



The Role of Information and Communication Technology in Enhancing Community Participation in Government Decision-Making Processes: A Case Study in Surabaya City

Edrion Tama¹

¹Ilmu Hukum, Muhammadiyah University Surabaya

*Corresponding Author: Edrion Tama

E-mail: Edrrr55@gmail.com

Article Info

Article History:

Received: 14 January 2024

Revised: 3 February 2024

Accepted: 10 March 2024

Keywords:

Information and Communication Technology (ICT)
Community Participation
Government Decision-Making
Surabaya City

Abstract

This study aims to examine the impact of Information and Communication Technology (ICT) on enhancing community participation in government decision-making processes in Surabaya City. A quantitative approach was employed, utilizing a survey method with a sample of 500 respondents selected through random sampling from various neighborhoods in the city. Descriptive and inferential statistical analyses were used to analyze the data. The results indicate that the use of ICT significantly increases community participation in government decision-making. Approximately 80% of respondents reported easier access to government information through official websites and applications. Moreover, about 75% of respondents stated that ICT enables them to provide direct feedback and opinions to the government, enhancing transparency and accountability in decision-making processes. However, around 20% of respondents still face challenges in accessing technology and lack digital literacy. Therefore, efforts are needed to improve accessibility and understanding of technology among the community to achieve broader and more equitable participation.

INTRODUCTION

Use of ICTs is significant in the functioning of the government system of any country by enhancing transparency, accountability and taking ordinary people to participate in the decision-making processes. In Indonesia, increasingly, the government is employing ICT that empowers the citizens to contribute in the formulation of policies. Good example is the city of Surabaya that governs the East Java Province that uses ICT to serve people and enhance quality of its governance. As there are more than 2.9 million inhabitants, Surabaya has difficulties with governance challenges (in addition to others) related to the inclusion of the population in decision-making.

The Information and Communication Technology (ICT) has become a significant determinant of government transformation across the world (Dias Canedo et al., 2020; Torkayesh & Torkayesh, 2021; Mojaye & Aondover, 2022; Al-Ansi et al., 2021). e-government implements decisions made by the government to involve more citizens using ICT. In Indonesia, ICT has become a significant instrument that is being

employed so that it can enhance transparency, accountability and enable citizens to participate in the law making process (Sofyani et al., 2020).

A study by Potts (2020) hints that ICT has changed how government officials relate with other citizens. Due to the availability of digital platforms, governments can outreach people more freely and people now find it easier to gain official information and form an opinion regarding how things are run (Lee-Geiller & Lee, 2019). According to Kusumastuti et al. (2022), they found out that the Surabaya city government has implemented some of the ICT activities, e.g., mobile applications to report citizens and information sharing tools with people in the streets. However, the challenges of a scarce access to technology as well as poor digital literacy skills persist and should be addressed (Neumeyer et al., 2020; James, 2021; Allmann & Blank, 2021).

Surabaya is one of the cities, where E-government initiatives are actively being performed in Indonesia. Surabaya is the second biggest city in Indonesia and this implies that its population is quite large and it experiences problems in administration (Indraprahasta & Derudder, 2019). In their work, Rachmawati et al. (2021) concluded that the local government has developed various apps and platforms that make people communicate with the authorities, find the information of the country easier, involve people in the decision-making process and make all the services more efficient.

According to the research conducted by Indrayani (2023), despite the such advantages as the adoption of ICT in government, additional research is necessary to comprehend the effects of e-government on the involvement of communities in Surabaya more accurately. This research aims to find out how the use of ICT has made a difference in terms of human involvement in the government affairs in Surabaya. The required future e-government initiatives are likely to be more successful, fair and reflective due to the knowledge that this research provides when compared to the experiences perceived in the progress of e-government in 2023 as reported by Rusadi & Rahmadany.

This study aims at exploring the impact of ICT on the ability of communities in participation in the city policy making. The issue that this study discusses is the discovery of how government websites, social media and mobile applications have influenced the volume and the nature of the participation of the masses and this holds true to the results of Cho et al (2021). The study is examining the view of the residents and their experiences in Surabaya to comprehend the effectiveness of the application of ICT to bring transparency, accountability and participatory rule in government (Judijanto et al., 2023; Priowidodo et al., 2024; Puspitarini, 2023).

To sample the people, 500 individuals were randomly sampled in different sub-districts of Surabaya. We also put questions in the survey that examined whether people used ICT in their government activities and their perception of the role of ICT on making decisions (Busch, 2023; Wirtz et al., 2019). The authors will apply descriptive statistical analysis and inferential statistical analysis to determine about relationship between various variables.

The aim of the study is to provide empirical evidence that would improve research on the way ICT increases the participation of people in local decisions. Their findings may enable researchers to offer policymakers and officials both in Surabaya and other cities in the country with directions to guide them regarding the ongoing IT projects and the future plans to have improved citizen participation and governance.

Past studies have demonstrated that ICT can be useful in enhancing the involvement of people in government (Oliveira et al., 2020). Nevertheless, there exists scanty research focusing on the Indonesian context, more so to the city level of Surabaya.

This is why the present research attempts to resolve that problem by examining how ICT could assist in engaging people in decisions taken at the community level as proposed by Hrivnk et al. (2021).

This study can also help the city government to make inclusive policies and policies which are fitting to the expectations of the community. The use of ICT in communicating with the government can be improved by the authorities; the experiences and views of the citizen on how they would like to communicate with the government can help improve areas in the delivery of services and information that would attract the interest and support of the populace (Mansoor, 2021). According to Johnston & Lane (2019), not only the fairness of the policies but also their ensuring that they respond to the actual needs of the community require people to act as stakeholders in the government decisions. Both in this manner is it likely that this study will of great help to the government of Surabaya to make its government better, more democratic and that has relation to its people. Other than its advantages, the research findings might be applied by other researchers in Surabaya and other cities in Indonesia. Extending research on ICT in government management can show us more about the things that impact ICT's success in improving public engagement and government quality.

METHODS

A survey approach within a quantitative study was used to collect data for this study. The method aims to take a picture of significant variables when they are all in a given state, so their relationships can be studied. People who are at least 18 years old and live in Surabaya are part of the target group.

Structured online questionnaires are given to people to collect the data. The questionnaires aim to check two important areas: how people in the community are involved in making decisions and their attitudes toward Information and Communication Technology (ICT). The questions in the questionnaire are structured so that they can numerically look at both actions and views concerning these problems. Collected data will go through processing and analysis using descriptive and inferential stats. These statistics will provide a brief summary of the participants' demographic features and their participation rates. We will use correlation and regression analyses to find out the connection between ICTs and community participation. The purpose of this framework is to draw insights from studies showing how digital engagement affects people's participation in government matters.

RESULTS AND DISCUSSION

According to the survey, most people rely on information and communication technology (ICT) to get access to government information. Usually, people look at government agency websites or the official social media pages managed by the government. Using these websites, the public can learn about laws, plans and updates from the government. The evidence proves that ICT now plays a major role in connecting the government with the public and points to a movement towards digital ways of interacting with government info.

Table 1. Use of ICT to Access Government Information

| Information Source | Percentage of Use (%) | Frequency of Use (Daily, Weekly, Monthly) |
|------------------------------|------------------------------|--|
| Official Government Websites | 60 | Daily |
| Social media | 40 | Daily/Weekly |
| Government Applications | 25 | Weekly |

Table 1 shows the percentage of respondents who used Information and Communication Technology (ICT) to get government information. It is clear from the findings that most people rely on government websites for news and almost half log on daily. A large number of respondents or about 40%, use social media to look for government information every day or a few times each week. On the other hand, government-specific applications are mainly used once per week by one in four respondents.

Official government websites seem to be the main way information is given out, probably because people see them as trustworthy and broad in what they offer. Yet, the extensive use of social media and, in smaller part, than government applications suggests that peoples' ways to communicate with the public are changing. Even though they are not the main way people get news, these sites give more people a chance to use government resources conveniently.

Table 2. Use of ICT to Provide Feedback to the Government

| Type of Feedback | Percentage of Use (%) | Frequency of Use (Daily, Weekly, Monthly) |
|---------------------------|------------------------------|--|
| Through Official Websites | 35 | Weekly |
| Through social media | 20 | Weekly/Monthly |
| Through Applications | 15 | Monthly |

In Table 2, you can find out how often people use several ICT platforms to communicate with the government. According to the research, the official government website is the most used channel, with a third of the sample people reporting that they submit their feedback there every week. One-fifth of the respondents use social media to express their thoughts or worries to government authorities roughly every week or month. When it comes to giving feedback through apps made by the government, only 15% of people do so every month.

Table 3. Challenges in Using ICT

| Challenges | Percentage (%) | Frequency of Occurrence (Often, Sometimes, Rarely) |
|--------------------------|-----------------------|---|
| Access Difficulties | 20 | Sometimes |
| Lack of Digital Literacy | 25 | Often |
| Low Self-Confidence | 15 | Rarely |

Table 3 shows the issues encountered by respondents as they use Information and Communication Technology (ICT) to use government services. About one-fifth of the respondents faced occasional troubles getting ICT resources. It is possible that these challenges are caused by lack of strong internet, weak mobile networks or not having enough access to helpful devices. Because of these hurdles, some people do not fully take part in government messaging online.

A bigger issue that was noted is that people are not adequately digitally literate. About a quarter of participants regularly face problems with ICT because they do not understand digital resources well. As a result, it seems the community still has unequal access to the skills needed to use various digital services. Without specific efforts, the lack of digital skills might continue preventing most citizens from engaging meaningfully using technology.

Nearly all the research I have done suggests that problems with self-confidence in ICT are not prominent. Not many, just 15% of those surveyed, stated that they hardly feel confident when dealing with technology. Even so, this factor emphasizes the

importance of encouraging users mainly those unfamiliar with online tools to feel at ease using ICT resources.

Table 4. Preference for Using ICT to Provide Feedback to the Government

| Method of Providing Feedback | Percentage of Use (%) |
|------------------------------|-----------------------|
| Digital Platforms | 80 |
| Directly (non-digital) | 20 |

Table 4 shows the ways respondents wish to be involved in sharing their opinions with government bodies. The data prove that nearly all of the respondents, representing 80%, usually choose to voice their opinions by using websites, social media or mobile apps. Instead, most respondents prefer using online tools, since only 20% want to visit in person or submit forms by post. Because people now prefer digital channels, governments notice that the public is interested in convenience and expects easy access to information in real time.

The findings highlight a growing reliance on technology as the primary medium for engaging with government institutions. This trend carries important implications for public policy, particularly in the development and implementation of digital feedback mechanisms. To align with citizen preferences and promote more responsive governance, it is essential for governments to invest in user-friendly, secure, and efficient digital platforms. Moreover, ensuring that these systems are accessible to all demographic groups will be key to fostering inclusive participation in public affairs.

Table 5. Use of ICT by Education Level and Income

| Education Level | Percentage of Use for Access (%) | Percentage of Use for Feedback (%) |
|--------------------------|----------------------------------|------------------------------------|
| High School or Below | 50 | 30 |
| Bachelor's Degree | 70 | 50 |
| Master's Degree or Above | 90 | 70 |
| Income Level | Percentage of Use for Access (%) | Percentage of Use for Feedback (%) |
| Low Income | 40 | 20 |
| Middle Income | 60 | 40 |
| High Income | 80 | 60 |

Table 5 demonstrates that the use of Information and Communication Technology (ICT) for interacting with the government varies depending on a person's education and income level. The findings show that people with a higher education are much more prone to use ICT for all kinds of activities. For instance, people who have a master's degree or more are much more likely to use ICTs than individuals with just high school education. Where income is concerned, high earners are more likely to use ICT tools than low earners.

They demonstrate that a person's socioeconomic background is very important in deciding if and how they use government digital tools. Access to helpful technology and the internet is generally limited by income, whereas education plays a part in building both technology and confidence skills. Thus, people with less education or money may experience additional challenges in taking part in digital governance.

Noticing these differences shows why we need special initiatives to help people get access to technology. To make sure everyone can take part equally in governance through ICT, we should increase technology accessibility, train people better in digital skills and develop platforms that suit diverse people.

Table 6. Perception of ICT's Potential to Improve Government Transparency and Accountability

| Perception | Percentage of Respondents (%) |
|------------|-------------------------------|
| Agree | 70 |
| Neutral | 25 |
| Disagree | 5 |

Table 6 shows the transformation of how citizens use ICT to conduct activities with the government because of the COVID-19. It has been demonstrated that, due to the pandemic people have tendency to use online systems more frequently in order to get access to government information and services. This transformation is one of the many transformations that continue to take place in the government in the sense that ICT is currently valued not only in facilitating communication, but also in promoting openness and good administration.

Eight in ten of the respondents were in an agreement that through ICT there might be an improvement in the amount of knowledge we have concerning our government. The fact that people believe in e- government demonstrates that people have enhanced optimism that their use of digital tools would lead to more visibility of government actions and also provide them with simpler tools they can use to monitor government activities. Meanwhile, one-fourth of the respondents were ambivalent and only 5 percent were opposed in that it reflects the fact that although the picture is positive on the whole, there are variations in the degree of faith and dependence on technology by individuals.

Based on these findings, it is quite apparent that government spending on enhanced ICT, their ease of use, as well as notifications to the citizens is key in achieving good government with the help of ICT. Amidst the pandemic, digital transformation is currently a priority issue, and it is therefore the obligation of governments to ensure that transparency practices are now introduced through the use of information and communication technology. This will result in improved services, more confidence of the people towards the government and better and transparent government practice in the long run.

The paper shows that the use of ICT in among the people of Surabaya is increasingly becoming common when they are interacting with the government chiefly to access information and contribute some feedback. It is also an initiative of broader campaign of digital governance that has been enjoyed by global trends showing how ICT facilitates transparency, accountability and citizen engagement (Bertot et al., 2010). It is notable that majority of the participants visit the government websites on a daily basis to obtain information, and furthermore through social media also. Unlike in the previous ways of transferring information to mere recipes, individuals with these tools also have the capacity to communicate with the government.

However, in spite of the fact that more people get access to government information through ICT, the feedback element is significantly less. As per the findings, it was identified that only 35 percent of the participants reported that they could provide feedback weekly on official websites and a significantly low number used social media or apps to that end. This implies that such forms of media as social media are useful to share information online but not as an activity to help individuals engage in civic acts. It is one of the most shared challenges of digital governance that people find that most sites are concentrating more on the transmission of information than communication with the users (Marland et al., 2017). The authorities ought to ensure that ICT development is constructed with interaction, feedbacks and dialogue between the citizens and authorities.

Without leaving major reasons why people and businesses are not utilizing ICT technologies, the report also names several others. The primary prohibiting factor that people reported was digital literacy as 25 percent of them mentioned it, the second problem was access as 20 percent reported it and 15 percent reported self-confidence. Earlier studies have also indicated that digital inequality does not only refer to physical infrastructure but also in terms of skills and confidence level (DiMaggio et al., 2004). Thus, bridging the digital divide requires more than mere internet access; there is the need to consider measures to increase the level of the digital skills among the underrepresented populations.

In this case it is evident, that receiving education and having income has a significant contribution to ICT use. Higher education and income meant that the individuals were highly likely to access information about the government and share their remarks using ICT. About 9 out of 10 individuals with a postgraduate degree made use of ICT for access which is twice as many as those with only high school or less education. This shows why digital literacy programs for all and targeted help for low-income and low-education people are important, so they do not become separated from digital society (Choudhary & Bansal, 2022; Khairi, 2023).

Positively, the survey revealed that 70% of people see that ICT can improve how transparent and accountable the government is. Because of this perception, it is believed that technology can help bring back people's trust and encourage more open government. Even so, to see results, political leaders must work on ensuring ICT is used in civic policy-making as well as keep strong safeguards for privacy and good digital moral choices (Gilardi, 2022).

Also, most (80%) respondents prefer receiving digital feedback instead of non-digital forms which shows how digital practices are becoming common among citizens, especially those who are younger and technically skilled. Yet, it is important to focus on making sure ICT systems are accessible to older people who can encounter challenges due to their age. Should they be ignored, this group might not be able to use digital technologies, even though they have an important role in politics (Resnick, 2013).

To sum up, the results of this study require government to take multiple policy approaches. Governments should first put effort into designing platforms that help people both find information and voice their opinions. Second, digital literacy programs must be part of public education and efforts to reach communities that are widely disadvantaged. Thirdly, it is necessary to expand digital infrastructure so that it benefits different groups of people, including those with different ages and abilities. In the end, the way in which feedback is collected from the people and made part of policy decisions should be visible and transparent to motivate more citizen participation.

CONCLUSION

The research explains that ICT has a major impact on communities' involvement in government decisions in Surabaya. The findings demonstrate that ICT tools particularly government websites, social media platforms, and mobile applications have significantly improved public access to government information and enabled greater citizen engagement. However, while access to information is relatively high, active participation through feedback remains limited, pointing to the need for more interactive and user-friendly digital platforms.

Barriers such as digital literacy gaps, access challenges, and socioeconomic disparities continue to hinder inclusive participation. These issues underline the importance of comprehensive policies that focus on digital education, infrastructure improvement, and equitable access to technology. Furthermore, the strong public

perception of ICT's potential to promote transparency and accountability emphasizes the urgency for sustained investment in digital governance. To build a more participatory, transparent, and accountable government, especially at the local level, policymakers must adopt a holistic approach. This includes not only expanding digital access but also fostering a civic culture that values and supports meaningful citizen involvement through ICT. The case of Surabaya offers valuable insights for other cities in Indonesia and beyond, underscoring that technology when implemented inclusively can be a powerful enabler of democratic governance.

REFERENCES

- Al-Ansi, A. M., Garad, A., & Al-Ansi, A. (2021). ICT-based learning during Covid-19 outbreak: Advantages, opportunities and challenges. *Gagasan Pendidikan Indonesia*, 2(1), 10-26. <http://dx.doi.org/10.30870/gpi.v2i1.10176>
- Allmann, K., & Blank, G. (2021). Rethinking digital skills in the era of compulsory computing: methods, measurement, policy and theory. *Information, Communication & Society*, 24(5), 633-648. <http://dx.doi.org/10.1080/1369118X.2021.1874475>
- Bertot, J. C., Jaeger, P. T., & Grimes, J. M. (2010). Using ICTs to create a culture of transparency: E-government and social media as openness and anti-corruption tools for societies. *Government information quarterly*, 27(3), 264-271.
- Busch, P. A. (2023). Faced with digital bureaucrats: A scenario-based survey analysis of how clients perceive automation in street-level decision-making. *Government Information Quarterly*, 40(4), 101872. <https://doi.org/10.1016/j.giq.2023.101872>
- Cho, S., Mossberger, K., Swindell, D., & Selby, J. D. (2021). Experimenting with public engagement platforms in local government. *Urban Affairs Review*, 57(3), 763-793. <https://doi.org/10.1177/1078087419897821>
- Choudhary, H., & Bansal, N. (2022). Barriers affecting the effectiveness of digital literacy training programs (DLTPs) for marginalised populations: a systematic literature review. *Journal of Technical Education and Training*, 14(1), 110-127. <http://dx.doi.org/10.30880/jtet.2022.14.01.010>
- Dias Canedo, E., Morais do Vale, A. P., Patrão, R. L., Camargo de Souza, L., Machado Gravina, R., Eloy dos Reis, V., ... & T. de Sousa Jr, R. (2020). Information and communication technology (ICT) governance processes: A case study. *Information*, 11(10), 462. <https://doi.org/10.3390/info11100462>
- DiMaggio, P., Hargittai, E., Celeste, C., & Shafer, S. (2004). From unequal access to differentiated use: A literature review and agenda for research on digital inequality. *Social inequality*, 1, 355-400.
- Gilardi, F. (2022). *Digital technology, politics, and policy-making*. Cambridge University Press.
- Hrivnák, M., Moritz, P., Melichová, K., Roháčiková, O., & Pospíšová, L. (2021). Designing the participation on local development planning: From literature review to adaptive framework for practice. *Societies*, 11(1), 19. <https://doi.org/10.3390/soc11010019>
- Indraprahasta, G. S., & Derudder, B. (2019). World City-ness in a historical perspective: Probing the long-term evolution of the Jakarta metropolitan area. *Habitat International*, 89, 102000. <https://doi.org/10.1016/j.habitatint.2019.102000>

- Indrayani, I. I. (2023). The Implications of locally managed SNSs on e-government implementation and community building. *Jurnal Studi Pemerintahan*, 347-366. <https://doi.org/10.18196/jsp.v14i3.336>
- James, J. (2021). Confronting the scarcity of digital skills among the poor in developing countries. *Development Policy Review*, 39(2), 324-339. <https://doi.org/10.1111/dpr.12479>
- Johnston, K. A., & Lane, A. B. (2019). An authenticity matrix for community engagement. *Public Relations Review*, 45(4), 101811. <https://doi.org/10.1016/j.pubrev.2019.101811>
- Judijanto, L., Erkamim, M., Dolphina, E., & Utama, I. W. K. (2023). Implementation of Digitalization of City Infrastructure for Improved Sustainability: Case Study on Smart City Project in Surabaya, Indonesia. *West Science Nature and Technology*, 1(02), 64-72. <https://doi.org/10.58812/wsnt.v1i02.488>
- Khairi, M. (2023). Technology Optimization for Equitable Access to Education and Health Services in Poverty Alleviation. *Bulletin of Science, Technology and Society*, 2(2), 51-58.
- Kusumastuti, R. D., Nurmala, N., Rouli, J., & Herdiansyah, H. (2022). Analyzing the factors that influence the seeking and sharing of information on the smart city digital platform: Empirical evidence from Indonesia. *Technology in Society*, 68, 101876. <https://doi.org/10.1016/j.techsoc.2022.101876>
- Lee-Geiller, S., & Lee, T. D. (2019). Using government websites to enhance democratic E-governance: A conceptual model for evaluation. *Government Information Quarterly*, 36(2), 208-225. <https://doi.org/10.1016/j.giq.2019.01.003>
- Mansoor, M. (2021). Citizens' trust in government as a function of good governance and government agency's provision of quality information on social media during COVID-19. *Government information quarterly*, 38(4), 101597. <https://doi.org/10.1016/j.giq.2021.101597>
- Marland, A., Lewis, J. P., & Flanagan, T. (2017). Governance in the age of digital media and branding. *Governance*, 30(1), 125-141. <http://dx.doi.org/10.1111/gove.12194>
- Mojaye, E. M., & Aondover, E. M. (2022). Theoretical perspectives in world information systems: A propositional appraisal of new media-communication imperatives. *Journal of Communication and Media Research*, 14(1), 100-106.
- Neumeyer, X., Santos, S. C., & Morris, M. H. (2020). Overcoming barriers to technology adoption when fostering entrepreneurship among the poor: The role of technology and digital literacy. *IEEE Transactions on Engineering Management*, 68(6), 1605-1618. <https://doi.org/10.1109/TEM.2020.2989740>
- Oliveira, T. A., Oliver, M., & Ramalhinho, H. (2020). Challenges for connecting citizens and smart cities: ICT, e-governance and blockchain. *Sustainability*, 12(7), 2926. <https://doi.org/10.3390/su12072926>
- Potts, R. (2020). Is a new 'planning 3.0' paradigm emerging? Exploring the relationship between digital technologies and planning theory and practice. *Planning Theory & Practice*, 21(2), 272-289. <https://doi.org/10.1080/14649357.2020.1748699>
- Priowidodo, G., Indrayani, I. I., & Yogatama, A. (2024). Smart Government-Based

- Governance through Digital Transformation of Public Services: Experience of Surabaya City Government, Indonesia. *PERSPEKTIF*, 13(4), 1176-1186. <https://doi.org/10.31289/perspektif.v13i4.12001>
- Puspitarini, R. (2023). Application of E-Government to Financial Accountability in the Surabaya City. *Jurnal Samudra Ekonomi dan Bisnis*, 14(3), 503-513. <http://dx.doi.org/10.33059/jseb.v14i3.6844>
- Rachmawati, R., Sari, A. D., Sukawan, H. A. R., Widhyastana, I. M. A., & Ghiffari, R. A. (2021). The use of ICT-based applications to support the implementation of smart cities during the COVID-19 pandemic in Indonesia. *Infrastructures*, 6(9), 119. <https://doi.org/10.3390/infrastructures6090119>
- Resnick, D. (2013). Politics on the Internet: The normalization of cyberspace. In *The politics of cyberspace* (pp. 48-68). Routledge.
- Rusadi, B. P., & Rahmadany, A. (2023). Analyzing Supporting and Inhibiting Factors in the Optimization of E-Government in Pontianak City. *Journal of Computer Science and Technology Studies*, 5(4), 22-31. <https://doi.org/10.32996/jcsts.2023.5.4.3>
- Sofyani, H., Riyadh, H. A., & Fahlevi, H. (2020). Improving service quality, accountability and transparency of local government: The intervening role of information technology governance. *Cogent Business & Management*, 7(1), 1735690. <https://doi.org/10.1080/23311975.2020.1735690>
- Torkayesh, A. E., & Torkayesh, S. E. (2021). Evaluation of information and communication technology development in G7 countries: An integrated MCDM approach. *Technology in Society*, 66, 101670. <https://doi.org/10.1016/j.techsoc.2021.101670>
- Wirtz, B. W., Weyerer, J. C., & Rösch, M. (2019). Open government and citizen participation: an empirical analysis of citizen expectancy towards open government data. *International Review of Administrative Sciences*, 85(3), 566-586. <https://doi.org/10.1177/0020852317719996>