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# DIGITAL DEMOCRACY DURING COVID-19 PANDEMIC: USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY BETWEEN CREATIVITY AND INABILITY TO PROMOTE THE PRACTICE OF DEMOCRATIC VALUES. CASE STUDY OF JORDAN

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**Abstract.** This study aims to examine the extent to which information and communications technology was used as a tool for political socialization and promotion of democratic values, and the purpose and extent of Jordanian university students' use of information and communications technology during the COVID-19 pandemic. The study adopted a cross-sectional design. A total of 1171 students were selected from science and humanities faculties at three universities to participate in the study. Questionnaires were sent to some of the university students to distribute to other students through their electronic learning platforms. The findings of the study revealed that, although most participants used information and communications technology to "high" and "very high" extents, they did not use it to promote democratic values, as the purpose was mainly for education, entertainment, and other services.

**Keywords:** COVID-19 pandemic, democracy, digital democracy, information and communications technology.

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## 1. Introduction

In the face of the COVID-19 pandemic, countries around the world can be classified into two groups: pro-herd immunity group and quarantine and isolation-based group. The COVID-19 pandemic led to the restriction of social, economic, and political activities in some countries, and closed most sectors except those operating with information and communications technology (ICT). Jordan is one of the countries that was greatly affected by the COVID-19 pandemic due to the lockdown policy it adopted. During the lockdown, the use of ICT increased among Jordanian citizens in general and students in particular, as students used it to meet most of their needs, such as academic activities and bill payments.

ICT played a vital role in maintaining communication between people during Jordan's implemented social distancing policies. The Internet, social networks (*Facebook*, *Twitter*, *Instagram*, *etc.*), news and interactive websites, and blogs, including mobile phone networks, were more important than ever. People's ability to use ICT to communicate and share information and knowledge directly during a crisis is the primary factor in transforming many social, economic, and political aspects of human lives, such as education, health care, business, political participation, and election campaigning.

Despite the ICT revolution, the political culture in Jordan is still traditional. The totalitarian culture continues to dominate, starting with the family, passing through educational institutions, civil society institutions, and political parties, leading to the tyranny of successive governments in power. Accordingly, Jordan is still suffering from a crisis in building democratic values, and it is still classified as an authoritarian state (Al-Hourani, 2012).

The COVID-19 pandemic has coincided with the ICT revolution, which has led to an increase in the use of ICT. Could this increase lead to the contribution of ICT as a new tool for political socialization to enhance the values of democracy and human rights?

Researchers are divided over the role and extent to which ICT promotes different democratic values. Some researchers believe that ICT is a double-edged sword and its contribution depends on utilization (Rosenau & Johnson, 2002, p. 55). For example, governments have abused technology in undemocratic ways (Youngs & Panchulidze, 2020, p. 12). Other researchers believe that digital democracy is a logical development of democracy, reinforced by ICT (Roleff, 2012), or that ICT does not promote democracy but is a means of supporting it (Human Rights Documentary Organization Center for Digital Expression Support, 2017, pp. 5–9; Lamah, 2014).

Thus, this study aims to examine the extent to which ICT was used by students as a new tool for political socialization in creatively promoting and practicing democratic values such as political participation; political culture; dialogue and respect for opinion; freedom, justice, and equality; political pluralism, and respect for human rights. The study also aims to examine the extent to which Jordanian university students used ICT during the COVID-19 pandemic, and the purpose for which they used it. The importance of this study stems from several scientific and practical considerations. During the coronavirus crisis, digitalization had become one of the most prominent topics discussed at technological, social, economic, and political levels. Therefore, we started talking about digital trade, digital information, digital economy, digital citizens, digital participation, and digital democracy. The importance also stems from the importance of applying technology to many political issues, such as participation in the expression of opinion, participation in the decision-making process, and the claim and defense of rights. It also includes scientific and rational results that can be used by decision-makers. This study is one of the first to discuss whether ICT has creatively promoted the process of democratic transformation in Jordan during a time of crisis.

Given the great use of information technology (IT) in Jordan over the past years, especially during the COVID-19 pandemic, researchers have tried to study the uncertainty around the idea of technological determinism and the role of technology in changing the political, economic, and social environment (Deva, 1997) in addition to its role in developing democratic values through creativity. Thus, the following research questions have been formulated to guide this study:

1. How creative is ICT in promoting the practice of democratic values (political participation; dialogue and respect for opinion; democratic political culture; freedom, justice, and equality; political pluralism; human rights values) among university students in Jordan?
2. To what extent do university students use ICT for communication?
3. What are the purposes of using ICT among university students?
4. Are there differences in the extent of use of ICT in promoting democratic values among university students in Jordan based on students' characteristics and ICT usage (student type, student college, educational level, extent of use of ICT, purpose of use of ICT)?

## 2. Research hypotheses

The researchers also developed a set of hypotheses that agree with the study questions as follows:

H1: ICT contributes to enhancing the practice of democratic values (political participation; dialogue and respect for opinion; democratic political culture; freedom, justice, and equality; political pluralism; and human rights values) among university students in Jordan;

H2: During the COVID-19 pandemic, university students' use of ICT increased;

H3: The purpose of university students' use of ICT was centered around education and the purchase of basic necessities;

H4: There are differences in the extent of the use of ICT in promoting democratic values among university students in Jordan according to the extent and purpose of their use of ICT.

## 3. Literature review

There are three trends among scholars regarding the role of ICT and its impact on democracy: 1) ICT does not lead to the promotion of democracy; 2) ICT does not create democratic values but promotes these values, if any; 3) ICT promotes and creates democratic values. Regarding the first trend, an article by Carothers (2015) titled "Why Technology Hasn't Delivered More Democracy", revealed that the unprecedented technological progress has not expanded democracy in the world. He stated that the number of democratic countries is not increasing, and many countries practicing democracy still face institutional problems and lack of citizen trust (Carothers, 2015). Martin Tisné explained that authoritarian leaders around the world have always cracked down on civic space and used technology to advance their undemocratic ends (Carothers, 2015). Similarly, Larry Diamond pointed out that the positive effects of technology may be limited to a number of negative elements, such as the growing global influence of non-democratic major powers such as China, Russia, and Iran, with the ineffectiveness of many democratic regimes, as well as the human rights violations committed in the name of the war on terror (Carothers, 2015). Diamond also supports the idea that the use of ICT is hampered by authoritarian leaders (Carothers, 2015). Senem Aydin Düzgit believed that in the midst of these technological developments, a segment of the world's population has not entirely embraced ICT (Carothers, 2015). For example, in Turkey, a country that has achieved some degree of economic success, about half of households still rely on traditional means for information and news. Düzgit corroborates this view by stating that authoritarian regimes hinder technological developments (Carothers, 2015). Rakesh Rajani stated that technology does not promote the practice of democratic values (Carothers, 2015). It creates new possibilities for collecting and analyzing data, blending ideas and reaching people, but people still need to move to participate and find workable courses of action. Diane de Gramont asserted that the greatest challenge facing democracies around the world is to form strong and reliable representative institutions responsive to the needs and demands of citizens (Carothers, 2015). The author further posits that technological developments can provide limited assistance in this context. Political parties are the weakest link in most old and new democracies as they suffer from limited trust and respect from citizens. Carothers (2015) emphasized three main

factors that explain why the scientific and technological progress that has prevailed in the world has not been reflected in political systems or influenced greater democratic practices. These factors are as follows:

1. Determining the impact of technological progress on political systems will take a long time;
2. Many factors limit the democratic impact of technology, including the ability of authoritarian governments to use technological progress to serve their non-democratic purposes. Also, only a limited number of people around the world are enjoying the effects of technological progress;
3. Technology does not provide solutions to a number of basic challenges in building democracies. Foremost among these are motivating citizens to participate in collective action and creating effective representative institutions. These three factors may represent a good start to explaining the relationship between technology and democracy (Carothers, 2015).

Min (2010) explored individuals' political use of the Internet and found that the use of Internet for politics is not equal among individuals as it is based on skills and motivational factors. This may be a warning against the technological determinist view that technologies will bring a democratic utopia. One solution to this problem is building digital knowledge or building digital capabilities among citizens. Besides universal access to the Internet, continuous civic education about ICTs and their beneficial use is essential in the current information-based society. The implementation of such a program will require the full cooperation and commitment of all stakeholders – civil society, government, and enterprises (Min, 2010, p. 32).

Bastien et al. (2020) aimed to analyze how people with disabilities accessed the Internet for political participation, compared it with others, and measured the extent to which people with disabilities used digital skills. A telephonic survey was conducted among a representative sample of the Canadian population. Researchers found that Canadians with disabilities were less likely to access technologies online, and that disabled users with low digital skills faced barriers to online participation in politics.

In an article entitled "How IT Threatens Democracy" former secretary-general of the United Nations Kofi Annan supported the first trend and went further, especially regarding weak countries (Kofi Annan Foundation, 2018). He said that the Internet and social media were praised, but the authoritarian regimes soon began launching a strict campaign against Internet freedom; these regimes feared the brave new digital age, as it was beyond the reach of their analog security establishments. It turned out that these fears lacked any real basis (Kofi Annan Foundation, 2018).

The situation in Iran represents the second trend, Golnaz Esfandiari explained that the situation in Iran sums up the difficulty of answering the question: Why has technology not led to greater democracy? Esfandiari stated that without social media, Minister of Foreign Affairs of Iran Mohammad Javad Zarif would not have retracted his statements regarding political prisoners (Carothers, 2015). The author added that the Internet and social media have ended the monopoly of information previously enjoyed by authoritarian governments, but explained that *Facebook* exchanges and tweets will not automatically create democracy in Iran or other

politically closed countries. Instead, they will give those seeking change a potentially powerful weapon with which they can reach a growing audience (Carothers, 2015).

One study that reinforces this trend is that of Gil de Zúñiga et al. (2010) who re-imagined the paths of political participation through blogging. The study highlighted the role of digital democracy in presenting a new image of political participation and explained the factors that predict participation via the Internet. The results showed that more than 3900 readers of 40 leading political blogs and their analysis demonstrate this. One major finding was a correlation between traditional participation and Internet participation, and that these two areas were highly complementary and supported each other. It was found that women's political participation in blogging was greater than that of men. Another major finding was that the increase in politically active blog readers encouraged the public to engage in political participation and promote democracy. The ease of Internet use, as well as the anonymity of potential users, may allow those disconnected from traditional politics to begin to bridge this gap and allow for a more equal and democratic society.

Moghzili (2017) addressed the extent to which ICT contributed to promoting electronic democracy. The results revealed that digital democracy was not a new type of democracy, but rather a new practice. With the use of technological tools and mechanisms, ICT played a vital role in supporting democracy, especially in countries that already enjoyed democracy, where ICT contributed to clearing the way for citizens' participation in decision-making.

We must know that IT is nothing but a mechanism that may bring about great changes in society, but it does not grant freedom. Hence, IT is only a means to enhance and support the process of democratic practice. Thus, we can say that there is no digital democracy if there is no democracy in the first place (Human Rights Documentary Organization Center for Digital Expression Support, 2017, pp. 5–9).

El-Dahshan's (2018) study supported the third trend that technology supports democracy. El-Dahshan further pointed out that the use of ICT and modern media greatly facilitated and promoted the practice of democracy in all its forms by expanding the base of access to information, urging people to participate in political affairs, and activating the role of democracy and political activists, their use of discussion lists and appropriate newsgroups, and freedom of expression. For all, the participation of individuals is the role of government and civil society. The author adds that the integration of ICT with political action has led to the creation of new mechanisms and ways of working for the practice of democracy and political action, in what we can call the democracy of ICT or digital electronic democracy (El-Dahshan, 2018, pp. 134–135). Supporting freedom and achieving social justice and democracy has become the only option for countries to achieve the aspirations and hopes of their people. In fact, the integration of ICT with political action has led to the creation of new mechanisms and ways of working for the practice of democracy and political action, in what we can call the democracy of ICT, or electronic or digital democracy (Al-Asraj, 2021, p. 2). It was stated that

> "while ICTs are indeed touted as the tools of bottom-up empowerment and democratization that actively thwart the ability of highly centralized dictatorial governments to take form, it is important to bear in mind the contradictory danger of facilitating a tyranny of the majority" (International Telecommunication Union, 2002, p. 24).

Lee (2017) addressed the effects of Internet use on political participation in East and Southeast Asia through the Asian Barometer Survey that was administered in two batches (in 2005–2007 and in 2010–2011) (Asian Barometer, 2022). The study showed that the use of the Internet was positively related to non-traditional political participation, while there was no relationship between Internet use and institutional work. It further highlighted the role of technology in personal discussion and self-efficacy, which in turn led to participation, in addition to the role of the Internet in enabling members to engage in political recruitment.

Lamah's (2014) study aimed to identify whether digital age technology supported democracy, or whether problems and challenges emerged at practical and theoretical levels. It emphasized the role of the information revolution in increasing the possibility of partnership in decision-making, while posing constraints and challenges related to the empowerment and skill gap in the use of IT.

bin Yazza and Soghairy (2019) aimed to discuss the contribution of the digital environment in supporting participatory democracy and achieving one of the dimensions of modern democracy, where the information revolution brought about a shift in the pattern of participation and participation systems. However, all parties contributed to the policy-making and decision-making processes. It was found that the digital environment and electronic societies could crystallize new models that contributed to the rationalization of governance and overcame the structural and procedural obstacles to consolidation of the participatory democracy model.

ICT plays a vital role in political participation, mobilization, and political socialization, as well as in mobilizing the public in politics (Gbue, 2014). Individuals can gain political values and orientations through other channels that may contradict the traditional channels of socialization such as digital means emanating from ICT (Kalsnes, 2016; Riaz, 2010).

Pye and Verba (1969) believed there are two sources of political culture. On the one hand, the individual passes through the stages of life through the institutions and tools of socialization. On the other hand, with non-political experiences that affected political behavior, they gain political experiences from their dealings with others and from exposure to political means of communication (Pye & Verba, 1969).

There is wide controversy among researchers that ICT may increase inequality between developed countries and Third World countries, as well as between citizens with higher income levels and lower income levels, or between educated and uneducated citizens within countries (van Dijk, 2005; Warschauer, 2003). However, during the COVID-19 pandemic, ICT provided individuals with free spaces for deliberation and debate on political issues, and gave them an opportunity to express their political and intellectual views with absolute freedom away from the pressures of society and the ruling political system. The convergence between ICT and political action has resulted in new ways of expressing opinions, practicing the democratic process, and disseminating the appropriate climate to strengthen it.

In the period leading up to the 37th G8 summit in May, 2011, a summit called E-G8 Forum was held in France, and dealt with the role played by ICT in politics, the economy, and society. President of France Nicholas Sarkozy greeted the audience on the accompanying website with words of joy and cheer, saying:

> "Within only a few years, the Internet achieved the dreams of the philosophers of the Enlightenment, and made the knowledge we gathered available to the largest audience

> imaginable. Promoting democracy and human rights, urging countries to have greater transparency, and in some countries, the persecuted can raise their voices to work together in the name of freedom" (Schmidt, 2012).

With cyberspace replacing physical space as a place for political debate and social interaction, it seemed that the complete digitization of democratic processes was inevitable. Adding to this was the fact that traditional democracies were ineffective. Day-to-day interactions with bureaucracies seemed dormant when compared to the dynamic relationships that people enjoyed on digital arenas. Thus, not only did switching to digital technology seem reasonable, but it was also desirable, whether to convince people to vote or involve them in daily management (Sgueo, 2020, pp. 1–3).

The concept of digital democracy belongs to the digital age; this concept appeared to the public clearly when ICT was integrated into political work, providing modern ways and means to practice democracy. Digital democracy referred to the following:

> "The use of information technology and digital communication tools in the generation, collection, classification, analysis, and circulation of all information, data, and knowledge related to the practice of the values of democracy and its various mechanisms, regardless of democracy, its intellectual form, its extent of spread, the integrity of its purpose, and its effectiveness in achieving its goals" (Human Rights Documentary Organization Center for Digital Expression Support, 2017, p. 8).

After merging with communication and IT, democratic practice exceeded the boundaries of space and time and turned the physical world into a virtual world (Lamah, 2014, pp. 3–4). As the digitization of citizen-state relations progressed, the discourse on this development was enriched with new terminology. The most prominent of these new terms were *e-democracy*, *e-government*, and *e-participation*. The relationship between electronic democracy on the one hand, and electronic government and electronic participation on the other hand, coincided with the same hierarchy as democracy, government, and citizen participation in the traditional world (Wirtz et al., 2008, p. 15).

The gradual expansion of relations between the citizen and state to include the digital space was not an attack on democracy as some feared, but a logical development reinforced by new technical capabilities and the accompanying democratic self-image, as in Germany, for example. Democracy is achieved through electronic democracy, electronic governance, and electronic participation (Roleff, 2012).

The COVID-19 pandemic posed a challenge for civil society actors to participate in the decision-making process at the state level, as traditional forms of information, participation, and decision-making had become difficult or impossible due to communication restrictions and fast-track procedures. At the same time, the COVID-19 pandemic could have provided an important impetus towards digitizing government administration and citizen participation (Greenpeace, 2020, pp. 8–9).

Governments around the world enacted various emergency powers to enforce closures and other measures. While these traditional measures were, in many cases, appropriate and justified to protect people from the COVID-19 pandemic, some governments used them deceptively to restrict democratic activities and silence critical voices. Emergency measures, in and of themselves, were not undemocratic by nature, but in many countries, they undermined

civil liberties. Some weak democracies and authoritarian regimes suffered from a dangerous tendency toward more centralized power and long-term oppression. Therefore, this COVID-19 pandemic must increase the need to defend democracy, as well as push international organizations toward their obligations to defend democracy and to reconsider adjusting their strategy. This, of course, is not without new political challenges that require adherence to democratic standards (Youngs & Panchulidze, 2020, p. 4).

The COVID-19 pandemic has directed more attention to the digital divide in the world, as an estimated 3.6 billion people are not connected to the Internet, including 900 million in Africa. Infrastructure and economic projects cannot be stopped, but must continue to ensure the preservation of facilities and the welfare of citizens (Petersen, 2020, p. 3).

In addition, due to the COVID-19 pandemic, digital applications have appeared on a large scale to enable information access and exchange, such as information on websites, live broadcasts of events on *YouTube*, and newsletters via electronic mail. In addition, parliamentary evenings, specialized conferences, and press talks via the *Zoom Video Communications* platform, *Microsoft Teams*, or *Cisco Webex* have become popular. However, public participation through these apps will not be normal (Kretschmer, 2020). Since the COVID-19 pandemic, these applications and systems have become common among millions of people, which leads us to say that what preceded the COVID-19 pandemic will not be the same afterward, as the world has become more virtual. Here, it must be pointed out that the repercussions of combating the COVID-19 pandemic would enhance the democratic transformation process, such as that seen with the German Federation for IT (Bitkom, 2020).

Many countries have tended to adopt new democratic rules during the COVID-19 pandemic; for instance, the legislative bodies in Albania, Colombia, Brazil, and the Maldives changed parliamentary rules to allow remote digital work. Chile and Singapore also passed constitutional amendments to allow virtual parliamentary debates. In countries such as Armenia, Guatemala, Indonesia, and Kosovo, social media tools were improved to communicate with citizens. In addition, virtual meetings held by women in Mexico called for the protection of women's rights. Many countries have considered expanding political participation online while addressing digital vulnerabilities to make these practices more secure. Consequently, states must amend their strategies and areas of intervention to guarantee democratic governance in COVID-19 pandemic and COVID-19 post-pandemic conditions. States need to develop innovative approaches to hold elections, ensure the effective functioning of democratic institutions, improve parliamentary oversight, and improve citizen participation in political processes (Youngs & Panchulidze, 2020, 18).

The literature on classical and contemporary political economy predicts that democratic states are more effective in managing disasters, including pandemics, than authoritarian regimes (Petersen, 2020, p. 10). Yen (2020) believes that Taiwan's effective response to the COVID-19 pandemic was because democracy in Taiwan established a strong relationship between the state and society, which strengthened the legitimacy of crisis management and increased the voluntary compliance of citizens.

The health crisis has demonstrated the positive role of technology, as preventive messages were spread and efforts made to increase public access to health care; in many democracies, governments raised concerns about privacy rights for their tracking applications. However,

as mentioned earlier, many governments have misused technology for illegal surveillance, which has led to breaches of medical privacy and wider violations of human rights (Youngs & Panchulidze, 2020, p. 12). Many German politicians believe that the election process should not be digital, at least for now, as the election process via the Internet would be vulnerable to attack. State Minister Dorothee Bär believes that digital elections will increase the participation rate, but she does not exclude the manipulation of results, and envisions digital elections when the systems are secured against manipulation (Witting, 2020).

Despite the need for technology and means of communication during the global COVID-19 pandemic crisis (Rosenau & Johnson, 2002, p. 55), IT is a double-edged sword that can act as a tyrannical force or can liberate the masses. It can facilitate the dynamics of globalization as well as those of violent nationalism, and serve to mislead policymakers. In short, whether the consequences of IT are beneficial or harmful depends on its use by citizens and their leaders.

## 4. Method

The researchers used the scientific method followed in political studies based on the steps of observation, positing and testing hypotheses, collecting and analyzing information, and arriving at results. The analytical statistical method was also used by processing data with the *SPSS*. The arithmetic mean and standard deviations were calculated for the first question, the duplicates were calculated as percentages for the second and third questions, and multiple variance analysis was used for the fourth question.

The study population comprised students at ten public universities in Jordan. A total of 1171 male and female students were selected using the multi-stage sampling method. Three universities were chosen randomly from three different regions; then, two colleges from each university were chosen randomly, so that one was a science college and the other a humanities college. Some colleagues in these colleges were asked to post the questionnaire on their electronic learning platforms for the students to access and complete.

The tool consisted of two parts: the first part dealt with independent variables, while the second part dealt with the values of democracy represented in political participation; political culture; dialogue and respect for opinions; freedom, justice, and equality; political pluralism; and human rights. Items were rated using a five-point Likert scale.

The apparent validity of the instrument was verified by presenting it to several specialized arbitrators, and some adjustments were made to the questionnaire. The Cronbach's alpha coefficient was calculated to assess the stability of the instrument. The reliability coefficient of the tool reached 0.884, which was considered suitable for the purposes of this study.

## 5. Results

Based on the inquiries, the results of the field study are as follows.

First, to determine the extent of the creativity of ICT as an alternative to political socialization institutions in enhancing the practice of democratic values during the COVID-19 pandemic, the mean and standard deviation were calculated as shown in Table 1.

**Table 1.** Creativity of information and communications technology in enhancing the values of democracy during the COVID-19 pandemic (source: created by authors)

| ITEMS | Mean | Standard deviation | Level |
|---|---|---|---|
| Helped to promote basic human rights and freedom | 1.5764 | .92261 | Low degree |
| Contributed to the institutional work to strengthen the democratic system | 1.8284 | .99679 | Low degree |
| Contributed to directing governmental and non-governmental forces to resolve the conflict in accordance with legal rules and procedures | 1.9283 | 1.00255 | Low degree |
| Contributed to an understanding of public policy | 2.3476 | 1.50655 | Low degree |
| Directing public opinion to act in accordance with democratic principles | 2.3809 | 1.24452 | Low degree |
| Contributed to creating a democratic culture | 2.4073 | 1.06486 | Low degree |
| Found democratic laws and systems to resolve disputes | 2.4663 | 1.11838 | Low degree |
| Contributed to understanding the rules of the democratic game | 2.7045 | 1.52970 | Moderate degree |
| Created a democratic climate among members of society | 2.7208 | 1.50546 | Moderate degree |
| Created political, economic, and legal legislations to strengthen the democratic system | 2.7370 | 1.25098 | Moderate degree |
| **Political culture** | **2.3097** | **.47790** | **Low degree** |
| Contributed to the independence of political groupings from state interference | 1.5064 | .78267 | Low degree |
| Contributed to weakening the parties so that the relationship between the citizen and authority becomes direct | 1.5380 | .85588 | Low degree |
| Contributed to reducing the intensity of ethnic, religious, and tribal trends in the electoral process | 1.6217 | 1.03503 | Low degree |
| Contributed to creating new ways to organize groups that defend their political rights | 2.3868 | 1.26820 | Low degree |
| Contributed to the establishment of groups to deliver the demands of individuals to political power | 2.8702 | .87621 | Moderate degree |
| **Political pluralism** | **1.9846** | **.49369** | **Low degree** |
| Contribute to the communication process with officials and decision-makers | 2.1204 | 1.20399 | Low degree |
| It helped participate in the decision-making process | 2.1349 | 1.29519 | Low degree |
| It contributed to an increase in the participation of individuals in political meetings and seminars | 2.1751 | 1.03573 | Low degree |
| It contributed to the increased follow-up of political events at the local, regional, and international levels | 2.1939 | 1.30907 | Low degree |
| It contributed to overcoming obstacles to participation, such as shyness and inability to cope | 2.4842 | 1.10107 | Low degree |
| Enhanced knowledge of the importance of political participation at all levels | 3.2844 | 1.39422 | Moderate degree |
| **Political participation** | **2.3988** | **.45644** | **Low degree** |
| Contributed to consolidating the values of freedom and responsible dialogue | 1.9650 | .89613 | Low degree |

*End of Table 1*

| ITEMS | Mean | Standard deviation | Level |
|---|---|---|---|
| Contributed to reducing cultural gaps between citizens | 2.0043 | .95942 | Low degree |
| Enhanced the ability of individuals to express their opposing views with ease | 2.0683 | .98559 | Low degree |
| Contributed to enhancing the acceptance of differences with others | 2.0845 | .73300 | Low degree |
| Strengthened the level of trust between the citizen and official institutions | 2.2314 | 1.28910 | Low degree |
| Enhanced the promotion of the values of dialogue between members of society | 2.3809 | .73388 | Low degree |
| Enhanced the values of cooperation between members of society | 2.4509 | 1.03442 | Low degree |
| Enhanced the values of acceptance of others among members of society | 2.4646 | .76977 | Low degree |
| **Dialogue and respect for opinion** | **2.2062** | **.25017** | **Low degree** |
| Enhanced the promotion of the values of justice among members of society | 1.6029 | 1.01120 | Low degree |
| Helped individuals have complete freedom to express their beliefs and ideas (political, religious, and cultural) without fear | 1.9667 | .88564 | Low degree |
| Enhanced promotion of the values of equality among members of society | 1.9718 | 1.15176 | Low degree |
| Enhanced respect for the principle of equal opportunities | 2.0837 | .93817 | Low degree |
| Reduced favoritism | 2.2545 | 1.01196 | Low degree |
| Helped the overall development of the human personality | 2.5406 | .91653 | Moderate degree |
| Promoted the freedom values among members of society | 2.5824 | .73543 | Moderate degree |
| **Freedom, justice, equality** | **2.1432** | **.38639** | **Low degree** |
| Enhanced knowledge about human rights | 1.6080 | 1.10673 | Low degree |
| Helped link human rights principles to everyday life | 1.6080 | 1.10673 | Low degree |
| Helped guide those affected by human rights violations | 1.9667 | .88564 | Low degree |
| Helped inform me about the Universal Declaration of Human Rights | 2.0572 | .92504 | Low degree |
| Helped legislate laws that conform to human rights principles | 2.0572 | .92504 | Low degree |
| Helped learn how to defend human dignity | 2.2545 | 1.01196 | Low degree |
| Helped learn how to claim rights | 2.3134 | 1.07416 | Low degree |
| Helped deal with other people without discrimination | 2.3134 | 1.07416 | Low degree |
| Helped resort to the judiciary to protect human rights | 2.5406 | .91653 | Moderate degree |
| Human rights | 2.3399 | .62184 | Low degree |
| Total | 2.1952 | .28682 | Low degree |

As shown in Table 1, the creativity of ICT in enhancing the values of democracy during the COVID-19 pandemic was low, as its mean reached 2.195, with a standard deviation of 0.286. The creativity of ICT was also low in all indicators of democratic values represented in political culture; political pluralism; political participation, dialogue and respect for opinion; freedom, justice, and equality; and human rights, as their means were 2.309, 1.984, 2.398, 2.206, 2.143, and 2.339, respectively.

The Table 1 shows that ICT excelled in enhancing some indicators of political culture (creating legislation and a climate compatible with the principles of democracy) to a moderate extent, while it contributed to strengthening other indicators (enhancing freedoms, strengthening institutional work, resolving conflicts according to the law) to a low extent. Political pluralism was also low. ICT contributed to the formation of groups that communicate the demands of individuals to political power, while it contributed to the rest of the indicators (independence of parties and reducing the role of tribal trends in elections) to a low extent.

Furthermore, ICT contributed to the enhancement of political participation to a low extent, as it contributed to increasing knowledge of the importance of political participation to a moderate extent, while it contributed to the rest of the indicators (overcoming obstacles to the participation process, increasing the follow-up of political events, participation in the decision-making process, communication with government officials) to a low extent. Dialogue and respect for opinion and others' opinion was also low, as ICT contributed to the enhancement of all its indicators (consolidation of the values of freedom, acceptance of the other, dialogue, cooperation with others) to a low extent.

Table 1 also shows that ICT contributed to the promotion of freedom, justice, and equality to a low extent, and it also contributed to promotion of the principle of equal opportunities, reducing waste, and favoritism to a low extent. It also contributed to the promotion of human rights to a low extent, as countries showed that IT contributed to enhancing knowledge about human rights, defending human dignity, demanding rights, resorting to the judiciary, and guiding those affected by human rights violations to a low extent.

Second, to determine the extent of the use of ICT among Jordanian university students during the COVID-19 pandemic, and to know the purpose of this use, the frequency and percentage were calculated as shown in Table 2.

**Table 2.** The extent and purpose of the use of information technology during the COVID-19 pandemic (source: created by authors)

| Variable | Variable levels | Frequency | Per cent |
|---|---|---|---|
| The extent of students' use of information and communications technology during the COVID-19 pandemic | Very low degree | 42 | 3.6 |
| | Low degree | 113 | 9.6 |
| | Moderate degree | 247 | 21.1 |
| | High degree | 370 | 31.6 |
| | Very high degree | 399 | 34.1 |
| The purpose of using information technology during the COVID-19 pandemic | For education only | 357 | 30.5 |
| | For education and entertainment | 457 | 39.0 |
| | For education and public services | 215 | 18.4 |
| | For education and awareness | 142 | 12.1 |

It is evident from Table 2 that the COVID-19 pandemic imposed the use of ICT on students, as 65.7% of the study sample used it to "high" and "very high" degrees, 21.1% used it to a moderate degree, and 13.2% used it to "low" and "very low" degrees.

Table 2 showed that 39% of the study sample used IT for the purposes of education, lectures, and entertainment, and 30.5% used it for education and lectures only, while 18.2% used it for education, lectures, public, and financial services, such as paying bills, credit cards, and commerce. The remaining 12.1% of the sample used IT for teaching and lectures, in addition to cultural and educational purposes.

Third, to determine the difference in the level of ICT creativity in promoting the practice of democratic values during the COVID-19 pandemic (according to difference in the purpose and extent of ICT use), a multivariate test was used.

Table 3 shows a difference in the creativity of ICT in promoting the values of political culture; political pluralism, dialogue, and respect for opinion; freedom; justice and equality; and human rights: the values of democracy according to the difference in the level of use, that is, their f-values, were 20.258, 18.946, 9.413, 22.689, 25.842 and 31.984, respectively.

**Table 3.** Multiple test results to know the effect of the purpose and level of use of information and communications technology in promoting democratic values (source: created by authors)

| Source | Dependent variable | Type III sum of squares | Diference | Mean square | f-value | Significance |
|---|---|---|---|---|---|---|
| Corrected model | Political culture | 63.735[a] | 7 | 9.105 | 52.042 | .000 |
| | Political pluralism | 69.262[b] | 7 | 9.895 | 53.300 | .000 |
| | Political participation | 9.648[c] | 7 | 1.378 | 6.847 | .000 |
| | Respect for opinion | 3.903[d] | 7 | .558 | 9.353 | .000 |
| | Freedom, justice, equality | 43.049[e] | 7 | 6.150 | 54.339 | .000 |
| | Human rights | 125.155[f] | 7 | 17.879 | 63.538 | .000 |
| | Total | 31.248[g] | 7 | 4.464 | 79.865 | .000 |
| Intercept | Political culture | 3217.258 | 1 | 3217.258 | 18388.933 | .000 |
| | Political pluralism | 2278.562 | 1 | 2278.562 | 12274.004 | .000 |
| | Political participation | 2982.042 | 1 | 2982.042 | 14813.990 | .000 |
| | Respect for opinion | 2753.859 | 1 | 2753.859 | 46200.212 | .000 |
| | Freedom, justice, equality | 2650.616 | 1 | 2650.616 | 23420.255 | .000 |
| | Human rights | 3268.954 | 1 | 3268.954 | 11617.030 | .000 |
| | Total | 2776.432 | 1 | 2776.432 | 49673.067 | .000 |
| Technology use | Political culture | 14.177 | 4 | 3.544 | 20.258 | .000 |
| | Political pluralism | 14.069 | 4 | 3.517 | 18.946 | .000 |
| | Political participation | 2.208 | 4 | .552 | 2.742 | .057 |
| | Respect for opinion | 2.244 | 4 | .561 | 9.413 | .000 |
| | Freedom, justice, equality | 10.271 | 4 | 2.568 | 22.689 | .000 |
| | Human rights | 29.088 | 4 | 7.272 | 25.842 | .000 |
| | Total | 7.151 | 4 | 1.788 | 31.984 | .000 |

*End of Table 3*

| Source | Dependent variable | Type III sum of squares | Diference | Mean square | f-value | Significance |
|---|---|---|---|---|---|---|
| Problem use | Political culture | 39.423 | 3 | 13.141 | 75.111 | .000 |
| | Political pluralism | 42.876 | 3 | 14.292 | 76.987 | .000 |
| | Political participation | 7.288 | 3 | 2.429 | 12.068 | .000 |
| | Respect for opinion | 1.738 | 3 | .579 | 9.717 | .000 |
| | Freedom, justice, quality | 25.334 | 3 | 8.445 | 74.614 | .000 |
| | Human rights | 73.739 | 3 | 24.580 | 87.350 | .000 |
| | Total | 18.740 | 3 | 6.247 | 111.759 | .000 |
| Error | Political culture | 203.474 | 1163 | .175 | | |
| | Political pluralism | 215.901 | 1163 | .186 | | |
| | Political participation | 234.111 | 1163 | .201 | | |
| | Respect for opinion | 69.323 | 1163 | .060 | | |
| | Freedom, justice, equality | 131.624 | 1163 | .113 | | |
| | Human rights | 327.260 | 1163 | .281 | | |
| | Total | 65.005 | 1163 | .056 | | |
| Total | Political culture | 6514.350 | 1171 | | | |
| | Political pluralism | 4897.440 | 1171 | | | |
| | Political participation | 6982.000 | 1171 | | | |
| | Respect for opinion | 5773.031 | 1171 | | | |
| | Freedom, justice, equality | 5553.551 | 1171 | | | |
| | Human rights | 6863.688 | 1171 | | | |
| | Total | 5739.280 | 1171 | | | |
| Corrected total | Political culture | 267.209 | 1170 | | | |
| | Political pluralism | 285.163 | 1170 | | | |
| | Political participation | 243.758 | 1170 | | | |
| | Respect for opinion | 73.226 | 1170 | | | |
| | Freedom, justice, equality | 174.673 | 1170 | | | |
| | Human rights | 452.415 | 1170 | | | |
| | Total | 96.253 | 1170 | | | |

a. R Squared = .239 (Adjusted R Squared = .234)
b. R Squared = .243 (Adjusted R Squared = .238)
c. R Squared = .040 (Adjusted R Squared = .034)
d. R Squared = .053 (Adjusted R Squared = .048)
e. R Squared = .246 (Adjusted R Squared = .242)
f. R Squared = .277 (Adjusted R Squared = .272)
g. R Squared = .325 (Adjusted R Squared = .321)

To determine the location of the differences between the levels of the independent variables, the Tukey's range test (TRT) was used, as shown in Table 4.

The Table 4 shows the location of the difference between the levels of the variable for ICT use in the promotion of democratic values during the COVID-19 pandemic among university students; it was found that students who used ICT to "high" and "very high" degrees believed that this technology worked to enhance the values of democracy to a lesser degree

**Table 4.** Tukey's range test results to find out the location of the differences between the levels of the variable of the level of information technology use and means of communication (source: created by author)

| Dependent variable | (I) Technology use | | (J) Technology use | | Mean difference (I-J) |
|---|---|---|---|---|---|
| Political culture | Dimension 2 | High degree | Dimension 3 | Very low degree | -.3037-* |
| | | | | Low degree | -.3700-* |
| | | | | Moderate degree | -.2583-* |
| | | Very high degree | Dimension 3 | Very low degree | -.3093-* |
| | | | | Low degree | -.3755-* |
| | | | | Moderate degree | -.2638-* |
| Political pluralism | Dimension 2 | Very low degree | Dimension 3 | Low degree | -.2869-* |
| | | High degree | Dimension 3 | Low degree | -.3807-* |
| | | | | Moderate degree | -.2814-* |
| | | Very high degree | Dimension 3 | Low degree | -.4004-* |
| | | | | Moderate degree | -.3011-* |
| Respect opinion | Dimension 2 | Very low degree | Dimension 3 | Low degree | -.1481*- |
| | | Moderate degree | Dimension 3 | Very low degree | -.2216-* |
| | | High degree | Dimension 3 | Very low degree | -.2081-* |
| | | Very high degree | Dimension 3 | Very low degree | -.2105-* |
| Freedom, justice, equality | Dimension 2 | Very low degree | Dimension 3 | Low degree | -.2830-* |
| | | Moderate degree | Dimension 3 | Very low degree | -.1655*- |
| | | | | Low degree | -.1175-* |
| | | High degree | Dimension 3 | Low degree | -.3383-* |
| | | | | Moderate degree | -.2209-* |
| | | Very high degree | Dimension 3 | Low degree | -.3433-* |
| | | | | Moderate degree | -.2258-* |
| Human rights | Dimension 2 | Very low D degree | Dimension 3 | Low degree | -.4052-* |
| | | Moderate degree | Dimension 3 | Very low degree | -.2629*- |
| | | High degree | Dimension 3 | Low degree | -.5560-* |
| | | | | Moderate degree | -.4137-* |
| | | Very high degree | Dimension 3 | Low degree | -.5411-* |
| | | | | Moderate degree | -.3989-* |
| Total | Dimension 2 | Very low degree | Dimension 3 | Low degree | -.1452-* |
| | | Low degree | Dimension 3 | Moderate degree | .0843* |
| | | High degree | Dimension 3 | Very low degree | -.1359-* |
| | | | | Low degree | -.2811-* |
| | | | | Moderate degree | -.1968-* |
| | | Very high degree | Dimension 3 | Very low degree | -.1283-* |
| | | | | Low degree | -.2734-* |
| | | | | Moderate degree | -.1891-* |

than those who used it to "very low", "low", and "moderate" degrees, separately. This was almost also related to the indicators of various democratic values such as political culture; political pluralism; political participation; dialogue and respect for opinion; freedom, justice, and equality; and human rights.

To determine the differences between the levels of the variable for ICT use in promoting the values of democracy in general, and its indicators, separately, the TRT was used as shown in Table 5.

**Table 5.** Tukey's range test results to find out the location of the differences between the levels of the variable of information and communications technology use (source: created by authors)

| Dependent variable | (I) Purpose of use | (J) Purpose of use | Mean difference (I-J) |
|---|---|---|---|
| Political culture | Education only | Education and entertainment | .3082* |
| | | Education and services | .2265* |
| | Education and awareness | Education only | .3064* |
| | | Education and entertainment | .6146* |
| | | Education and services | .5329* |
| Political pluralism | Education only | Education and entertainment | .4162* |
| | Education and services | Education only | -.4140-* |
| | Education and awareness | Education and entertainment | .4909* |
| | | Education and services | .4887* |
| Political participation | Education only | Education and entertainment | -.1832-* |
| | Education and services | Education and entertainment | -.1438-* |
| Respect for opinion | Education only | Education and awareness | -.0906-* |
| | Education and services | Education and entertainment | .0615* |
| | Education and awareness | Education and entertainment | .1153* |
| Freedom, justice, equality | Education only | Education and entertainment | .2837* |
| | | Education and services | .2164* |
| | Education and awareness | Education only | .1878* |
| | | Education and entertainment | .4716* |
| | | Education and services | .4043* |
| Human rights | Education only | Education and entertainment | .4674* |
| | | Education and services | .4432* |
| | Education and awareness | Education only | .3118* |
| | | Education and entertainment | .7792* |
| | | Education and services | .7550* |
| Total | Education only | Education and entertainment | .2219* |
| | | Education and services | .1970* |
| | Education and awareness | Education only | .1872* |
| | | Education and entertainment | .4091* |
| | | Education and services | .3842* |

Table 5 shows the difference between the levels of the variable for using ICT in promoting democratic values during the COVID-19 pandemic among university students; it was found that students who used ICT for education only, as well as those who used it for education and awareness, believed that this technology promoted the values of democracy to a greater degree than those who used ICT for education and services as well as for education and entertainment, separately. This was almost also related to the indicators of various democratic values such as political culture; political pluralism; political participation; dialogue and respect for opinion; freedom, justice, and equality; and human rights.

## 6. Discussion

First, the creativity of ICT in promoting the values of democracy in general, and creativity to all indicators of political culture; political pluralism; political participation; dialogue and respect for opinion; freedom, justice, and equality; and human rights was found to be low. Thus, we have rejected H1 which claims that ICT contributes to strengthening the practice of democratic values among university students in Jordan. This result is consistent with the first and second trends that believe ICT does not lead to the promotion of democracy, but that it may be a tool to enhance the values of democracy, if these values exist in the first place. This also applied during the COVID-19 pandemic, as many studies proved that the level of democracy in Jordan was low. The Economist Democracy Index (EDI) indicates that Jordan was a dictatorial country during the years 2017, 2018, 2019, 2020, 2020, and 2021 with the following ratings 3.87, 3.93, 3.93, 3.62, and 3.49, respectively. This means that despite the increase in the use of technology during the COVID-19 pandemic, the EDI has declined. This result is consistent with what was proposed (Bitkom, 2020) about the future of democracy as being digital, but the COVID-19 pandemic showed that it was difficult for political decision-making processes to take place, except in a very limited range. The results of this study are also consistent with the proposition of the Solonian Democracy Institute (2020, p. 9), Ireland, as there were many uses of ICT during the COVID-19 pandemic, but they were still below the expected level from the perspective of democracy. The idea of digital government was difficult and complex, as the problem was ensuring the use of digital tools to empower citizens instead of marginalizing them further.

Although the implementation of Defense Law No. 13 of 1992 of Jordan (Food and Agriculture Organization of the United Nations, 1992) was intended to protect people from the COVID-19 pandemic, it negatively affected the rights and freedoms of citizens. In particular, it reduced bonuses and salaries of employees in the public sector; restricted democratic activities; and silenced critical voices. The COVID-19 pandemic negatively affected the role of ICT in promoting democratic values, as the focus was on using IT through educational platforms used in universities for distance education.

The study results are also evidenced by the coincidence of the parliamentary elections in Jordan with the COVID-19 pandemic; despite the government's use of IT in the parliamentary elections for some procedures, it was unable to conduct the elections electronically due to the weak infrastructure. German politicians believe the election process should not be digitalized because an election process via the Internet would be vulnerable to cyberattacks (Witting, 2020).

Second, the COVID-19 pandemic led students to use ICT, as most of the study sample used it to "high" and "very high" degrees, while the minority used it to "moderate", "low", and "very low" degrees. Thus, we have proven H2 which claims that the COVID-19 pandemic has led to students' increased use of ICT. During the COVID-19 pandemic, many digital applications were used, such as websites, *YouTube*, and electronic mail, in addition to platforms such as *Zoom Video Communications*, *Microsoft Teams*, and *Cisco Webex* (Kretschmer, 2020). As a result, these applications became common to millions of people and made the world more virtual. This crisis has highlighted the indisputable importance of digital technology in all fields (Noha Alghamdi and Saeed Alghamdi, 2022).

Most students used ICT for education; lectures; entertainment; education and lecture purposes only; education purposes, lectures, and public and financial services, such as paying bills; and cultural and educational purposes, respectively. Thus, we have confirmed H3, which is consistent with the theory of uses and gratifications, where student needs in using IT were limited to continuing their studies through educational platforms, in addition to meeting some basic daily services.

The increase in the percentage of students who used ICT may be due to the COVID-19 pandemic, as the Jordanian government had used the strategy of quarantine and isolation, and the closure of most sectors (lockdown). The Defense Law No. 13 of 1992 of Jordan (Food and Agriculture Organization of the United Nations, 1992) was announced throughout the Hashemite Kingdom of Jordan (HKJ) as of March 17, 2020, which imposed home quarantine; university and school closures forced students to use educational platforms for distance learning. Students' use of this technology was focused on education, in addition to the benefits provided by the services. Therefore, the government and private sector, through some electronic platforms for awareness and education, did not receive enough attention from students due to the circumstances of the COVID-19 pandemic.

Third, we have confirmed H4, which relates to the existence of differences in the extent of using ICT to promote democratic values among university students in Jordan according to the purpose and extent of using ICT. The study found that the students who used ICT to "large" and "very large" degrees believed that this technology promoted the values of democracy to a lesser degree than those who used ICT to "very small", "small", and "moderate" degrees, separately. This is also related to the indicators of various democratic values such as culture, political pluralism; political participation; dialogue and respect for opinion; freedom, justice, and equality; and human rights.

Those who used technology to "high" and "very high" degrees were more knowledgeable about its ability to promote democratic values than others were, regardless of the existence of the COVID-19 pandemic. This result may coincide with what Hacker and van Dijk (2001), as well as Kuklinski et al. (2000) noted on the role of ICT in increasing the speed of information transmission in a way that helped create citizens with more information, which enabled them to understand and evaluate public policy and form political preferences. The greater use of ICT by students enhanced their ability to assess the role of this technology in promoting democratic values (Hacker & van Dijk, 2001, p. 4; Kuklinski et al., 2000, pp. 790–791).

Students who used ICT for education only, as well as those who used it for education and awareness, believed that this technology promoted democratic values to a greater degree

than those who used it for education and services, and education and entertainment, separately. It was also roughly related to indicators of various democratic values, such as political culture; political pluralism; political participation; dialogue and respect for opinion; freedom, justice, and equality; and human rights.

This result is consistent with what was proposed by Hacker and van Dijk (2001) and Kuklinski et al. (2000) regarding the impact of the communication and information revolution on the democracy of the political system, as it was related to the quality of the political culture of citizens, and how citizens used these means. Did they use them to enable participation in politics and instill values consistent with the principles of democracy and human rights, or did they use them for shopping, games, and entertainment? This was no different during the COVID-19 pandemic, as students who used ICT for education and awareness saw that this technology enhanced the values of democracy more than those who used it for entertainment, games, and services, such as shopping and paying taxes (Hacker & van Dijk, 2001, p. 4; Kuklinski et al., 2000, pp. 790–791).

## 7. Conclusions

At the beginning of the COVID-19 pandemic, Jordan closed most sectors and restricted social, economic, and political practices. This, in turn, led to the use of ICT to meet the basic needs of individuals; most students used ICT to "high" and "very high" extents. However, this use was limited to the purposes of education, lectures, and entertainment rather than for cultural purposes. The reason may be due to the nature of the COVID-19 pandemic prevented students from practicing face-to-face education, and also the nature of society and the belief that it is a priority to use IT to achieve basic needs and education. This result is consistent with the uses and gratifications theory, where university students used technology to satisfy their needs and desires. During the COVID-19 pandemic, the use of technology for education through electronic platforms, as well as the use of entertainment, increased due to the inability of individuals in general and students in particular to leave their homes due to quarantine.

The results of the study showed that ICT was unable to creatively promote the values of democracy during the COVID-19 pandemic in the HKJ, due to the weakness of democracy in the country. *The Economist* ranked Jordan as a dictatorship, and there was no democracy to begin with, regardless of the COVID-19 pandemic. This result agreed with some studies that found IT does not improve democratic values. However, it also differed with the technology determinism theory, which claims there is a role for technology in changing the political, economic, and social environment of individuals, and thus, it affects their thinking and behavior, which can lead to the strengthening of some of their values. Hence, this study recommends the following:

- Encourage non-democratic countries to work diligently toward democracy and increase confidence among citizens and governments, since many studies have proven that democratic countries have faced the COVID-19 pandemic more efficiently and competently than dictatorial countries;
- During crises, governments must act on all political, social, economic, cultural, and psychological aspects to equal and high degrees;
- Work must be done to equip the infrastructure related to ICT to benefit from it in all aspects when crises occur, such as the COVID-19 pandemic.

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