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The Digital Divide and Political Apathy

A Multivariate Logistic Regression Analysis of a Sample of Arab Opinion Index Data**

الفجوة الرقمية والعزوف عن المشاركة السياسية

تحليل انحدار لوجستي ثنائي الاستجابة لعينة من بيانات المؤشر العربي

Abstract: This study seeks to measure the digital divide and its impact on political participation in selected Arab countries. It focuses in particular on assessing the role of demographic and socio-economic status (SES) in unequal access to the internet. A multivariate logistic regression analysis was used to predict political participation based on SES and internet use. Based on Arab Opinion Index data, the results of the analysis indicate that SES (gender, age, income and educational level) plays a major role in the level of Internet access, and that the purpose for which the internet is used determines the likelihood of political participation. The results also indicate that vulnerable social groups are more reluctant to participate in political activities.

Keywords: Digital Divide, Logistic Regression, Political Participation, Social Inequality, Internet.

الملخص: تركز هذه الورقة على قياس الفجوة الرقمية ومدى تأثيرها في المشاركة السياسية في مجموعة من الدول العربية، وتهدف إلى تقييم الدور الذي تؤديه المحددات الديموغرافية والسوسيو-اقتصادية في الحد من الوصول إلى الإنترنت. جرى استخدام منهج تحليل الانحدار اللوجستي Logistic Regression المتعدد المتغيرات للتنبؤ بالمشاركة السياسية التي تؤثر في المحددات السوسيو-اقتصادية واستخدام الإنترنت. وتشير نتائج التحليل، استناداً إلى بيانات «المؤشر العربي»، الذي يصدره المركز العربي للأبحاث ودراسة السياسات، إلى أن محددات المكانة الاجتماعية (الجنس والعمر والدخل والمستوى التعليمي) لا تزال تؤدي دوراً رئيساً في التأثير في مستوى الوصول إلى الإنترنت. وأظهرت النتائج أن الغرض من استخدام الإنترنت يحدد احتمالية المشاركة السياسية، كما أظهرت أيضاً ارتفاع احتمالية العزوف عن المشاركة السياسية لدى الفئات الاجتماعية الهشة.

كلمات مفتاحية: الفجوة الرقمية، المشاركة السياسية، الانحدار اللوجستي، الفوارق الاجتماعية، الإنترنت.

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Introduction

Several studies reveal a digital divide between wealthy developed countries and poor developing countries based on unequal access to modern information and communication technology. These studies also highlight differences between urban and rural areas, age, gender, income, educational levels, and other influences on access to modern technology, especially internet use.¹

According to the latest statistics of the International Telecommunication Union (2021),² there are still 2.9 billion people in the world who are not connected to the internet. With weak modern communication infrastructure,³ the poorest countries miss many opportunities to integrate and involve different social groups in development. The Covid-19 pandemic did nothing to shrink the gap between countries. On the contrary, these disparities were exacerbated by the challenges presented by remote learning, bearing in mind that over half the population of the Arab world have no internet at home,⁴ most notably Sudan, Mauritania and Yemen, which have no greater access than the world's poorest regions.⁵

According to the indicators available to the International Telecommunication Union (2021), the percentage of internet users increased from 15% in 2005 to 63% in 2021. However, this does not mean that all countries benefited to the same extent. In Arab countries, this percentage currently comes to 66%, which is lower than that recorded on the European continent (87%) or the American continent (81%). However, the percentage of internet users in Arab countries is higher than that recorded in the poorest countries, where the rate of internet use comes to no more than 27%. It is clear from these figures that there is a digital gap between the regions of the world in terms of internet use, and that Arab countries rank higher than some other regions. However, the percentage of internet users recorded in the Arab world does not reflect the actual disparities among the countries of this region.

The United Nations report titled, "The Digital Divide and Open Governments in the Arab Region" for the year 2021⁶ points to major differences among Arab countries. In Mauritania and Yemen, internet users only account for 30% of the total population, while in Sudan and Syria the percentage is no more than 35%. The Gulf Cooperation Council (GCC) countries, by contrast, have the highest rates, with more than 90% of their populations using the internet. It appears from the data provided in this report that the gap among Arab countries is the greatest between a state like Qatar, which comes in first at 99.7%, and Mauritania, which records the lowest percentage (20.8%). The differences can be even more serious when rural areas are compared to urban areas. According to the International Telecommunication Union,⁷ 88% of urban areas in the Arab world have 4 GB mobile network coverage (allowing access to wireless internet at a much higher speed), while this coverage comes to no more than 55% in rural areas.

It should be noted that the digital divide separates not only countries and regions, but social groups as well. Data from the International Telecommunication Union report⁸ indicates that globally, the percentage of internet use among males comes to 62% as compared to 57% among females. This gap is wider in the

¹ Jan van Dijk, *The Digital Divide* (Cambridge: Polity Press, 2020), pp. 11-13.

² ITU Publications, *Measuring Digital Development: Facts and Figures 2021*, International Telecommunication Union (Geneva: 2021), accessed on 13/7/2022, at: <https://bit.ly/3P7nwaR>

³ The International Telecommunication Union (ITU), accessed on 13/7/2022, at: <https://bit.ly/3QdulJd>

⁴ Rasha Faek & Tarek Abd El-Galil, "The Shift to Online Education in the Arab World is Intensifying Inequality," *al-Fanar Media*, 30/4/2020, accessed on 13/7/2022, at: <https://bit.ly/3C9hWCf>

⁵ Ankita Upadhyay, "Covid-19: How Online Classes Have Widened the Digital Divide," *The Times of India*, 5/7/2021, accessed on 13/7/2022, at: <https://bit.ly/3bEN5IU>

⁶ UN, "Digital divide and open government in the Arab region," the Economic and Social Commission for Western Asia (Beirut: United Nations, 2021), accessed on 13/7/2022, at: <https://bit.ly/3zG8m6J>

⁷ ITU Publications.

⁸ Ibid.

Arab world, with a rate of 68% among males and 56% among females. The same report indicates that globally, young people (15-24 years of age) record the highest rate of Internet use (71%) compared to other age groups (60%). Similar figures emerge from in the Arab world, where the rate of Internet use among youth is 73% compared to other age groups (60%).

Access to the internet clearly offers many benefits, while the lack thereof has negative consequences. Research on the digital divide has begun shifting from the study of indicators related to the presence of an internet connection (referred to as the first-level digital divide) to indicators on other levels such as internet skills and the tangible benefits of internet use.⁹ In this context, the problem of the digital divide can be viewed not only through the percentage of people connected to the internet, but as a basic indicator for understanding the differences among Arab societies in terms of social integration through political participation. Therefore, this paper considers the digital divide as related to the possibility of acquiring digital knowledge and tools in order to exercise citizenship through genuine participation in various activities of relevance to the development of Arab societies. Given the impossibility of covering all areas, the paper is limited to certain types of political participation and the extent of non-participation as a result of the digital divide.

The first question posed by this research is: If Arab countries differ in terms of access to the internet, how does this impact political participation? Can it be said that the lower the percentage of internet use in a community is, the less political participation there will be? The relationship between these two phenomena may overlap with another problem related to social differences in general, especially in view of the fact that, according to several studies, the level of internet use and the purposes behind it may differ as a function of variables such as gender, age, income, and educational level.¹⁰ The second question asks: What is the relationship between internet use and socio-economic and demographic determinants? Based on the answer to this question, the paper discusses the digital divide not only among countries, but also among social groups, recognising that this gap may vary according to economic and political attitudes, and even the characteristics of Arab societies. The third question is: In light of the digital divide, what is the impact of social differences on political participation? This question will enable analysis differences among social groups, and will determine which groups are more aloof from or engaged in political activities. The study crucially utilises data from the Arab Opinion Index,¹¹ which provides variables for measuring the level of internet use in relation to political participation in a number of Arab countries.

Logistic Regression Methodology for Predicting Political Participation

The methodological importance of this research lies in the use of advanced quantitative tools to study the impact of the digital divide on political participation, especially with the availability of coordinated data for a group of Arab countries. The study focuses on ten Arab countries (Jordan, Tunisia, Sudan, Iraq, Palestine, Kuwait, Lebanon, Egypt, Morocco and Mauritania).¹² These countries were selected according to the data available from the Arab Opinion Index Survey (2017-2018), which includes a sample of 16,500 respondents from the aforementioned countries.

⁹ A. J. van Deursen & J. A. van Dijk, "The First-Level Digital Divide Shifts from Inequalities in Physical Access to Inequalities in Material Access," *New Media Soc*, vol. 21, no. 2 (2019), p. 355.

¹⁰ UN, 2021.

¹¹ ACRPS, Public Opinion Measurement Program, Arab Opinion Index 2017/2018, accessed on 7/8/2022, at: <https://bit.ly/3BQ3DCj>

¹² Saudi Arabia was omitted due to a lack of variables regarding political participation.

Variables Used in the Analysis

Variables related to the use of the internet and social media: This set (as independent variables) consists of a main variable related to Internet use generally. This variable was measured based on respondents' self-evaluation of their level of internet use on a scale from 1 to 5, where 1 indicates almost no internet use, and 5 indicates its use several times a day. This variable was used to compare and rank countries by level of internet use. Then the digital divide was assessed based on the relationship between internet use and demographic and socio-economic variables. In addition, a set of nine variables from the Arab Opinion Index (2017-2018) related to the use of social media were selected and measured on a scale from 1 to 5. These variables indicate the purpose of Internet use via social media. Due to the high correlation among variables relating to the purpose for Internet use, the number was reduced by means of a factor analysis,¹³ and the conversion of the nine variables into two aggregate axes (see Table 1).¹⁴ The variable is correlated with the axis when the load factor¹⁵ exceeds 0.4, while each axis represents a set of variables that are more consistent with the factor.¹⁶

It is clear from Table (1) that the first axis focuses on variables such as primarily on family and friends, getting to know people, and cultural and social activities. It measures to some extent the level of social media use without a true orientation towards issues of public interest. As for the second axis, it measures the level of social media use with an orientation towards issues of public affairs, including the aims of obtaining political information and interacting with social and political issues, including the organisation of activities. The variables on the first axis were combined into a single variable representing the average of the four variables on a scale from 1 to 5. Similarly, the second axis's five variables were combined into a single variable representing their average on a scale from 1 to 5.

Table (1): Axes according to the purpose for social media use

Axis 2 Load Factor	Axis 1 Load Factor	Variables Relating to Social Media Use
	0.593	To contact family and friends
	0.651	To meet new people
	0.644	To learn about social and cultural activities/events
	0.572	To find out what people are talking about
0.436		To glean news/political information
0.708		To express an opinion on current political events
0.694		To interact with a social issue
0.894		To interact with a political issue
0.740		To organise an activity relating to a public issue, such as social demands or a political cause

Source: Results of the factor analysis prepared by the researcher based on the Arab Opinion Index (2017-2018). The variable is correlated with the axis when the load factor exceeds 0.4.

¹³ Norm O'Rourke & Larry Hatcher, *A Step-by-Step Approach to Using SAS® for Factor Analysis and Structural Equation Modeling* (Chicago: SAS Institute Inc, 2007), pp. 43-44.

¹⁴ Several methods were used to extract the axes, including rotation, which allowed for the existence of correlation. In this way, the number of axes was determined using a criterion of eigenvalues greater than 1.

¹⁵ O'Rourke & Hatcher, p. 22.

¹⁶ Cronbach's alpha is above 0.7.

Demographic and socio-economic variables: This set of variables (as independent variables) consists of gender, age, income and educational level. These variables are considered essential for measuring the social gap in Internet use.

Variables related to political participation: The Arab Opinion Index data contain a set of variables to measure political participation (as a dependent variable). The Ekman and Amnå study indicated¹⁷ that there is a type of participation which is linked to activities based on movements by activists to express a position and make citizens' voices heard, and which can be classified as informal political participation.¹⁸ The Arab Opinion Index data includes variables on this subject via the following questions: 1- "During the past twelve months, have you signed a petition or a letter of document of protest?" 2- "During the past twelve months, have you participated in a peaceful demonstration/march or sit-in?" 3- "During the past 12 months, have you joined an activist group working to lobby/support/mobilise for a public or societal cause?"

Sample respondents answered on a dual-response scale (yes/no). These questions were then collected by creating a new dual-response variable (informal participation) to be determined as follows: 1- Affirmative response to at least to one of the three aforementioned questions, 0- Non-participation in any of the three activities mentioned. According to Ekman and Amnå's classification, there is also formal political participation through activities directly related to voting in elections and party affiliation. The Arab Opinion Index contains the following questions to measure this aspect: 1- Do you intend to vote in the upcoming parliamentary/legislative elections? 2- Are you affiliated with a political party/collective/current or group? 3- Do you intend to join a political party/collective/current or group in the future? Sample respondents answered on a two-response scale (yes/no). These questions were then collected by creating a new dual-response variable (formal participation) to be determined as follows: 1: Affirmative response to at least to one of the three aforementioned questions, or 0: non-participation in any of the activities mentioned.

The Logistic Regression Model

The independent variables in this study consist of: (1) internet and social media use, and (2) demographic and socioeconomic determinants. The logistic regression model was used¹⁹ as a statistical tool to study the impact of independent inputs on the expected output (political participation). In the results table, odds ratios are presented to determine the predictive power of independent variables and their impact on political participation through two logistic regression analysis models. In the first model, "informal participation" was the dependent variable, and in the second model, "formal participation" was the dependent variable. Odds ratios were obtained by converting the logistic regression coefficient into predictive values²⁰ capable of interpreting and analysing participation (or non-participation) in a manner that would be more accurate and more consistent with the features of the available data. To enhance the model's performance and explanatory power, only the independent variables with statistical significance were kept in the final model. These variables were obtained by means of the backward stepwise deletion regression method.²¹ Thus, each time the model removed the least significant variable until it arrived at a parsimonious final model containing only the statistically significant independent variables. In addition, a weighting variable was used to correct sampling errors.

¹⁷ Joakim Ekman & Erik Amnå, "Political participation and civic engagement: Towards a new typology," *Human Affairs*, vol. 22, no. 3 (2012), p. 292.

¹⁸ Xavier Lemyre, "Jeunes, participation et engagement au Canada," *Patrimoine canadien*, September 2016, p. 3, accessed on 9/10/2022, at: <https://bit.ly/3Vg4BPg>

¹⁹ David Hosmer & Stanley Lemshow, *Applied Logistic Regression* (New Jersey: Wiley, 2013), p. 18.

²⁰ Hicham Raiq & Mohamed Ourya, "The extent of youth satisfaction in light of political and economic transformations after the Arab Spring: A dual-response logistic regression analysis of a sample from the Maghreb," *Arab Politics*, no. 46 (2020), p. 81.

²¹ Hosmer & Lemshow, p. 139.

Digital Opportunities and the Multidimensional Nature of Political Engagement

As stated in an article published on the website of the University of Munich,²² one of the best definitions of political participation may be the comment made of old by Greek leader Pericles,²³ who believed that citizens never neglect the state, however busy they may be with family concerns, and that even business owners have a positive view of politics and its impact on society. In this context, we go from being merely actors within the sphere of private life to citizens interested in their country's public life. The influence of politics cannot be separated from individuals' daily lives, nor can the impact of individuals' daily practices be separated from the political life of the state as a whole. In his day, Pericles was keen in his speeches to motivate citizens to actively participate in public affairs, and even offered salaries²⁴ to those who contributed to services that benefited the public. The purpose of this was to foster democratic notions and open the way for participation by new societal groups. Our situation today differs little from that of ancient societies, since the concept of political participation in contemporary societies continues to be linked to citizen activities related to matters and issues of public concern.

Participation in public affairs is linked to multiple areas; it also introduces concepts that have become widespread in the social and political sciences and other disciplines. However, some ambiguities may still prevail. In several studies, for example, the ideas of political participation and civic engagement in reference to the means and levels of citizens' involvement in issues of public concern are combined into a single category²⁵ that may include overlapping types of activities. This is due in part to the multiple definitions that may either intersect with or complement each other. When Putnam introduced the concept of civic engagement that was popularised in the early 1990s, he emphasised the importance of social capital for citizen participation, including everything from reading the newspaper to local sports, leisure activities and more, without providing a precise definition of the term.²⁶ The concept of civic engagement has evolved over time, and numerous studies have defined it as "all the ways in which individuals participate in public life,"²⁷ or "actions taken by citizens in pursuit of common interests."²⁸ Accordingly, new classifications of political and civic participation have been proposed in view of their multiple dimensions.

Some define civic engagement quite broadly to include multiple concerns, while viewing political participation as narrow, including only those actions and activities whose aim is to impact political outcomes.²⁹ In another classification, Ekman and Amnå³⁰ view civic engagement as a kind of latent (or quiet) political engagement which may be transformed from a personal interest in societal issues to collective action through volunteer work within associations to improve conditions in the local community and contribute to charitable work. Such actions differ from Manifest political participation, which is characterised by voluntary activities undertaken by the public to influence public policy. Manifest political engagement may be embodied directly and formally in party affiliation or voting to choose the people who will set policies.

²² Berk Orkun Isa & Mustafa Eray Yucel, "A Theory of Political Participation," in: *Munich Personal RePEc Archive* (2020), pp. 1-2, accessed on 13/7/2022, at: <https://bit.ly/3Vg4BPg>

²³ He lived in ancient Greece between 495 and 429 BC.

²⁴ Vincent Azoulay, *Périclès: La démocratie athénienne à l'épreuve du grand homme* (Paris: Armand Colin, 2015), p. 109.

²⁵ Reinhold Hedtke & Tatjana Zimenkova, *Education for Civic and Political Participation: A Critical Approach* (London: Routledge Taylor & Francis Group, 2013), p. 192.

²⁶ Ekman & Amnå, pp. 283-284.

²⁷ Monica Bala, "Civic Engagement in the Age of Online Social Networks," *Contemporary Readings in Law and Social Justice*, vol. 6, no. 1 (2014), p. 768.

²⁸ Marko M. Skoric, Qinfeng Zhu, Debbie Goh & Natalie Pang, "Social media and citizen engagement: A meta-analytic review," *New Media & Society*, vol. 18, no. 9 (2016), p. 1822.

²⁹ Ekman & Amnå, p. 285.

³⁰ *Ibid*, p. 192.

Several studies have measured such participation based on the rate at which people vote in elections,³¹ especially in view of the fact that when citizens vote, their participation takes on a distinctive flavour, since they know that a single vote is unlikely to change the overall outcome, yet this knowledge does not deter them from participating.³² Yet, however important elections are, Manifest political participation is not limited to election-related activities. There are other, informal, ways in which people can participate, whether individually or collectively. In this context, political participation may take the form of protests, demonstrations or signing petitions to express a position and make citizens' voices heard by those in power.³³

Studies vary in their understanding of how political participation relates to the internet. They view participation as an "action", whereas merely watching television, visiting websites, or claiming to be interested in politics or information about civil society does not constitute actual participation.³⁴ The opportunities provided by the internet to inform oneself about what is happening in the political arena may give the impression that there has been an increase in political participation, whereas in reality, such opportunities are no guarantee of genuine participation. Living as they do in an Internet-saturated society, citizens have access to an enormous amount of information related to political and societal life, including applications for dealing with the governmental and non-governmental sectors, which gives rise to the hope that this will stimulate political participation.³⁵ However, in light of official institutions' domination over network systems, one might reasonably wonder how voluntary citizens' participation really is, and what freedoms they enjoy in this realm. True participation cannot be imposed by directives, rules and the like.³⁶

Overall, political participation in developed societies has come to be based on digital citizenship,³⁷ which requires governments to guarantee citizens' right to freely acquire knowledge and arrive at their own convictions concerning the political and societal issues circulating via digital media. The internet may thus become an ideal tool for supporting greater political participation through the general advancement of individuals' ability to exchange information and communicate without restrictions. These media also provide many opportunities for the exchange of viewpoints via dialogue platforms, which provide a public space where people can take part in activities that foster full-fledged citizenship. Furthermore, the internet provides a wide margin of freedom to voice ideas, attitudes and criticisms relating to issues of common interest, and to scrutinise the laws and rules that govern the exercise of public authority and the implementation of policy.³⁸ In these ways, the internet can empower citizens to relate with greater awareness to government institutions.

Nevertheless, some studies find that political participation has not improved significantly through the means provided by the internet. Statistics indicate that this participation is mainly limited to using the internet to obtain government services, complete administrative procedures, or engage in activities of a local nature, whereas political participation in the form of elections or political party activities has made little progress.³⁹ There are two possible reasons for this: First, there is a relative lack of interest in local channels with the domination of major international corporations that monopolize the media sphere (including electronic media). Second: For many citizens in the Arab world, the main source of political information is the official channels of the mass media, where the opinions expressed reflected a notable absence of diversity. In this sort of atmosphere, citizens will not necessarily increase their ambition for

³¹ M. Hawkesworth & M. Kogan, *Encyclopedia of Government and Politics*, vol. 1 (London/ New York: Routledge, 1992), p. 428.

³² Isa & Yucel, p. 1.

³³ Ekman & Amnå, p. 292.

³⁴ Jan W. van Deth, "A conceptual map of political participation," *Acta Politica*, vol. 49, no. 3 (2014), p. 351.

³⁵ Manuel Castells, *The Rise of the Network Society* (London: Wiley-Blackwell, 2010), pp. 383, 392.

³⁶ Van Deth, p. 352.

³⁷ Aytakin Isman & Ozlem Canan Gungoren, "Being Digital Citizen," *Procedia - Social and Behavioral Sciences*, no. 106 (2013), p. 251.

³⁸ Darin Barney, *The Network Society* [Arabic], Anwar Jamaawi (trans.) (Doha: ACRPS, 2015), p. 165.

³⁹ Dijk, p. 145.

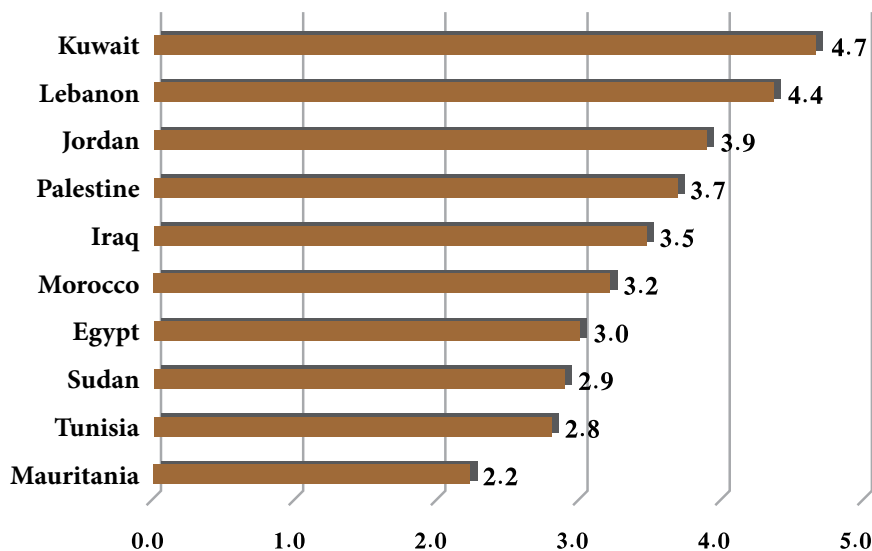
political participation.⁴⁰ On the contrary, they may go in search of the endlessly varied opportunities for digital communication in areas that have nothing to do with politics, such as their professional, personal, or recreational interests.

In parallel with the multiple dimensions of political participation, it should be noted that the Arab world has witnessed important transformations since the Arab Spring, in which modern means of communication played a major role. These events had the effect of re-arranging spaces for political participation. Arab regimes' partial openness towards new spaces may well stimulate participation, especially in countries that have witnessed transformations in multiple sectors. However, these countries still face challenges with respect to how to interact with the new spaces for political practice, and how to make them a practical success. Even in the Arab countries that have not experienced major transformations, there is at least some discussion of reshaping the space for political participation.⁴¹ This study examines how Arab citizens have interacted with these spaces based on the internet usage.

Results

Figure 1 shows that according to Arab Opinion Index data, Arab countries differ in terms of internet use. The figures represent the average level of internet use on a scale from 1 to 5 (where 1 represents almost no Internet use, and 5 represents quite intensive use). The highest level was recorded in Kuwait and Lebanon, while the weakest was recorded in Sudan, Tunisia and Mauritania (lower than 3 out of 5).

Figure (1): Comparative levels of Internet use in Arab countries on a scale from 1 to 5



In addition to the existence of a gap between Arab countries, there is also a gap within each society. It is clear from Table (2) below that internet use differs among social groups according to demographic characteristics, a phenomenon which is found in all Arab countries. For example, the level of internet use among females is lower than that among males (except for Kuwait and Lebanon); similarly, it is low among older age groups (55 years and over), those with low incomes (except Kuwait), and the citizens with low educational level.

⁴⁰ Pippa Norris, *Digital Divide: Civic Engagement, Information Poverty, and the internet Worldwide* (Cambridge: Cambridge University Press, 2001), p. 98.

⁴¹ Assia Boutaleb et al., *Introduction aux mondes arabes en (r) évolution* (Paris: Deboeck, 2018), p. 130.

Table (2): Comparing Arab countries in terms of internet use by demographic and socio-economic characteristics. The numbers indicate the averages of internet use on a scale from 1 to 5 (where 1 represents almost no internet use, and 5 represents very frequent use).

	Jordan	Tunisia	Sudan	Iraq	Palestine
Gender:					
• female	3.9	2.5***	2.8**	3.2***	3.5***
• male	3.9	3.2	3.0	3.8	3.9
Age:					
• 18-34	4.2	3.9	3.4	3.8	4.2
• 35-54	3.9	2.5	3.6	3.2***	3.5
• 55 +	2.7***	1.7**	1.7***	2.7***	2.0***
Income:					
• low	3.4***	1.8***	2.5**	2.9***	3.2***
• average	4.1	2.8	2.9	3.6	3.8
• high	4.4	3.8	3.5	3.8	4.2
Educational level:					
• low	3.5***	1.9***	2.5*	3.1**	3.2***
• average	4.2	3.5	2.8	3.5	4.0
• high	4.5	4.2	3.7	4.2	4.3

	Kuwait	Lebanon	Egypt	Morocco	Mauritania
Gender:					
• female	4.7	4.4	2.8***	2.9***	2.1*
• male	4.7	4.3	3.2	3.6	2.3
Age:					
• 18-34	4.8	4.8	3.9	4.3	2.6
• 35-54	4.8	4.3	2.6	2.6	2.3
• 55 +	4.3***	3.7***	1.4***	1.4***	1.5***
Income:					
• low	4.7	3.9***	1.4***	2.4***	2.6
• average	4.7	4.6	2.4	3.5	2.3
• high	4.8	4.4	2.6	3.9	1.5***
Academic level					
• low	4.5*	3.9***	2.0***	2.6***	1.4***
• average	4.7	4.6	2.8	4.2	2.4
• high	4.8	4.9	3.3	4.6	2.6

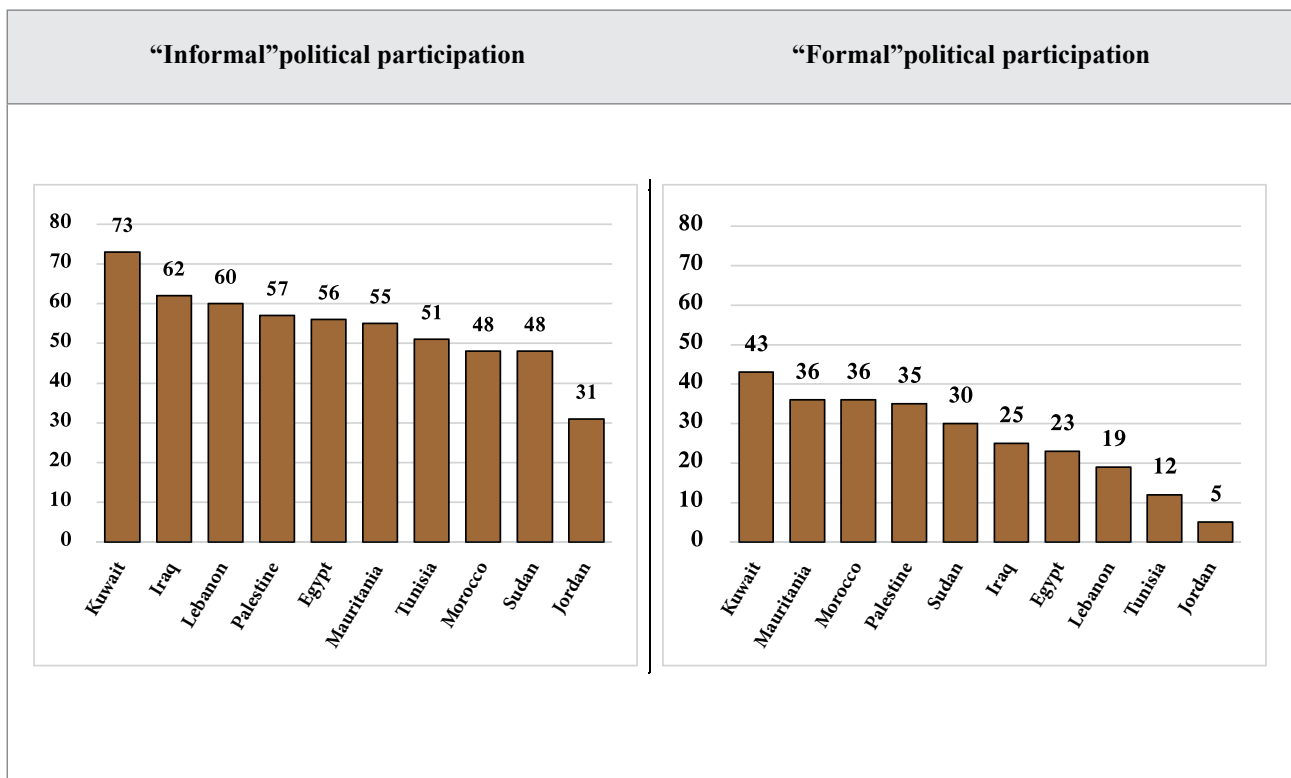
* Statistical significance at the level of 0.05/ **Statistical significance at the level of 0.01/ ***Statistical significance at the level of 0.001

Source: Prepared by the researcher based on Arab Opinion Index 2017-2018 data

Considering the variable “internet use” ordinal, the Mann-Whitney-Wilcoxon test was used to compare means for demographic variables for two groups and the Kruskal-Wallis test to compare the means for three or more groups.

Figure (3) shows that according to Arab Opinion Index data, there are differences between Arab countries in terms of the level of political participation. The “formal” participation rate is higher than the “informal” political participation rate. Overall, Kuwait records the highest rates of political participation, while Jordan records the lowest. Some countries, such as Tunisia, Lebanon, Egypt and Iraq, have low levels of informal political participation (less than 30%). Regarding official participation, Lebanon and Iraq registered rates of more than 60%. In general, there is noticeably more reluctance to participate in informal politics than to participate in formal politics.

Figure (3): Percentages of political participation



Source: Prepared by the researcher based on Arab Opinion Index 2017-2018 data.

Figure 4 shows that Arab countries differ in terms of the relationship between the level of internet use and political participation. Kuwait and Palestine record the highest levels of internet use, as well as the highest levels of informal political participation, while other countries, such as Morocco, Mauritania and Sudan, record high levels of informal political participation, but lower levels of internet use. Egypt, Tunisia and Iraq record lower levels of both internet use and [informal political] participation. Jordan and Lebanon report higher levels of internet use, but lower levels of informal political participation.

Figure 5, by contrast, shows a somewhat different distribution for formal participation. Although the rate of formal political participation is higher than that for informal participation, formal political participation has declined in some countries such as Morocco and Sudan, while in other countries, such as Egypt and Lebanon, it has increased.

Figure (4): A comparison of countries in terms of the relationship between the level of internet use and informal political participation

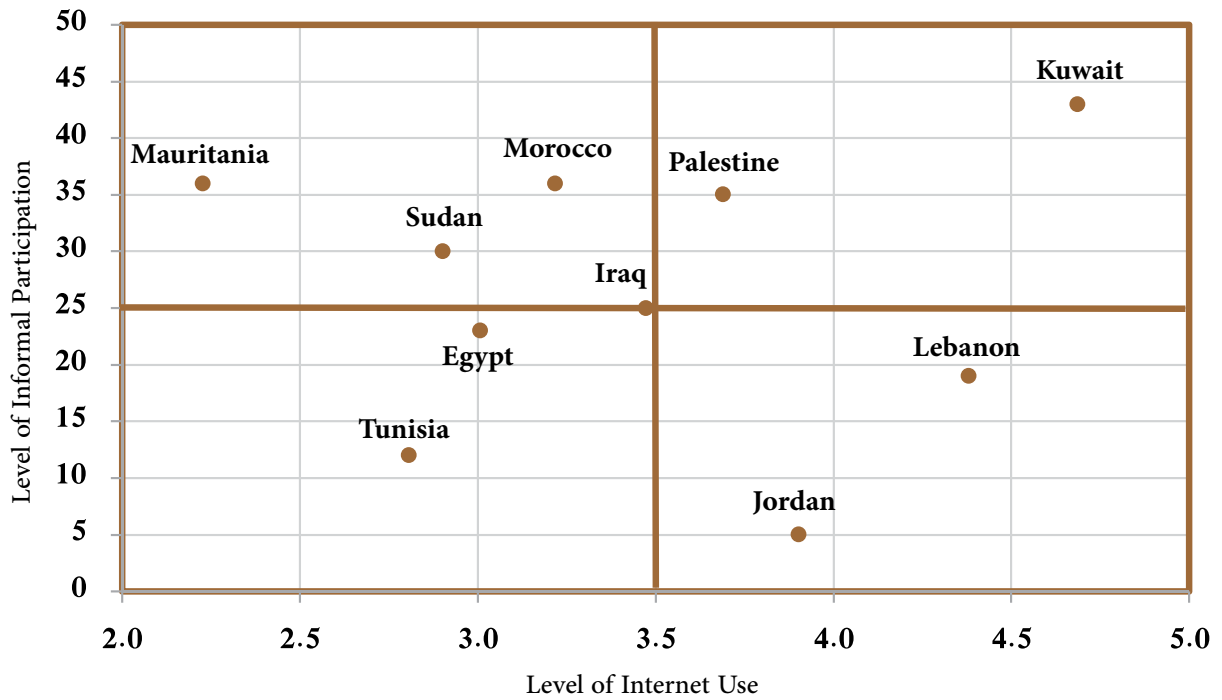


Figure (5): Comparing countries in terms of the relationship between the level of internet use and formal political participation

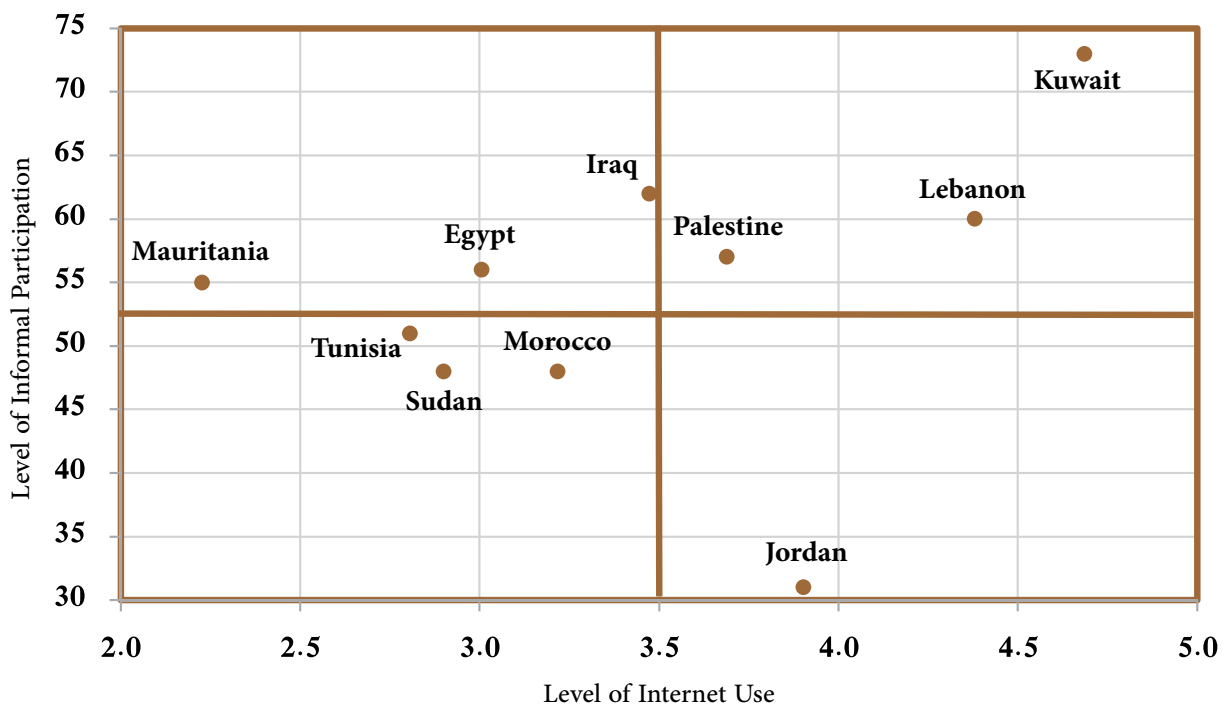


Table (3): Results of logistic regression. The numbers indicate odds ratios for determining the predictive power of determinants with an impact on political participation.

"Informal" political participation as a dependent variable										
	Jordan	Tunisia	Sudan	Iraq	Palestine	Kuwait	Lebanon	Egypt	Morocco	Mauritania
Internet use						6.3***				
Use of social media										
Axis 1 ⁴²			0.8*			0.6***			0.7***	
Axis 2	1.5***	1.6***	1.7***	1.6***	1.6***	1.6***	1.8***	1.7***	2.2***	1.5***
Gender										
• male	3.1***	1.9**		1.7***	2.2***	1.8*	1.4***	2.0**	1.5**	
• female										
Age • 18-34									1.9***	1.3*
• 35-54		2.0*					1.4*		1.8**	
• 55 +		--								
Income										
• high		1.5*		1.7**						2.8***
• average				1.5*						
• low				--						
Academic level										
• high		2.1***	1.6**	--	2.2***	2.0***			1.5**	
• average					1.6*					
• low										

"Formal" political participation as a Dependent Variable										
	Jordan	Tunisia	Sudan	Iraq	Palestine	Kuwait	Lebanon	Egypt	Morocco	
Internet Use			**1.6			5.5***				
Social media use										
Axis 1			0.8**		0.8**	0.8**				0.7***
Axis 2		1.1*	1.5***		1.3***	1.3***	1.3***			1.3***
Gender										
• male					1.7***	1.7**				1.4*
• female										
Age • 18-34	0.5**				0.7*	0.5***	0.6**			0.5***
• 35-54	0.7*						0.7*			
• 55 +										
Income										
• high						1.9***	2.3***	4.8***	1.8***	
• average						1.4**	1.5**	3.1***	1.4**	
• low										
Academic level										
• high				1.3*	1.9***			1.8***	1.6**	
• average										
• low										

* Statistical significance at the level of 0.05/ **Statistical significance at the level of 0.01/ ***Statistical significance at the level of 0.001

Source: Prepared by the researcher based on Arab Opinion Index data, 2017-2018

⁴² As explained in the methodology, Axis 1 denotes the level of social media use for family/friends/dating, etc. Axis 2 indicates the level of social media use with an orientation towards issues of public concern, such as obtaining political information and interacting with issues.

It is evident from the results of the logistic regression⁴³ that in most cases where there is statistical significance, it is the use of social media directed towards issues of public concern that stimulates political participation. As the use of social media directed towards issues of public interest increases by one unit on a scale of 1 to 5), the odds of informal political participation rises 1.5 times in Jordan and Mauritania and 2.2 times in Morocco, which represents the greatest degree of increase. The results also indicate that the use of social media for other purposes (family, friends) may increase the odds of refraining from formal or informal political participation in some Arab countries (with an odds ratio of less than 1). Hence, it may not be internet use per se which determines citizen behaviour in relation to political participation but, rather, the purpose behind such use.

The odds of political participation appears to be higher among males than it is among females in all countries where there is statistical significance. In Jordan, for example, males are 3.1 times more likely than females to experience informal political participation. In other countries (Palestine, Kuwait and Morocco), both formal and information political participation is more likely among males than it is among females. For countries where statistical significance was found, age appears to play a role in influencing political participation. There is a high odds of informal political participation in the age groups 18-34 and 35-54, while there is a reluctance for formal political participation among young people compared to older age groups in a number of Arab countries, as evidenced by the odds ratios of less than 1 which appear in the bottom section of Table 3 showing the results of the logistic analysis.

The results also show that in all countries that recorded statistical significance on the income variable, the odds of political participation (formal or informal) is higher among high and medium income earners. In other words, low-income earners are more hesitant to become politically involved than are other groups. The same conclusion applies to academic level. Although the level of influence may differ from one country to another and from one social group to another, the main focus of the study is the relationship between demographic and socio-economic variables on the one hand and political participation on the other. Some social groups may not enjoy as many real opportunities for political participation as other groups do.

Discussion and Summary

This discussion centres around three points related to the main research questions raised in the introduction.

1. **The aim of the first question is to determine whether Arab countries differ in terms of internet access, and what impact this has on political participation.** The most important conclusion drawn from this study is that there are, in fact, differences among Arab countries in terms of internet access. The level of internet usage in Kuwait far exceeds that in Mauritania and Tunisia. There is undoubtedly a wide digital divide among Arab countries, which can be seen in relation to the digital divide globally. In other words, wealthy countries benefit more from modern ICT than do poor countries. In addition to limited internet access, many citizens in poor countries lack the necessary qualifications to benefit from technology, and they live in marginalised rural areas far from the network system.⁴⁴ According to the United Nations Digital Development Report,⁴⁵ Kuwait, for example, has managed to increase the rate of internet availability in homes to 99.7%, while this rate comes to no more than

⁴³ Based on Arab Opinion Index 2017-2018 data.

⁴⁴ Jeffrey James, "The global digital divide in the internet: developed countries constructs and Third World realities," *Journal of Information Science*, vol. 31, no. 2 (2016), p. 114.

⁴⁵ UN (ESCWA), *Arab Digital Development Report 2019 Towards Empowering People and Ensuring Inclusiveness* (Beirut: United Nations, 2019), p. 38, accessed on 13/7/2022, at: <https://bit.ly/3A9CYiu>

15% in Mauritania. In addition, rich countries have moved towards using the internet in technical, functional and creative fields that can develop individuals' skills and enable them to take advantage of opportunities and integrate into the digital community.

On the other hand, it cannot be inferred from the results (Figures 4 and 5) that there is a strong relationship between the level of internet use and the level of political participation. Some Arab countries record a fairly high level of internet use without this helping to increase political participation. It may be said in this context that regardless of the rapid development of social networks such as Facebook, Twitter, Instagram, Tik Tok, WhatsApp, etc., there are still many countries that have not fully exploited the information revolution in the manner required to use the internet as a tool for promoting political participation. The proliferation of smartphones and other mobile devices can help expand the internet penetration rate and lift barriers to people's participation in politics.⁴⁶ But as the results of the logistic analysis have shown, not all internet use bolsters political participation. Using it to keep up with family, get acquainted with others, or dig up people's news does not increase the likelihood of political participation, as indicated by Axis 1 (Table 3), which has no statistical significance in the logistic analysis model. Clearly, the factor related to political participation is internet use directed towards issues of public concern. Notably, according to the results of Table 3, this axis is a more powerful predictor of informal political participation than it is of formal participation in all Arab countries. It may be that the internet provides Arab citizens with a margin of freedom of expression and opportunities to discuss and oppose policies in one way or another far from the constraints imposed by the pathways of official participation. Since the Arab Spring, social media in countries such as Tunisia and Morocco have witnessed the spread of rap songs that are increasingly critical of the political situation. These songs have received millions of views and garnered countless fans on YouTube as movements that break into new spaces, amplifying the voices and sufferings of educated youth from poor circles.⁴⁷

2. The relationship between internet use and political participation should not be considered from a single perspective only. For although this relationship is impacted by social differences, it is impacted by other factors as well. This leads us to the second question: What is the relationship between internet use and socio-economic and demographic characteristics? The results of this study show that there are social differences in terms of internet use not only between countries, but within each single society. With the exception of Kuwait, which has been able to reduce the digital divide between social groups, other Arab countries face difficulties in enabling some citizen groups to access the internet. The findings on Kuwait are not surprising, as several international reports rank the GCC countries among the most developed in terms of high GDP. The Arab Gulf countries have achieved great successes in the use of information and communication technology, with low rates of illiteracy and unemployment.⁴⁸ Although the severity of the digital divide differs from one country to another and one social group to another, Egypt, Morocco and Tunisia have recorded notable social disparities in terms of internet access. The United Nations report classifies these three Arab countries (in addition to Algeria) as middle-to-low-income societies. The same report indicates that in these countries, which have low rates of ICT use coupled with high rates of illiteracy, nearly 100 million people lack internet access,⁴⁹ most of them being from vulnerable social groups, especially in rural areas. By contrast, this study shows that Jordan and Lebanon have managed to curb the digital divide between social groups more

⁴⁶ Chuan-hsien Chang, "Does Internet usage inspire offline political participation? Analyzing the Taiwanese case," *Japanese Journal of Political Science*, vol. 20, no. 4 (2019), p. 194.

⁴⁷ Boutaleb, p. 152.

⁴⁸ UN (ESCWA) 2019, p. 128.

⁴⁹ Ibid.

successfully than the North African countries. These results are consistent with the United Nations report, which ranks Jordan and Lebanon immediately behind the GCC states, which enjoy advanced levels of the use of modern information and communication technology and widespread access to the internet among different social groups. These two countries are also seeing declining illiteracy rates.⁵⁰ Meanwhile countries such as Sudan, Iraq and Palestine suffer from ongoing conflicts which negatively impact their ability to make policies for the development of the technology sector and the reduction of the digital divide. There is also a group of low-income countries (such as Mauritania) that may not have the resources to advance the information technology sector and narrow the digital divide.

3. In the context of the digital divide, the results of the study show that there is a relationship between demographic and socio-economic determinants on the one hand, and political participation (formal and informal) on the other. The odds of male participation is high compared to female participation in most Arab countries. UN Women notes that the Arab region has the world's lowest rate of political participation by women. Arab countries scored 15.2% on the gender gap index (women represented in Parliament according to the commission's report), which causes these countries to rank the lowest in the world on this index, far below the global average of 22.1%.⁵¹ Some studies point to the role played by the Arab Spring uprisings in reducing the gender gap. Since that time, Arab women have played crucial roles in social movements, peacebuilding, and reconciliation processes. A new feminist discourse has appeared in several Arab countries calling for comprehensive and equal citizenship and including support for women as actors in influencing political life.⁵² Several Arab countries have passed new laws supporting women's role in the political arena by, for example, raising the rate of parliamentary representation. But there are those who believe that this leap has only emerged in "progressive" forms of political participation, that is, participation in "latent" movements and activities in civil society in relation to issues in areas such as education, immigration, the environment, etc., whereas barriers such as inequality in employment and education as well as socio-cultural considerations continue to restrict women's participation in "traditional" forms of politics.⁵³ In other words, Arab women are still less well represented than men in several institutions such as political parties, the judiciary, and ministerial posts, a phenomenon which negatively impacts other areas of public life and participation in other political spaces.⁵⁴

With regard to age differences, the results of the study indicate a high odds of youth (18-34 years) participating in informal political activities in countries such as Morocco and Mauritania. There is also a high odds of participation among members of the middle age group (35-54 years) in Tunisia, Lebanon and Morocco. These groups are more frequent users of the internet than older groups. Perhaps the internet may help motivate young people and middle age groups to engage in informal political participation. The interconnection between informal political engagement and the internet applies particularly to young audiences, as issues circulate more and more via digital media⁵⁵ away from the formal constraints in the context of which young people may not find the appropriate space for political participation. Indeed, the results of the logistic regression analysis in five countries show that young people are more reluctant to take part in formal politics. A growing number of studies show that younger generations are less likely to vote, for example,⁵⁶ while agreeing that older people are less inclined to use the internet than younger people

⁵⁰ Ibid.

⁵¹ UN Women, *Arab States, Leadership and Political Participation*, accessed on 8/8/2022, at: <https://bit.ly/3A8ieHM>

⁵² Arab Reform Initiative, field of work, women's political participation, accessed on 6/8/2022, at: <https://bit.ly/3A2SknV>

⁵³ Nasser Yassin & Robert Hoppe, *Women, Civil Society and Policy Change in the Arab World* (London: Palgrave Macmillan, 2019), pp. 42-43.

⁵⁴ UN Women, *Arab States*.

⁵⁵ Laurence Monnoyer-Smith & Stéphanie Wojcik, "La participation politique en ligne, vers un renouvellement des problématiques?" *Participations*, vol. 8, no. 1 (2014), p. 11.

⁵⁶ Lemyre, p. 9.

are.⁵⁷ Older people suffer more from the negative aspects of the digital divide because they may not benefit from the information and opportunities that digital networks provide for informal political participation. Thus, the intergenerational digital divide may lead to older people being excluded from some activities, thus creating a division between younger and older activists on social media.⁵⁸

The results of the logistic regression analysis indicate that low-income groups have the least access to the internet and at the same time are less prone to informal political participation in Tunisia, Iraq, Egypt and Mauritania, and less prone to formal participation in Kuwait, Lebanon, Egypt, Morocco and Mauritania. Studies on Arab society show higher-income groups to be the most involved, an outcome which differs only slightly from the results of studies on Western democracies.⁵⁹ There is an interaction among indicators whereby internet use may increase participation-related disparities between social classes (low-income versus high-income). High-income groups undoubtedly benefit more quickly from digital communication and receive more opportunities, whereas harsh living conditions pose a barrier to digital connectivity for individuals with low incomes. Some researchers have described this group as “the mobile underclass” or “second-class internet users” who benefit less from digital media.⁶⁰ Deep-rooted social and economic inequality in a number of countries in the Arab world may exclude the lower classes and impede their efforts to mobilise online, thereby increasing the likelihood that they will refrain from political participation. In poor circles, even if internet access is available, it will be difficult for people to afford it.⁶¹ Consumer economics theory attempts to explain the digital divide through market costs and the “trickle-down effect”. In other words, since the advent of modern digital media, it has largely been acquired by high-income earners, while disadvantaged groups have to wait for prices to fall,⁶² contenting themselves with the use of unsatisfactory, low-quality devices that do not enable them to integrate into the digital world and interact effectively with the issues in their communities.

Social vulnerability also appears via educational disparities. The results of the study show that citizens with high (and to some extent, medium) levels of education are more prone to informal political participation in Tunisia, Sudan, Palestine, Kuwait and Morocco; and more prone to formal political participation in Iraq, Palestine, Egypt, Morocco and Mauritania. Notwithstanding the controversy surrounding the relationship between academic level and political participation, the results of a number of studies indicate that educational advancement has a positive and important causal effect on political participation.⁶³ This does not mean that people with low educational levels do not engage in political activities or do not use the internet at all. Rather, the issue is related to the way “democratic spaces” are accessed⁶⁴ and the use of new domains. The online participatory process is designed to operate on the basis of the qualifications that an individual can employ to develop work styles and adapt to new technologies.

On the ground however, some Arab countries still suffer from illiteracy problems⁶⁵. Similarly, participatory spaces outside the formal system remain limited and are sometimes based on contradictory work patterns.⁶⁶ Some Arab countries have passed laws under the influence of the Arab Spring which

⁵⁷ CC McDonough, “The Effect of Ageism on the Digital Divide Among Older Adults,” *Journal of Gerontology Geriatric Medicine*, vol. 2, no. 008 (2016), p. 1, accessed on 13/7/2022, at: <https://bit.ly/3diwRzu>

⁵⁸ Julia Schuster, “Invisible feminists? Social media and young women’s political participation,” *Political Science*, vol. 65, no. 1 (2017).

⁵⁹ Saifuddin Ahmed & Jaeho Cho, “The internet and political (in)equality in the Arab world: A multi-country study of the relationship between Internet news use, press freedom, and protest participation,” *New Media & Society*, vol. 21, no. 5 (2019), pp. 1068, 1078.

⁶⁰ P. M. Napoli & J. A. Obar, “The emerging mobile internet underclass: a critique of mobile internet access,” *Information Society*, vol. 30, no. 5 (2014), p. 330.

⁶¹ Mary Chayko, *Superconnected: The internet, Digital Media, and Techno-Social Life* (SAGE Publications, 2017), p. 111.

⁶² Dijk, p. 11.

⁶³ Alexander K. Mayer, “Does Education Increase Political Participation?” *The Journal of Politics*, vol. 73, no. 3 (2011), p. 644.

⁶⁴ Darin Barney et al., *The Participatory Condition in the Digital Age* (London: University of Minnesota Press, 2016), pp. 24-25.

⁶⁵ UN (ESCWA), p. 128.

⁶⁶ Boutaleb, p. 154.

appear to open up democratic spaces that promote political participation. At the same time, however, there are practices and procedures that restrict citizens. The United Nations refers to some North African and Middle Eastern countries,⁶⁷ which have blocked access to the internet, partially disabled it, censored unwanted websites, or cut off the internet “in good faith” to combat cheating on school exams, thereby disrupting communication and obstructing daily activities for millions of other citizens, not to mention causing significant economic losses. Under these circumstances, and in the absence of digital policies geared towards citizen empowerment, it is difficult to attract the interest of every social stratum to engage with issues of public concern. Quite to the contrary, indifference may grow among more and more citizens even if they have the necessary capabilities and communication skills.

Conclusion

The analysis presented in this paper demonstrates the complexity of the relationship between political participation and internet use. Despite the progress of some Arab societies in terms of internet access, the increasing opportunities offered by modern means of communication do not necessarily lead to satisfactory results in terms of political participation. This study can help create a shared sense among Arab countries of the importance of overcoming the digital divide, not only by connecting people to the internet, but by providing the skills, training and equal opportunities needed to enable citizens to exploit the tangible benefits the internet us can bring.

The interconnection between the digital divide and social disparities may exacerbate unequal opportunities for political participation by excluding important but vulnerable segments of society from the political process. Arab countries still face major challenges in terms of employing the potentials of the internet to enhance communication and enable citizens to deliberate on issues of common concern. In addition to the failure of digital policies to adapt to the requirements and ambitions of Arab societies and despite the progress made following the Arab Spring, the region has yet to achieve a qualitative leap towards opening up genuine new democratic spaces to guarantee citizens’ rights to political participation. The advancement of political participation and digital citizenship might be hampered by fear of the dangers of the internet, such as digital crime or the spread of extremist currents that threaten existing regimes and the stability of society. Hence, clearly more studies are needed on this subject, not only to reduce the digital divide at its various levels, but also to move from an Arab model of technology consumption to one of creating innovative solutions that will reduce risks while expanding rights to political participation conducive to our societies’ well-being and stability.

⁶⁷ United Nations (Human Rights Council), “Internet shutdowns: trends, causes, legal implications and impacts on a range of human rights (2022),” accessed on 8/11/2022, at: <https://bit.ly/3QeQPtF>

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