

E-government and Channel Choice Research: An Annotated Bibliography

Nicole Bergen
University of Alberta
2017

Introduction

In a democratic society, it is essential for citizens to be able to connect with their government, whether that's through searching a website for information, calling a department for clarification, or visiting an office to solve a problem. If technology is to be used to its highest potential in citizen-government interactions, government information and communications professionals need to know what people need, how they approach the government, and why they choose one method of contact over another. If information is online but people don't have access to it or, more likely in Canada today, if information is online but people don't know how to use it well, then they will either need to use other channels to contact the government or they will continue contact the government online inefficiently and use government information ineffectively (Scheerder, van Deursen, & van Dijk, 2017).

I set out to examine e-government without realizing how broad a topic this is, although some of the researchers presented here lament the lack of studies in certain branches of the field. Bélanger & Carter (2012, p. 364) define e-government as "the use of information technology to enable and improve the efficiency with which government services are provided to citizens, employees, businesses and agencies". Other e-government researchers don't always explicitly define "e-government" but they don't usually restrict it to "services provided"; instead they allow the term to encompass a wide range of citizen-government or business-government interactions. One of the first e-government studies I read was Reddick & Turner (2012, p.2) about channel choice in e-government, which they defined as "the use by citizens of one media channel [e.g. phone, office, website, or email] compared to another" to interact with the government to some end, e.g. to seek information or to solve a problem. This became my focus for this bibliography.

Most of the following researchers examine this extremely specific topic within e-government research and have come to valuable consensus which can guide the choices of government information professionals who would like to better connect with citizens, but it is my view that some researchers have given too much weight to a very few factors in the examination of human behaviour and have used too few qualitative or mixed methods studies to do so. For this reason, the final four articles expand the conversation to include aspects of citizen-government interaction which have been excluded as contributing factors in most channel choice research between 2011-2017. These featured additional factors are information systems, media exposure and political participation, service behaviour, and the third-level digital divide which examines digital skills and the difference between Internet use and outcome. These are by no means the only other factors which could influence channel choice and successful channel use but they may serve to remind readers that the factors considered in the first eleven articles are not the only ones that could possibly explain channel choice behaviour.

I began searching for "e-government" in any journal that the University of Alberta library has access to and limited the results to peer-reviewed academic journals in English. From my original search, I found about a dozen preliminary options on a variety of subtopics. Once I selected the first two channel choice articles, it was very helpful to investigate the authors in their literature review and theory sections. There, I found that there were seven researchers who often worked in various combinations with each other and who cited each other's work frequently. To ensure that I wasn't missing vital research that was outside of this group, I then searched again for e-government AND "channel choice" which yielded only thirty-one results. When the above limiters were applied, that number decreased to sixteen. Of those sixteen, thirteen were by these same seven researchers, sometimes with other colleagues, with one by a researcher that I then added to the channel choice section. The remaining two were about topics that I didn't find useful. I did sometimes try following subject headings but didn't find these helpful because they often weren't specific enough, i.e. they covered too many governmental or technological fields.

BERGEN: E-GOVERNMENT AND CHANNEL CHOICE RESEARCH

Because technology changes so quickly, I focused on studies published between 2011 and 2017, and I know that this results in my excluding most of the foundational research on e-government and technology adoption that began in earnest in the 1990s and continued through the 2000s. Some studies were excluded because, while the research questions were interesting and valid for this topic, the results were too dated to be useful in 2017. One article from 2007 eventually made it onto my list because of the number of times it was cited by more recent researchers in the field. It is difficult to determine how far back to look when considering research involving technology because even some material from less than ten years ago is either obsolete, in that the technological concerns they identified have since been addressed, or not practicable, because people have begun interacting with technology in enormously different ways. E-government, and in particular, channel choice regarding e-government, is also a very recent field of study and some of the researchers featured here have dealt with that by consulting research from other fields, such as sociology, prior to the 1990s and 2000s to explain more recent human behavior as regards government and technology. Being by nature a pragmatic person, I have chosen to look only as far back as is useful for someone who is interested in either encouraging more citizen interaction with government through electronic means or in guiding government projects that aim to connect with those citizens.

Because access to technology and methods of technology use vary widely around the world, I further restricted this collection by region, including only studies of citizen interaction with Western governments with much the same technological developments as Canada. The countries represented here are Canada, the United States, the Netherlands, and Denmark, all of which are in the top 10 of the UN E-Government Survey 2016 Development Index (United Nations, 2017).

Regarding publishers, seven of the fifteen articles annotated below were published in *Government Information Quarterly*, which Bélanger & Carter (2012) claim was one of the original publications for e-government research and which M. McCaffrey (personal communication, September 8, 2017) confirms is the only significant government information journal currently being published. All eight of the remaining articles were published in eight different journals or conference proceedings. For many of these articles, the intended audience seems to be a combination of other e-government researchers and certain e-government practitioners, although some researchers assume a lot of theoretical and statistical knowledge on the part of their audience, if indeed practitioners are included in their intended audience.

Annotations

Part 1: Channel Choice in Citizen and Business Interaction with Government

Ebbers, W. E., Jansen, M. G. M., Pieterse, W. J., van de Wijngaert, L. A. L. (2016). Facts and feelings: The role of rational and irrational factors in citizens' channel choices. *Government Information Quarterly*, 33(3), 506-515. DOI: [dx.doi.org/10.1016/j.giq.2016.06.001](https://doi.org/10.1016/j.giq.2016.06.001)

This is a quantitative study conducted in the Netherlands using a survey with vignettes to try to approximate an experiment situation, proposing to consider both rational and irrational factors regarding channel choice. The sometimes-irrational nature of human behaviour is a factor that is lacking in most of the channel choice research here and this study may help practitioners familiar with the usual rational factors to expand their thinking when planning for citizen-government interactions. Unfortunately, the vignette results can't be generalised as well as regular survey results and the role of emotions was excluded, though the authors encouraged others to include them. This study may have benefited more from a fully mixed method approach rather than being non-committal; the methods of the study didn't expand to match its scope. These researchers

BERGEN: E-GOVERNMENT AND CHANNEL CHOICE RESEARCH

received financial support from the Dutch Municipalities Quality Institute which may indicate their intended audience.

In their findings, they ranked channels in order of popularity: phone, online, front desk. Task complexity and digital skill were found to affect some channel choices. They also found that trust and the nature of the service predict channel choice, satisfaction correlates with phone channel choice, and that habit plays a role in channel choice but can be altered by task urgency or complexity. As for demographic predictors, they found that age predicts channel choice, gender doesn't, and education only sometimes. These are the standard factors examined in such research, but I'm unclear where the irrational factors are to be found in this study.

Ebbers, W. E., Jansen, M. G. M., & van Deursen, A. J. A. M. (2016). Impact of the digital divide on e-government: Expanding from channel choice to channel usage. *Government Information Quarterly*, 33(4), 685-692. DOI: [dx.doi.org/10.1016/j.giq.2016.08.007](https://doi.org/10.1016/j.giq.2016.08.007)

This study uses a quantitative online survey, conducted by a professional marketing research agency, to explore two factors that might influence channel choice: the nature of the interaction and digital skills. They begin to move toward a consideration of third-level digital divide, something which government information professionals should consider: most Canadians now have internet access, but many may still not have the skills to use it well. In this, the researchers reassessed the conceptualization of past researchers like Reddick & Anthopoulos (2014).

They found that age influenced online channel choice only and that digital skills, gender, and education didn't influence channel choice, which departs in some ways from earlier researchers in this collection who found that gender (Teerling, Pieterse, 2011) and education (Ebbers, Jansen, Pieterse, van de Wijngaert, 2016), do wield some influence. They were surprised to find that digital skill didn't influence channel choice. Their results led to them to question the implications for public policy in terms of reducing red tape and increasing transparency if citizens are using digital channels regardless of skill. They recommended that social, operational, and creative digital skills should be considered in future research.

They were open about some limitations including that their results might apply only to developed countries, which most researchers from the developed countries in this collection don't mention. They also acknowledged that since their survey was only done online, participants with higher digital skills may be disproportionately represented. They received financial support from the City of The Hague.

Madsen, C. & Kræmmergaard, P. (2016). Warm experts in the age of mandatory e-government: Interaction among Danish single parents regarding online application for public benefits. *The Electronic Journal of e-Government*, (14)1, 87-98. Retrieved from www.ejeg.com

This study is a qualitative project that began with five focus groups and continued with nine individual semi-structured interviews. The goal was to discover how citizen-to-citizen interactions influence channel choice in citizen-to-government interactions, and in the process, to examine the consequences of trying to make electronic government interaction mandatory, both perspectives that are not represented elsewhere in this collection. They examined the use of "warm experts", people they describe as those who more knowledgeable on a topic than the participant and who are more accessible than an impersonal official expert.

It would be unwise to predict behaviour from such a small qualitative study and the researchers were unable to test the degree of influence of citizen-to-citizen interaction, but focused on discovering the sort of behaviour that

BERGEN: E-GOVERNMENT AND CHANNEL CHOICE RESEARCH

existed and which could be tested in future studies. In conducting this study, the researchers received funding from the Danish Pensions Fund ATP and Innovation Fund Denmark.

They discovered differences between how the government presents information and how citizens would like it presented, and that political terminology makes citizens' searches less efficient. They further found that participants who prefer traditional (e.g. face-to-face) channels thought the system was more malleable than those who preferred e-government channels. They concluded that channel choice is a social as well as a cognitive process and recommended that analysis consider how social interactions can influence the evaluation of channels and of public authorities. Lastly, they determined that to effectively use e-government, administrative literacy is needed in addition to digital literacy.

Nam, T. (2014). Determining the type of e-government use. *Government Information Quarterly*, 31(2), 211-220. DOI: [dx.doi.org/10.1016/j.giq.2013.09.006](https://doi.org/10.1016/j.giq.2013.09.006)

This study used a quantitative public survey to discover not only why some people use e-government and others do not, but also why some people use certain functions of e-government while others do not and what motivates those choices. It draws data from a Government online survey from Pew Internet and the American Life Project and illustrates the way e-government use might be changing compared to other past studies. This article, falling into the middle of my selected time range, consolidates previous research and begins to branch out toward other factors that may influence e-government use.

Nam found that policy researchers were more likely to have higher satisfaction with e-government services than those using e-government for information or services. Unlike Ebbers, Jansen, Pieterse, & van de Wijngaert (2016), he found that trust didn't predict e-government use but that gender and education did. He also examined a wider range of factors that past researchers found and found that more affluent people, people of colour, people who lived in the suburbs, and Republicans were more likely to use e-government.

Nam's study adds new considerations to this topic, but unfortunately, it lacks clarity, over-uses jargon, and would have benefited from a more plainly articulated research question. Neither were the diagrams used in a way that provides clarity to his presentation or illuminates the discussion. One final caveat is his discussion on user interest in and satisfaction with e-government seems less trustworthy than the rest, given that these aspects were not analyzed in his study.

Pieterse, W. & van Dijk, J. (2007). Channel choice determinants: An exploration of the factors that determine the choice of a service channel in citizen initiated contacts. *The Proceedings of the 8th Annual International Digital Government Research Conference*. Digital Government Society: Philadelphia, PA. Retrieved from <https://dl.acm.org/citation.cfm?id=1248488&CFID=1003805785&CFTOKEN=19861039>

This study is quite old, technologically speaking, but it is so often cited in the field that to exclude it would have been to exclude a key piece of research on e-government on which much of the subsequent research has been based. It is an exploratory study which used semi-structured interviews to discover determinants of citizen-to-government channel choice. Some limitations of this qualitative approach were the inability to generalize findings, to "statistically test the relations between the various concepts", and to develop a model of those relations (p.180). The authors acknowledge that their findings may not apply to other countries due to cultural differences and that their data had a slight overrepresentation of men, the elderly, those with higher education.

BERGEN: E-GOVERNMENT AND CHANNEL CHOICE RESEARCH

They concluded that habit is one of the most important factors that influence channel choice, but as complexity increases, other factors are considered more relevant and that past experience colour perceptions of current tasks. They also found that age and education correlate with access to technology, which may also influence channel choice. This study considers some of the basic factors, demographic and experiential, that may influence channel choice and which future researchers have elaborated on. Many subsequent studies on a comparable research problem use a similar approach to e-government channel choice research, often adapted for quantitative data.

Reddick, C. & Anthopoulos, L (2014). Interactions with e-government, new digital media and traditional channel choices: Citizen-initiated factors. *Transforming Government: People, Process and Policy*, 8(3), 398-419. DOI: doi.org/10.1108/TG-01-2014-0001

This is a quantitative study which uses data from a Canadian national survey conducted by the Institute of Citizen-Centred Service to examine the factors that may predict e-government use. The researchers were specifically interested in whether the factors that might predict the use of traditional channels differ from the ones that predict e-government use as well as how e-government and new digital media channel choices changed the traditional ways that citizens initiate contact with their government. As with Nam (2014), this and the following article consolidated much of what was learned in previous e-government research and began to expand into new territory, in this case, that of new digital media, which is still under-researched.

They found that satisfaction doesn't influence channel choice, but that age, gender, income, and higher internet use influenced e-government use. If a person had to solve a problem they were more likely to choose an office, but if they had to find information, they were more likely to choose e-government. They also found that privacy concerns didn't impact e-government use and that minorities were more likely to use new digital media. They qualified their findings, noting that their quantitative analyses didn't measure behaviour and that they had a small sample size for new digital media users.

They concluded that the digital divide, user satisfaction, the nature of transaction, and security and privacy affect all three channel types (e-government, traditional, and new digital media) and, therefore, that multi-channel services are important but that governments should also try to close the digital divide.

Reddick, C. G., & Turner, M. (2012). Channel choice and public service delivery in Canada: Comparing e-government to traditional service delivery. *Government Information Quarterly*, 29(1), 1-11. DOI: 10.1016/j.giq.2011.03.005

This is a quantitative study investigating when and why Canadian citizens choose one government channel over another using a 2007 national survey from the Institute for Citizen-Centered Services which was sent by mail and online to Canadian residences. This study is valuable because it examines Canadian e-government data specifically, demonstrating the development of Canadian e-government use and, citing many of the researchers in this collection, relating it to comparable European studies.

They found that gender, education, and community size affected channel choice. Furthermore, they found that task characteristics influenced channel choice because participants tended to use a government website to find information and a government office to solve problems. They did find some conflicting data regarding the relationship between the nature of the interaction and how satisfied a citizen was likely to be with the channel they chose and so they recommend that the government provide equal standards of service across channels and educate their citizens about e-government services. To other researchers, they suggest that focus groups

BERGEN: E-GOVERNMENT AND CHANNEL CHOICE RESEARCH

should be used to examine these issues in more depth and that social media should be examined as a government service channel

They conclude that a digital divide exists across gender, age, and education level, but they suggest that, given the data from other surveys, this divide may be changing and may be due to social and cultural norms, but that more research is required to confirm this. They suggest that people may use multiple channels in certain orders for different problems.

Teerling, M. L. & Pieterse, W. (2011). How to improve e-government use: An empirical examination of multichannel marketing instruments. *Information Policy: The International Journal of Government & Democracy in the Information Age*, 16(2), 171-187. DOI: 10.3233/IP-2011-0213

This is a mixed methods study using exploratory, in-depth, semi-structured interviews followed by a survey available online and in-person in a medium-sized Dutch municipality which examined perceptions of multichannel marketing (MCM) instruments, how they influence channel choice, and how they might best be used. This is one of the older studies in this collection and shows signs of being dated, but is included because, with its proposed citizen multichannel behaviour model, it helped lay the theoretical groundwork for many of the subsequent quantitative studies in this bibliography. They described their process in detail and considered communicational, economical, and legal policy instruments, which subsequent researchers don't seem to have expanded on as well as they might. Factors that successive researchers introduced, such as habit and satisfaction, were not examined here and they aren't as explicit in naming the limitations of the study as subsequent researchers. They call for a longitudinal experimental field study to confirm MCM effectiveness in influencing channel choice which, as far as I can tell, hasn't been done yet.

They conclude that citizens prefer increasing communication and decreasing price regarding web services and improving online services, and that they don't like legal or economic instruments to force online channel choice. Further, they found that younger, highly educated, and male citizens valued web services more, which is a plausible finding for a 2011 study though subsequent studies suggest that demographics might not influence channel choice in the same way anymore (Ebbens, Jansen, van Deursen, 2016).

van den Boer, Y., Arendsen, R., Pieterse, W. (2016). In search of information: Investigating source and channel choices in business-to-government service interactions. *Government Information Quarterly*, 33(1), 40-52.

This study used a survey of employees from Dutch small and medium businesses and is the second part of a sequential mixed methods approach that sets out to discover which source and channel choices businesses make and what order they make them in, the first part being a qualitative study (van den Boer, Pieterse, van Dijk, Andersen, 2015). This is one of the first studies to differentiate between channel choice and source choice and is also unusual for considering business-government interaction, although it focuses on individuals in businesses.

The researchers found that people selected an average of 1.6 sources while looking for information and used 2.3 channels to obtain information from their first source. They also found that task characteristics, perceived complexity, and the desire for certainty influence the number of sources someone chooses and that a person's position within an organization influences their channel choice. They conclude that information seeking among tax professionals is inefficient because they use multiple sources and channels, but this presents a dilemma

BERGEN: E-GOVERNMENT AND CHANNEL CHOICE RESEARCH

since a single source likely won't do if uncertainty, insufficient information, or a desire for comparisons are factors.

They received a low response rate and men and the more highly educated were over-represented compared to the general population, but this is not unusual in business. They highlighted their focused on public service, so generalizability to the private sector or to individuals would be difficult. Finally, they were concerned that some participants may have misunderstood the differences between channel and source, especially since not all researchers in this field differentiate. They received funding from the Netherlands Tax and Customs Administration.

van den Boer, Y., Pieterse, W., Arendsen, R., van Dijk, J. (2017). Towards a model of source and channel choices in business-to-government service interactions: A structural equation modeling approach. *Government Information Quarterly*, Vol. TBD [Article in Press]. DOI: [dx.doi.org/10.1016/j.giq.2017.07.002](https://doi.org/10.1016/j.giq.2017.07.002)

This study uses a sequential mixed methods approach to examine the relationship between business and government to find out how channel and source choices are different and interdependent, and what factors affect each. They used an exploratory qualitative study followed by a survey and maintained a distinction between source and channel choices, examining their network characteristics.

The researchers found that experiential and situational factors don't influence channel choice but characteristics of the relationship predict all three sources they consider. They found that task characteristics influence the advisor source negatively and the Netherlands Tax and Customs Administration (NTCA) positively and that gender doesn't influence source choice. Source characteristics, prior experiences, and position in the organization all influence phone and website channel choice. Age and education affect both channel and source choice and gender doesn't influence channel choice. The researchers concluded that nothing they examined predicts all channel and source choices

They acknowledge that it is hard to generalize these findings to a world outside of business-to-government contacts and they didn't study how aware their participants were of the various channel and source choices, which no study in this collection has addressed either. After testing, they discovered that the model didn't fit the data, so four hypotheses couldn't be tested. Finally, they acknowledged funding by the NTCA.

van den Boer, Y., Pieterse, W., van Dijk, J., Andersen, R. (2015). Exploring information-seeking processes by businesses: Analysing source and channel choices in business-to-government service interactions. *International Review of Administrative Sciences*, 82(2), 373-391. DOI: [dx.doi.org/10.1177/0020852314564309](https://doi.org/10.1177/0020852314564309)

This exploratory, qualitative study seeks to discover the factors that influence source and channel choice and to discover if and how source and channel are interdependent. It is the first part of a two-article mixed-methods approach, though only the second of the two articles (van den Boer, Arendsen, Pieterse, 2016) explains this arrangement. The researchers used focus group interviews followed by individual interviews, both semi-structured, of employees from small and medium businesses. Beginning to distinguish between channel and source choices, this study encourages government information professionals to examine their role as information providers and to consider other non-governmental sources that citizens and business might reach out to for government information.

BERGEN: E-GOVERNMENT AND CHANNEL CHOICE RESEARCH

The researchers conclude that source and channel choice can be influenced by the same factors, including task characteristics and prior experiences, position of participants in the business, and to some extent, relationship characteristics and perceived source characteristics. However, they further conclude that situational factors affect channel choice rather than source choice.

Many of the studies they cited are from ten to twenty-five or more years ago which was noticeably more than in related studies. The sample comprised an intentional over-representation of businesses with employees in the Netherlands. They call for quantitative studies to determine the extent of influence of the factors they examined. The other article in the two-study mixed approach was funded by the Netherlands Tax and Customs Administration (NTCA) but this study doesn't acknowledge this source of funding. One of the researchers, Arendsen, is the head of the NTCA research division.

Part 2: Digital Connections Between Citizens and Governments.

Bélanger, F. & Carter, L. (2012). Digitizing government interactions with constituents: An historical review of e-government research in information systems. *Journal of the Association for Information Systems*, 13(Special Issue), 363-394.

This historical study of e-government research sets the goal of discerning insights and trends and compares the most highly cited e-government articles to e-government articles from leading information systems journals. With its focus on information systems, this study offers historical perspectives and suggestions for future research regarding citizen-government interactions which could be of use to those government information professionals wishing to increase e-government use and who need access to reliable information about usage trends and possibilities.

The researchers provide basic descriptive statistics but stop there and their diagrams are mostly visual with little supporting connections to the data. They may have taken this approach in order not to overwhelm someone unfamiliar with statistics, but the result is that some of their claims seem to lack sufficient evidence, although coding procedures are described in detail in their Appendix C. They found significant differences between the most highly cited articles and those from leading IS journals, including about theoretical foundations and method type. They don't, however, discuss any possible limitations of their review, so that any aspects that they may have decided to exclude will be for the reader to discover.

They conclude with recommendations for e-government research, which are laid out very systematically and include the suggestions to publish pragmatic papers in IS journals; to develop deeper theoretical roots within e-government research, and to consider IS when doing so; to conduct longitudinal studies, of which there is only one in this collection; to research different levels of e-government; and to broaden the research perspective.

Bimber, B. and Copeland, L. (2013). Digital media and traditional political participation over time in the U.S. *Journal of Information Technology & Politics*, 10(2), 125-137.

This is a longitudinal quantitative study that set out to answer the question: "Are the relationships between the extent of digital media use and participation consistent across election years?" using data from the American National Elections Studies (ANES) in 1996, 1998, 2000, 2004, and 2008 (p. 125). It is useful in its examination of possible connections between internet use and political participation and what that may mean for government information specialists, but it would benefit from updating with 2016 election data.

BERGEN: E-GOVERNMENT AND CHANNEL CHOICE RESEARCH

The researchers found that in each of these years, political participation was associated with seeing political information online, but that seeing such information only predicted political participation in 2008 and that there were no two years in which exposure to political information could predict the same political involvement.

The studies they used didn't adequately measure new digital media use so the title is somewhat misleading and should more accurately read "The Internet and Political Participation". These researchers called for future researchers to further study online content and political experiences and they acknowledge that 2002 and 2006 data did not include enough information about the variables they were examining to be of use to this study.

Carter, L., Weerakkody, V., Phillips, B., and Dwivedi, Y. K. (2016). Citizen adoption of e-government services: Exploring citizen perceptions of online services in the United States and United Kingdom. *Information Systems Management*, 33(2), 124-140.

This is a quantitative study that examines the public sector by trying to understand e-government adoption in two culturally similar countries of the US and the UK. Specifically, they ask how trust and risk affect e-government use. This study was administered in London through the Department of Vehicles and Licensing Agency (DVLA) and in a town in Virginia through the Department of Motor Vehicles (DMV). E-government studies often compare results from different countries in their literature reviews but rarely directly compare two countries within the same study. This is useful to consider when using, for example, Dutch studies to develop Canadian e-government programs.

The researchers' structural model is not clearly explained but is used to test their hypotheses. The study used a small sample of 245 participants and I was confused about the choices of London, England and an unnamed town in Virginia, US that the researchers admit is not very diverse, since these two locations don't seem easily comparable. Furthermore, some of their statistics not are clearly explained and they use far too many uncommon and unnecessary acronyms.

They found that factors affecting e-government adoption include disposition to trust, trust of the internet, perceived risk, perceived usefulness, and perceived ease of use. They conclude that the government should provide value-added services to encourage e-government use and that local and federal governments should implement complementary, citizen-focused e-government solutions. They recommend further research in additional countries and suggest considering other technological, economic, legal, political, and social factors.

Scheerder, A., van Deursen, A., & van Dijk, J. (2017). Determinants of internet skills, uses, and outcomes: A systematic review of the second- and third-level digital divide. *Telematics and Informatics*, 34(8), 1607-1624. [Dx.doi.org/10.1016/j.tele.2017.07.007](https://doi.org/10.1016/j.tele.2017.07.007)

This is a systematic literature review investigating how Internet skills and use and the digital divide are defined in studies between 2011-2016. They ultimately selected 126 articles for review using predefined criteria but didn't describe their analysis method in detail. There was no separate analysis section but aspects of the analysis, such as categorizing of terms, were briefly described in each of their results categories. They categorized, for example, four primary internet skills and several activities that affected type and frequency internet use. This study takes further the differences between the second- and third-level digital divide and their implications for successful e-government use by citizens with internet access but perhaps without adequate digital skills to make the most of that access.

BERGEN: E-GOVERNMENT AND CHANNEL CHOICE RESEARCH

The researchers found that most research focused on the second-level digital divide and that the third-level divide is under-researched. They also found that sociodemographic and economic determinants were studied much more often than social, cultural, personal, material, and motivational factors. They concluded that further research is needed on the third-level digital divide, or the differences between Internet use and outcomes, and they recommended further research into social and cultural determinants and the use of the term “digital skills” to refer to Internet-related skills. They only included studies on the “digital divide” and so excluded studies on Internet outcomes that didn’t focus on that divide. They acknowledged that their research was financed by University of Twente (Netherlands) program Tech4People.

Additional References

United Nations. (2017). UN E-government survey 2016. Retrieved from <https://publicadministration.un.org/egovkb/en-us/Reports/UN-E-Government-Survey-2016>