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Do Cambodians Trust E-government Services? A Survey

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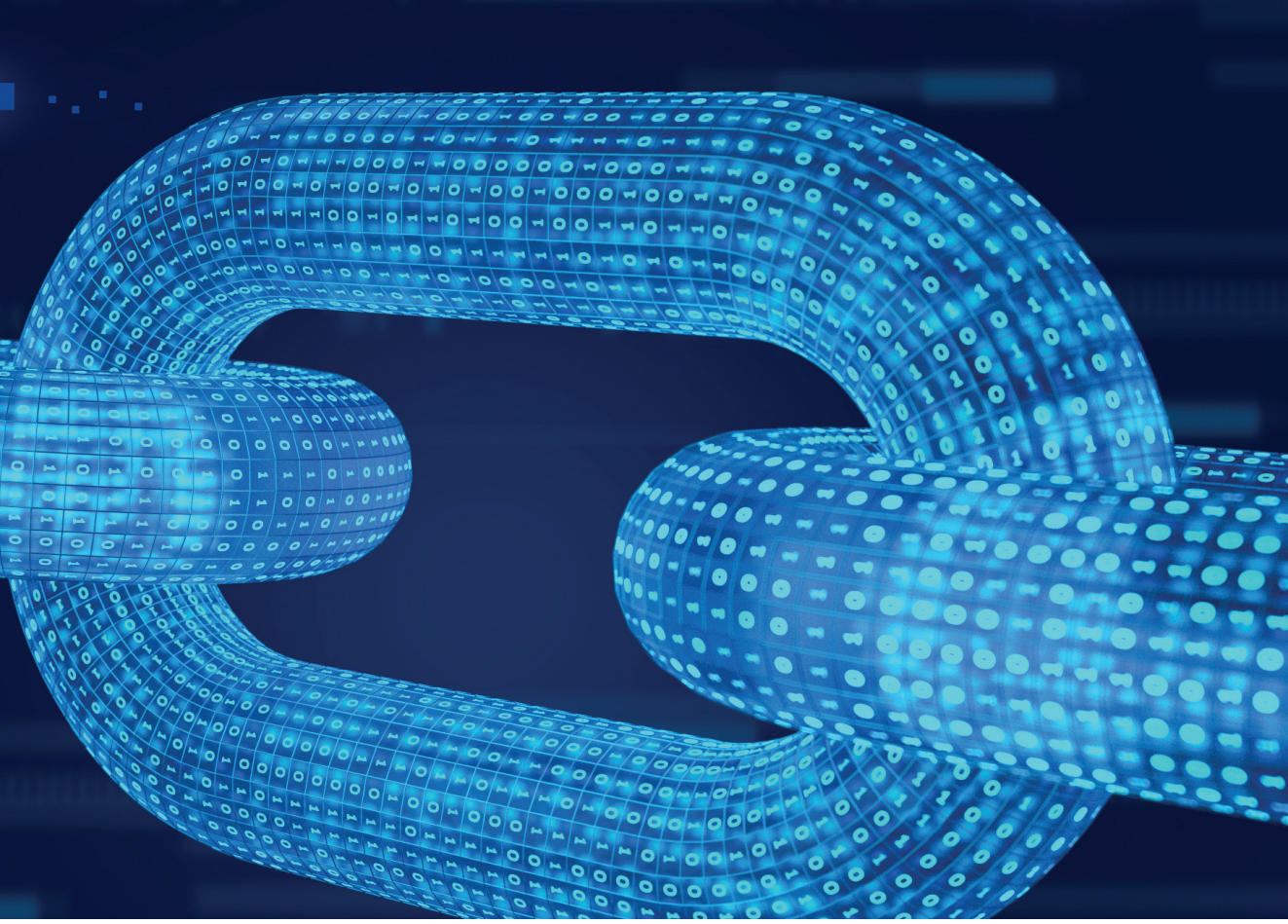


Abstract

Lack of user trust is a major reason why e-government projects fail. To align efforts for the successful implementation of e-government in Cambodia, the government focuses on platform development, integration between government agencies and other technical considerations. However, there is no proper discussion about how to enhance citizen trust in e-government services. This study explores user perceptions and trust around e-government in Cambodia by surveying 256 participants recruited through online platforms. The result of this study indicates that among well-educated and regular internet users in Cambodia, the knowledge of e-government is significantly low and that most are still neutral about whether it can be trusted or not. We have suggested several methods and approaches the government could consider in order to boost citizens' knowledge and trust, which in turn could potentially influence user adoption of e-government.

3 Channara Rin has been successfully completed master's degree of Information Technology and as GIS lecturer of bachelor's degree at Norton University, and he is working at Ministry of Land Management, Urban Planning and Construction (MLMUPC) as Technical support staff for Rice-SDP Project under ADB Funds. This project supports the implementation of the Policy on the promotion of paddy production and Rice Export of the Royal Government of Cambodia. And the main task part of MLMUPC is to develop comprehensive tools like online M&E system and online land use management system. Besides that, Channara has experience consultant on data scraping with WHO, Cambodia to extract all data of malaria into new online dhis2 system, and he also experienced working with FHI360, Cambodia more than four years as GIS/HMIS Technical Officer to develop online prevention database system under Flagship Projects. He is interested in e-commerce, e-government, data science, and tech startup.

Introduction

Cambodia doesn't have a unified national government portal but approximately 60 separate websites, each built independently without reference to any standards for user interface, look-and-feel, development approach, technical platform or security. The current state of digital government of Cambodia is largely fragmented, with a few online services available to citizens and businesses, for example, the online business registration at the Ministry of Ecommerce and the e-Visa platform for visitors. Both systems allow users to complete the entire process online, including payment.[4] Besides lacking standardization, Cambodia's framework for e-transactions is incomplete, which also hurts consumer trust in digital services.[5]

There are many factors that influence user adoption of e-government[6] and their intention to use them, such as perceived risk, perceived control, internet connectivity, perceived usefulness, perceived ease of use and service quality which lead to user satisfaction. However, numerous studies show that lack of user trust is the main factor that causes failure in many e-government projects. For instance, a study focused on developing a fully functional e-government using a four-stage model shows that privacy and confidentiality issues and citizen-focused change must be considered throughout e-government development.[7] The citizen's concern on privacy and confidentiality is considered a critical obstacle to realizing e-government. Another study investigating the acceptance of e-democracy from a developing nation's perspective reveals that lack of trust in government to fulfill its promises may limit citizens' e-democracy adoption.[8] Similarly, a recent study on e-participation on an e-government website in Saudi Arabia shows that user trust can positively affect the user intention to use e-government.[9]

Since 2000, Cambodia has been embracing the adoption of Information and Communication Technologies (ICT) as an enabler of its administrative reform efforts by forming the National ICT Development Authority (NiDA). Many policy documents related to digital development have been issued since, and the Cambodia ICT master plan for 2020 called "ICTopia Cambodia" was introduced. It consists of four pillars: Empowering People, Ensuring Connectivity, Enhancing Capabilities, and Enriching e-services. The objective of ICTopia is to build Cambodia as a nation with intelligent people, intelligent society and intelligent government by ICT.[10]

To align efforts towards successful implemen-

4 Beschorner, Natasha, James Neumann, Martin Sanchez, and Eduardo Miguel, Benefiting from the Digital Economy, Cambodia policy note, (Washington, D.C , World Bank Group, 2018), 5

5 ibid., 12.

6 Kumar, Vinod, Bhasker Mukerji, Irfan Butt, and Ajax Persaud, Factors for successful e-government adoption: A conceptual framework, (Electronic Journal of E-government, 2007), 72-73.

7 Layne, Karen, and Jungwoo Lee, Developing fully functional E-government: A four stage model, (Government information quarterly, 2001), 135.

8 Ayo, Charles K., Victor W. Mbarika, and Aderonke A. Oni, The influence of trust and risk on intention to use e-democracy in Nigeria, (Rome, Mediterranean journal of social sciences 6, 2015), 484.

9 Alharbi, Abdullah, Kyeong Kang, and Igor Hawryszkiewycz, The influence of trust and subjective norms on citizens intentions to engage in E-participation on E-government Websites, (Adelaide, Australasian Conference on Information Systems, 2015), 8--9

10 KOICA, Cambodia ICT Masterplan 2020, (Phnom Penh, Korea Information Society Development, 2014), 5.

tation of e-government, a policy area has been identified; however, this policy area focuses more on platform development, the integration between government agencies and other technical considerations. There is no discussion about how to enhance citizen trust in e-government services.

Since user trust is found to be the main influence factor in e-government adoption but little attention has been paid to it by the relevant stakeholders in Cambodia, this would like to explore the perception of its citizens towards e-government services, in particular their level of trust. The research question is simple: how much the Cambodian people trust e-government services?

Methodologies

A survey was created to collect data from respondents online using Google Forms. The conceptual framework discussed below is used for the formulation of the questionnaire and as a basis for the data analysis.

Conceptual Framework

This research uses the model of trust and risk in e-government adoption by Belanger and Carter[11] to construct the questionnaire and guide the resulting data analysis. In this framework, there are four components that considered to influence user intention to use technologies, three of which focus on user trust: Disposition to Trust, Trust of the Internet, Trust of the Government. The remaining component is how users perceive risk. Figure 1 shows the hypothesis of trust and risk in e-government adoption.

(Source: Bélanger & Carter, 2008)

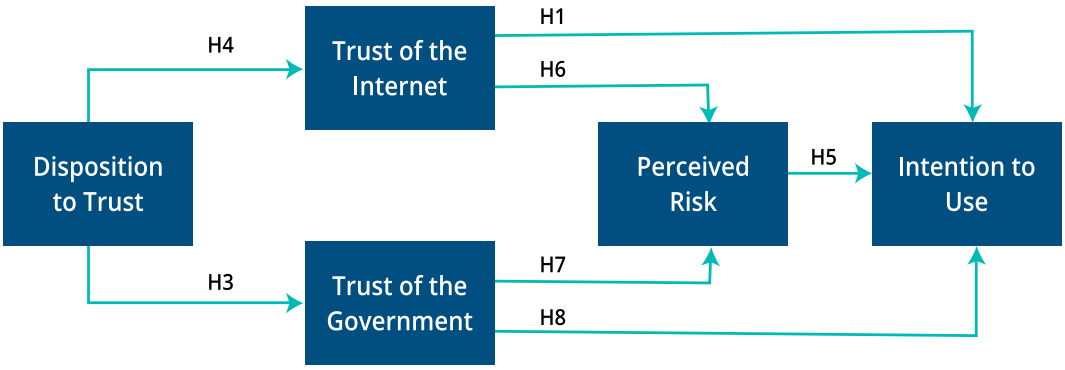


Figure 1: Trust and risk in E-government adoption

11 Bélanger, France, and Lemuria Carter, Trust and risk in e-government adoption, (The Journal of Strategic Information Systems, 2008), 165-176.

Below is a summary of each component:

Disposition to Trust

Disposition to Trust refers to an individual's inclination towards trust. It consists of two subconstructs, Faith in humanity and Trusting Stance. Faith in humanity focuses on an individual's confidence to believe that others are generally care enough to help. Trusting Stance refers to the personal choice or strategy to trust others. It is assumed that disposition to trust is a generalized reaction of individual's life experiences with other people which alter their belief that others can be trustworthy.[12]

Trust of the Internet

Trust of the Internet focuses on the individual's perception towards the internet, whether it is a reliable channel that can provide accurate information and secured interaction.[13]

Trust of the Government

Trust of the Government focuses on the citizens' approval of their government. It is assumed that if the citizens have low faith in government, it may affect the efficacy of the policies that the government attempts to implement.[14]

Perceived Risk

Perceived risk focuses on individual's perception of uncertainties associated with specific an activity. It consists of several types of risk: financial, performance, physical, psychological, and social risk. It is assumed that when perceived risk is present, trust is mandatory for technology adoption.[15]

Sample and Data Collection

In this study, we use convenience sampling to recruit participants who are easily available through social media. A structured questionnaire on Google Forms is shared to individuals and/or groups via social media like Facebook and other common communication tools in Cambodia such as Telegram or simply Email.

Data Analysis

Online data collection was carried out on Google Forms. Descriptive data analysis on the same tool helped identifies key variables. Frequency tables and graphs for key p variables were generated for the report. The STATA application was used for the data management and analysis.

Result

Demographic Information

There are 256 participants in this study's sample. Males and females are nearly equally represented. Most of the participants are between 25 and 48 old; only one is younger than 18 and six are older than 48. The majority of the respondents holds a bachelor's degree. 25% are working for private companies, 21% are students, 18% are working for NGO, 16% are government officials – the rest business owners or have various other professions. Table 1 shows a list of socio-demographics of participants.

12 Ibid, 167

13 Ibid, 166

14 Ibid, 166

15 Ibid, 168

Table 1: Socio-Demographics of participants

Measure	Item	Freq	Per
Gender	Male	127	49.61%
	Female	129	50.39%
Age	< 18	1	1%
	18 – 25	104	40%
	26 – 48	145	57%
	49+	6	2%
Education	None	2	1%
	Bachelor	183	71%
	High School	17	7%
	Master	23	9%
	Primary	11	4%
	Vocational Education	20	8%
Occupation	Private Company	63	25%
	Business owner	30	12%
	Government	42	16%
	NGO	45	18%
	Other	23	9%
	Students	53	21%

This table shows that the majority of participants are well-educated and working in various sectors that present a small degree of diversity.

Knowledge of Internet Technology and E-Government

The results indicate that the participants are very familiar with the internet. Most of them (55%) started using it in the 2010s, others even back in 1995. This result is similar to a previous study[16] which shows that people aged between 15 and 39 are the main internet users. Figure 2 shows the number of participants by the year they started using the internet.

16 Phong, Kimchhoy, and Javier Sola, Mobile phones and Internet in Cambodia 2015, (Phnom Penh, Development Innovations, 2015), 22.

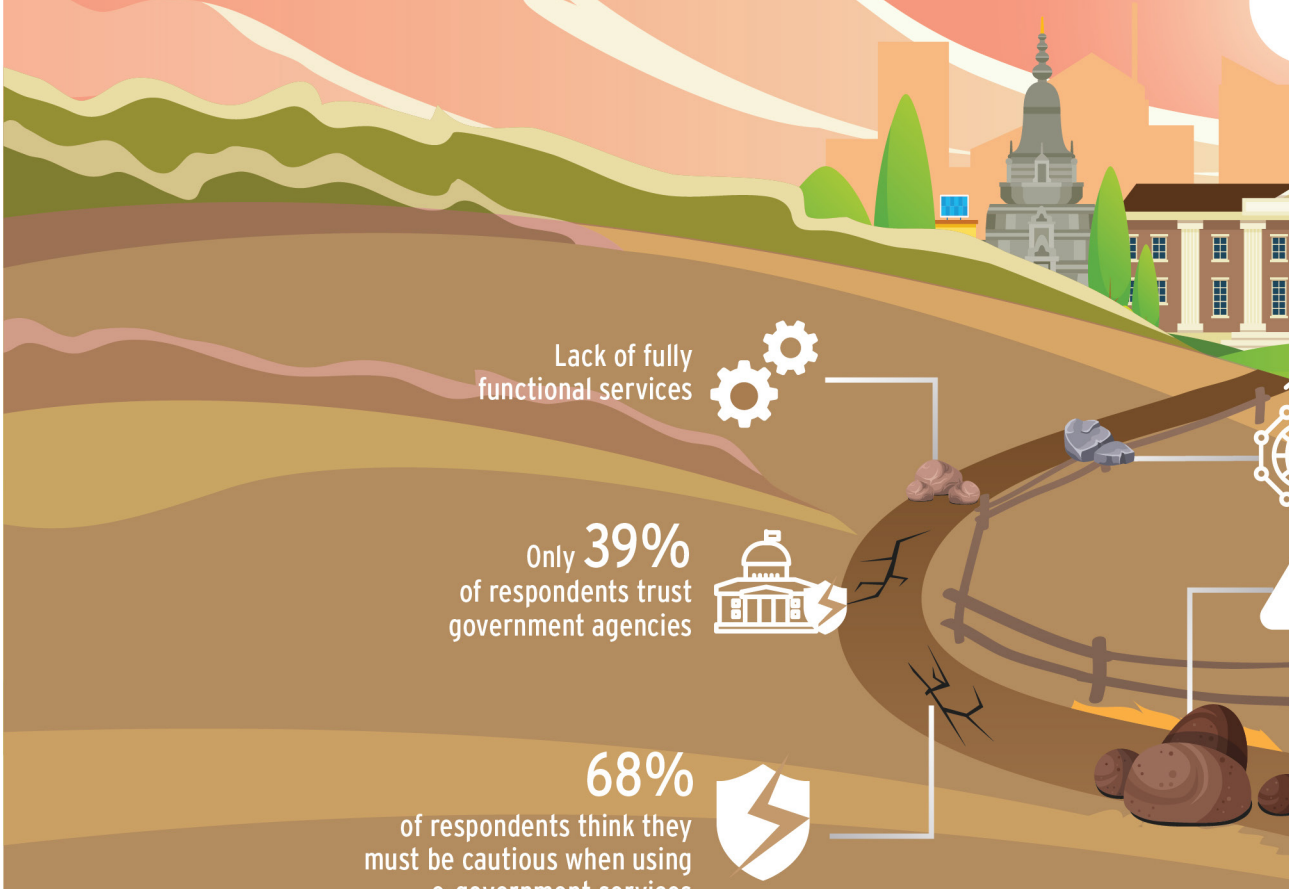
Building E-government Trust

User trust is the main factor that causes failure in many e-government projects. Therefore, it is important to promote trust among citizens, especially at the very first stage of any e-government initiatives.

Important steps towards e-government

- Use social networks like Facebook to promote e-government
- Transparency: Educate people about what the government does and how it serves the people

of respondent
e-goverr



Lack of fully functional services

Only **39%** of respondents trust government agencies

68% of respondents think they must be cautious when using e-government services

72% of respondents did not know what e-government is

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Editors: Robert Hör & Ann-Cathrin Klöckner

DIGITAL INSIGHTS

KONRAD ADENAUER STIFTUNG

Recommendations:

- Interact and cooporate with public.
- Adopt International Standard ISO/IEC 29100 to ensure a high-level framework for the protection of personal information.
- Interoperability between different agencies and departments.
- Improve quality of services to increase user satisfaction and trust.
- Customer Relationship Management (CRM): Government becomes more responsive to the public and thus boosts its reputation.

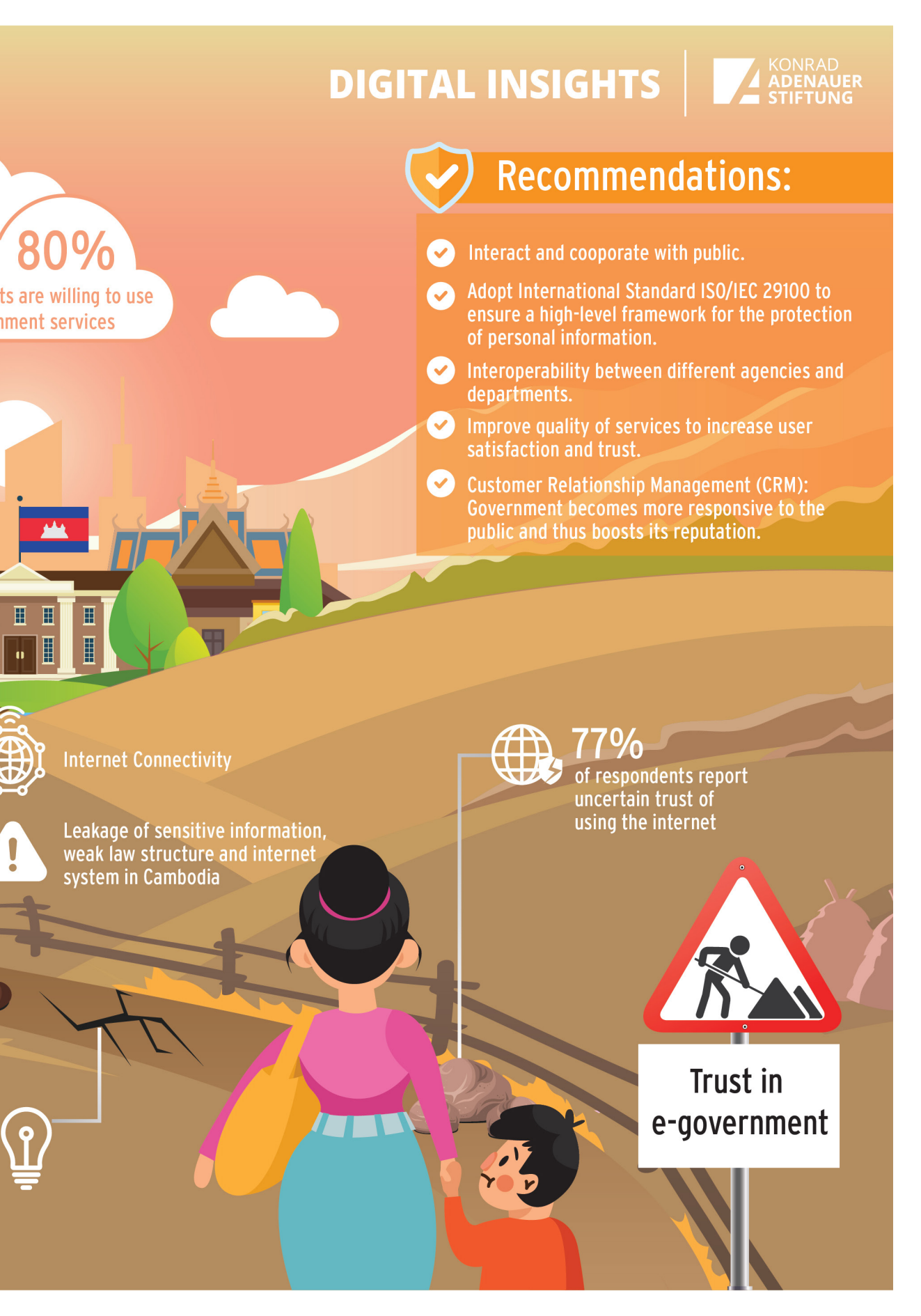
80%

ts are willing to use
nment services

Internet Connectivity

Leakage of sensitive information, weak law structure and internet system in Cambodia

77%
of respondents report uncertain trust of using the internet



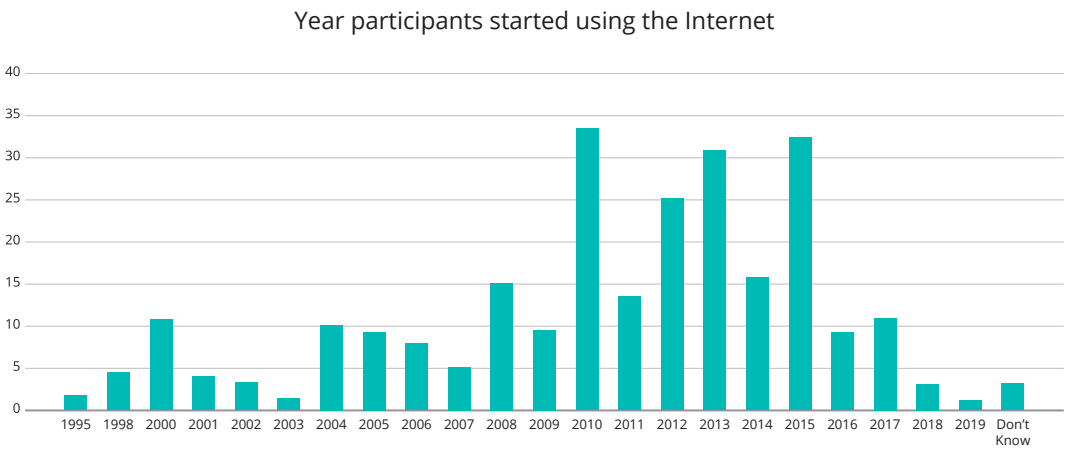


Figure 2: Year participants started using the Internet

Most of the participants use the internet every day. This should indicate that technology adoption should not be a barrier to the participants.

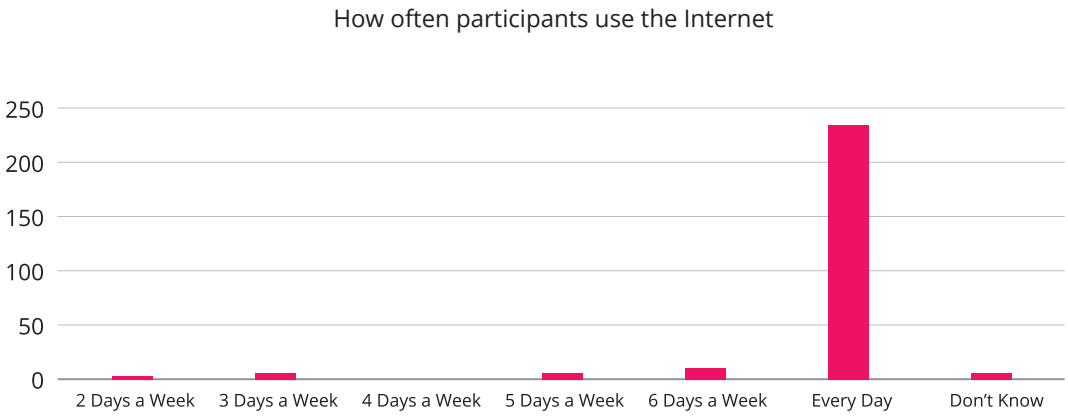


Figure 3: How often participants use the Internet

However, when asked about their knowledge and experience with e-government, most of the participants (72%) responded that they don't know what e-government is. Although a vast amount of this well-educated sample group is digitally native, their exposure to e-government is limited. Among 28% who claimed to know what e-government is gave different definitions, when asked whether they have actual experience using e-government services, the majority said that they did.

Among 197 participants who responded to a question about whether they have experience using any websites or mobile apps belonging to the government, 76% said "never" and 24% said "yes". Those who said they had experience using e-government were asked to list the names of the websites and mobile apps they used. Table 3 shows a list of sites and apps believed to belong

E-government Definitions	Freq	Per
Online Services	12	17%
ICT Services provided by government	13	18%
ICT Services for public and other services	47	65%

Table 2: E-government definitions given by participants

to government by the number of times they have been mentioned by the respondents. Although specific ministry websites were mentioned they are categorized into one bucket. The category "website" means that no specific website given. Where social media and other platforms are counted, these mean the pages of different government departments.

It would appear that social media, especially Facebook, is overwhelmingly the most popular property to grab the attention of the audience. Based on a report by geeksincambodia[17] Facebook is very popular in the country; in 2018, there were over 6.8 million local users on Facebook. The Facebook page with largest fan base is the prime minister's Facebook page[18] with more than 11 million followers.

Items	Freq
Google	1
Voterlist website	1
Traffic Law App	1
Website	1
Electricity and water	2
Phone	2
Email	2
Telegram	3
Don't Know	3
Chat	5
Salary Tax App	5
Driving Rules App	6
Social Media	9
YouTube	17
Ministry Websites	19
Facebook	37

Table 3: Websites and mobile apps mentioned by participants perceived to belong to the government

Trust of the Internet

Although the majority of respondents notice the government presence on social media, when asked how they trust social media in sharing the information, most respondents (77%) are unsure. Only 16% said they trust it and 6% said they don't trust the social media. Security is found to be the main reason why people don't trust sharing information on the internet. Only 34% feel safe to use the internet as a means to interact with the government, 13% don't feel secure and 52% are neutral to the idea.

The most frequently mentioned security concern is the leakage of sensitive information.

17 Samantha, Fuentes, geeksincambodia. Accessed 07 01, 2019. http://geeksincambodia.com/cambodias-2018-social-media-digital-statistics/.

18 Socialbakers. Accessed 07 01, 2019. https://www.socialbakers.com/statistics/facebook/pages/total/cambodia/.

This is the fear that personal information on the internet can be hacked or used by unauthorized people. Only 24% of respondents believe that the existing technology can control and manage the internet in safe way. Most of them (67%) are unsure and 9% do not trust the existing technology.

Trust of Government

Several questions were asked about participant's trust in the government. Approximately 39% of respondents reported that, in general, they trust government agencies, although only 13%

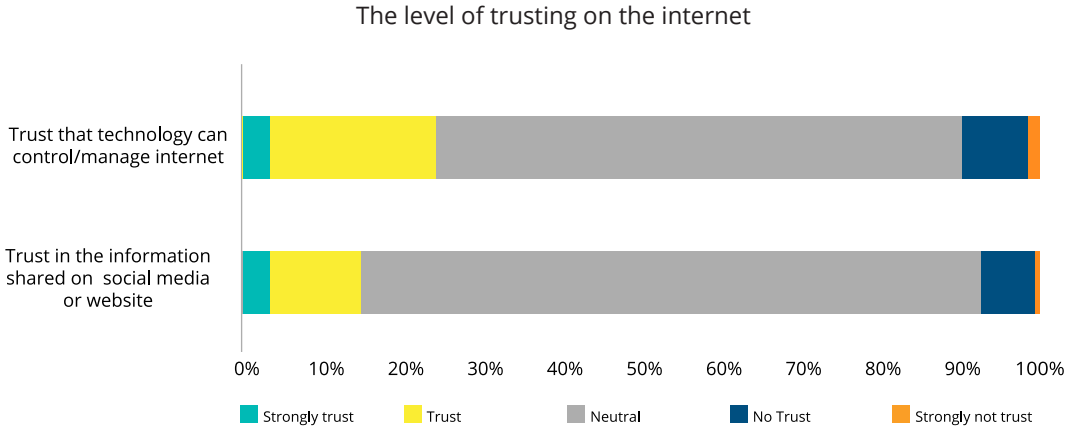


Figure 4: The level of trusting on the internet

feel safe interacting with government agencies to support their business by using internet services. A good 57% of respondents reported that they did trust the existing law and structure system can protect them from risk on the internet. Furthermore, 53% of respondents did not provide any decision making to question do you think state government agencies can be trusted to carry out online transaction.

Consistent with the low trust in government agencies, 27% of respondents believe that e-government service is trustworthy, while almost 65% stay neutral, and 9% did not believed on e-government services.

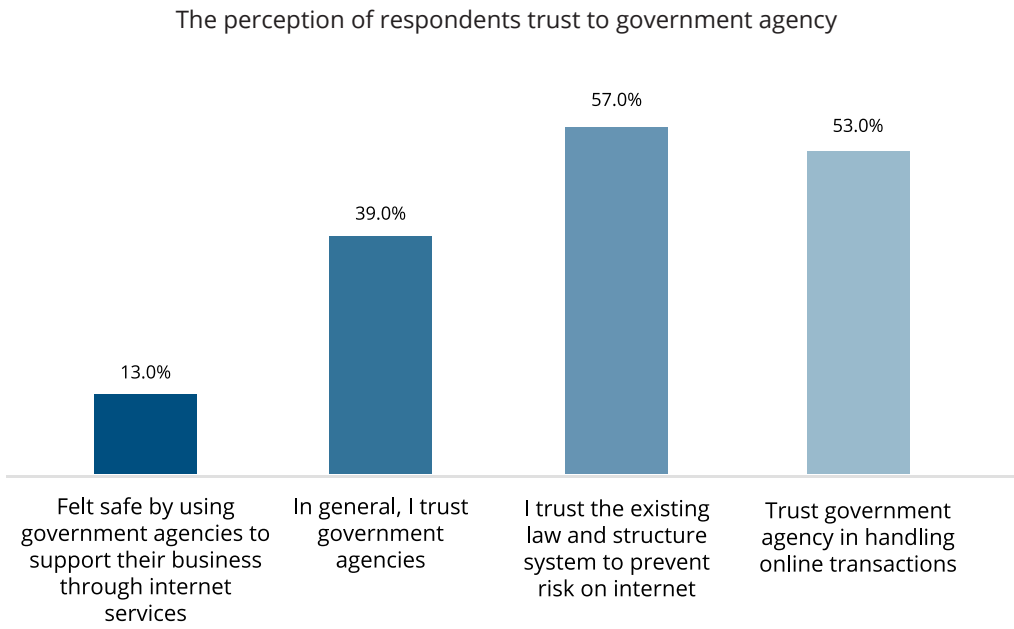


Figure 5: Trust of government agency

Moreover, 68% of respondents reported that they must be cautious when they are using the e-government service and 59% felt hesitant to provide information to a government website.

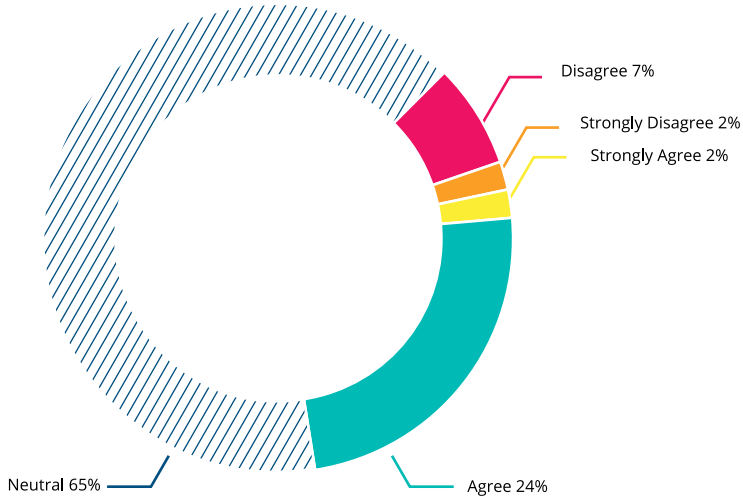


Figure 6: E-government services are trustworthy

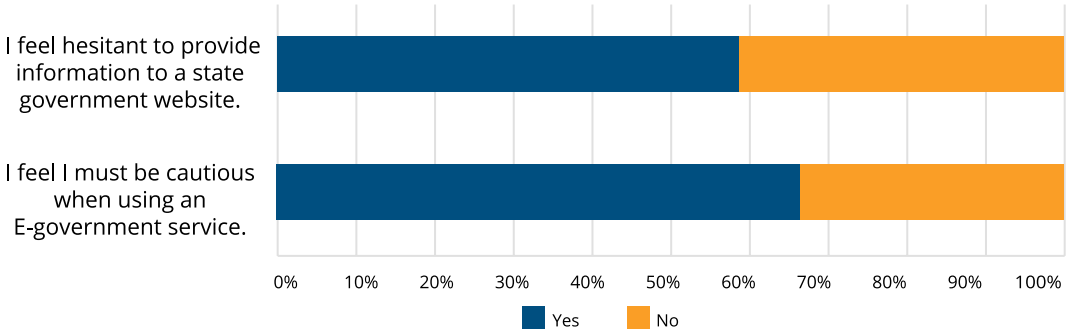


Figure 7: Trust to use e-government

Perceived Risk

The figure below describes several aspects of perceived risk around e-government. On the one hand the numbers indicate that it is relatively high.

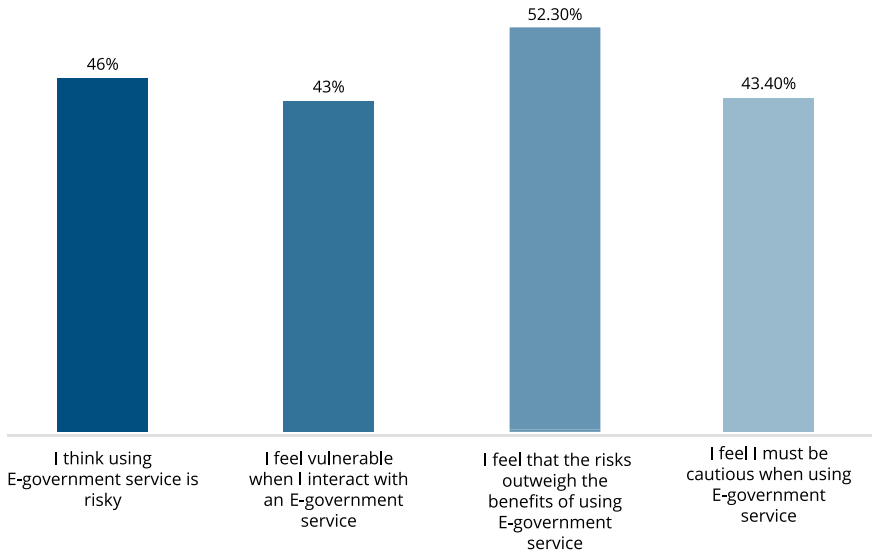


Figure 8: Perceived risk of e-government

On the other hand, almost 30% of respondents believed that e-government services will not harms to user, and 12% believed that e-government service will harms to users. 60% are neutral.

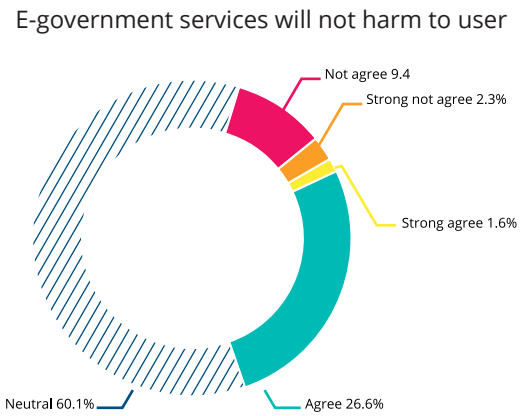


Figure 9: Believed e-government services will not harm user

Intent to Use

Despite the above, in total, almost 80% of the respondents are willing to use the e-government services. Those who aren't fear for their personal security or feel unsafe to share personal information on the internet. Some think the law structure and internet system in Cambodia is still weak, and others just find it hard to access the e-government service. E-government also seem too new for some users.

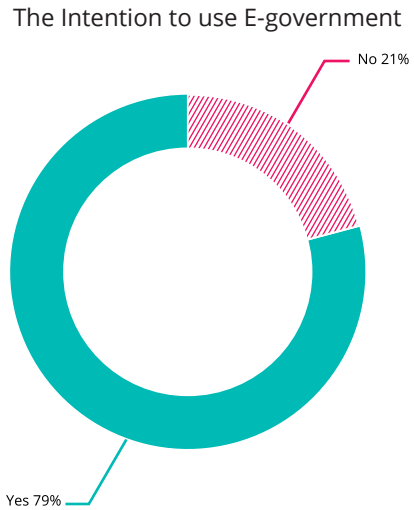


Figure 10: Intention to use e-government

Conclusion and Recommendations

The survey results indicate that most educated Cambodians are very familiar with internet usage. While it is hard to say how tech-savvy they are, it is clear that technology is not a barrier. Nevertheless, knowledge about e-government is notably low, and the perceived risk of using e-government services is substantially high. Generally, social media is perceived to be an important channel for e-government. This may simply be due to the fact social media has evolved from entertainment into a political platform.[19] Although social media, especially Facebook, is perceived as a powerful tool to raise public awareness,[20] those who have negative perceptions of e-government initiatives do not effectively adopt it.[21]

Having said that, the government should recognize that social media alone cannot be seen as a fully functional e-government platform. Having a digital presence is just a first step in e-government development.[22] A fully functional e-government involves public interaction, data collection, a working database to support online transactions and interoperability between different agencies and departments in order to be able to deliver convenient services. Additionally, social media is always associated with privacy and confidenti-

19 Fountain Megan, Social Media and its Effects in Politics: The Factors that Influence Social Media use for Political News and Social Media use Influencing Political Participation, (PhD diss., The Ohio State University, 2017), 11-12.

20 Department of Media and Communication. Cambodia Communication Institute. Cambodian Communication Review 2014. Phnom Penh, Royal University of Phnom Penh, 2014, 61-62.

21 Feeney, Mary K., and Eric W. Welch, Technology–task coupling: Exploring social media use and managerial perceptions of e-government, (The American Review of Public Administration, 2016), 12.

22 Layne, Developing fully functional, 124.

ality concerns.[23] This study confirms that such concerns are significantly high among educated Cambodian users, especially because they are afraid that their sensitive personal information could be hacked or used by unauthorized people, and because they believe that the existing system structure and legal framework cannot protect from risk on the internet.

To address these privacy and confidentiality concerns in general, the leadership responsible for implementing e-government initiatives should adopt international standards such as the ISO/IEC 29100, which provides a high-level framework for the protection of personally identifiable information.[24] This privacy framework is intended to help organizations define their privacy safeguarding requirements within an ICT environment. It can also be used to evaluate existing e-government services and measure their level of privacy and confidentiality. By complying with international standard like these, user trust in e-government can be enhanced.

The principles of this framework include:

1. Consent and choice
2. Purpose legitimacy and specification
3. Collection limitation
4. Data minimization
5. Use, retention and disclosure limitation
6. Accuracy and quality
7. Openness, transparency and notice
8. Individual participation and access
9. Accountability
10. Information security
11. Privacy compliance

Despite participants' concerns, however, most are neutral as to whether the internet and government are trustworthy or not. This may simply be because, as found earlier, participant knowledge about the e-government is low, and their exposure to e-government is limited. This could be an opportunity for the government to create more positive perceptions. Consequently, it is up to government agencies to build their reputation among citizens and increase their trust in e-government. This can be influenced by a government agency's reputation[25] and previous experiences.

Government reputation can be boosted by adopting the customer relationship management (CRM) approach and becoming more responsive to the public.[26] CRM is a holistic management approach which, enabled by technology, can help start, maintain and optimize relationships with customers and increase their satisfaction and loyalty.[27] The use of CRM in Egypt solved various issues related to e-government implementation.[28] Although there are many different government CRM frameworks, the Egyptian case study identifies the "point solution model" as one of the most appropriate ones for developing countries with relatively scarce resources. This model focuses on specific departments or agencies providing a limited scope of services. Therefore, it should be explored in the context of

23 Mohammadi Azin, Analyzing Tools and Algorithms for Privacy Protection and Data Security in Social Networks, (International Journal of Engineering, 2018), 1271.

24 ISO/IEC 29100. Accessed 07 03,2019. https://www.sis.se/api/document/preview/914169/

25 Alzahrani, Latifa, Wafi Al-Karaghouli, and Vishanth Weerakkody, Analysing the critical factors influencing trust in e-government adoption from citizens' perspective: A systematic review and a conceptual framework, (International business review, 2017), 8.

26 Da Silva, Rui, and Luciano Batista, Boosting government reputation through CRM, (International journal of public sector management, 2007), 604.

27 Schellong, Alexander, CRM in the public sector: towards a conceptual research framework, (Atlanta, International Conference on Digital Government Research, 2005), 5.

28 Azab, Nahed, Maged Ali, and George Dafoulas, Incorporating CRM in e-government: Case of Egypt, (IADIS International Conference E-Commerce, 2006), 251-253.

Cambodia's e-government initiatives as well.

Government reputation can also be improved by better explaining what the government is doing and how it serves the interest of the public.[29]

In term of trust in internet, participants were found to be neutral. However, one study finds that the "transfer effect" of trust in the internet is smaller than that of trust in the public administration. This suggests that the delivery channel is relatively less important than the actual entity which provides the service when citizens evaluate an e-service's trustworthiness.[30] And because trust in a specific technology depends on users' knowledge of how it responds under different circumstances,[31] improving citizens' knowledge should remain a priority in any e-government initiative.

Generally speaking, there are other variables that contribute to the trust of the system, such as system quality, information quality and service quality.[32] These should all be carefully considered while planning and operating e-government services.

To conclude, the government must consider citizen perceptions in order to make the most of e-government and increase its adoption. It is arguable that the results of this study cannot be generalized because of a relatively small sample size with well-educated Cambodians from the urban area, which may not represent the perceptions of those who further away and who are less educated. Future studies should include more participants from different areas, rural ones in particular, and more demographic groups such as different education and income levels.

Yet the major implication of this study for stakeholders in the development of e-government in Cambodia is that focusing on the creation of e-government services and making them available to citizens is not enough. It is equally important to promote trust among citizens, especially at the very first stages of any e-government initiative. Adhering to the international standards of ICT development could be helpful. Educating citizens about e-government is very important.

All in all, the Cambodian government can take advantage of the positive opportunities it has to realize its digital transformation ambitions. Only a small fraction of citizens appear to have negative views towards e-government services. Most of them are already noticing the government's presence on social media, hence communicating with them and informing them about e-government projects should be easy. Despite people's concerns over privacy and confidentiality, most appear to be willing to use e-government services.

It is up to the government to ensure that their citizens' first encounter with e-government services will be a positive experience. If the citizens are satisfied and keep using the e-government service again it can be considered a successful implementation of e-government.

29 Rui, Boosting government, 593.

30 Belanche, Daniel, Luis V. Casaló, Carlos Flavián, and Jeroen Schepers, Trust transfer in the continued usage of public e-services, (Information & Management, 2014), 637.

31 Mcknight, D. Harrison, Michelle Carter, Jason Bennett Thatcher, and Paul F. Clay, Trust in a specific technology: An investigation of its components and measures, (Transactions on Management Information Systems, 2011), 12.

32 Thielsch, Meinald T., Sarah M. Meeßen, and Guido Hertel, Trust and distrust in information systems at the workplace, (PeerJ, 2018), 15.