

## Mobile Application as Platform for Publicly Oriented Government Communications in The Public Services of The Kurdistan Regional Government: Case Study

**Sozan Sulaiman Maghdid**

Department of Information Technology, Khabat Technical Institute, Erbil Polytechnic University, Erbil, Kurdistan Region, Iraq

[sozan.maghdid@epu.edu.iq](mailto:sozan.maghdid@epu.edu.iq)

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### ABSTRACT

The idea of a "smart city" is thought to apply to overcoming many of the challenges that urban areas in the twenty-first century face. The use of technology in the form of 'mobile government' ('m-government') is thought to connect public needs with government services. Using a mobile application (mobile app) as a medium of government communication is one form of 'm-government'. This study is based on Mobile apps as a government communication case study, it is conducted by using a web survey (google form) that included many closed type questions as well as a few open type questions directed to the citizens in the Kurdistan region. To analyze the data, we used the (full form of SPSS) version 22 program and the qualitative methods used to assess the validity of this study are interviews and observations. Furthermore, despite the fact that 97.76% of them favor the idea of an e-government, 2.24% of the respondents were against e-government'. The use of mobile apps not only to operate the government's contact function, which serves as a tool for government socialization, but also to serve as a platform for providing public needs in the private and public sectors. The study's most important finding is that mobile applications can be used for public-oriented government communication in Kurdistan Region. Using mobile applications in the sense of good governance will be helped



to implement the ideals of inclusion, equality, and transparency.

## **1. Introduction**

The penetration of the Internet is increasing not only in developed countries but also in emerging countries. According to data from (Iraq Digital, 2021), Internet penetration rates are gradually snowballing, with robust increases in local ISPs. In 2010, the number of subscribers in the Kurdistan Region was 335,740. By 2020, the number had risen to more than 3 million. Generally, in urban areas people are more interested in using the Internet.

Erbil has a population of 2,932,800, which has become the first city in terms of internet penetration as of 2020. A smartphone can do more than make calls, send messages and perform many tasks with the help of a mobile application (McLuhan, 2016). in urban areas. Technology is accelerating the progress of information and communication and thus has affected human culture.

KRG residents are now familiar with mobile applications for example ordering taxis (Careem Taxi, Uber, etc.), buying food (Tiptop, Lizzo, Prisma, Talabat, etc.), shopping for different things (Kurdish shopping), Carrefour, etc.), for news (Kurdish Hawawa), for the weather (Kurdish weather, etc.) and for booking or ordering a doctor (Dr. Online, Dr. Fastlink, Shari Al-Otaiba, etc.). The public and private sectors will benefit from mobile applications to improve public services. Mobile applications are designed to work on mobile devices and have evolved into the core of “e-government”, which can be accessed anytime and anywhere, (Ganapati, 2015).

Ubiquity government or smart government is mobile applications for public services in urban areas (Belanger et al., 2005) and One sign of continuous development. The digital age has changed many aspects of human life, including government, and the relationship between government and the general public. The smart government requires a more progressing mindset and viewpoint in using and integrating information, technology, and creativity to build a smart city. This strategy is used not in government operations and internal affairs only but in public services and community mobilization (Gil-Garcia et al., 2015).

However, as many cities have found, excellent development would not be possible without substantial improvements in government procedure, which means the bureaucracy system must be changed to accommodate modern technology and its use (Goldsmith & Crawford, 2014).

The Kurdistan Regional Government has committed to working hard to make the region a smart city. One option is for a local developer to build a mobile app (Kurdistan Health) which will serve as a participatory communication tool for all reports from KRG residents in the health sector. Rather than just focusing on getting accurate information from the public the KRG continues to innovate to find the best way to respond as quickly as possible to reports from all KRG public. In this paper, we present the results of a citizen survey conducted in the Kurdistan Region on mobile applications in government operations (smart government). According to the study deductions, there are differences of opinion about the smartphones and tablets use publicly oriented government engagement in KRG public services. The paper also examines and presents citizens' views on various aspects of e-government.

The purpose of this study is to find out how to use modern communication technologies, such as mobile phone applications, as a means of government communication within the framework of e-government. To be more specific, this paper attempts to answer the following important question: “How does a mobile application become a platform for publicly oriented government communication in KRG public services?”

## **2. Study Objectives**

1. To improve the efficiency with which information technologies are used and employed.
2. To reduce the time, it takes for each department to complete procedures and for the beneficiary to receive the service he needs.
3. To gain the most out of excellent business encounters and be precise in completing diverse tasks.
4. To lower government costs and improve service quality.
5. To improve beneficiaries' satisfaction with their services by providing accurate and timely data as needed.

6. To reduce the administrative corruption that is somewhat present in government institutions.

### **3. Hypothesis**

1. The high level of education contributes positively to increasing citizens' demand for electronic government services.
2. The high computer and Internet knowledge level contributes positively to the increased demand for citizens for e-government services.
3. A good awareness of the advantages of e-government leads to an increase in citizens' demand for e-government services.
4. Availability of the infrastructure for using electronic services contributes positively to increasing Citizens' demand for e-government services.
5. The use of awareness-raising mechanisms for the concept and nature of e-government increases the demand for Citizen's e-government services.
6. Citizens' confidence in electronic services contributes positively to increasing Citizens' demand for e-government services.

### **4. Literature Review**

M-government is a strategy and its implementation involving all forms of wireless and mobile technologies, services, apps, and devices for improving benefits to all parties as citizens, businesses, and all government units involved in e-government.

According to previous studies, little amount of research has been done on how to use a mobile app as a government contact tool from the government's standpoint. In the meanwhile, there is no doubt that the general people are willing to use technology. (Reddick & Zheng, 2017), They discovered that socioeconomic level was not a strong predictor of future use of government-provided mobile apps in China and pleasure was an excellent predictor of future use of mobile apps. (Azeez & Lakulu, 2018) conducted one of the few empirical studies on public government services. They established an evaluation framework for the success of m government services based on the relevant literature from the perspectives of service quality, system quality, information quality, trust, usefulness, and satisfaction. However, only 15 academics who are professionals in the field of m-government were allowed to test the model. More data validation from a larger sample pool is required to confirm the model. (Abu Bakar & Abdul Rahman, 2016), a descriptive study to determine the use of m-



government among citizens. The most common use of m-government is filing complaints, retrieving educational material, and checking the status of various applications. Nonetheless, they did not create a conceptual framework to assess m-government adoption. (Matos et al., 2021), they developed exploratory research with a quantitative approach to describe the current scenario and general characteristics of mobile applications published on Google Play by country-level executive agencies. They sought to identify and analyze the state of mobile app development offered by the Brazilian state governments and the Federal District. The study examines Super App's functionality and maturity level. On Google Play, they looked at 97 mobile applications from 32 state department pages. When considering mobile applications as potential tools for communication, information exchange, and the relationship between citizens and the public sector. Their research was justified because it is considered a preliminary study that can assist in making governmental decisions about the types of distribution chosen to introduce this initiative when considering mobile applications as potential tools for communication, information exchange, and the relationship between citizens and the public sector. (Firdaus et al., 2017), their study is a case study of the Qlue mobile application, which was sponsored by the DKI Jakarta provincial government. They validated their research through interviews and observations, and one of the most important findings was that Qlue is a tool for government communication aimed at the general public and to become a channel for conveying the demands of the public with ambition, rather than just operating the government's communication function. (Wang et al., 2020) they researched citizens' use of government applications in Guangzhou, Wuhan, and Chengdu. They split it into four sections: information use, service use, participatory use, and reputation. Their findings reveal that, to varying degrees, service use and participatory use of government applications predict trust in government and government reputation but that no sort of government application may directly improve people's compliance. They discovered that deep e-government use behaviors in the context of more advanced digital services and higher levels of interaction between government and citizens can not only play a more effective role in enhancing trust in the government's reputation but can have a potential impact. (Dutra & Soares, 2019), they looked at 12 Brazilian APPs (which offer 25 services) and 20 Portuguese APPs (which provide 22



services). According to their findings, 60 percent of services can be fully implemented through an application and over 90% of services offered by the application are interactive apps. In Portugal, represent 77 percent of applications are submitted, (50%) of the vast majority of APP services are interactive or (36%) in nature are educational, and most applications in Portugal typically only provide one service. The purpose of e-government is to provide citizens with timely access to government services (Tola, 2020). According to (Abdullah, 2021), citizens enjoy the perceived values provided by e-government since it reduces procedures and inefficiencies in public administration, which strains their resources.

## **5. Methodology**

### **5.1 Study Design**

This survey uses an 'exploratory research' (Firdaus et al., 2017), approach to understand how the mobile app is used in government communication in the Kurdistan Region, specifically in the sense of urban public services; the phenomenon studied in this analysis is the use of mobile applications in government operations (m-government). The research was labeled as a case study. In particular, this study used a depth-interview technique to collect data, using a web survey (google form) that included many closed type questions and a few open type questions. The first collection of questions collected demographic information such as citizens gender, age, and tertiary institution, as well as whether or not they owned a tablet or smartphone. The second set of questions looked at the general usage of mobile devices, while the third set of questions concentrated on how people use mobile technologies for government communication. The fourth group of questions examined citizens' attitudes toward using mobile technologies in government communication. A link to an online questionnaire was forwarded to the citizens via several social media groups like Facebook, Viber, WhatsApp, Messenger, and Telegram in the Kurdistan region.

### **5.2 Sampling and Participants**

A total of 1072 individuals from Kurdistan citizens were included in the study's sample. The participants ranged in age from 19 to 72 years old and were of both

genders (male and female) shown in Figure 1. 98.51% of those own a smartphone, compared to 1.49% who do not own it.

This study aims to determine how the use of modern communication technology, such as a mobile app, as a means of government communication fits into the context of 'm-government.' To be more precise, this study aims to address the following key question: "How is the mobile app becoming a platform for public-oriented government communication in the Kurdistan Region Provincial Government public services?"

In this study, the following inquiry questions are addressed: -

1. Do government institutions support the idea of e-government through a mobile application?
2. What attitude are the people of the Kurdistan region of Iraq to becoming an electronic government and the provision of services to them through mobile applications?
3. Do the electronic government through mobile satisfactorily manage the work?

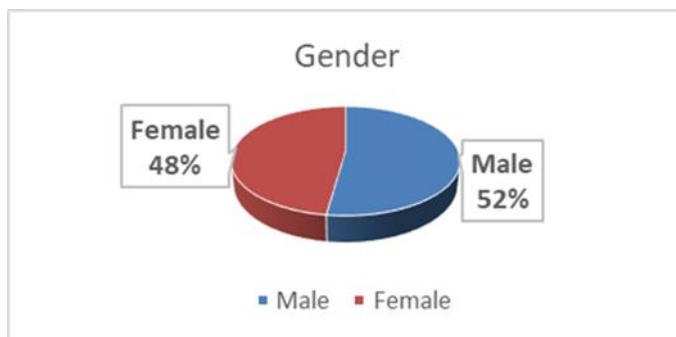


Figure (1): The proportion of males and females who participated in the study

### **5.3 Data Gathering**

A questionnaire was utilized by the researcher. The aim of this study is to determine how the use of modern communication technology, such as a mobile app, as a means of government communication fits into the context of 'm-government.' The (full-form of SPSS) version 22 program was used to analyze the questionnaire data.

## 6. Study Results

The following Likert scale was used to determine the level of agreement and disagreement of respondents and the scope of agreements or disagreements to assess their opinions and perspectives on adapting of mobile applications as a public-facing government communications platform.

Table (1): Description of the study sample by gender

Categories	Frequency	Percent
Male	560	52.24%
Female	512	47.76%
Total	1072	100.0

Through the above schedule, the proportion of male among the respondents is more than 52.24% and 47.76%, respectively, and this indicates that the majority of respondents were male, as shown in Table 1 and Figure 1.

Table (2): Do you own a smart Phone?

Categories	Frequency	Percent
Yes	1056	98.51%
No	16	1.49%
Total	1072	100.0

Also, through the above Table 2, the researcher found that the number of sample members who have cellular devices was (98.51%).

Table (3): Do you use a mobile application a lot?

Categories	Frequency	Percent
Yes	840	78.36%
No	232	21.64%
Total	1072	100.0

The researcher found in the Table 3 that the majority of the sample members used mobile phones frequently, and their percentage was (78.36%).



**Table (4): Do you use any mobile apps designed in Kurdistan?**

<b>Categories</b>	<b>Frequency</b>	<b>Percent</b>
Yes	584	54.48%
No	488	45.52%
Total	1072	100

The researcher found in the Table 4 that the majority of the sample people were using applications that were designed within the region and their percentage (54.48%).

**Table (5): If you hear the name, in what way have you heard of it?**

<b>Categories</b>	<b>Frequency</b>	<b>Percent</b>
TV	40	3.73%
Social Media	644	60.07%
Friends	388	36.19%
Total	1072	100.0

The researcher found in the Table 5 the sample personnel who were taking their opinions used in the region, had taken information on programs by social communication channels as well as by friends by 96.27% with note that the largest percentage was by social networking channels (60.07%).

**Table (6): Do you know if the Kurdistan Regional Government has submitted any application to provide and facilitate service facilities?**

<b>Categories</b>	<b>Frequency</b>	<b>Percent</b>
Yes	176	16.42%
No	896	83.58%
Total	1072	100.0

Through the Table 6, the researcher found the majority of those who had problems or any transactions for the purpose of in government departments, their parents had and solved their problems was not legally managed by (61.57%) and this indicates that there are other factors affecting administrative processes and this Indicates some somewhat administrative corruption and reliability.

**Table (7): Almost, how many times do you visit state institutions annually?**

<b>Categories</b>	<b>Frequency</b>	<b>Percent</b>
About 1 to 2 times	508	47.39%

About 3 to 4 times	248	23.13%
More	264	24.63%
No once	52	4.85%
Total	1072	100.0

The researcher found in the Table 7 that the majority of those whose opinions were taken were going to government departments for the purpose of aligning their transactions more than once, with a percentage of (95.15%). Where the largest percentage of those who went to government departments once or twice at a rate of (47.39%), followed by individuals who went to departments from three to four times at a rate of (23.13%), while those who visited them for more than four times were (24.63%).

Table (8): Have you ever had a problem finding your files to facilitate your work in state institutions?

Categories	Frequency	Percent
Yes	692	64.55%
No	380	35.45%
Total	1072	100.0

The researcher found in the Table 8 that the majority of the sample members who faced problems in wasting their files of papers and so on who went to government departments for the purpose of accommodating their transactions were (64.55%), and this indicates neglect and negligence on the part of the employees who work in those departments in general.

Table (9): Nearly, how many times have you had trouble finding your documents and files?

Categories	Frequency	Percent
About 1 to 2 times	556	51.87%
About 3 to 4 times	168	15.67%
More	164	15.30%
No once	184	17.16%
Total	1072	100.0

The researcher also found in the Table 9 that the majority of the sample members and their percentage (51.87%) of those who had problems in wasting and losing their files from one to two times, as for those who lost their transactions from three to four times their percentage was (15.67%), and finally it was (15.30%) for the individuals who lost their files and their transactions are more than four times, and we conclude from this that a percentage of (84.84%) had problems in wasting their files and transactions by the departments in general.

Table (10): If there is a mobile application, it can connect all ministries in all fields and be free to use to manage and facilitate your work, it's good in your opinion?

Categories	Frequency	Percent
Yes	1048	97.76%
No	24	2.24%
Total	1072	100.0

Through the above Table 10, it became clear to the researcher that the majority had good opinions, agree and have a desire to have portable applications, in addition, that these applications are available without the citizens having any amounts of material, that is, they are available to all, linking all ministries with each other for the purpose of facilitating and managing transactions in all areas and covers All citizens' needs were (97.76%).

Table (11): If you can, through the mobile application, while you are at home or at work, make an appointment to review the state institutions, do you use this application?

Categories	Frequency	Percent
Yes	1040	97.01%
No	32	2.99%
Total	1072	100.0

The researcher found in the Table 11 that the proportion of (97.01%) agrees with the idea of portable applications for the purpose of taking appointments or a timing for reviewers by the relevant department, which is at home or places of work, and this is to reduce congestion by reviewers as well as reduces the pressures of the workforce and therefore regulates Working departments involved.

Table (12): Do you think that the Government mobile application should be security, easy and free?

Categories	Frequency	Percent
disagree	80	7.46%
Neutral	56	5.22%
Agree	44	4.10%
Very agree	892	83.21%
Total	1072	100.0

The researcher found in the Table 12 that the majority of the sample and the ratio (83.21%) strongly agree on the idea that mobile applications designed by the Government (province) are found to be available for all and easy to use and can be trusted by sample search and (9.32%) between neutral and agree on the idea and (7.46%) disagree on the idea. Thus, the results show us that the majority of the public in the Kurdistan Regional Government supports an electronic government and its use on mobile applications, which has advantages such as efficiency, transparency, etc.

## 7. Conclusions

The government has been encouraged to make certain adjustments and digitalize their system to be more accessible and transparent to the public due to the extensive use of e-government in developed countries. Furthermore, the depth of public awareness and citizen motivation is a reason to expedite the process' implementation. Adopting or using global e-government patterns of development does not give any justification to the Kurdistan Regional Government not to adopt it. Where this study concluded that the majority of citizens own smart phones, and they support the presence of the e-government application on their phones, it should not be complicated, easy to use, as its presence speeds up the implementation of business and improves public services in the Kurdistan Region. According to this survey, Citizens should be aware of the advantages of such a system, having a training and development program and dissemination of use in the media and social networking sites is necessary. here, we found in this study that citizens suffer from losing their files and private documents when they review their government institutions more than once. In addition, there is somewhat administrative corruption in these institutions, the existence of e-government or its mobile application



increases public service, citizen happiness, openness, transparency, accountability, efficiency, and effectiveness. Furthermore, it addresses issues such as nepotism, corruption, misappropriation of public funds, mistreatment, routines, the elimination of the paper system, bureaucracy, government spending, misconduct, bribery, and a variety of other services. The outcomes of this study suggest that the Kurdistan Region Government's use of mobile applications is geared more toward attracting public expectations and responding to them than using it as a one-way communication channel between government and the public. A mobile app as a public-oriented government communication medium has many characteristics: it is focused on public needs; it is available to everyone; it has a confidential guarantee for its anonymous choice; it can be used for any public service report; it is effective; it is a post-bureaucratic model of government communication. As a result, to attain these development goals, the government must provide value to individuals to encourage them to use the digital system. Furthermore, citizens should have confidence in the system's data security and reliability. For government staff to operate with the system more efficiently and with fewer errors, the study also proposes holding employee training rations, which is required. In a smart city, the government is critical in optimizing ICT functions to create interactive, participatory, and information-based environments, increase public service quality, and manage administrative functions more efficiently through better inter-departmental and community collaboration. Thus, the government's efforts to create e-government with public access to e-services can be aided by strengthening the IT infrastructure.

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## ئەپلیکەیشن مۆبایل وەک سەکۆپەک بۆ پەيوەندییە گشتیەکانی حکومەت لە خزمەتگوزارییە گشتیەکانی حکومەتی هەریمی کوردستان: تووژینەوهی کەیس

### پوختە:

وا بیر دەکرێتەوه کە بیرۆکە "شاریکی زیرەک" بۆ تیپەراندنی زۆریک لەو تەحەددایانە ی کە ناوچە شارییەکان لە سەدهی بیست و یەکەمدا رووبەرپووی دەبنەوه، دەتوانرێت بەکارهێنرێت. بەکارهێناری تەکنەلۆژیا لە شیوهی 'حکومەتی جووڵا' ('م-حکومەت') وا بیر دەکرێتەوه کە توانای بەستنهوهی پێداوێستییه گشتیەکانی لەگەڵ خزمەتگوزارییەکانی حکومەتدا هەبێت. بەکارهێناری بەرنامە مۆبایل (ئەپی مۆبایل) وەک میدیای پەيوەندییەکانی حکومەت یەکیکە لە جۆرەکانی 'م-حکومەت'. ئەم تووژینەوهیە لەسەر بنەمای ئەپەکانی مۆبایل وەک تووژینەوهی کەیس پەيوەندی حکومی ئەنجامدراوه، بەکارهێناری راپرسییەکی ویب (فۆرمی گووگل) ئەنجامدراوه کە چەندین پرسیاری جۆری داخراوی لەخۆگرتوو هەرۆهە چەند پرسیاری جۆری کراوهی ئاراستەکراوه بۆ هاوڵاتیانی هەریمی کوردستان. بۆ شیکردنەوهی داتاگان، ئیمە بەرنامە (SPSS) وەشانی ۲۲مان بەکارهێنا و ئەو شیوازه چۆنایەتیانە کە بۆ هەلسەنگاندنی رەوایی ئەم تووژینەوهیە بەکارهێنراون بریتین لە چاوییکەوتن و تیبینیەکان. جگە لەوهش، سەرەرای ئەوهی کە 97.76%یان لەگەڵ بیرۆکە حکومەتی ئەلیکترۆنیدان، 2.24%ی ئەو کەسانە کە دژی حکومەتی ئەلیکترۆنی بوون. بەکارهێناری ئەپی مۆبایل نەک تەنها بۆ کاریکردنی فەنکشی پەيوەندی حکومەت کە وەک نامرازیک بۆ کۆمەلایەتیکردنی حکومەت کاردەکات، بەلکو بۆ خزمەتکردن وەک سەکۆپەک بۆ دابینکردنی پێداوێستییه گشتیەکان لە کەرتی تاییەت و گشتیدا. گرنترین دۆزینەوهی تووژینەوهی کە ئەوهیە کە دەتوانرێت لە ئەپلیکەیشن مۆبایل بۆ پەيوەندییەکانی حکومەت بەئاراستە گشتی لە هەریمی کوردستان کەلک وەرگیریێت. بەکارهێناری بەرنامە مۆبایل بە مانای حوکمرانی باش یارمەتیدەر دەبێت بۆ جیبەجیکردنی نایدیالەکانی گشتگیری و یەکسانی و شەفافیەت.

## تطبيق الهاتف المحمول كمنصة للاتصالات الحكومية الموجهة للجمهور في الخدمات العامة لحكومة إقليم كردستان: دراسة حالة

### الملخص:

يُعتقد أن فكرة "المدينة الذكية" قابلة للتطبيق للتغلب على العديد من التحديات التي تواجهها المناطق الحضرية في القرن الحادي والعشرين. يُعتقد أن استخدام التكنولوجيا في شكل "الحكومة المتنقلة" ("الحكومة المتنقلة") قادر على ربط الاحتياجات العامة بالخدمات الحكومية. يعد استخدام تطبيق الهاتف المحمول (تطبيق الهاتف المحمول) كوسيلة للاتصال الحكومي أحد أشكال "الحكومة الإلكترونية". تعتمد هذه الدراسة على تطبيقات الهاتف المحمول كدراسة حالة للاتصالات الحكومية، ويتم إجراؤها باستخدام استبيان ويب (نموذج google) الذي تضمن العديد من الأسئلة المغلقة بالإضافة إلى بعض الأسئلة المفتوحة الموجهة إلى المواطنين في إقليم كردستان. لتحليل البيانات، استخدمنا برنامج (SPSS) الإصدار 22 والطرق النوعية المستخدمة لتقييم صحة هذه الدراسة هي المقابلات والملاحظات. علاوة على ذلك، وعلى الرغم من أن 97.76٪ منهم يؤيدون فكرة الحكومة الإلكترونية، فإن 2.24٪ من المبحوثين عارضوا الحكومة الإلكترونية. إن استخدام تطبيقات الأجهزة المحمولة ليس فقط لتشغيل وظيفة الاتصال الحكومية، والتي تعمل كأداة للتنشئة الاجتماعية الحكومية، ولكن أيضًا لتكون بمثابة منصة لتوفير الاحتياجات العامة في القطاعين العام والخاص. تتمثل أهم نتائج الدراسة في إمكانية استخدام تطبيقات الهاتف المحمول في الاتصالات الحكومية الموجهة للجمهور في إقليم كردستان. سيساعد استخدام تطبيقات الهاتف المحمول بمعنى الإدارة الرشيدة في تنفيذ مثل الشمول والمساواة والشفافية.