

AUDIT IN THE SERVICE OF REVENUE INCREASE: A TOOL FOR BOARDS AND COMMITTEES OF LOCAL AUTHORITIES

Alkiviadis Karagiorgos^{*}, Stamatis Stamatis^{**},
Paschalia Plioska^{***}, Olga Koutri^{**}

^{*} Corresponding author, Department of Accounting, School of Business, University of Nicosia, Cyprus
Contact details: Department of Accounting, School of Business, University of Nicosia 46 Makedonitissas Avenue, CY-2417, Cyprus

^{**} Department of Business Administration, University of Macedonia, Greece

^{***} Department of Business Administration, Technological Educational Institute of Central Macedonia, Greece



Abstract

How to cite this paper: Karagiorgos, A., Stamatis, S., Plioska, P., & Koutri, O. (2019). Audit in the service of revenue increase: A tool for boards and committees of local authorities. *Corporate Board: Role, Duties and Composition*, 15(2), 8-17.
<https://doi.org/10.22495/cbv15i2art1>

Copyright © 2019 The Authors

This work is licensed under a Creative Commons Attribution 4.0 International License (CC BY 4.0).
<https://creativecommons.org/licenses/by/4.0/>

ISSN Online: 2312-2722
ISSN Print: 1810-8601

Received: 19.03.2019
Accepted: 24.04.2019

JEL Classification: M42
DOI: 10.22495/cbv15i2art1

Governmental funding is on a continuous decline. It is clear that local authorities need economic self-sufficiency and autonomy. In this context, public boards must utilize different revenue maximizing strategies from direct taxation and their own income. This paper attempts to investigate the extent to which a number of factors such as organization, human resources, legislation, cooperation and the use of information systems influence the effectiveness of local authorities' revenue attestation, making particular reference to the important role that internal and external audit can play in the process. The results of the survey can help councils of local public organizations in their decisions regarding strategies and goals based on the utilization of the identified factors. For the purposes of this paper, a questionnaire was sent electronically to all municipalities in Greece. In particular, descriptive statistics and regression analysis were used. The results of the regression model revealed that audit, cooperation, and human resources variables exercise a significant positive influence on the effectiveness of local authorities' revenue attestation.

Keywords: Audit, Local Authorities, Board, Committee Revenue, Greece

1. INTRODUCTION

According to Pallis (2010), boards of local authorities, in Greece depend on decisions on state grants at a 29% and most Mayors in the Greek territory estimate them to be the most important source of funding. The continuous reduced funding of the municipalities in Greece cause an evident shortage in their revenues. It is therefore understood that in order for municipalities to achieve economic self-sufficiency and autonomy, the respective boards must find ways to maximize the revenue from direct taxation as well as additional income sources.

Audit in public sector contributes, as an independent and objective body, to an effective public administration. Of course, in order to fulfil its mission, the audit needs to evolve, and constantly adapt and respond to efficiency (Berggren, 1987). Regarding the role of auditors in the public sector, Holt and Morris (1987) mention that perhaps the

aspect of internal audit that the directors very little perceive is the role of the audit in accordance with their own.

Drogalas, Alampourtsidis, and Koutoupis (2014) mention internal Audit as an independent assurance function procedure aimed to add value and improve the acts of the entity. It should implement the evaluation procedures as Quality Assessment Review (QAR) or main performance indicators (Drogalas, Karagiorgos, Pazarskis, & Vagenas, 2019). On the other hand, a corporate board works as a safeguard for corporations and manages day-to-day operations (Adams, Hermalin, & Weisbach, 2010; Keasey & Wright, 1993; and Bainbridge, 2003).

Older literature consists of studies conducted around the world studying the internal audit's importance in financial stability, municipalities and local governments - communities (Elder, Kattelus, & Ward, 1995; Modlin, 2012). At the same time, there

are studies related to the contribution of external control to local authorities (Mzenzi & Gaspar, 2015) as well as the role of the mechanisms of governance in municipalities (De Toni, Vallone, & Guarini, 2015). Also, previous literature (Harris, 2007; Giustiniano, De Simone, Cicotto, & Pinna, 2016) refers to the motivation of human factor in local bodies, committees and public organizations.

At the same time, previous literature refers to legislation (Fan, 2012), cooperation (Baird, Chen, & Schoch, 2012) and the revenue system (Xu & Cui, 2011). The adoption of information technologies and organizational culture as well as the use of information systems are important factors in the operation of all organizations of both private and public sector. The literature proves that this subject has been studied by various researchers (Melitski, Gavin, & Gavin, 2010; Batara, Nurmandi, Warsito, & Pribadi, 2017).

The purpose of this research is to investigate the extent to which a number of factors, such as the internal organization of the revenue department, human resources, legislation, cooperation, audit and use of information systems, affect the revenue attestation of local authorities' board, making particular reference to the important role of internal and external audit in the process.

The results of the research show that there are three factors that positively affect the revenue attestation by local authorities. The findings of the research contribute to the existing but limited literature providing evidence of the most important factors related to the revenue attestation by local authorities. At the same time, this research is an incentive for local boards and committees to carry out relevant future strategies that would include additional factors related to the effectiveness of revenue attestation by Public Authorities.

In the course of the present paper, the literature review is being presented along with the presentation of the research hypothesis. In its third part, the selected sample, the questionnaire as well as the methodology of research are described. The fourth part focuses on findings deriving from the statistical analysis. Finally, in the sixth part, the conclusions and the proposals for further research are being outlined.

2. LITERATURE REVIEW

The existing literature consists of research projects conducted in the public sector, such as local authorities, municipalities and districts in the USA (Elder et al., 1995; Melitski et al., 2010; Modlin, 2012; Afonso, 2013), in Asia (Xu & Cui, 2011; Fan, 2012; Mir, Fan, & Maclean, 2017; Batara et al., 2017), in Africa (Mzenzi & Gaspar, 2015; Olaoye, Gunleye, & Solanke, 2018), in Oceania (Guthrie, 1992; Baird et al., 2012; Goodwin, 2004) and in Europe (Almey, Rohlickova, & McCluskey, 1998; Purcell, Coyle Shapiro, & Kessler, 2000; Harris, 2007; Bevc & McCluskey, 2007; Ziaee Bigdeli, de Cesare, & Kamal, 2013; De Toni et al., 2015; Giustiniano et al., 2016; Cohen, Costanzo, & Manes-Rossi, 2017; Guga, 2018). These research projects presented below, study the internal audit system and its importance to financial stability, in municipalities and local authorities - communities. In addition, they study the contribution of external audit in local authorities,

the role of governance mechanisms in municipalities, human resources and its motivation, legislation, organization, cooperation and the use of information systems.

At the same time, there are studies related to the contribution of external audit in local authorities (Mzenzi & Gaspar, 2015) as well as the role of governance mechanisms in municipalities (De Toni et al., 2015). Also, previous literature (Harris, 2007; Giustiniano et al., 2016) refers to human resources of local bodies and public organizations and their motivation.

Elder et al. (1995) conducted research in Michigan's municipalities in the USA and compared the internal audit reports of financial directors with the reports of auditors of a large regional company with experience in government practices. The results of the research showed that on average the managers' reports assess their audit systems more favourable than the auditors' reports, thus indicating, according to the authors, that the auditor's reports may lead to a more conservative assessment of the system than the reports provided by the management and that the accuracy of the internal audit reports can be improved if the reports are drawn up by auditors.

Organizational culture and technology adoption are two of the most critical issues that organizations face in a global society. Increasingly, organizations operate in uncertain, networked, decentralized environments where the adoption and use of information technology have become indispensable for the fulfilment of organizational missions. The research by Melitski et al. (2010) in the United States has found that there is a relationship between the individual perception of organizational culture and the individual willingness to adopt the technology.

Also, another study in the local authorities of North Carolina by Modlin (2012) highlights the importance of internal audit in order to maintain financial stability. The study examines the findings of independent auditors that point to numerous problems in reporting in the majority of prefectural authorities, ranging from internal audit problems to reconciliation issues that need to be addressed to information users who question the viability of the unit. At the same time, Afonso (2013), one year later, in North Carolina, in his study found that local authorities are becoming less dependent on property taxes as they move towards a more volatile tax, sales tax. These findings resulted from research conducted in 35 municipalities, examining the impact of local sales taxes and income instability of the same sources, and found that the use of the impact of taxes increases revenue volatility.

A research conducted in China by Xu and Cui (2011), analysed China's revenue system from the original reform and China's opening in the late 1970s, both at central and local levels. A brief comparison shows that although central and local revenue systems have basic similarities, such as general dependence on tax revenue and overall dependence on turnover and income taxes, there are striking differences including off-budget revenues and a high concentration of land-related revenue in local authorities.

Moreover, a research conducted in 28 provinces and cities in China (Fan, 2012) shows that

respondents from the region where the economy is less developed, and the legislative level lower are more demanding for a performance audit, as well as that respondents have not realized the benefits of the audit. In 2017, Mir et al., investigating the independence of public sector audit in China, found that strengthening administrative accountability in non-democratic jurisdictions through public sector audit can in itself bring significant benefits, as it finds that public sector audit in China operates in a manner similar to that of internal audit. The Chinese Court of Auditors can provide limited political and public accountability for Chinese civil servants indirectly by reinforcing their managerial responsibilities.

Batara et al. (2017) in their study examined the correlation of technology acceptance variables with the intention of adopting the transformation of eGovernment as defined in four domains, namely the use of new technology systems, the redesign of government processes, the restructuring of the governmental organization, and the change organizational culture and behaviour, from the point of view of civil servants in Indonesia and the Philippines. Their findings show that behaviour is a key factor in the intention of adopting the reform of eGovernment in all four domains while the expected performance, social influence and facilitation conditions positively influence the intention to adopt processes, organizational structure and cultural and behavioural change of the state.

A recent study by Menzzi and Gaspar (2015) on the contribution of external audit to accountability to local authorities in Tanzania, based on external audit reports over the past ten years as well as on additional data gathered through interviews, shows that external audit has contributed marginally to improving accountability within local authorities. The findings of the research show that external control can enhance accountability when the scope is expanded to provide relevant information and recommendations to responsible employees. Similarly, in Nigeria, Olaoye et al. (2018) research was conducted analysing tax control and tax productivity trends over the period ranging from 2000 to 2015. The researchers concluded that tax control strengthens the level of productivity of the administration tax and that any form of tax audit tends to positively affect revenue attestation from taxation from the government.

Already in the early 1990s, in the face of increased political, public and professional interest in internal and external audit in the public sector, Australia is trying to figure out the direction of change in developments in the field of public sector's audit as well as the failures of audit in the 1980s. Guthrie (1992) mentions that in 1985 the Victorian Committee on Economic and Monetary Affairs identified, in their report, several shortcomings in the internal audit operations in the Victorian public sector. These include failure of many organizations to establish an internal audit function, limiting the scope of internal audit coverage to financial and compliance issues and insufficient staff resources and internal auditor training.

Baird et al. (2012), in Australia, examined the relationship between three organizational factors (the use of multidimensional performance measures,

linking with rewards and training) and three organizational education domains (innovation, result orientation and teamwork) with the efficiency in management systems of 450 Australian local authorities. The results of the research show an important relationship between the uses of multidimensional performance measures, the relationship of performance and rewards, the training and two organizational factors of education (teamwork/respect for individuals and result orientation) with the effectiveness of management systems.

Finally, in other studies, the ownership concentration variables of government ownership and block-holders are positively related to governance quality, but government ownership is insignificant (Alanazi, 2019). Good auditing has a positive effect on reducing public sector corruption. This leads to believe that auditing organized to certain principles has the potential to contribute to the proper functioning of public administration with a lower degree of corruption (Gustavson & Sundström, 2018).

Goodwin (2004), in Australia, conducted research on the comparison of internal audit in the private and public sectors. The results of the research show that internal audit holds a higher position in the public sector than in private sector entities where more than one-third of the heads of internal auditors' report to the head of the financial service.

Since 1998, radical and far-reaching reform programs have been taking place in the new democracies of Central and Eastern Europe. Key points of these programs are the privatization and decentralization processes that require newly established levels of local authorities to develop their own sources of domestic revenue. Property tax represents what is which, from the international point of view, is the most important, stable source of revenue for local authorities. Most new emerging democracies have introduced or are in the process of importing taxes on the value of the immovable property (Almey et al., 1998).

Purcell et al. (2000), through a case study on labour relations in local authorities in the Municipality of Brent in London, systematically assesses changes in human resource management as the regulation of labour relations in local authorities moves from national level to the level of local authorities. Later, Harris (2007) studied the changing nature of human resources' operations in three cases in the United Kingdom and looked at how changes in human resource performance driven by the pursuit of efficiency and cost reduction may affect the capacity of human resources to fulfil its role.

Bevc and McCluskey (2007) recognized the need for financial autonomy of local authorities in Slovenia, which led to the imposition of a tax on real estate. The study finds that both local authorities' revenues and costs remain largely controlled by the central government of the state. Ziaee Bigdeli et al. (2013) carried out research into the adoption of technology in the public sector, the adoption of inter-organizational systems and the cooperation between departments in local authorities. These researchers concluded that there is a need to develop a new conceptual framework that can be

used to make decisions in relation to the exchange of information at a local level.

The study by De Toni et al. (2015), in Italy, showed the role of governance mechanisms in municipal bankruptcy in relation to issues of the audit. This research shows that the spoilage system may favour power enforcement by politicians over public administrators and undermine the ability to prevent and manage the state of financial difficulty. In the last two decades, in Europe, there has been increased interest in motivating civil servants, considering the ongoing international debate on the role of public administration in economic systems (Giustiniano et al., 2016). Furthermore, financial law focused on control and audit, strengthen public finances sustainability (Bostan & Dascălu, 2016). While Ferry and Murphy (2017) argue how Accountability, Transparency, and Public Assurance can aid public finances during periods of austerity.

In Greece, Cohen et al. (2017) conducted a research in four Greek municipalities in the period 2002-2012 because Greek Municipalities are vulnerable to future shocks and especially to a further deepening of the current economic crisis. The results of the research showed that the municipalities are particularly flexible and open to social innovation and responded to the crisis through adaptation but presented a limited internal transformation. Nevertheless, the shock caused by the crisis and the unprecedented reduction in municipal budgets has caused a cultural shift towards more prudent management and prudence. In Albania, a study on the modernization of local authorities, Guga (2018), concludes that Albania's attempt to decentralize its governmental functions has not yet produced the desired results.

3. RESEARCH HYPOTHESIS AND METHODOLOGY

From the literature review the following six research hypotheses are formed, the study of which will prove whether they are positive or not related to the effectiveness of the revenue attestation by local authorities.

H1: The effectiveness of revenue attestation is affected by the organization of the revenue department.

H2: The effectiveness of revenue attestation is affected by human resources.

H3: The effectiveness of revenue attestation is affected by the legislation.

H4: The effectiveness of revenue attestation is affected by the cooperation with other departments or public entities.

H5: The effectiveness of revenue attestation is affected by the audit.

H6: The effectiveness of revenue attestation is affected by the use of information systems.

3.1. Research sample – Questionnaire

The research was conducted in the last quarter of 2018 in all municipalities of Greece and the questionnaires were answered by the employees and the head of the revenue department. The questionnaires were sent by email and 83 questionnaires were finally answered. This sample was chosen as the most suitable for issues of revenue in public finance.

The questionnaire consists of eight (8) sections

and includes 28 closed multiple-choice, Likert-scale questions (five-level scale). Apart from the linear regression, several procedures were carried out including tests of goodness-of-fit and independence, cross-tabulation and chi-square, t-tests for mean difference and analysis of variance (ANOVA).

3.2. Dependent and independent variables

Seven of the eight sections of the questionnaire are the dependent and independent variables of empirical research.

More precisely, the first independent variable is "department organization" and is analysed in questions 6 to 9. This variable analyses the organization of the revenue department of the Municipalities and examines the degree of the separation of the duties of the personnel in the revenue department, the recording of each position's duties, the registration of the real estate of the Municipality and the proper keeping of the register of liable debtors.

The second independent variable is "human resources", is examined in questions 10 and 11 and analyses human resources and the training of revenue department staff.

The third independent variable ("legislation"), is examined in questions 12 and 13, and analyses issues of legislative support.

The fourth independent variable (questions 14 to 17) is "cooperation" and the questions examine the cooperation of the revenue department with the treasury department, with other departments of the municipality, with other public services, as well as with the administration.

The fifth independent variable (questions 18 and 19) is "audit" and it is examined through the questions the extent of an audit of the revenue department from the Court of Auditors and whether audit reports are considered by the Court of Auditors.

The last independent variable ("use of information systems") is examined in questions 20 and 21 and analyses the use and capabilities of information systems used by municipalities.

Finally, the dependent variable is "the effectiveness of revenue attestation" (questions 22-28), examines the effectiveness of revenue attestation from the corresponding department.

3.3. Model

Taking into consideration the above literature review, seven variables were selected to be examined in this research. The first is "the effectiveness of revenue attestation", which is the dependent variable, and the other six are the independent variables and are "department organization", "human resources", "legislation", "cooperation", "audit" and "use of information systems". Therefore, six research hypotheses were developed for each of the independent variables.

Linear multiple regression analysis was performed to determine the major factors that affect the effectiveness of revenue attestation in local authorities. Data are presented in the following section with descriptive statistics along with the results obtained from the regression analysis. The regression model and all variables used are shown below:

$$Y = b_0 + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 + b_6X_6 + e_i \quad (1)$$

Where:

- Y - Effectiveness of revenue attestation
- X1 - Department organization
- X2 - Human resources
- X3 - Legislation
- X4 - Cooperation
- X5 - Audit
- X6 - Use of information systems

respondents is between 16 and 20 years, and 21.7% of them have 6 to 10 years of experience. Finally, the number of employees employed in the revenue department where the respondents work ranges for the 36.1% of the respondents between 4 and 5 while for 33.7% of the total sample between 2 and 3 people.

4. RESULTS

4.1. Descriptive statistics

4.1.1. Generally

Demographic characteristics of the respondents regarding their age, education, the position of responsibility in the department, years of work experience and a number of employees in the revenue department are shown in Table 1.

Table 1 shows the total percentage of participants (100%), of which 57.8% is between ages 41 to 50. Regarding education, 37.3% of the respondents have academic education and 20.5% of them finished High School. Most respondents, i.e. 42.2% are head of the department and 41% were employees. The experience of 27.7% of the

4.1.2. Internal department organization

Table 2 presents the descriptive statistics on internal department organization given through questions 6 to 9.

The separation of duties in the revenue department is done "to a great extent" according to 40.96% of the respondents while 24.10% said it to be done "to a moderate extent". Regarding job description, 30.12% of the respondents believe that there is a record of job description "to a great extent" and 27.71% "to a small extent". As for the registration of the real estate of the municipality 40.96% believes that it is done "to a moderate extent". According to 44.58% of the sample, there is a proper keeping of a register of liable debtors "to a great extent" and according to 26.51% of the respondents "to a moderate extent".

Table 1. Demographics characteristics of the participants

		<i>Frequency</i>	<i>Percentage %</i>
Age	31 - 40	10	12.1
	41 - 50	48	57.8
	51 <	25	30.1
Education	High school	17	20.5
	Graduate of TEI (Higher Tech Education)	15	18.1
	Graduate of AEI (Higher Education)	31	37.3
	Postgraduate	18	21.7
	Doctorate	2	2.4
Position	Employee	32	41.0
	Head of the department	35	42.2
	Head of administration	12	14.4
	Elective personnel	1	1.2
	Other	1	1.2
Years of experience	1 - 5	16	19.3
	6 - 10	18	21.7
	11 - 15	11	13.3
	16 - 20	23	27.7
	21 <	15	18.0
Number of employees in the revenue department	1	6	7.2
	2 - 3	28	33.7
	4 - 5	30	36.1
	6 <	19	22.9

Table 2. Answers on internal department organization

<i>Questions</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>
6) To what extent is there the separation of duties in the revenue department?	8 9.64%	15 18.07%	20 24.10%	34 40.96%	6 7.23%
7) To what extent is there a record of the job description in the revenue department?	11 13.25%	23 27.71%	18 21.69%	25 30.12%	6 7.23%
8) To what extent is there a registration of the real estate of the Municipality?	2 2.41%	20 24.10%	34 40.96%	20 24.10%	7 8.43%
9) To what extent is there a proper keeping of the register of liable debtors?	1 1.20%	8 9.64%	22 26.51%	37 44.58%	15 18.07%

4.1.3. Human resources

Table 3 presents the descriptive statistics on human resources given through questions 10 and 11. The employees of the revenue department participate in relevant seminars "to a moderate extent" according

to 45.78% of the respondents and "to a great extent" according to 21.69% of them. According to 33.74% of the respondents, the number of employees of the revenue department is sufficient "to a small extent" but according to 30.12%, it is "not at all" sufficient.

Table 3. Answers on human resources

Questions	1	2	3	4	5
10) To what extent do the employees of the revenues department participate in relevant seminars?	11 13.25%	16 19.28%	38 45.78%	18 21.69%	0 0.00%
11) To what extent is the number of employees in the revenue department sufficient?	25 30.12%	28 33.74%	21 25.30%	9 10.84%	0 0.00%

4.1.4. Legislation

Table 4 presents the descriptive statistics on legislation given through questions 12 and 13.

Changes in legislation are directly forwarded to the revenue department "to a great extent" according

to 36.15% of the respondents and "to a small extent" according to 22.89% of them. Regarding the extent of legal support in revenues 28.91% said that it is offered "to a small extent" and 24.1% of the respondents "to a moderate extent".

Table 4. Answers on legislation

Questions	1	2	3	4	5
12) To what extent changes in legislation are directly forwarded to the revenue department?	5 6.02%	19 22.89%	15 18.07%	30 36.15%	14 16.87%
13) To what extent is there legal support concerning revenues?	18 21.69%	24 28.91%	20 24.10%	18 21.69%	3 3.61%

4.1.5. Cooperation

Table 5 presents the descriptive statistics on the

cooperation of the department of the respondents with other departments given through questions 14 to 17.

Table 5. Answers on department cooperation

Questions	1	2	3	4	5
14) To what extent is there cooperation between the revenue department and the treasury department?	0 0.00%	4 4.82%	9 10.84%	41 49.40%	29 34.94%
15) To what extent is there cooperation of the revenue department with other departments of the municipality?	1 1.20%	9 10.84%	25 30.12%	46 55.43%	2 2.41%
16) To what extent is there cooperation of the revenue department with other public services (Tax Office, Information Centre of Ministry of Economics etc.)?	3 3.61%	17 20.48%	21 25.30%	38 45.79%	4 4.82%
17) To what extent is there cooperation of the revenue department with the administration?	5 6.02%	10 12.05%	32 38.55%	28 33.74%	8 9.64%

Almost half of the sample examined, 49.40%, answered that there is the cooperation of the revenue department with the treasury department "to a great extent" and 34.94% "very much". Regarding the cooperation of the revenue department with other departments of the municipality, 55.43% thinks that it is done "to a great extent" and 30.12% "to a moderate extent". The cooperation of the revenue department with other public services, like for example the Tax Office, is done according to 45.79% of the sample "to a great extent" and according to 25.30% of the sample "to a

moderate extent". Finally, the cooperation of the revenue department with the administration is done "to a moderate extent" and according to 33.74% "to a great extent".

4.1.6. Audit

Table 6 presents the descriptive statistics on an audit by the Court of Auditors given through questions 18 and 19.

Table 6. Answers on audit

Questions	1	2	3	4	5
18) To what extent is the audit of revenues by the Court of Auditors updated?	12 14.46%	16 19.28%	27 32.53%	21 25.30%	7 8.43%
19) To what extent are taken into consideration and applied the recommendations of the reports of the Court of Auditors?	6 7.23%	6 7.23%	17 20.48%	33 39.76%	21 25.30%

The audit of revenues by the Court of Auditors is updated "to a moderate extent" according to 32.53% of the respondents and "to a great extent" according to 25.3%. Recommendations of the reports of the Court of Auditors are taken into consideration and applied "to a great extent" according to 39.76% of the sample and "very much" according to 25.30%.

4.1.7. Use of information systems

Table 7 presents the descriptive statistics on the use of information systems given through questions 20 and 21.

Table 7. Answers on the use of information systems

Questions	1	2	3	4	5
20) To what extent has there been a good use of the possibilities of the information systems?	0 0.00%	6 7.23%	17 20.48%	44 53.01%	16 19.28%
21) To what extent are the information systems you use covering the needs of the department?	4 4.82%	6 7.23%	21 25.30%	46 55.42%	6 7.23%

It is made good use of the information systems used in the revenue department "to a great extent" according to 53.01% of the respondents and "to a moderate extent" according to 20.48%. Moreover, the information systems in use are covering the needs of the department "to a great extent" according to 55.42% and "to a moderate extent" according to 25.30%.

4.1.8. Revenue attestation

Table 8 presents the descriptive statistics on revenue attestation given through questions 22 to 28.

As far as revenue attestation is concerned, 28.92% said that the attestation of real-estate tax of non-electrified properties is "to a great extent" updated and 26.51% "to a moderate extent". The

attestation of unpaid municipal fees and taxes is according to 48.19% updated "to a great extent" and according to 24.10% "to a moderate extent". At the same time, 40.96% of the respondents believe that the attestation of fees on the gross income of traders is updated "to a great extent" and 26.51% "to a moderate extent". Concerning the attestation of fines deriving from the road traffic code, 51.81% answered that is done "to a great extent". Moreover, 34.94% of the respondents believe that the attestation of revenues from cemeteries is updated "to a great extent" while 27.71% "to a moderate extent". The attestation of fees for the use of communal spaces is according to 46.99% updated "to a great extent". Finally, 44.58% and 30.12% answered that the attestation of revenue for property rentals is updated "to a great extent" and "very much" respectively.

Table 8. Answers on revenue attestation

Questions	1	2	3	4	5
22) To what extent has there been an update of the attestation of real estate tax of non-electrified properties?	11 13.25%	21 25.30%	22 26.51%	24 28.92%	5 6.02%
23) To what extent has there been an update of the attestation of unpaid municipal fees and taxes?	5 6.02%	10 12.05%	20 24.10%	40 48.19%	8 9.64%
24) To what extent has there been an update of the attestation of fees on the gross income of traders?	4 4.82%	12 14.46%	22 26.51%	34 40.96%	11 13.25%
25) To what extent has there been an update of the attestation of fines deriving from the road traffic code?	3 3.61%	7 8.43%	14 16.87%	43 51.81%	16 19.28%
26) To what extent is has there been an update of the attestation of revenues from cemeteries?	14 16.87%	8 9.64%	23 27.71%	29 34.94%	9 10.84%
27) To what extent has there been an update of the attestation of fees for the use of communal spaces?	8 9.64%	9 10.84%	13 15.66%	39 46.99%	14 16.87%
28) To what extent has there been an update of the attestation of revenue for property rentals?	0 0.00%	6 7.23%	15 18.07%	37 44.58%	25 30.12%

4.2. Reliability test and regression

4.2.1. Reliability test

To test the reliability of the questions of dependent and independent variables we will use Cronbach's alpha. Kline (1999) noted that the area indicating good reliability ranged in values around and above 0.7 (and in particular from 0.65 to 0.84). The "Cronbach's alpha" value for the scale of questions relating to the dependent variable (Y), i.e. the effectiveness of the revenue attestation in local authorities is 0.832. This means that this scale of questions is sufficiently reliable.

Table 9. Reliability test

Variables	Cronbach's Alpha
Y (Effectiveness of revenue attestation)	0.83
X1 (Department organization)	0.65
X2 (Human resources)	0.62
X3 (Legislation)	0.66
X4 (Cooperation)	0.78
X5 (Usefulness of audit)	0.77
X6 (Use of information systems)	0.78

The results showed that all the sub-scales of the independent variables derived from the averages of the corresponding questions have high reliability

with values ranging around 0.7. Also, on a reliable scale, all data should be associated with the sub-scale to consistently reflect its structure. We checked whether the questions for each of the sub-scales had a correlation of more than 0.3, and we saw that all correlations in all sub-scales were over $r > 0.3$. The following table shows the results.

4.2.2. Multiple linear regression analysis

Table 10 shows the Summary of the model with $R^2 = 0,428$, showing that the independent variables explain 42% of fluctuation of the efficiency of revenue attestation and that the remaining 58% is due to other unexplained factors that have not been included in the regression.

Table 10. Model summary

Model summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,654 ^a	,428	,382	,59911

In the analysis of variance (ANOVA) (Table 11), the assay of the statistical significance of R^2 is carried out and is $0.000 < 0.05$, that means that it is checked if it has a linear relation with at least one of the independent variables. In this model, it appears that there is a linear relationship and therefore the dependent variable has a linear relation with at least one of the independent variables.

Table 11. ANOVA-analysis of variance

ANOVA ^a						
Model	Sum of Squares	df	Mean Square	F	Sig.	
1	Regression	20,370	6	3,395	9,459	,000 ^b
	Residual	27,279	76	,359		
	Total	47,649	82			

From the verification of the statistical significance of the coefficients (Table 12) it follows that the variables that have significance Sig. = p-value < 0.05 and consequently have a significant positive effect on the model, is "cooperation" ($t = 2.06$, $p < 0.05$), "audit" ($t = 3.46$, $p < 0.01$) and "human resources" ($t = 1.85$, $p < 0.10$). On the other hand, "department organization" ($t = 0.83$, $p > 0.05$), "legislation" ($t = -1.03$, $p > 0.05$) and "use of information systems" ($t = 0.83$, $p > 0.05$) do not have a significant effect on the model, that is to the determination of the effectiveness of revenue attestation.

Table 12 demonstrates that a change in the independent variable's standard values could alter the number of deviations. Standardized values are directly comparable and therefore provide a better picture of the importance of the independent variable in the model. Thus, the first variable that can be interpreted is the variable of "audit" (Beta = 0,385), second is "cooperation" (Beta = 0,253) and third is "human resources" (beta = 0,135).

Finally, multicollinearity (VIF) is not a problem for any of the independent variables (i.e. the model does not give unnecessary and redundant information through the "repetition" of some variables - "weak" variables), as in all cases were less than 5 (Bowerman & O'Connell, 1990).

Table 12. Multiple regression analysis results on the effectiveness of revenue attestation

Coefficients ^a						
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	
	B	Std. Error	Beta			
1	(Constant)	,933	,404		2,311	,024
	Department organization	,098	,118	,094	,832	,408
	Human resources	,145	,108	,135	1,853	,089
	Legislation	-,081	,079	-,109	-1,033	,305
	Cooperation	,277	,134	,253	2,066	,042
	Audit	,280	,081	,385	3,465	,001
	Use of information systems	,046	,102	,048	,452	,653

Note: a. Dependent Variable: Revenue attestation

5. DISCUSSION

Regarding the cooperation between the revenue department and other departments, there is close cooperation with the municipal treasury department, but their cooperation with other public services and with their own administration is difficult. The results of the audit of revenue attestation by the Court of Auditors have shown that when the audit is taking place the recommendations of the audit reports are largely applied.

The effects of regression analysis have shown that the variables that have a significant positive effect are "audit", "cooperation" and "human resources", while the other three, "department organization", "legislation" and "use of information systems", do not have that positive effect. Therefore,

municipalities will improve their financial position and achieve an increase in the effectiveness of the revenue attestation if they focus as much as possible on improving the variables that have a positive effect. In addition, the independent variables explain 42% of fluctuation of the efficiency of revenue attestation and the remaining 58% is due to other unexplained factors not included in the regression. Further research is required in order to better understand the unexplained factors affecting the results. It could be assumed that they could be found in issues related to the country by country differences or in respective socioeconomic factors. Furthermore, we could enter periodic factors regarding cases of fiscal depressions and social or psychological interferences in the responders.

6. CONCLUSIONS

The present research investigated the extent to which a number of factors such as the organization of the revenue department, human resources, legislation, cooperation, audit and use of information systems affect the effectiveness of revenue attestation by local authorities. Regarding the internal organization of the revenue department of the municipalities, we conclude that there are several shortcomings in the separation of the duties of the employees, in the job description and in the recording of the real estate of the municipality. On the other hand, the registry of debtors is considered relatively satisfactory. Employees in the revenue department of municipalities do not participate in training seminars on their work subject. Changes in legislation are forwarded to the departments to a satisfactory extent, while the possibility for legal support for employees in the revenue departments of municipalities is almost non-existent. Findings on the use of information systems have shown that municipal revenue departments make extensive use of the opportunities that information systems provide to them and that they largely cover the needs of the departments.

REFERENCES

1. Adams, R. B., Hermalin, B. E., & Weisbach, M. S. (2010). The role of boards of directors in corporate governance: A conceptual framework and survey. *Journal of Economic Literature*, 48(1), 58-107. <https://doi.org/10.1257/jel.48.1.58>
2. Afonso, W. B. (2013). Diversification toward stability? The effect of local sales taxes on own source revenue. *Journal of Public Budgeting, Accounting & Financial Management*, 25(4), 649-674. <https://doi.org/10.1108/jpbafm-25-04-2013-b004>
3. Alanazi, A. S. (2019). Corporate governance and the characteristics of the board of directors: Evidence from an emerging market. *Corporate Board: Role, Duties and Composition*, 15(1), 17-24. <https://doi.org/10.22495/cbv15i1art2>
4. Almey, R., Röhlickova, A., & McCluskey, W. J. (1998). The development of property taxation in the new democracies of Central and Eastern Europe. *Property Management*, 16(3), 145-159. <https://doi.org/10.1108/02637479810232952>
5. Bainbridge, S. M. (2003). Director primacy: The means and ends of corporate governance. *Northwestern University Law Review*, 97(2), 547-606.
6. Baird, K., Chen, Q., & Schoch, H. (2012). Performance management system effectiveness in Australian local government. *Pacific Accounting Review*, 24(2), 161-185. <https://doi.org/10.1108/01140581211258461>
7. Batara, E., Nurmandi, A., Warsito, T., & Pribadi, U. (2017). Are government employees adopting local e-government transformation?: The need for having the right attitude, facilitating conditions and performance expectations. *Transforming Government: People, Process and Policy*, 11(4), 612-638. <https://doi.org/10.1108/tg-09-2017-0056>
8. Berggren, G. R. (1987). Developed auditing in a developing public sector. *Managerial Auditing Journal*, 2(1), 3-5. <https://doi.org/10.1108/eb017581>
9. Bevc, I., & McCluskey, W. J. (2007). Fiscal decentralization in the Republic of Slovenia: An opportunity for the property tax. *Property Management*, 25(4), 400-419. <https://doi.org/10.1108/02637470710775220>
10. Bostan, I., & Dascălu, E. D. (2016). Strengthening the sustainability of public finances by means of financial law focused on the control and audit exercise. *Ecoforum Journal*, 5(1), 387-393.
11. Bowerman, B. L., & O'Connell, R. T. (1990). *Linear statistical models: An applied approach*. Belmont, CA: Duxbury Press.
12. Brierley, J. A., El-Nafabi, H. M., & Gwilliam, D. R. (2001). The Problems of Establishing Internal Audit in the Sudanese Public Sector. *International Journal of Auditing*, 5(1), 73-87. <https://doi.org/10.1111/1099-1123.00326>
13. Cleveland, H. (2005). Institutional change in government: Puzzles and paradoxes. *On the Horizon*, 13(1), 24-30. <https://doi.org/10.1108/10748120510601635>
14. Cohen, S., & Hlepas, N. (2017). Financial resilience of Greek local governments. *Governmental Financial Resilience, Emerald Publishing Limited*, 27, 135-152. <https://doi.org/10.1108/s2053-769720170000027008>
15. Cohen, S., Costanzo, A., & Manes-Rossi, F. (2017). Auditors and early signals of financial distress in local governments. *Managerial Auditing Journal*, 32(3), 234-250. <https://doi.org/10.1108/maj-05-2016-1371>
16. Coupland, D. (1993). The internal auditor's role in public service orientation. *Managerial Auditing Journal*, 8(1). <https://doi.org/10.1108/02686909310023506>
17. De Toni, A., Vallone, C., & Guarini, E. (2015). An anatomy of governance failures in municipal bankruptcy. *Contingency, Behavioural and Evolutionary Perspectives on Public and Nonprofit Governance*, 4, 189-216. <https://doi.org/10.1108/s2051-66302015000004007>
18. Dittenhofer, M. (2001). Reengineering the internal auditing organization. *Managerial Auditing Journal*, 16(8), 458-468. <https://doi.org/10.1108/02686900110403163>
19. Drogalas, G., Alampourtsidis, S., & Koutoupis, A. (2014). Value-added approach of internal audit in the Hellenic police. *Corporate Ownership & Control*, 11(4-7), 692-698. <https://doi.org/10.22495/cocv11i4c7p11>

6.1. Limitations

There are some limitations in our research, which should be taken into account when interpreting our results. Initially, as the regression model demonstrates, there are other factors that can be important and affect the effectiveness of revenue attestation. Moreover, it should be noted that although the research was carried out nationwide, it is based on a limited sample.

6.2. Implications

The findings urge employees in the revenue department of municipalities to participate in training seminars on their work subject. Furthermore, it highlights the necessity of municipalities to take action and support legally their employees.

6.3. Future research

Finally, a proposal for further research could be based on a larger sample that will include other factors that may affect the effectiveness of revenue attestation by local authorities.

20. Drogalas, G., Karagiorgos, A., Pazarskis, M., & Vagenas, N. (2019). Informal interactions between audit committees and internal audit function. Evidence from Greek listed firms. *Corporate Board: Role, Duties and Composition*, 15(1), 25-32. <https://doi.org/10.22495/cbv15i1art3>
21. Elder, R. J., Kattelus, S. C., & Ward, D. D. (1995). A comparison of finance officer and auditor assessments of municipal internal control. *Journal of Public Budgeting, Accounting & Financial Management*, 7(3), 336-350. <https://doi.org/10.1108/jpbafm-07-03-1995-b002>
22. Fan, H. (2012). Government performance auditing demand research based on the neo-institutional economics. *China Finance Review International*, 2(2), 100-120. <https://doi.org/10.1108/20441391211215806>
23. Giustiniano, L., De Simone, S., Cicotto, G., & Pinna, R. (2016). Engaging public servants: Public service motivation, work engagement and work-related stress. *Management Decision*, 54(7), 1569-1594. <https://doi.org/10.1108/md-02-2016-0072>
24. Goodwin, J. (2004). A comparison of internal audit in the private and public sectors. *Managerial Auditing Journal*, 19(5), 640-650. <https://doi.org/10.1108/02686900410537766>
25. Guga, E. (2018). Local government modernization in Albania: Historical background and the territorial reform 2015-2020. *International Journal of Public Sector Management*, 31(4), 466-506. <https://doi.org/10.1108/IJPSM-01-2017-0018>
26. Gustavson, M., & Sundström, A. (2018). Organizing the audit society: Does good auditing generate less public sector corruption? *Administration & Society*, 50(10), 1508-1532. <https://doi.org/10.1177/0095399716674306>
27. Guthrie, J. (1992). Critical issues in public sector auditing. *Managerial Auditing Journal*, 7(4). <https://doi.org/10.1108/02686909210012842>
28. Harris, L. (2007). The changing nature of the HR function in UK local government and its role as "employee champion". *Employee Relations*, 30(1), 34-47. <https://doi.org/10.1108/01425450810835400>
29. Holt, K., & Morris, J. (1987). Developments in central government internal audit. *Managerial Auditing Journal*, 2(2), 3-6. <https://doi.org/10.1108/eb017588>
30. Jenkins, D., Gronow, S., & Prescott, G. (1990). Information technology - The changing nature of local government property management. *Property Management*, 8(1), 75-82. <https://doi.org/10.1108/eum0000000003354>
31. Keasey, K., & Wright, M. (1993). Issues in corporate accountability and governance: An editorial. *Accounting & Business Research*, 23(91A), 291-303. <https://doi.org/10.1080/00014788.1993.9729897>
32. Kline, P. (1999). *The handbook of psychological testing*. London, UK: Routledge.
33. Kuhn, J. R., Mueller, J., & Ahuja, M. (2013). An examination of the relationship of IT control weakness to company financial performance and health. *International Journal of Accounting & Information Management*, 21(3), 227-240. <https://doi.org/10.1108/ijaim-12-2011-0042>
34. Melitski, J., Gavin, D., & Gavin, J. (2010). Technology adoption and organizational culture in public organizations. *International Journal of Organization Theory & Behavior*, 13(4), 546-568. <https://doi.org/10.1108/ijotb-13-04-2010-b005>
35. Miller, K. C., Grant, G. H., & Alali, F. (2008). The effect of IT controls on financial reporting. *Managerial Auditing Journal*, 23(8), 803-823. <https://doi.org/10.1108/02686900810899536>
36. Mir, M., Fan, H., & Maclean, I. (2017). Public sector audit in the absence of political competition. *Managerial Auditing Journal*, 32(9), 899-923. <https://doi.org/10.1108/maj-03-2016-1357>
37. Mitchell, V. (1991). Local authorities' use of geographical information systems. *Logistics Information Management*, 4(4), 12-18. <https://doi.org/10.1108/eum0000000002885>
38. Modlin, S. (2012). County government finance practices: What independent auditors are finding and what makes local government susceptible. *Journal of Public Budgeting, Accounting & Financial Management*, 24(4), 558-578. <https://doi.org/10.1108/jpbafm-24-04-2012-b002>
39. Murphy, P., & Jones, M. (2016). Building the next model for intervention and turnaround in poorly performing local authorities in England. *Local Government Studies*, 42(5), 698-716. <https://doi.org/10.1080/03003930.2016.1171755>
40. Mzenzi, S. I., & Gaspar, A. F. (2015). External auditing and accountability in the Tanzanian local government authorities. *Managerial Auditing Journal*, 30(6/7), 681-702. <https://doi.org/10.1108/maj-04-2014-1028>
41. Olaoye, C. O., Gunleye, S. A., & Solanke, F. T. (2018). Tax audit and tax productivity in Lagos state, Nigeria. *Asian Journal of Accounting Research*, 3(2), 202-210. <https://doi.org/10.1108/AJAR-08-2018-0028>
42. Purcell, J., Coyle Shapiro, J., & Kessler, I. (2000). Employment relations in local government: Strategic choice and the case of Brent. *Personnel Review*, 29(2), 162-183. <https://doi.org/10.1108/00483480010295961>
43. Samelson, D., Lowensohn, S., & Johnson, L. E. (2006). The determinants of perceived audit quality and auditee satisfaction in local government. *Journal of Public Budgeting, Accounting & Financial Management*, 18(2), 139-166. <https://doi.org/10.1108/jpbafm-18-02-2006-b001>
44. Wyatt, P., & Ralphs, M. (1998). The application of geographic and land information systems to the management of local authority property. *Property Management*, 16(2), 83-91. <https://doi.org/10.1108/02637479810214123>
45. Xu, H., & Cui, H. (2011). The revenue system of China: Past, present, and emerging issues. *Journal of Public Budgeting, Accounting & Financial Management*, 23(4), 544-568. <https://doi.org/10.1108/jpbafm-23-04-2011-b005>
46. Zhang, J. X., & Rich, K. T. (2016). Municipal audit committees and fiscal policies. *Journal of Public Budgeting, Accounting & Financial Management*, 28(4), 436-466. <https://doi.org/10.1108/jpbafm-28-04-2016-b002>
47. Zhang, X. (2012). The use of geographic information system in local government's modernisation: A case study from the northwest of England. *Transforming Government: People, Process and Policy*, 6(2), 206-222. <https://doi.org/10.1108/17506161211246935>
48. Ziaee Bigdeli, A., de Cesare, S., & Kamal, M. (2013). Information sharing through inter-organisational systems in local government. *Transforming Government: People, Process and Policy*, 7(2), 148-176. <https://doi.org/10.1108/17506161311325341>