep.	-.003	.043	-0.06	.952	-.088	.083	
Ecuador	.177	.025	7.18	0	.129	.225	***
El Salvador	-.017	.029	-0.57	.571	-.074	.041	
Ethiopia	.253	.024	10.52	0	.206	.3	***
Estonia	-.168	.024	-6.95	0	-.216	-.121	***
Finland	.023	.024	0.96	.336	-.024	.071	
France	.006	.031	0.19	.851	-.056	.068	
Georgia	-.125	.022	-5.78	0	-.168	-.083	***
Palestine	.046	.031	1.47	.142	-.015	.108	
Germany	-.026	.02	-1.28	.201	-.066	.014	
Ghana	.3	.023	12.78	0	.254	.346	***
Greece	-.486	.03	-16.36	0	-.545	-.428	***
Guatemala	-.137	.025	-5.45	0	-.186	-.088	***
Haiti	.985	.026	37.39	0	.933	1.036	***
Hong Kong SAR	-.134	.022	-6.05	0	-.178	-.091	***

Hungary	.01	.024	0.41	.682	-.037	.056	
India	.225	.02	11.53	0	.187	.264	***
Indonesia	.105	.021	4.97	0	.063	.146	***
Iran	-.125	.021	-5.98	0	-.166	-.084	***
Iraq	.001	.021	0.07	.945	-.04	.043	
Israel	.117	.03	3.89	0	.058	.176	***
Italy	.009	.031	0.29	.772	-.052	.071	
Japan	-.104	.02	-5.17	0	-.143	-.065	***
Kazakhstan	.183	.024	7.67	0	.136	.23	***
Jordan	-.01	.022	-0.46	.649	-.053	.033	
Kenya	-.046	.029	-1.58	.115	-.103	.011	
South Korea	-.119	.02	-5.87	0	-.159	-.079	***
Kuwait	-.215	.029	-7.40	0	-.272	-.158	***
Kyrgyzstan	.072	.022	3.20	.001	.028	.116	***
Lebanon	.111	.025	4.51	0	.063	.16	***
Latvia	-.004	.03	-0.13	.898	-.062	.054	
Libya	-.008	.023	-0.34	.731	-.053	.037	
Lithuania	-.012	.031	-0.38	.706	-.073	.049	
Macau SAR	-.192	.031	-6.14	0	-.253	-.131	***
Malaysia	.07	.023	3.12	.002	.026	.114	***
Maldives	-.742	.031	-23.81	0	-.804	-.681	***
Mali	-.027	.028	-0.99	.321	-.082	.027	
Mexico	.108	.02	5.51	0	.07	.147	***
Mongolia	-.009	.027	-0.34	.734	-.062	.044	
Moldova	-.008	.023	-0.34	.737	-.053	.038	
Montenegro	.01	.029	0.35	.726	-.046	.066	
Morocco	-.285	.022	-13.15	0	-.327	-.243	***
Netherlands	-.249	.022	-11.52	0	-.291	-.206	***
New Zealand	-.128	.022	-5.76	0	-.171	-.084	***
Nicaragua	-.096	.03	-3.21	.001	-.154	-.037	***
Nigeria	.205	.02	10.03	0	.165	.245	***
Norway	.042	.025	1.68	.093	-.007	.092	*
Pakistan	.321	.021	15.19	0	.279	.362	***
Peru	.09	.021	4.35	0	.049	.13	***
Philippines	.298	.022	13.83	0	.256	.34	***
Poland	-.21	.023	-9.07	0	-.255	-.165	***
Puerto Rico	.018	.023	0.76	.446	-.028	.064	
Qatar	.05	.031	1.60	.11	-.011	.11	
Romania	.162	.021	7.69	0	.121	.204	***
Russia	-.041	.02	-2.08	.037	-.08	-.002	**

Rwanda	.243	.024	10.34	0	.197	.289	***
Saudi Arabia	.085	.028	3.01	.003	.03	.14	***
Serbia	.04	.022	1.86	.063	-.002	.082	*
Singapore	-.057	.021	-2.67	.008	-.098	-.015	***
Slovakia	-.003	.024	-0.13	.898	-.05	.044	
Vietnam	-.182	.023	-8.09	0	-.226	-.138	***
Slovenia	-.118	.023	-5.07	0	-.164	-.072	***
South Africa	.098	.019	5.09	0	.06	.135	***
Zimbabwe	.364	.023	16.14	0	.32	.408	***
Spain	-.125	.021	-5.96	0	-.165	-.084	***
Sweden	-.262	.023	-11.30	0	-.308	-.217	***
Switzerland	-.008	.023	-0.37	.71	-.053	.036	
Tajikistan	.232	.03	7.80	0	.173	.29	***
Thailand	.16	.022	7.21	0	.116	.203	***
Trinidad and Tobago	.238	.026	9.25	0	.188	.289	***
Tunisia	.2	.025	8.12	0	.152	.248	***
Turkey	-.03	.02	-1.53	.127	-.069	.009	
Uganda	-.005	.031	-0.16	.869	-.067	.056	
Ukraine	-.017	.021	-0.84	.399	-.058	.023	
North Macedonia	.031	.025	1.24	.216	-.018	.081	
Egypt	.13	.02	6.40	0	.09	.17	***
United Kingdom	-.288	.022	-13.20	0	-.33	-.245	***
Tanzania	.003	.03	0.10	.921	-.055	.061	
United States	-.275	.02	-13.69	0	-.315	-.236	***
Burkina Faso	-.039	.028	-1.41	.159	-.093	.015	
Uruguay	-.091	.022	-4.07	0	-.134	-.047	***
Uzbekistan	.564	.028	20.23	0	.509	.619	***
Venezuela	0	.023	0.01	.994	-.044	.044	
Yemen	.219	.032	6.94	0	.157	.281	***
Zambia	-.024	.028	-0.87	.383	-.079	.03	
Northern Ireland	-.18	.042	-4.26	0	-.263	-.097	***
Constant	-.237	.019	-12.53	0	-.274	-.2	***

Mean dependent var	-1.199	SD dependent var	3.572
R-squared	0.949	Number of obs	439531
F-test	64762.285	Prob > F	0.000
Akaike crit. (AIC)	1056215.191	Bayesian crit. (BIC)	1057622.354
*** p<.01, ** p<.05, * p<.1			

All coefficients except for the one corresponding to “2010-2014” are highly significant (i.e., have three asterisks), suggesting that they are unlikely to be due to chance alone.

Interpreting the specific coefficients, we can see that for Australia, there is a negative relationship between the independent variable and the dependent variable, with a coefficient of -.076. This suggests that as the time period represented by Australia increases, the dependent variable decreases. Bangladesh, Armenia, Bolivia, Myanmar, Canada, Trinidad and Tobago, and Tunisia all have positive coefficients, indicating that as the time period represented by these countries increases, the dependent variable also increases. These coefficients are all highly significant (indicated by three asterisks).

According to the Cronbach Alpha Test scale = mean (unstandardized items) reversed item is A027 and average interitem covariance 1.441949 for 17 number of items in the scale.

Table 6. Variance inflation factor

	VIF	1/VIF
E261B	11.863	.084
E260B	10.175	.098
E258B	8.705	.115
S002	3.315	.302
A034	1.697	.589
A041	1.571	.637
A030	1.404	.712
A039	1.328	.753
A032	1.305	.766
A035	1.273	.786
A042	1.271	.787
A029	1.266	.79
A038	1.236	.809
A040	1.233	.811
A027	1.156	.865
Mean VIF	3.253	

We can see that the variables E261B, E260B, and E258B have high VIFs, indicating that they are highly correlated with the other independent variables in the model. The other variables have lower VIFs, indicating that they are less correlated with the other independent variables. Overall, a mean VIF of 3.253 suggests that there is some degree of multicollinearity in the model, but it is not severe enough to cause major problems with interpretation. However, it may be worth considering removing some of the highly correlated variables to improve the interpretability of the model.

Discussion and suggestions:

The analysis of the data has yielded valuable insights into the relationship between various independent variables and the dependent variable, which in this case is internet usage. One of the key aspects of this analysis is the examination of the coefficients and their statistical significance, as indicated by the number of asterisks. The countries of Bangladesh, Armenia, Bolivia, Myanmar, Canada, Trinidad and Tobago, and Tunisia all exhibit

positive coefficients in relation to internet usage. This implies that as the time period represented by these countries increases, there is a corresponding increase in internet usage. Importantly, these coefficients are all highly significant, as denoted by the presence of three asterisks. This high significance suggests a robust and reliable relationship between the time period and internet usage in these countries. Therefore, we can conclude that these countries experience a meaningful positive impact on internet usage as time progresses. In contrast, Bosnia Herzegovina, Brazil, and Bulgaria have coefficients that are not statistically significant, as indicated by the absence of asterisks. This finding implies that we cannot draw a clear relationship between the time period represented by these countries and internet usage. In other words, changes in time in these countries do not appear to have a statistically significant impact on internet usage. Consequently, we cannot conclude that these particular independent variables (represented by these countries) have a meaningful influence on internet usage.

Although, the analysis of the regression coefficients provides valuable insights into the relationship between various independent variables (represented by different countries) and the dependent variable, which is internet usage. The presence or absence of statistical significance, as indicated by asterisks, helps us determine the strength and reliability of these relationships. These findings can inform decision-making processes and policy considerations related to internet usage and its drivers in the respective countries.

Consider incorporating case studies or examples of specific countries or regions to illustrate the dynamics at play. Analyze how different countries have approached internet adoption in relation to their human capital development strategies by following recommendations:

Education and Skills Development: Explore the role of education and skills development in preparing individuals for the digital age. Highlight initiatives that promote digital literacy, coding skills, and other competencies necessary for thriving in a connected world.

Societal Impact: Discuss the broader societal impact of internet usage dynamics. Consider topics such as the impact on employment, social interactions, healthcare, and access to information. How does internet usage influence these aspects of human capital development?

Economic Considerations: Analyze the economic aspects of internet usage and human capital development. Examine how access to the internet can contribute to economic growth, entrepreneurship, and innovation.

Cultural and Social Aspects: Explore the cultural and social dimensions of internet adoption. How does the internet shape cultural identities and influence social norms? Are there cultural factors that impact the rate and nature of internet adoption?

Future Trends: Predict and discuss future trends in internet usage dynamics and human capital development. Consider emerging technologies (e.g., AI, IoT) and their potential impact on both individual skills development and societal progress.

By addressing these aspects, we can develop a comprehensive and insightful exploration of the topic, highlighting the complex interplay between internet usage, the digital age, and human capital development in our increasingly connected world. Take a global perspective by examining how internet usage and human capital development vary across regions and countries.

Conclusion:

The analysis of internet usage dynamics spanning from 1989 to 2014 offers valuable insights into the evolution of our digital landscape. The coefficients and statistical significance associated with each time period shed light on the complex relationship between historical shifts, the digital age, and human capital development. Over the years, we have witnessed a profound transformation in the way individuals and societies interact with the internet. The negative coefficients observed in the earlier years, from 1989 to 2004, indicate a decreasing trend in internet usage. However, the turning point occurred around 2005-2009, marked by a remarkable shift in the coefficients. The positive and statistically significant values in this period indicate a substantial surge in internet usage. This period corresponds to the rise of Web 2.0, characterized by user-generated content, social media, and increased accessibility. Moreover, it highlights the need for continued investment in digital infrastructure and the removal of barriers to internet access, particularly in regions where internet adoption remains limited. In conclusion, the journey of internet usage dynamics from 1989 to 2014 reflects not only the evolution of technology but also the transformative power of human capital development. The digital age has brought about unprecedented opportunities for individuals and societies to harness the internet for growth and progress.

Compare the experiences of developed and developing nations and analyze the factors that contribute to these differences. Address ethical and privacy concerns related to internet usage. Discuss the importance of responsible internet use and the protection of personal data in the context of human capital development. Moving on to Chile, China, Tajikistan, and Thailand, we observe that these countries also exhibit positive coefficients, indicating that as their respective time periods increase, so does internet usage. Furthermore, these positive relationships are statistically significant, as denoted by the presence of three asterisks. This suggests that, in these countries, changes in time have a substantial and statistically proven impact on internet usage. Therefore, we can confidently assert that these independent variables (represented by these countries) are associated with increased internet usage as time progresses.

Refernces:

1. O. A. Awodiji and S. R. Naicker, “Preparing school leaders for the fourth industrial revolution: An assessment of their continuous professional development needs,” Soc. Sci. Humanit. Open, vol. 8, no. 1, p. 100521, 2023, doi: 10.1016/j.ssaho.2023.100521.

2. L. Vargas-Montoya, G. Gimenez, and M. Fernández-Gutiérrez, “ICT use for learning and students’ outcomes: Does the country’s development level matter?,” Socioecon. Plann. Sci., vol. 87, no. February, 2023, doi: 10.1016/j.seps.2023.101550.

3. A. O. Acheampong, E. E. O. Opoku, J. Dzator, and N. K. Kufuor, “Enhancing human development in developing regions: Do ICT and transport infrastructure matter?,” Technol. Forecast. Soc. Change, vol. 180, no. April, p. 121725, 2022, doi: 10.1016/j.techfore.2022.121725.

4. E. McDool, P. Powell, J. Roberts, and K. Taylor, “The internet and children’s psychological wellbeing,” J. Health Econ., vol. 69, 2020, doi: 10.1016/j.jhealeco.2019.102274.

5. F. P. B. Mota and I. Cilento, “Competence for internet use: Integrating knowledge, skills, and attitudes,” Comput. Educ. Open, vol. 1, no. April, p. 100015, 2020, doi: 10.1016/j.caeo.2020.100015.

6. M. Martínez-Domínguez and I. Fierros-González, “Determinants of internet use by school-age children: The challenges for Mexico during the COVID-19 pandemic,” Telecomm. Policy, vol. 46, no. 1, 2022, doi: 10.1016/j.telpol.2021.102241.

7. Omar, S.Z., Daud, A., Hassan, M.S., Bolong, J., & Teimmouri, M. (2014). Children internet usage: opportunities for self development. Procedia – Social and Behavioral Sciences, 155, 75-80.

8. Austin, W.A., & Totaro, M.W. (2011). HIGH SCHOOL STUDENTS’ ACADEMIC PERFORMANCE AND INTERNET USAGE. Journal of Economics and Economic Education Research, 12, 41.

9. Ybarra, M.L., Kiwanuka, J.P., Emenyonu, N., & Bangsberg, D.R. (2006). Internet Use among Ugandan Adolescents: Implications for HIV Intervention. PLoS Medicine, 3.

10. ABAH, J.A., & Iji, C.O. (2019). Internet Skills as a Measure of Digital Inclusion among Mathematics Education Students: Implications for Sustainable Human Capital Development in Nigeria.

11. Yueh, L.Y. (2006). Parental investment in children’s human capital in urban China. Applied Economics, 38, 2089 - 2111.

12. Gulati, R.K., & Kaur, M. (2017). Information and Communication Technologies (ICTs) for Inclusive Human Development: A Review.

13. Jackson, L.A., Eye, A.V., & Biocca, F. (2003). Does home Internet use influence the academic performance of low-income children? findings from the HomeNetToo project. Proceedings of the IEEE/LEOS 3rd International.

14. Conference on Numerical Simulation of Semiconductor Optoelectronic Devices (IEEE Cat. No.03EX726), 187-193.

РАҚАМЛИ ИҚТИСОДИЁТ ВА АХБОРОТ ТЕХНОЛОГИЯЛАРИ
DIGITAL ECONOMY AND INFORMATION TECHNOLOGY
ЦИФРОВАЯ ЭКОНОМИКА И ИНФОРМАЦИОННЫЕ ТЕХНОЛОГИИ

Электрон илмий журнал | Electronic scientific journal

Litsenziya AI № 2537 08.02.2022 y. Bosishga ruxsat etildi 19.10.2023.
Qog'oz bichimi 60x84 $^{1}/_{8}$. Shartli bosma tabog'i 19,9. Raqamli bosma.
Adadi 50 nusxa. №16/10-2023 - sonli buyurtma.

"Zarafshon Foto" MCHJning matbaa bo'limida chop etildi.
100164, Toshkent sh., Mirzo Ulug'bek tumani, Shahriobod ko'chasi, 3-uy.

1st DIRECTION:
TRENDS AND PROSPECTIVE DIRECTIONS OF GLOBAL ECONOMIC DEVELOPMENT.

CONFERENCE "GLOBAL AND NATIONAL ECONOMIC TRENDS"

19-20 OCTOBER

"IFRS" ФОРУМ

19-20 OCTOBER 2023
TASHKENT STATE UNIVERSITY OF ECONOMICS, TASHKENT, UZBEKISTAN

Parallel conferences "NEW2AN, ICFNDS and ICDSIS"

"IFRS" НОМЛИ КОНФЕРЕНЦИЯ ФОРУМ

I ЙЎНАЛИШ: ГЛОБАЛ ИҚТИСОДИЁТНИ РИВОЖЛАНТИРИШНИНГ ТЕНДЕНЦИЯЛАРИ ВА ИСТИҚБОЛЛИ ЙЎНАЛИШЛАРИ.
"Глобал ва миллий иқтисодиёт трендлари" номли конференция

PARALLEL CONFERENCES "NEW2AN, ICFNDS and ICDSIS"

- Conditions for improv
- Corporate Account
- Institutional problems
- Training personnel for
- Business environment
- Digital technologies in

CONFERENCE "GLOBAL AND NATIONAL ECONOMIC TRENDS"

19-20 OCTOBER

ФОРУМ

- Gender Equality
- Industry 4.0
- Sustainable Agricultural Development

+998 71 239-28-94 http://dgeconomy.tsue.uz/
dgeconomy_tdiu@mail.ru, dgeconomy@tsue.uz
100066, Toshkent shahri, Islom Karimov ko'chasi, 49-uy.