
E-Administration in Polish Enterprises in 2004-2019

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Abstract:

Purpose: The publication's main objective is to evaluate the degree of e-administration in Polish enterprises in 2004-2019. It was assumed that the discussed issue's most crucial notion that requires consideration is the actual use of e-administration by enterprises in Poland.

Design/Methodology/Approach: Review of domestic and foreign literature and then statistical analysis of the existing data furnished by Statistics Poland (formerly known as Central Statistical Office) for the period 2004-2019 on e-government in Polish companies.

Findings: In the analyzed period, the enterprises' use of e-administration services remained at a very high level in most distinguished sections. Furthermore, online contact with public administration was used by enterprises for the following purposes, information acquisition, form downloading and filing as well as submission of bids in the electronic public procurements system. E-administration is not developing in Poland as quickly and dynamically as in other European countries, but it has an upward trend.

Practical Implications: In the authors' opinion, the presentation of e-administration by enterprises in the analyzed period can become a factor that stimulates the action of public bodies in Poland in the scope of broadly understood e-administration.

Originality/value: The doctrine features few analogous papers in Polish and English. The presented paper fills a gap in the literature by getting the reader acquainted with the use of e-administration by Polish enterprises in 2004-2019.

Keywords: E-government, information systems, public administration, information technology, enterprises.

JEL classification: D73, O, O3, O33, O38.

Paper Type: Research study.

Acknowledgement: The paper presents the authors' personal opinions and does not necessarily reflect the official position of the Opole University of Technology. Despite the availability of Statistics Poland's newest data on the information society in Poland, there is a lack of statistical data for 2019 on e-administration in enterprises which prevented an analysis of the entire period of e-administration development to date. The data for 2020 will be available in March 2021.

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1. Introduction

Electronic public administration (e-administration, e-government) is becoming increasingly crucial for the client (citizen, economic entity, enterprise) because it affects the quality of life and their development at the regional and global level. E-administration tools became part of the state and public body functioning around the world. For years, technological progress has been somewhat “coercing” state authorities to take continuous action using state-of-the-art Information and Communication Technologies (ICT). The primary objective of supporting e-administration development in UE member states is to provide citizens and entrepreneurs with effective services that utilize ICT tools. Internet play a key role in transforming traditional “hard copy” public administration into an integrated electronic administration services system. Furthermore, society expects all services provided by the state administration to be available online and the efficient processing of their cases to be quick and straightforward, especially for entities operating in economic trade and which relatively often deal with public offices due to the nature of their activity.

The publication’s main objective is to evaluate the degree of e-administration in Polish enterprises in 2004-2019. Existing data sources were used to determine the use of e-administration. The basis for the study included the statistical data published by Statistics Poland in 2004-2019 on enterprises hiring ten and more persons with their activity classified according to the Polish Classification of Activity (PKD).

E-administration Definition: In foreign scientific discourse, the term e-administration is referred to as e-government recognized differently in the scientific doctrine and publications of global organizations UE institutions (Helbig, Gil-García and Ferro, 2009; Norris, 2010). When categorizing the arrangements on terms, it is necessary to note that there are two concepts of defining e-government narrow and broad (Ganczar, 2009). The nature of the former is to deal with e-government in terms of ensuring access to public services provided online. According to United Nations, e-government is the use of ICT and its application by the government to provide information and public services to the people (United Nations, 2020). “*E-government* can thus be defined as the use of ICTs to more effectively and efficiently deliver government services to citizens and businesses.

It is, therefore, the application of ICT in government operations, achieving public ends by digital means (United Nations, 2020). “E-government is the use of information and communication technologies for better public services for citizens and businesses (Wimmer and Codagnone, 2007; Cumbie and Car, 2014; Moon, 2002; West, 2004; Danziger and Andersen, 2002; Bournaris, 2020; Devadoss, Pan and Huan, 2003; Tassabehji, Hackney and Maruyama, 2019) When defining e-government in terms of e-services’ availability, the authors note that e-government allows for providing public administration information and services around the clock

(Norris, 2010; Coursey and Norris, 2008; Bournaris, 2020). According to D.F. Norris, regardless of the prerequisites for e-administration development and implementation by the authorities of particular states, one of two main reasons for its implementation, aside from electronic access to information, is to provide services online (Norris, 2010).

As pointed out by T. Bournaris, state governments face the challenge of improving public administration effectiveness to provide more efficient and effective services, which continuously improves e-administration (Bournaris, 2020). As stated by the European Commission, “digital public services reduce administrative burdens on businesses and citizens by making their interactions with public administrations faster and efficient, more convenient and transparent, and less costly.” (Communication from the Commission to the European Parliament, 2016).

In a broad sense, the term of e-government, aside from the notion of availability of public administration services provided online, also encompasses modernization and re-organization of its structures about the implementation of state-of-the-art information and communication technologies. In this sense, e-government is more than just a term encompassing the issue of availability of public administration services provided online because it is related to a deep reconstruction and modernization of administration which takes place based on the ICT foundation in order for the public sector to be open and transparent, citizen-friendly and effective (Bogucki, 2005). As per European Union policy, eGovernment uses ICT in public administrations combined with organizational change and new skills to improve public services and democratic processes and strengthen support to public policies.

In the analyzed sense, e-government is defined using ICT as a tool for better governance which means that state-of-the-art information and communication technologies are becoming a tool for public administration transformation (Bonsón *et al.*, 2012). Enthusiasts of the e-government’s broader sense point out that the implementation of e-government requires the use of information and communication technologies in public administration as well as their use for the reconstruction of public administration’s internal processes and provision of electronic public services (Aldrich, Berlot, McClure, 2002; Heeks, Bailur, 2007; Raguseo and Ferro, 2011).

Raguso and Ferro point out that the thing linking the e-government term’s definitions presented in the doctrine is that e-government takes into account the automation or computerization of existing paper-based procedures that will prompt new institutional and operational features, new managerial skills, new abilities to define adequate policies, new capabilities of planning activities to conduct, new aptitudes to increase the citizens’ involvement in public activities (Raguseo and Ferro, 2011). Effective e-administration functioning requires broadening employee power to aid citizens most quickly and suitably by accelerating administrative processes and optimizing governmental solutions (Hawrysz, 2020).

2. Literature Review

The review of scientific achievements on the use of e-administration in Polish enterprises encompassed the domestic literature. Few analogous papers in Polish and English have been developed to date. The presented paper fills a gap in the literature by getting the reader acquainted with the use of e-administration by Polish enterprises in 2004-2019. The available domestic publications lack those that consider the degree of use of e-administration by enterprises in Poland in the long term. The publications most often concern the use of e-administration by enterprises up to 2017 with consideration of the degree of its use in a period of one to two years (Mańkowska, 2017; Perdał, 2014; Dabrowska and Trawnicky, 2012; Kokot-Stępień and Piersiala, 2019; Kobylińska, 2017; Kryk, 2014; Śledziwska and Zięba, 2016; Dominiak, 2016; Ejdys, 2018; Talar and Kos-Łabędowicz, 2014; Miciuła and Miciuła, 2015).

It is peculiar that these publications, aside from theoretical notions related to e-administration (e-government), also encompass empirical studies on the use of e-administration by enterprises in various spatial and time scales. In terms of the studies' spatial aspect, they are focused on three levels, regional/local (Perdał, 2014; Kobylińska, 2017; Kryk, 2014; Dominiak, 2016), domestic (Dabrowska and Trawnicky, 2012; Perdał, 2014; Kokot-Stępień and Piersiala, 2019; Śledziwska and Zięba, 2016; Ejdys, 2018) and European (Perdał, 2014; Mańkowska, 2017). In their research, particular authors have often considered at least two aspects of spatial use of e-administration by enterprises.

Empirical studies are dominated by research on the diagnosis of the degree of use of e-administration by Polish enterprises without limitation of the research area to a selected region of Poland (Dąbrowska and Trawnicky, 2012; Kokot-Stępień and Piersiala, 2019; Kobylińska, 2017; Kryk, 2014; Śledziwska and Zięba, 2016). For example, J. Ejdys refers to the use of e-administration by Polish enterprises by relying on Statistics Poland's 2017 data to indicate e-administration by enterprises solely in that specific year (Ejdys, 2018). Similarly, in their deliberations, I. Miciuła and K. Miciuła present enterprises that used e-administration in 2013 (Miciuła and Miciuła, 2015). The topic of empirical studies on the use of e-administration by enterprises also covers the notion of diagnosis of the use of e-administration by enterprises in a selected Polish region (Dominiak, 2016; Kobylińska, 2017; Kryk, 2014).

In her paper, J. Dominiak presented an analysis of the degree of use of new technologies by Wielkopolskie enterprises based on the example of electronic services (Dominiak, 2016). Similarly, M. Kobylińska focused her research on selected aspects of the use of e-administration by enterprises, in particular Polish voivodeships (Kobylińska, 2017). Based on the desk research method and a taxonomic analysis, B. Kryk has analyzed the use of e-administration by enterprises

in the Zachodniopomorskie Voivodeship compared to other voivodeships (Kryk, 2014).

3. The Use of E-Government by Enterprises in Poland during the period of 2004-2018

Providing enterprises with public administration services by electronic means aims to improve contacts with public administration bodies, accelerate procedures for settling all official matters, and reduce administrative costs, thus freeing funds for investments. The proof of the effective functioning of e-government lies in the bilateral correlation between the legislative actions taken, actions implementing specific solutions to more effectively and efficiently make available and provide e-government services, and their actual use by enterprises.

The use of e-government by enterprises in Poland between 2004-2018 is presented below. For the considerations contained in this part of the publication, it should be noted that the statistical data on the types of activity of enterprises using e-government requires additional grouping into sections. Therefore, it is essential that in statistics, records and documentation and accounting, as well as in official registers and information systems of public administration in Poland, the application of the Regulation of the Council of Ministers of 24.12.2007 on the Polish Classification of Activities (Journal of Laws 2007, No. 252, item 1885 as amended) Polish Classification of Activities, the so-called PKD.

From 01.07.2008 to 31.12.2009, the activities of the entities entered in the National Official Register of National Economic Entities, REGON register, were reclassified according to PKD 2007. In connection with the issuance of the new regulation regarding PKD in 2007, the statistical data analyzed in this publication, grouped into sections about the types of entrepreneurial activity using e-government, included two different PKD classifications: Polish Classification of Activities PKD 2004 and Polish Classification of Activities PKD 2007. Over the years 2004-2008, statistical data was presented in the PKD 2004 system according to the following nine sections:

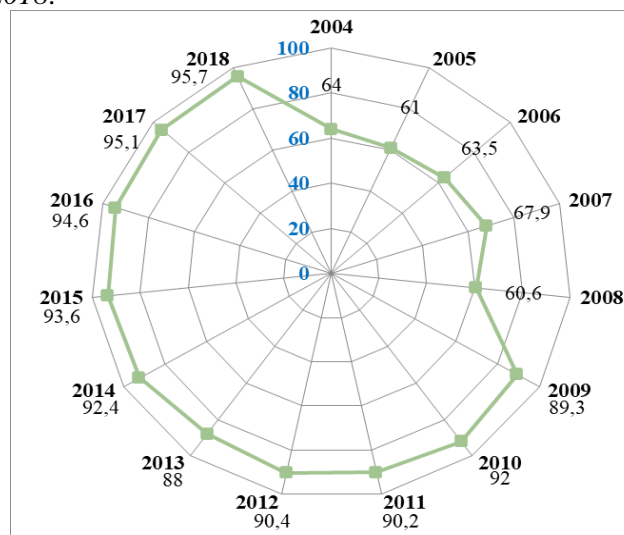
1. "Industrial processing",
2. "Construction",
3. "Trade and repairs",
4. "Hotels and other tourist accommodation facilities",
5. "Transport, storage and communication",
6. "Real estate and business services, R&D activities",
7. "Information technology",
8. "Film, radio and television activities",
9. "Financial agency services".

By contrast over the period of 2009-2018, in accordance with PKD 2007, the following thirteen sections were distinguished:

1. “Industrial processing”,
2. “Electrical energy, gas, steam, hot water and air conditioning generation and supply”,
3. “Water supply; sewerage and waste management as well as remediation activities”,
4. “Construction”,
5. “Wholesale and retail trade; repair of motor vehicles including motorcycles”,
6. “Transport and warehouse management”,
7. “Accommodation and food service activities”,
8. “Information and communication”,
9. “Financial and insurance activities”,
10. “Services for the real estate market”,
11. “Professional establishment, scientific services and technical activities”,
12. “Business administration services and support service activities”,
13. “Computer and communication equipment repair and maintenance”.

Since 2004, the enterprises conducting economic activity in Poland have used the available e-government tools with varying intensity. The details are presented in Figure 1.

Figure 1. The percentage of enterprises in Poland using e-government over the period of 2004-2018.



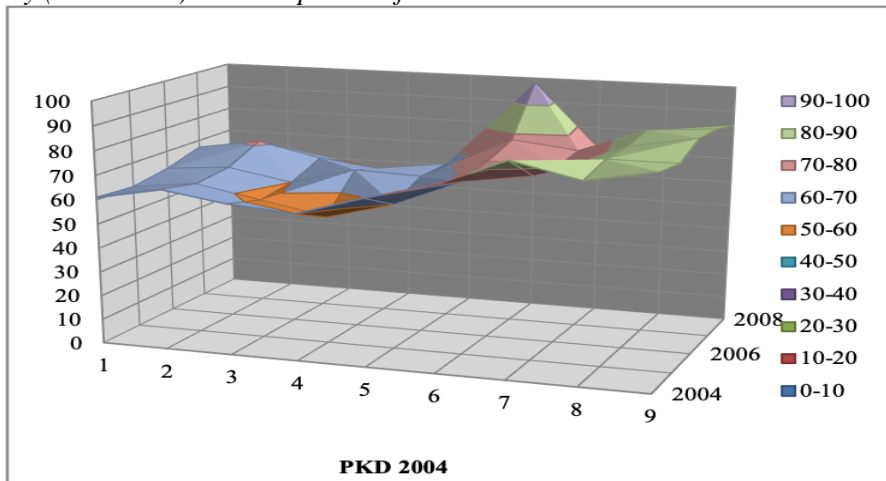
Source: The authors' own elaboration based on the data from the Statistics Poland.

The rate of using e-government services, increasing year over year (Figure 1), confirms the high activity of enterprises in this area. In the last analyzed period (2017 and 2018), this rate exceeds 95%. Its lowest level in the period under consideration (2004-2018) was 61% (in 2005). The year 2009 proved to be the breakthrough moment in the development of e-government when there was a marked increase of enterprises using e-government (by 28.7%) compared to the previous year. At the beginning of 2008, all taxpayers and payers in Poland gained access to tax return e-forms, which allowed online settlement of income tax with the tax office. However, initially, the universality of this tool was limited by possession of a qualified e-signature. The cancellation of this requirement at the turn of 2009 and 2010 significantly simplified this procedure and thus popularized the submission of tax e-declarations.

Moreover, after a delay of 18 months, in June 2011, there appeared a possibility of registering a trusted profile on the ePUAP platform, which also contributed to the increased usage of e-government among enterprises. The results of implementing other e-services looked promising too. Based on the assessment of the European Commission, the best online access to public services in Poland is offered by three websites: e-Inspectorate (Polish e-Inspektorat), ZUS (Social Insurance Institution), e-Deklaracje.gov.pl, and e-Sad.gov.pl.

In order to identify the enterprises in which this development turned out to be the highest, and the ones with the lowest, their division into individual sections during 2004-2018, about the Polish Classification of Activities PKD 2004 and PKD 2007, was taken into consideration. The details are presented in Figures 2-3.

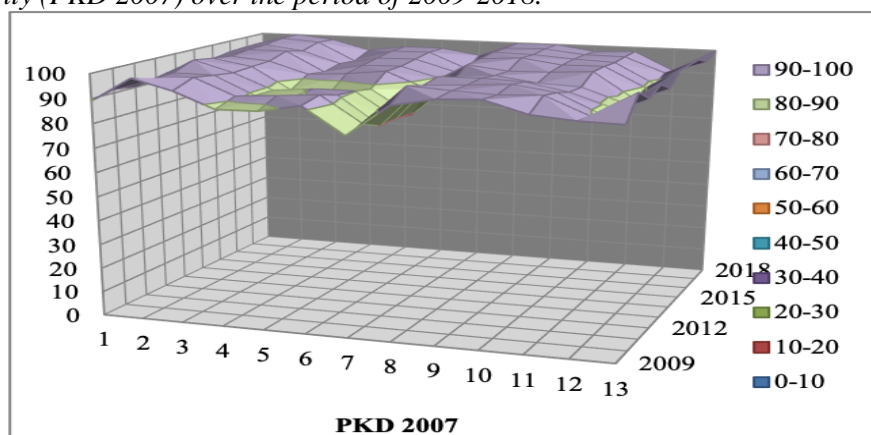
Figure 2. The percentage of enterprises in Poland using e-government by type of activity (PKD 2004) over the period of 2004-2008.



Source: The authors' own elaboration based on the data from the Statistics Poland.

During the analyzed period of 2004-2008, e-government was most often used by enterprises operating in real estate and business services, R&D activities (98% in 2008); enterprises operating financial agencies (84% in 2008) and in the section of film, radio and television activities (79% in 2008). In addition, during this period, a decline in the interest of enterprises using e-government can be observed. An increase of the level of services in this area took place only in one distinguished section - services for real estate and business, R&D activities (by 23%). There was a decrease in the remaining ones, with the largest among the enterprises from the section of hotels and other tourist accommodation establishments (by 16%) and in the IT section (by 15%).

Figure 3. The percentage of enterprises in Poland using e-government by type of activity (PKD 2007) over the period of 2009-2018.



Source: The authors' own elaboration based on the data from the Statistics Poland.

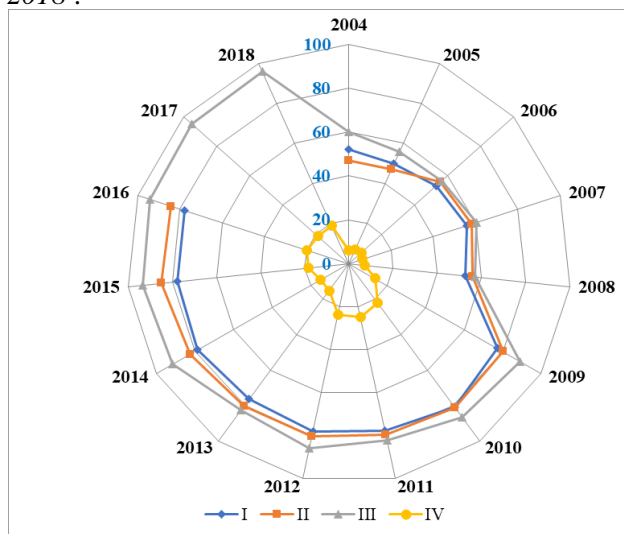
The high rate of usage of e-government services over the period 2009-2018 confirms the high activity of enterprises in this area. When analyzing individual sections, enterprises from two of them exceed the remaining ones in using e-government. All enterprises in the section computer and communication equipment repair and maintenance (in 2010, 2014-2016, and 2018) and in the section Electricity, gas, steam, and hot water generation and supply (in 2012, 2017-2018) used the Internet in their contacts with public administration. In the remaining years, this percentage exceeded 90%.

The lowest rate was reported by enterprises in the accommodation and food service activities section, which reached the lowest value (78.8%) compared to the remaining years and other sections in 2013. Only in 2016 and 2018 did this rate exceed the 90% threshold. By contrast, in the section comprising activities in administration services and business support activity, the percentage of enterprises using the Internet in their contacts with public administration was below 90% during 2011-2016 and was then at 88.2% -89.5%.

Enterprises use the Internet in contact with public administration bodies mainly for such purposes as obtaining information (I), downloading forms (II), returning completed forms (III), and submitting offers in the electronic system of public procurement (IV). The details are presented in Figure 4.

During the analyzed period of 2004-2018, returning completed forms enjoyed the most incredible popularity among enterprises in individual years. Since 2014, over 90% of all enterprises have returned completed forms online. Invariably, submitting bids in the electronic system of public procurement has been the least popular service for several years. In 2004, only 6% of enterprises used it. In 2018, almost every fifth company chose this form of contact with public administration.

Figure 4. The percentage of enterprises in Poland using e-government over the period of 2004-2018³.



Source: The authors' own elaboration based on the data from the Statistics Poland.

In Poland, e-government is not as popular as in other European countries. Throughout 2009-2013, Finland, Netherlands, and Lithuania were the leaders in using the Internet in their contacts with public administration among the European Union member states (over 90%). In Poland, e-government services exhibit a growth tendency, but the rise is prolonged and significantly diverging from other European countries. In 2009, the rate of enterprises using the Internet for contacting public administration in Poland exceeded the EU average by 13 percentage points and amounted to 89%, and then increased to 90% in 2012, exceeding the EU average by only two percentage points (Eurostat). In the following years, Eurostat resigned from surveying e-government. In Poland, this rate is still collected.

³The statistical data for 2017 and 2018 on obtaining information and downloading forms was not collected by the Statistics Poland.

4. Research Methodology

A review of domestic and foreign literature was conducted to understand the term of e-administration and indicate the subjects of studies conducted thus far, the studies' methodology, and the critical aspects concerning the use of e-administration by Polish enterprises. This enabled the authors to get acquainted with the fundamental theories, their development, and the studied notion's discourse. In terms of Polish and English literature, the review started with selecting full-text databases, which depended on the authors' access to the database. The basis for the literature review featured three databases: "Wiley and Research Gate," "BazHuM" Polish database of humanist and social magazines as well as "CEON. Science Library."

In order to search for literature on the term of e-administration and its use by Polish enterprises, the primary keywords present in the titles and abstracts of papers provided in the database were identified: e-government, information systems, public administration, information technology, and enterprises.

The deliberations also featured the method of analyzing the existing data of Statistics Poland from 2004-2019 on the use of e-administration by Polish enterprises. The basis for the study included the statistical data published by Statistics Poland in 2004-2019 on enterprises hiring that use e-administration tools, hiring ten and more persons, with their activity classified according to the Polish Classification of Activity (PKD). The basis for the analysis features Statistics Poland's reports titled "Information Society in Poland. Results of statistical research in 2015-2019/2014-2018/2013-2017/2012-2016/2011-2015/2010-2014/2009-2013/2009-2012/2007-2011/2006-2010/2004-2008/2004-2007/2004-2006".

5. Conclusion

The development of e-administration in Poland is a complex process branded by many difficulties. However, in recent years one cannot overlook the changes that had taken place in terms of its development. The digitization of services provided to enterprises by public administration bodies in Poland was preceded by formalization in the constitutional, material, and process-related domains, which allowed for the creation of various online platforms and sites functioning in IT systems.

The use of e-administration tools became possible regardless of the current location and the used equipment and software, and the main advantages of using them include time savings, flexibility in terms of place and time when dealing with clerical matters. The public administration bodies' creation, development, and implementation of new standards and organization processes in the ICT discipline and the bodies' back-office contributed to improved enterprise service effectiveness and quality.

The following conclusions and remarks come to mind when summarizing the results of the conducted analyses:

- The annually growing index of use of e-administration services by enterprises confirmed their high activity in this regard.
- The index of the enterprises' use of e-administration services (in the studied period) remained at a very high level in most of the distinguished sections.
- Online contact with public administration was used by enterprises on several planes. The main purposes included information acquisition (most popular), form downloading and filing as well as submission of bids in the electronic public procurements system (least popular).
- The implemented legal bases and e-administration tools contributed to the systematic increase in the use of e-administration by Polish enterprises.
- The high index of use of e-administration by enterprises operating in Poland points to high activity in this regard, which does not coincide with the Eurostat report stating that Poland is separated by significant distance from countries with high level of the services' development.
- E-administration is not developing in Poland as quickly and dynamically as in other European countries, but it has an upward trend. Nevertheless, it is a very slow improvement that differs substantially from the improvement in other EU states. It is necessary to take further action and facilities on e-administration for enterprises to stimulate their further development and constantly strive to reach the European level.
- There is a chance that e-government will become a real and universal service for enterprises in Poland, the more so, as the electronic administration is gaining increasing importance in the development and competitiveness of enterprises both in the regional and global aspect.

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