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Full Length Research Paper

Financial accountability mechanisms in local governments in Uganda: A case of Kabale District Local Government

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The purpose of the study is to present financial accountability mechanisms in local governments, with reference to Kabale district local government. A cross-sectional research design, which used both quantitative and qualitative approaches to collect and analyze data, was adopted. Both simple random and purposive sampling techniques were used to select 117 respondents from 174 subjects. Questionnaires and personal interviews were used to collect data from respondents. Frequencies and percentages were used to analyze quantitative data, while direct quotes from interviews conducted among key informants formed the basis for qualitative analysis. Quantitative analysis was aided by software for document analysis (SPSS V 20.0). The study found out that service delivery was the most commonly used financial accountability mechanism, followed by financial reporting, expenditure control and budget. The paper therefore, concluded that service delivery is the most used mechanism of financial accountability, though the district's local budget seemed unclear on reflecting the priorities of the local people. This paper suggests that the local government should ensure that the district's budget demonstrates community preference; salaries and wages should be paid in accordance with the district's approved budget; expenditures on development should always be as per the approved budget, and the mode of financial reporting, particularly on liabilities should be standardized.

Key words: Financial accountability, expenditure control, financial reporting, service delivery, budget.

INTRODUCTION

In government, financial accounting entails the recording, communicating, summarizing, analyzing and interpreting financial statement in aggregate and in details (Onuarah and Appah, 2012). It is required that government accounts meet internal management requirements while

providing the public with a window on government operations. Achua (2009) explains that government financial reports would have been prepared with the objective of providing full disclosure on a timely basis of all material facts relating to government financial position

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and operations. However, many public sector organizations seem to undermine this practice. For instance, Kiyemba (2018) shows incidences of ineffective budgetary controls that are fueled by fraud and corruption, and personal interests over community preferences in Wakiso district. Overseas Development Institute (2018) shows how Ministry of Finance introduced a Budget Transparency Initiative to promote accountability and service delivery in Uganda. However, sustainability of the initiative failed due to weak coordination of activities and failure to understand expected roles and expectations between central and local governments. Government of Uganda has over the years introduced a number of reforms aimed at enhancing transparency, accountability of public resources and improved service delivery. The government adopted the practice of open and transparent budget consultative process, which was further enacted by Public Finance Management Act 2015. Workshops have been organized to consult all stakeholders (development partners, local governments, central government ministries and departments) at National and local government levels to guide in the process of priority setting and resource allocation (MOFPED, 2017). One of the key milestones in reforming public finance management in Uganda has been the decentralization of the payroll management. However, the limited internet infrastructure and technical capacity to operate the IFMS are still a challenge (Munyambonera and Lwanga, 2015). Kabale district local government formulates her Budget Framework Paper by involving all stakeholders and continues to emphasize decentralized and participatory development planning and budgeting process as stipulated in the Local Government Act CAP 243 under section 36 (3). The Local Government Budget Framework Paper outlines district interventions for social and economic development in the fiscal year. Kabale district local government suffers from inadequate local revenue collections due to political influence and poor administration and fluctuating indicative planning figures from central government (Kabale District Local Government, 2015), which have inched on the district's financial accountability. While the (Auditor General, 2017) does not indicate incidences of poor financial accountability, cases of inadequate controls surrounding management of domestic arrears and understaffing at the district remain critical and unattended to. Despite the many years of decentralization policy in Uganda, and numerous efforts to reform the local government system (Auditor General, 2017; Eton et al., 2018:106), financial accountability at local government remains a challenge in Uganda. It's upon these bases therefore the researchers conducted this study.

LITERATURE REVIEW

From the theoretical perspective, financial accountability

was discussed in view of the Principal-agent theory. The principal, who are the citizens grant some authority to the agents (politicians and civil servants) to act on their behalf (Shah, 2007; Agwor and Akani, 2017; Gailmardy, 2012). The principal-agent theory relates the customer (principal), who pays for services or goods, and the agent. More than often, however, the agent least does what the principal expects (Hlavacek and Hlavacek, 2006), yet the principal is limited in his ability to monitor and judge the contractor's input and output (Keil, 2005), which leads to mistrust and can only be avoided under high monitoring costs. In ideal situations, the public empowers government officials to promote public welfare using public resources. However, more often than none, government officials serve their own interests, which jeopardize service to the public. According to (Berner and Smith, 2004) accountability is interpreted as the ability of the principals (public) to question the conduct and behavior of the agents, and to impose sanctions where such conduct or behavior falls short of the requirement. This would be demonstrated in the ballot box on the side of the politicians, but how about the civil servants? In growing democracies, the agents override the principals, thus denying them full participation in their demand for accountability of the actions of the agents (Cabannes, 2005) to the point of denying them full participation through information exchange. Principals only disseminate information to advance their own self-interests and to maximize their own utilities (United Nations, 1999). According to Birskyte (2013), the public attempts to demand accountability from politicians and civil servants however, a wider range of principals lack the capacity to hold agents accountable. This research argues that while the public can be involved in demanding accountability from politicians and civil servants, the public is also driven by personal interests, political patronage, resource shortage and foreign backings. In turn, the agents do not consider the targets of the constituent principals. In other words, the principal-agent-theory cannot apply in dynamic situations where power is not directly delegated. As people continue to look to politicians for cash in exchange for their votes, this implies a decrease in their legality to demand accountability (United Nations, 2005). Since resources are in the hands of an elected government, people must be corrupted by accepting bribes for their votes, which constrains effectiveness and delivery of public goods.

FINANCIAL ACCOUNTABILITY

Accountability is generally defined as accepting and meeting one's personal responsibilities, being and feeling obligated to another individual as well as oneself, and having to justify one's actions to others (Wilson et al., 2010). Accountability has frequently been presented as rational practice to ensure responsibility by individuals and institutions, which should be implemented in all civil

societies, economic institutions and organizations (Agwor and Akani, 2017). He noted that the traditional tools of accountability are often considered by non-profit organizations as unnecessary formal tasks and excessive bureaucracy, which can have important consequences both organizationally and managerially. According to (Onuarah and Appah, 2012), accountability focuses on the extent to which feedback recipients perceive they are responsible for, utilizing feedback information for development. A sound system of public expenditure management needs to take into account the wider values and requirements of society. Accountability, transparency, predictability and participation are important instruments for sound budget management, but also have an intrinsic value, and are generally seen as the four pillars of good governance. If budget managers do not comply with parliament's authorizations, or if public funds are used for private purposes, it is doubtful whether either aggregate fiscal discipline or efficient resource allocation, or both, will be achieved. Financial accountability is about assuring its stakeholders regarding the use of public resources (stewardship) as well as to underpin decision-making about how to allocate scarce resources like time, personnel, space, equipment and money (Doussy and Doussy, 2014). The allocation of resources may affect the entire operation and success of an organization, which often hinges on the quality of its financial management. Thus public entities have to provide information about financial activities to its stakeholders in order to discharge financial accountability. Financial accountability is a very important component of the public sector financial management process.

Financial accountability mechanisms

Expenditure controls

There is a tendency for spending on wages and salaries, goods and services and other items of recurrent expenditure to be higher than the approved budget, and for spending on the development budget to be lower than the approved amounts. The under spending in development expenditure is mainly due to capacity limitations, weak project implementation and possibly a lack of reporting on execution of donor-funded projects (Cabannes, 2005). Overspending in the recurrent budget can be attributed to weaknesses in expenditure controls, including inadequate commitment controls. The lack of data integrity is a big issue, both for aggregate and individual budget items, thus reducing the overall quality of financial reports. Credibility in public expenditure is assessed by comparing aggregate expenditure out-turn to original approved budget, compositions of expenditure out-turn to original budget and aggregate revenue out-turn to original approved budget (PNG Government, 2015). However, Hladchenko (2016) advises that when the resource envelope allows, the government should

shift its policy focus towards improving the quality of public expenditure. Such restraints normally arise from the weak budget forecast.

Annual financial reports, which are a reflection of final budget outcome, may indicate an overall level of budget execution which was in line with the initial approved budget. For example, a very small difference between original and executed budget can be explained by the supplementary budget that was adopted in-year and helped reallocate expenditure among sections (Dunleavy et al., 2006). This helps to increase the overall level of budget execution. Without this supplementary budget, most public entities operate under-execution of the budgets. Similarly, Pelizzo and Stapenhurst (2013) noted that it is possible for the recurrent budget to appear overspent while the development budget is regularly under-executed. These two items broadly compensate at the overall level. At the end of the year, departments tend to transfer lapsing funds into trust accounts, which results into a recorded increased level of budget execution even though these transfers represent no more than an accounting transaction between different government accounts (Lytvynchuk, 2014). Effective expenditure control is attained when the extent to which the composition of expenditures differs from the original approved budget is compared, and that public entities can predict the extent to which the budget is predictable, reliable and reflects the implementation of stated public policy (Pelizzo and Stapenhurst, 2013; Pillay, 2013). This suggests that documents containing a large amount of detailed information with vast accompanying narrative should be provided. In a related view, Miller (2012) adds that any discrepancies in the data for total revenues and expenditures should be presented in the documents. A lack or shortage of information on important fiscal indicators such as the debt stock, financial assets, fiscal risks and tax expenditures, in addition to a medium-term budget framework impinges on the level of financial accountability. Moreover, presenting the development budget for each agency in the same section as the current budget, and modifying the definitions of the development budget would reflect genuine capital expenditure (Shah, 2007).

Financial reporting

Financial reporting plays a major role in fulfilling government's duty to be publicly accountable in a democratic society. Financial reporting is used in assessing accountability by comparing actual financial results with the legally adopted budget, assessing financial condition and result of operations, assisting in determining compliance with financial laws and assisting in evaluating efficiency and effectiveness (Wang, 2013). The accounting profession through oversight bodies, developed certain international rules and guidelines on

how financial information is treated and communicated so that measurement and presentation are less subjective (Kumar et al., 2012). These guidelines and rules for preparing financial statements are commonly known as Generally Accepted Accounting Principles (GAAP), The International Accounting Standards Board (IASB), the International Accounting Standards (IASs) and International Financial Reporting Standards (IFRSs). These standards start with a conceptual framework which anchors financial reports to a set of principles such as materiality (the degree to which the transaction is big enough to matter) and verifiability (the degree to which different people agree on how to measure the transaction) (Beyer and Guttman, 2012). The standards establish which resources and obligations should be recorded as assets and liabilities, which changes in assets and liabilities should be recorded, when these changes should be recorded, how the recorded assets and liabilities and changes in them should be measured, what information should be disclosed and which financial statements should be prepared (Li, 2005). That is, the standards prescribe recording and reporting practices that are deemed to be acceptable when reporting on the financial affairs of an entity.

Today, all public institutions in Uganda are adhering to IFRSs to ensure the same understanding of the information by both the preparers and users of that information. The enforcement of accounting standards improves the quality of financial reporting (Auditor General, 2017). Unfortunately, literature recognizes that measuring the quality of financial reports like the financial statements is problematic especially because different users may perceive the usefulness of information very different from each other (Indriasari, 2008; Rabrenovic, 2009; Hladchenko, 2016). This is associated with the fact that most of the stakeholders will not have the ability or need to analyze the financial statements in detail or test the compliance with accounting standards. Therefore, concentrating on characteristics like understandability, comparability, verifiability and timeliness (Kedia and Philippon, 2003), which enhance faithfulness and representation to citizens, politicians, donors, government and NGOs; is far better. Stakeholders like CSOs and community members could be probably only interested in whether the statements are trust worthy, that no corruption took place, the budget were complied with and that the organization in question is in a position to provide value for money (Graham et al., 2006). Therefore, financial statements must be transparent and easy to understand to enable making informed decision.

While the definition of financial accounting system points to set of procedures from data recording to financial reporting in order to answer budget implementation, financial accounting system can be measured by five dimensions: the accounting of cash, the accounting procedures, cash outlays, the accounting procedures assets, the accounting procedures in cash, and the

presentation of financial reports. In government however, financial accountability statements are about accounting standards, which are structured to report on the financial position reporting entity (Elliot and Elliot, 2012). This suggests that emphasis of reporting is laid on accountability dimension, presentation dimension and disclosure. As the organization processes and reviews its accounting material, a systematic approach to the identification, analysis, evaluation, endorsement and periodic review of decisions taken involving such material is provided, which spans a number of accounting areas. However, at the end of the day, the final financial statements will include amounts based on judgments, estimates and assumptions by management (South African Institute of Chartered Accountants (SAICA), 2012).

A consolidated local government financial statement is prepared annually that includes full information on revenues, expenditure and financial assets including revenue arrears. These annual statements however, do not provide a full reporting on liabilities. They do not provide any information on expenditure arrears or accounts payable (Kabale District Local Government, 2015). Under the cash accounting system the source document for accounting entries is the payment voucher coupled with the electronically generated cheque or other payment instruction. Entries are dated using the date on the payment instrument. It is important to note that auditing is a crucial component of most modernist conceptions of accountability since it legitimates the information on which formal, financial accountability rests (Shulman et al., 2013). The fundamental role of an auditor is to provide independent assurance to external users that a financial report of an entity is accurate and reliable.

Service delivery

A service is an activity or a series of activities of more or less intangible nature that normally, but not necessarily, takes place in interactions between the customer and service employees and/or systems of service providers, which are provided as solutions to customer problems (Bajo et al., 2017). Service delivery can be taken to be an outcome of performance depending on the context in which it is used (Yeo and Neal, 2004). According to (Birskyte, 2013), service can be expressed in terms of capacity to deliver desired services and from which customers get satisfaction. A service delivery gap is that gap between the established delivery standards and the actual service delivered (Goncalves, 2013). It is an inconsistency between service design/quality specifications and the actual service quality by the service delivery system. Effective engagement between citizens, service providers and elected representatives is essential to democratic service delivery.

Service delivery refers to programs or services that are

provided either to the general public or to specifically targeted groups of citizens, either fully or partially using government resources. This includes services such as education and training, health care, social and community support, policing, road construction and maintenance, agricultural support, water and sanitation, and other services (Salahu, 2012). He observes that service delivery excludes those services provided on a commercial basis through public corporations. Similarly, (Public Expenditure and Financial Accountability (PEFA), 2016) points out that service delivery excludes policy functions, internal administration, and purely regulatory functions undertaken by the government, although performance data for these activities may be captured for internal management purposes. It also excludes defense and national security (Agwor and Akani, 2017).

Quality of service delivery has emerged as the most significant strategy in ensuring the survival of organizations and also a fundamental route to business excellence as well as extending market share of health care organizations. Service provision that is de-linked from citizen-influence and democratic decision making is unlikely to deliver quality services for the poor (Omolaye, 2015). For meaningful contributions, the poor require the ability and capacity to ask questions and, sufficient information of their right and entitlements, service options, local and national budgets, and the systems to address when decisions are taken undemocratically or when services are of poor quality. Local governments are assumed to be performing if the projects and services meet the demands of the citizens in the local areas (Agwor and Akani, 2017).

Shah (2007) insists that service delivery has to be communicated over and over again to everyone. Employees at all levels must be aligned with a single vision of what the organization is trying to accomplish. Thus, effective internal communications is the requisite for integration and harmony in the service organizations activities and quality. Public Expenditure and Financial Accountability (2016) also emphasizes that the goal of any social service organization is to improve the results of the target population in some way by providing the right type of services and by providing them in an appropriate and adequate way.

Budget

Budget is a plan of financial operation embodying an estimate of proposed expenditures for a given period of time and the proposed means of financing them. In a much more general sense, budgets may be regarded as devices to aid management in operating an organization more effectively. Governments build budgets to demonstrate compliance with laws and to communicate performance effectiveness (Wilson et al., 2010). It is worth noting that financial accounting and management

accounting cannot be so neatly compartmentalized in the public sector, where management accounting refers to budgeting and control, rather than accounting solely in the service of managers. The budget is an expression of public policy and political preferences (Tsurkan et al., 2016). It is an instrument of fiscal policy on revenue and spending to achieve macroeconomic objectives. It provides benchmarks for performance measured partly by the accounting system. Given their close relationship, it is often difficult to tell where budgeting ends and accounting begins. They reinforce each other in demonstrating and discharging fiscal accountability to the government's stakeholders, who are more numerous and diverse than the owners of a firm.

Budgeting is an important mechanism for financial planning and management and, as a cyclical decision-making process, it allows for the achievement of organizational priorities and objectives through limited fiscal resources. The correct application of budgeting can contribute significantly to greater efficiency, effectiveness and accountability within any organization if a level of synergy exists between the policy direction and the fiscal framework (Bernier and Smith, 2004). Being part of the control environment relating to the efficient, effective and economic utilization of resources, budgets are also an indistinguishable part of the broader planning and policy environment. Similarly, (Mikesell, 2007) expresses that a budget's importance in a democratic setting should be aligned to both the legislative and executive management environments and emphasizes publicity, amongst others, as a core principle of any budget (Neblo et al., 2010). In essence, publicity requires budget openness and transparency during all the stages of the budgeting process, which include executive recommendation, legislative consideration and budget execution.

In budgeting, this means uniting administrators, who have information on municipal finance and budgetary processes, with their constituents, who have information on their own preferences (Kim et al., 2010). This suggests that combining of information leads not only to new information but also to new understanding. The budget measures the extent to which aggregate budget expenditure outturn reflects the amount originally approved, as defined in government budget documentation and fiscal reports (Omolaye, 2015). He notes that aggregate expenditure includes planned expenditures and those incurred as a result of exceptional events such as armed conflicts or natural disasters; and expenditures financed externally by loans or grants should be included. However, if amounts are held in suspense accounts at the end of any year that could affect the scores if included in the calculations, they can be included. The budget recognizes that it is prudent to include an amount to allow for unforeseen events in the form of a contingency vote, although this should not be so large as to undermine the credibility of the budget (Salahu, 2012). Where part of the budget is protected

from spending cuts for either policy (for example, poverty reduction spending) or regulatory reasons (for example, compulsory welfare payments), this will show up as a composition variance (Berner and Smith, 2004). Assessors are requested to report on the purpose and extent of protected spending in the narrative.

Accurate revenue forecasts are a key input to the preparation of a credible budget. Revenues allow the government to finance expenditures and deliver services to its citizens. Overly optimistic revenue forecasts can lead to unjustifiably large expenditure allocations that will eventually require either a potentially disruptive in-year reduction in spending or an unplanned increase in borrowing to sustain the spending level (Public Expenditure and Financial Accountability (PEFA), 2016). On the other hand, undue pessimism in the forecast can result in the proceeds of an over-realization of revenue being used for spending that has not been subjected to the scrutiny of the budget process (Mikesell, 2007). As the consequences of revenue under-realization may be more severe, especially in the short term, the criteria used to score this indicator allow comparatively more flexibility, when assessing an over-realization.

A robust classification system allows transactions to be tracked throughout the budget's formulation, execution, and reporting cycle according to administrative unit, economic category, function/sub function, or program (Public Expenditure and Financial Accountability (PEFA), 2016). The budget should be presented in a format that reflects the most important classifications. The classification should be embedded in the government's chart of accounts (the accounting classification) to ensure that every transaction can be reported in accordance with any of the classifications used. In the same line, Tsurkan et al. (2016) argue that the budget and accounting classifications should be reliable and consistently applied, providing users with confidence that information recorded against one classification will be reflected in reports under the other classification. In view of national budgets, a set of budget supporting documents must be provided by the executive to the legislature for scrutiny and approval. These documents provide a complete picture of central government fiscal forecasts, budget proposals, and outturn of the current and previous fiscal years (Mikesell, 2007). The arrangements for providing transfers from central government to sub national governments and the timeliness of information on those transfers ought to be captured. Financial reporting by sub national governments and fiscal risks to central government from sub national governments are addressed to governments through their budgets, or through conditional (earmarked) grants to sub national governments to implement selected service delivery and expenditure responsibilities (Salahu, 2012). The overall level of grants is usually determined by policy decisions at the central government's discretion or as part of constitutional negotiation processes. However, clear criteria for the

distribution of grants among sub national governments are needed to ensure a locative transparency and medium-term predictability of funds available for planning and budgeting of expenditure programs by sub national governments (Edeme and Nkaku, 2017). He further clarifies that every fiscal transfer from central government to the relevant sub national governments should be taken into consideration.

Legislatures play a critical role in the management of public finances. As part of their budget decision-making responsibilities, legislatures approve the national budget and subsequently provide oversight as the executive implements the budget (Wilson et al., 2010). The challenge that remains with local government budgets is timeliness of reliable information provided to sub national governments on their allocations from central government for the coming year. It is crucial for sub national governments to receive information on annual allocations from central government well in advance of the completion (and preferably before commencement) of their own budget-preparation processes. Information on transfers to sub national governments' budgets should be regulated by the central government's annual budget calendar, which should provide for reliable information on allocations early in the cycle (Public Expenditure and Financial Accountability (PEFA), 2016).

METHODOLOGY

The study adopted a cross-sectional research design. This type of research design measures differences between or from among a variety of people, subjects, or phenomena rather than a process of change. Data was collected in a single interface with respondents and a report was produced. Quantitative approaches were used to collect and analyze data on financial accountability constructs (expenditure control, financial reporting, service delivery and budget). The target population included local government staff, elected leaders, and civil society leaders identified from Kabale district local government (central division, town councils, sub counties). These categories of the population were contacted because they are part of financial accountability in addition to having enough experiences on financial accountability in the district. The study comprise of a total of 174 study units, constituting 100 staff, 42 elected leaders, and 32 civil society leader. The target population was stratified into three strata that is staff, elected leaders, and civil society leaders. Proportional allocation was employed to determine the number of participants to be taken from each stratum. This resulted into taking 67 staff, 29 elected leaders, and 21 civil society leaders, which was equivalent to a sample size of 117. Purposive sampling was used to select the CAO, District chairperson, and town clerks while simple random sampling was used to select the staff, elected leaders, and civil society leaders. The CAO, District chairperson, and town clerks were purposively selected because of their vast knowledge of public finance management and accountability expectations. Questionnaires and interview methods were used to collect primary data. The CAO, district chairperson, and town clerks were interviewed while the rest of the staff, elected leaders, and civil society leaders were served with questionnaires. A structured questionnaire with close-ended questions was designed. The items were developed from literature review. The questionnaire had two sections that is a background

section and a basic section. The background section had 7 items covering background characteristics. The basic section, which was directly related to financial accountability mechanisms had four sub-sections. Expenditure control had 6 items, financial reporting had 8 items, service delivery had 7 items while budget had 7 items. All the items on financial accountability mechanisms were scale-items, measured on a 5-point likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Collected data was sorted and entered into SPSS version 20. The software was used to help in generating percentages of counts for each item used in the questionnaire. The researcher summarized percentage data into *disagreement* (an aggregate of strongly disagree and disagree), *agreement* (an aggregate of strongly agree and agree) and '*not sure*'.

RESULTS

Background characteristics

Participation according to gender indicates that 78.9% were male while 21.1% were female. In respect to age distribution, 43.1% belonged to (40 - 49) years of age and constituted the majority, 27.5% belonged to (30 - 39) years, 17.4% belonged to (50 and above) years while 11.9% belonged to (20 - 29) years and constituted the least participation, which suggests that most of the participants were adults with a high degree of reasoning and maturity, which were essential in the study. Regarding their marital status, In line with marital status, 75.2% indicated to be married and were the majority, 19.3% were single while only 6 participants representing 5.5% indicated the "others" option. In terms of the highest level of education revealed that 58.7% were tertiary graduates, 24.8% were university graduates while 16.5% indicated secondary as their highest level of education. According to their experience in local government activities, 52.3% had (5 -9) years' experience with the local government, 26.5% had not worked with the local government for more than 5 years while 21.1% had worked with the local government for 10 years and over.

Financial accountability mechanisms used in Kabale district local government.

The study investigated three mechanisms of ensuring financial accountability in Kabale district local government. These were expenditure control, financial reporting, service delivery and the budget. Table 1 presents the details of the findings. Bringing to light the aspect of expenditure control as a mechanism of ensuring financial accountability in Kabale district local government, 89.9% that the district local government's resource envelope is adequate enough to allow for quality public expenditure, while 85.3% confirmed that the district's overall budget execution is always in line with the official approved budget and the district council is committed to spending within the budget (71.5%).

Actually, Kabale is a stop-off point for tourists to Lake

Bunyonyi and the two parks famous for mountain gorilla tracking: Mgahinga national park and Bwindi impenetrable national park. In moderate presentation, 64.2% confirmed that the district's financial reports always indicate a very small difference between the original and the expected budget, 62.4% confirmed that the money spent on development is lower than the approved budget, while 54.1% confirmed that council spends more on salaries and wages than is approved in the budget. On the whole, expenditure control as a financial accountability mechanism in Kabale district appears to stand at 71.2%.

In relation to financial reporting as a financial reporting mechanism, 92.7% confirmed that the overall budget execution is achieved under supplementary budget, 83.5% confirmed that the financial reporting system is compliant with financial laws, while 80.7% indicated that the reporting system has a standard for recording assets. In a related view, 78.9% confirmed that the local government's financial information is treated in accordance with international rules and guidelines, which makes district's reporting system to demonstrate quality. Though participants confirmed that their financial reports are easily understood by users (76.2%), they also moderately indicated that financial information is presented in a less subjective manner (61.5%) and that the reporting system has a standard for recording liabilities (57.8%). On the whole, financial reporting as a financial accountability in Kabale district local government appears to stand at 76.3%.

In view of service delivery, 88.1% confirmed that the district runs projects that are intended to improve citizens' welfare, 82.6% confirmed that the services delivered by the council are indeed of the right type, 81.7% agreed that the projects implemented by the council meet the demand of citizens in the local area. About 79.8% agreed that the district delivered quality services, are a guarantee of their tight (74.3%) and reflect citizens' participation in decision making (70.7%). On a slightly lower end, 64.2% agreed that district council solves citizen's problems. On the whole, service delivery in Kabale district local government appears at 77.3%.

In line with budget as a mechanism of financial accountability in Kabale district local government, 87.1% indicated that budget demonstrates political preference. In moderate view points, 56.9% agreed that the budget demonstrates a sound financial system, 55.0% agreed that the budget is a true measure of council's effectiveness while 51.4% agreed that the budget is a true measure of council's efficiency. It should be noted that 47.8% disagreed with the view that the budget enables council to attend to priorities in the local area, 40.4% disagreed that the budget demonstrates community preference, while 35.8% disagreed that the budget enables council to utilize resources economically. The above statistics suggest a politicized and biased position on the budget as a policy document. In the same

Table 1. Financial accountability mechanisms.

Variable List	Disagreement (%)	Not Sure (%)	Agreement (%)
Expenditure control			
1.Our resource envelope is adequate to allow quality public expenditure	6.4	3.7	89.9
2.Our overall budget execution is always in line with the official approved budget	8.2	6.4	85.3
3.Our council is committed to spending within the budget	20.2	8.3	71.5
4.Our financial reports always indicate a very small difference between the original and the executed budget	26.6	9.2	64.2
5.The money council spends on development is lower than is approved in the budget	23	14.7	62.4
6.Our council spends more on salaries and wages than is approved in the budget	29.4	16.5	54.1
Average	19.0	9.8	71.2
Financial reporting			
1.The overall level of budget execution is achieved under supplementary budget	5.5	1.8	92.7
2.Our financial reporting system is compliant with financial laws	9.2	7.3	83.5
3.Our financial reporting system has a standard for recording assets	7.4	11.9	80.7
4.Our financial information is treated in accordance with international rules and guidelines	11.9	9.2	78.9
5.Our financial reporting systems demonstrates quality	6.5	14.7	78.9
6.Our financial reports are easily understood by users	23.9	0	76.2
7.Our financial information is presented in a less subjective manner	20.2	18.3	61.5
8.Our financial reporting system has a standard for recording liabilities	23.9	18.3	57.8
Average	13.6	11.6	76.3
Service delivery			
1.The projects that are intended to improve citizens' welfare are clearly communicated to everyone	11.9	0	88.1
2.The services delivered by my council are indeed of the right type	9.2	8.3	82.6
3.The projects implemented by my council meet the demand of citizens in the local area	18.3	0	81.7
4.The services delivered by our council are of quality	7.4	12.8	79.8
5.The services delivered by our council are a guaranteed of my right	18.4	7.3	74.3
6.The services delivered by our council reflect citizen participation in decision making	13.8	15.6	70.7
7.The services delivered by our council solves citizen problems	24.8	11	64.2
Average	14.8	11.0	77.3
Budget			
1.Our council budget is a demonstration of political preference	4.6	8.3	87.1
2.Our budgets demonstrate the a sound financial system	26.6	16.5	56.9
3.Our budget is a true measure of council's effectiveness	24.8	20.2	55
4.Our budget is a true measure of council's efficiency	30.3	18.3	51.4
5.Our budgets enable council to utilize resources economically	35.8	18.3	45.9
6.Our council budget is a demonstration of community preferences	40.4	17.4	42.2
7.Our budget enables council to attend to priorities in the local area	47.8	24.8	27.5
Average	30.0	17.7	52.3

Source: Field data, 2019.

line of observation, one respondent reiterates: "...any government that delivers quality services, which are consistent with community interests and that promotes the private-sector growth alongside proper management of public resources is not far from the Millennium Development Goals..." (Civil Society Advocate). However, it remains evident that since the budget in Kabale district is a demonstration of political preference, it is true that local area priorities and preference are ignored, which renders council inefficient. Similarly, if the budget can

hardly demonstrate a sound financial system, the council stands to inefficient in its utilization of economic resources. On the whole, the budget, as revealed by the statistics suggests a non-performing budget represented by 52.3%. The findings are in agreement with the opinion of one key informant: "...Mayors have the powers to implement their policy preferences but these should not suppress citizens' interests..." (Sub County Speaker). In practice, competing interests should be analyzed democratically than politically suppressing them. It should

be noted that out the four mechanisms of financial accountability used in Kabale district local government, service delivery (77.3%) and financial reporting (76.3%) appear to be two practices that propagate sound financial accountability.

DISCUSSION

The study sought to establish the financial mechanisms that are used in Kabale district local government. Participants pointed to service delivery as the most important mechanism of financial accountability in Kabale district local government. The findings are in line with (MOFPED, 2017) which presented how government of Uganda has over the years introduced a number of reforms aimed at enhancing transparency, accountability of public resources and improved service delivery. The findings render support to (Rabrenovic, 2009) who outlined service delivery as one of the mechanisms that can ensure sound financial accountability. Based on European Union guidelines, Rabrenovic notes that the ability of the accounting entity to remain transparent and give evidence of value for money is dependent on the effectiveness of the internal controls in place to forestall budgetary problems before they occur.

The findings seem to disagree with Auditor General (2017) whose report called for the need to ensure quality service delivery as well as citizen participation and involvement. The disagreement of the findings with Auditor General's report comes in as corrective evidence to the recommendations of the Auditor General's report of 2017. Contrary to Auditor General's report, the current study presented Kabale district local government as delivering services that depict the right type and as meeting the demands of citizens. The findings are in agreement with Agwor and Akani (2017) who investigated financial accountability and performance of local governments in River State, Nigeria; and observed that local governments are assumed to be performing if the projects and services meet the demands of the citizens in the local areas.

The findings indicated pessimistically that Kabale district local government solves the problems of citizens. This agrees with Keil (2005) who analyzed the principal-agent theory and its application on outsourcing in software development. He found that the principles (who are the citizens in this case) fail to receive the goods and services they pay for because they are limited in ability to monitor and judge the input and output of the contractors (in this case the local government). Similarly, Hlavacek and Hlavacek (2006) who analyzed the "Principal – Agent" problem in the context of the economic survival found that the public empowers government officials to promote public welfare using public resources, however, government officials end up serving their own interests, which jeopardizes service to

the public. This is true in the sense that the public lacks the ability to question the conduct and behavior of government officials and to impose sanctions where such conduct or behaviors fall short of the requirement.

The study presented the budget as the least used mechanism of financial accountability in the district. Participants disagreed that the budget enables council to attend to priorities in the local area. The findings agree with Tsurkan et al., (2016) who noted that financial accounting and management accounting cannot be neatly compartmentalized in the public sector, where management accounting refers to budgeting and control rather than accounting solely in the service of managers. Certainly, if the budget is an expression of political preference, service delivery will be compromised in favor of political interests. However, the findings disagree with Berner and Smith (2004) who view the budget as a mechanism for financial planning. In their view, the budget allows for the achievement of priorities and objectives through the limited fiscal resources. Treated in this angle, the budget can contribute significantly to greater efficiency, effectiveness and accountability within the organization. Participants also disagreed that they demonstrate community preference and that council utilizes resources economically. In this view, all public actions should embrace citizens' preference and work towards achieving it. The findings however, disagree with Kim et al. (2010) who noted that when various stakeholders combine information on budgeting preferences, the principle of publicity overrides all the core principles of any budget. Competing interests should be analyzed and prioritized democratically.

CONCLUSION AND POLICY IMPLICATION

The study examined financial accountability mechanisms in Kabale district local government, Uganda. Given the four financial accountability mechanisms investigated, service delivery is the most widely applied financial accountability mechanism in Kabale district local government. Given the current study, it is clear that most of the projects implemented in the district align with the demands of the local population and citizens' welfare, in particular. The study found that participants could evaluate the performance of the district in terms of service delivery because such services are visible to the public compared to financial reporting, expenditures and the budget, which require technical judgment. Notwithstanding the technical requirements to evaluate financial performance in terms of financial reporting, expenditure control, and the budget; this study found that the district achieves much of her budgetary goals under supplementary budget approvals. The budget was indeed the least measure of financial performance strongly because of the irregularities in salaries and wages expenditures, and its political preference. Therefore, local

governments should ensure their budgets demonstrate community preference, pay salaries and wages as approved in the budget, and standardize their reporting on liabilities. Due to the scope of this paper, which could not quantitatively relate financial accountability and service delivery, future researchers should consider assessing the effect of financial accountability on service delivery in local governments.

CONFLICT OF INTERESTS

The authors have not declared any conflict of interest.

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Full Length Research Paper

Digital ethics and taxpayers' attitude in Greece: Evidence and policy recommendations for the future

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New technologies transform public policies and the services provided to citizens, contributing significant added value to them individually or collectively. The same applies to the case of Artificial Intelligence (AI) in Tax Administration (TA). Contemporary TA integrates in its operation a number of algorithmic applications in high impact areas of taxation. This paper aims to analyze Greek taxpayers' attitudes regarding issues of digital ethics in the context of digital transformation of Greek TA, examining in particular the possible effects of AI applications in matters of efficiency, transparency and corruption in the country. The present research is based on a large-scale representative sample of 965 taxpayers who were contacted through the authors' questionnaire, allowing them to capture a wide range of views and explore taxpayers' attitudes. The research shows that taxpayers in Greece are currently positively influenced by Tax Administrations' digital revolution. To this end, digital revolution of Public Administration (PA) in general has positively influenced taxpayers' attitudes as citizens. Issues, however, of digital ethics seem to raise questions about the new AI strategy in Greece. Finally, it offers a fresh view, adding new dimensions of analysis and some new insights in the existing body of knowledge on the use of AI implementation on taxpayers' attitudes, leading to some useful implications for public servants and TA in Greece.

Key words: Digital ethics policy, TA, taxpayers' attitude, Greece.

INTRODUCTION

The current Greek Prime Minister announced the establishment of a High-Level Advisory Committee for Artificial Intelligence (AI) in Greece, at a time when the European Union is in the midst of passing its AI Act (COM/2021/206 final). The purpose of the Committee is to get Greece ready for the tremendous breakthroughs that

are happening in AI technology and its applications. This decision comes at a time when the Greek Minister of Finance sets currently in place additional security measures against tax evasion in Greece. A new comprehensive action plan to tackle burgeoning tax evasion in Greece is under way, setting new rules for tax

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compliance, expanding the use of electronic transactions but also advancing the electronic tools of the Greek TA. According to the latest report on the VAT deficit, the so-called VAT Gap (European Commission, 2023a), Greece presented a reduction in the deficit by 3.2 percentage points in 2021, however the country still ranks third among the EU countries with high VAT Gaps, right after Romania with 36.7% and Malta with 25.7%, losing 3.23 billion euros in revenue per year. However, Greece has to improve standards of corruption in the country. According to the 2023 Rule of Law Report (European Commission 2023b), Greece still needs to address major issues of corruption, despite the outstanding legislative and administrative reforms that have been made, since 2010 onwards.

Under this light, this research is based on a large-scale survey conducted for the capture of Greek public opinion, regarding digital ethics issues in the context of digital transformation of the TA in Greece, examining in particular the possible effects of AI applications in matters of efficiency, transparency and corruption. What is the general taxpayers' attitude towards AI implementation for taxation and corruption purposes? How comfortable are they with certain decisions being made by a computer rather than a human being? What concerns have they about the use of AI by government for public policy? How concerned are they about the impact of AI on the economy and jobs and how ready are they to accept their use for the improvement of transparency, efficiency and good governance in TA? What aspects of digital ethics can and should be implemented in the near future in Greece and in TA in specific?

As the digital transformation of OECD member states has been significantly activated after COVID, surveys on public perception of IT, transparency, efficiency and corruption are showing the first results (OECD 2023a). However, no research to date correlates the assessment of public opinion on issues of AI, transparency, efficiency and corruption compared to the way PA and TA operate. The present research, more specific, is based on a large-scale representative sample of 965 taxpayers who were contacted through the authors' questionnaire, allowing them to capture a wide range of views and explore taxpayers' attitudes on the above topics. For a better understanding, similar questions have been addressed for PA issues in general. This study also aims to specify the legal limits in the use of technology aiming in AI implementation in Greece, under the light of digital ethics and conclude with a set of recommendations. Research results will be presented at Chapter 4.

RELATED LITERATURE

AI research is evolving widely, causing high expectations for solving complex issues and, for others, a high degree of mistrust about the actual effectiveness of the phenomenon. Although to date there is no commonly

accepted definition of AI (Nilsson, 2009) existing efforts have been criticized for being too anthropocentric (Wang, 2019). Research on AI addresses issues such as governance and the use of AI for the common good (Samoili et al., 2020; Floridi et al., 2021a; Stahl, 2021) sustainable environmental and social development (Truby, 2020), and as a powerful anti-corruption tool (Wirtz and Müller, 2019; Adam and Fazekas, 2021), for improving accountability, transparency (Sturges, 2008; Bertot et al., 2010; Aarvik, 2019), and tax compliance (Carrero and Ribeiro, 2020; Raikov, 2021).

Digital ethics in TA

Three main schools of thought on ethics: metaethics, normative ethics, and applied ethics are usually discussed (Fieser, and Dowden, 2011). Applied ethics combines consequential and nonconsequential approaches in specific contexts such as business ethics (Breibach and Maglio, 2020). According to the Oxford Handbook of Business Ethics (2010), it is about "rules, standards, codes, or principles, which provide guidelines for morally right behaviour and truthfulness in specific situations." Close to business ethics, Capurro (2009) argues that digital ethics or information ethics in a broader sense deal with the impact of digital Information and Communication Technologies (ICT) on our societies and the environment at large.

Digital ethics, as a concept, usually also address areas of fundamental rights enshrined in the EU Charter of Fundamental Rights. According to the Proposal for AI Act (COM/2021/206 final):

"The use of AI with its specific characteristics (e.g. opacity, complexity, dependency on data, autonomous behaviour) can adversely affect a number of fundamental rights enshrined in the EU Charter of Fundamental Rights ('the Charter'). This proposal seeks to ensure a high level of protection for those fundamental rights and aims to address various sources of risks through a clearly defined risk-based approach. With a set of requirements for trustworthy AI and proportionate obligations on all value chain participants, the proposal will enhance and promote the protection of the rights protected by the Charter: the right to human dignity (Article 1), respect for private life and protection of personal data (Articles 7 and 8), non-discrimination (Article 21) and equality between women and men (Article 23). It aims to prevent a chilling effect on the rights to freedom of expression (Article 11) and freedom of assembly (Article 12), to ensure protection of the right to an effective remedy and to a fair trial, the rights of defence and the presumption of innocence (Articles 47 and 48), as well as the general principle of good administration. Furthermore, as applicable in certain domains, the proposal will positively affect the rights of a number of special groups, such as the workers' rights to

fair and just working conditions (Article 31), a high level of consumer protection (Article 28), the rights of the child (Article 24) and the integration of persons with disabilities (Article 26). The right to a high level of environmental protection and the improvement of the quality of the environment (Article 37) is also relevant, including in relation to the health and safety of people. The obligations for ex ante testing, risk management and human oversight will also facilitate the respect of other fundamental rights by minimising the risk of erroneous or biased AI-assisted decisions in critical areas such as education and training, employment, important services, law enforcement and the judiciary. In case infringements of fundamental rights still happen, effective redress for affected persons will be made possible by ensuring transparency and traceability of the AI systems coupled with strong ex post controls.”

What happens, however, in Tax Administrations? Since a considerable range of activities of Tax Administrations (OECD, 2021a; Blanco, 2022; OECD, 2023a) have been digitally restructured, new challenges, however, often raise important ethical issues, where the main recipients are the taxpayers. In particular, issues such as extended use of data, AI, the ever-expanding application of algorithms for decision and policy-making, but also its gradual decline of human participation or supervision in automated (often opaque or discriminatory) procedures raise questions of fairness, accountability and eventually protection of human rights (Pasquale, 2017; Anderson et al., 2018; Floridi et al., 2021b; Tsamados et al., 2021; Panagopoulou-Koutnatzi, 2023), critical aspects of the now well-known term “digital ethics”.

Use of AI by TA

Digital ethics become a crucial topic for TA, since the use of AI by TA is currently a major strategic target. It is well known that technology is transforming the way governments function across various sectors (World Bank, 2016). For this reason, OECD countries continue to demonstrate their clear strategic vision for digital government through the development and implementation of national digital government strategies, with common priorities such as increasing the accessibility and proactive delivery of services, and treating data as a key strategic asset to create public value. Almost all countries (29 out of 30, 97%) had a National Digital Government Strategy in place in 2022 (OECD, 2023b).

TA is an important application of e- government for almost all the OECD countries (OECD, 2023a). The benefits of digital technology are well documented; leaving no doubt that it can also ease tax compliance, reduce tax collection costs, and increase administrative efficiency (Chen et al., 2017). For this digital transformation journey, around 75% of OECD Tax Administrations have a digital transformation strategy in place. Tax Administrations

report that these strategies are driving their services to become ‘smarter’, allowing taxpayers to complete increasingly complex tasks digitally, more efficiently and 24/7 (OECD, 2023a). To this end, a Digital Transformation Maturity Model has been developed by the Forum on TA which allows self-assessment by Tax Administrations of the current level of maturity and to facilitate consideration of future strategy (OECD et al., 2022).

As Tax Administrations become familiar with big data management, they are adopting these applications at an accelerating rate. Around 90% of OECD Tax Administrations report using data science and analytical tools, and this facilitates the use of data in all aspects of an administration’s work. The IRS, for example, has already a long history in AI and data analytics: both supervised and unsupervised machine learning methods were used to detect noncompliance (including questionable refunds on individual income tax returns) using a combination of conventional approaches and machine learning. From 2015 to 2019, the IRS prevented the issuance of \$11 billion in invalid refunds (Holtzblatt and Engler, 2022).

AI is also broadly used for risk assessment and also fraud detection, with TA making significant progress on AI. Around 50% of administrations are using it for risk assessment and also fraud detection. The Italian Revenue Agency was authorized to use an algorithm that cross references financial data with tax filings, earnings, property records, bank accounts, and other electronic payment information to detect taxpayers with elevated risks of non-paying. This led to the identification of 1 million high-risk cases and prevented fraud amounting to \$6.85 million in 2022 (Beebe, 2023). Biometric and facial recognition methods are currently used for tax identification purposes. A few administrations (i.e. Argentina, Australia, Austria, Brazil, China, and Singapore) are also using facial recognition or finger print to authenticate the digital identity of a taxpayer (OECD et al., 2022).

However, AI can also be used for tax compliance purposes. Communication, interaction and the facilitation of cooperation with taxpayers, as systematically supported (OECD, 2021b) constitute a key core for the smooth operation of the TA, in a climate of practical taxpayer compliance. Modern Tax Administrations, today, implement the above through a series of contact points, such as: face-to-face interactions, phone calls, multi-functional websites, etc. A significant number of existing services are being improved today with the use of innovative technologies, such as AI, thus enabling real-time interaction between the TA and taxpayers. For example, a growing number of Tax Administrations are confirming the use of AI through virtual assistants to facilitate responses to taxpayer queries, with the aim of encouraging a new culture of self-service. Popular areas of AI integration are the use of chatbots for information provision and the use of algorithms to detect suspicious transactions and prioritizing enforcement, when taxpayers

show signs of default. According to the European Commission (OECD et al., 2022) different EU Tax Administrations have started to use chatbots for specific tax matters (that is, Latvia, Austria, Germany).

Use of AI by Greek TA: From technological steps to AI

Since 2016, TA in Greece –Independent Authority for Public Revenue (IAPR)- is in effect an autonomous body in the sense that it enjoys full operational freedom, although the Ministry of Finance may control or affect targets and strategies. The IAPR is responsible for collection of direct and indirect taxes at national level, including customs duties, while a solid Digital Transformation Plan is executed from 2010 onwards, especially after the economic adjustment programs in the country (IMF 2011, 2013, 2014).

TA in Greece, has not only made significant administrative reforms, but also prioritized major IT reforms. Currently, a broader digital transformation, expansion of electronic services for taxpayers and utilization of new technologies to improve its efficiency has been achieved. To this end, in recent years, the IAPR has been making use of resources of the National Strategic Reference Framework and the Recovery and Resilience Fund for the purpose of the Digital Transformation of the Tax and Customs Administration, while recently has been announced a promising wide scale AI implementation strategy. AI implementation, though, as shown below, is not yet applicable.

However, good national practices exist in several IT areas. Successful examples of this strategy are listed below:

1. Digital platform/portal for taxpayers' requests (My AADE): A new digital portal of the IAPR, for all services provided to citizens and businesses through the renewed digital environment of the portal, taxpayers can easily have access to all IAPR digital applications, quickly finding the service taxpayers are interested in manage contact information.
2. Digital platform/portal for additional tax obligations (My Car, My Property, My Business Support)
3. Implementation of the e-invoice system (my data): A new electronic platform by which the IAPR introduces electronic accounting books into the daily lives of businesses. Electronic Books is a very important step in the digital transformation of the TA and its relationship with businesses. The IAPR's goal is primarily to serve businesses by providing an innovative digital platform for fulfilling their tax obligations, which will lead to the automation of tax declaration and will relieve them of their current obligations, such as Filing of Customers-Suppliers Lists. Along with reducing the administrative costs of businesses, IAPR e-books enhance the transparency of transactions by providing a digital business collaboration environment for the pricing of goods and services.

Use of big data and analytics for tax audit and collection

As of 2021 onwards, Risk Management and Selection Department of IAPR Central Management) carries out centrally selections both for tax audits and supportive procedures. To this end, an Integrated Information System for Auditing Services (ELENXIS) is developed, operating a centrally developed selection method and data systems supporting risk analysis to assist in selecting taxpayers for tax audit. Tax audits must primarily be focused on those taxpayers, at which the risk of significant tax concealment and of unauthorized claim for tax refund or subsidies, respectively, is the biggest.

Legislative and administrative reform

The overall legislative and administrative reform is supportive of using new technologies and additional analytics-driven approaches under proper governance. In 2023, a new law (L.5073) was passed for stamping down tax evasion in Greece. Among others, the government's package of interventions incorporates measures such as videotaping of tax audits, discouraging the use of cash under the threat of high fines, while expanding the use of Points of Sale (POS). Furthermore, tax audits are becoming stricter, with the addition of new criteria to the audit process, while a reward is provided for those who report digitally documented tax evasion. Last but not least, electronic invoicing will become mandatory for the majority of businesses.

RESEARCH METHODOLOGY

This Chapter describes the research design and methods used in this study. The paper analyzes survey data collected from a sample of taxpayers (n = 965) living in Greece. The case of Greece has been chosen for the following reasons:

The digital transformation of the state (PA and TA) is developing by leaps and bounds from 2020 onwards, making satisfactory progress compared to other countries in recent years (DESI Report, 2022). As far as advanced technologies are concerned, although AI constitutes key strategic area of action within the Digital Transformation Bible (2020-2025), the country's national strategy is still in the preparation stage. Indicatively, it is reported that although 13% of businesses in Greece use big data, which is generally in line with the EU average (14%), their performance is nevertheless much lower than the EU average in terms of usage of cloud computing and AI. Citizens' levels of trust towards the state occupy particularly low percentages, compared to other countries (World Employment and Social Outlook Trends, 2022).

The survey was posted to Facebook and sent by email to citizens with only requirement to be taxpayers in Greece, when submitting the questionnaire. The survey was available between 5th of January till 31st of May 2023, and originally 1500 questionnaires were distributed, yielding a 64.33% response rate. The final dataset consisted of 965 online responses (Table 3). More specific, the questionnaire (Table 2) consisted of fifteen questions, asking taxpayers to evaluate on a scale of 1 to 5 (1 = Not at all, 2 = A little, 3 = Moderate, 4 = A lot, 5 = Very much) their trust in PA and TA and

Table 1. AI State of play and TA in Greece, 2021.

State of play	Status
ICT-Distributed ledger technology / Blockchain	Not applicable
ICT-Artificial intelligence (AI), including machine learning	Not applicable
ICT-Cloud computing	In place
ICT-Data science / analytics tools	In place
ICT-Robotics Process Automation (RPA)	Not applicable
ICT-Application programming interfaces (APIs)	In place
ICT-Whole-of-government identification systems	In place
ICT-Digital identification technology (e.g. biometrics, voice identification)	Not applicable
ICT-Virtual assistants (e.g. chatbots)	Not applicable

Source: Isora (2021).

express their perceptions on different aspects of digital ethics in view of the forthcoming implementation of AI in PA and TA. Scope of the survey was to trace the main taxpayers' attitudes on the following concepts: The analysis of the survey data collected was carried out through the statistical process. After data collection, data were exported to an Excel file containing all the variables with their responses and timestamp as a single user identifier (ID). Then, the file was imported in statistical data processing software IBM SPSS v. 27.0 (Statistical Package for the Social Sciences) for statistical processing and analysis of the data.

RESULTS

Digital maturity of taxpayers in transactions with the Government

Digital maturity of the survey participants -taxpayers is particularly high in areas such as transactions with the PA, TA and other areas of daily transaction (Table 4), demonstrating not only the high degree of trust in electronic transactions and with agencies of the State, but also their positive attitude towards the expansion of electronic transactions in all the actions of the Greek PA (Table 1). This is also confirmed by the degree of trust in the use of electronic services of the PA and the TA (Table 10).

Moderate degree of trust in the ethical functioning of the institutions

Taxpayers' attitude in the ethical functioning of the institutions is reflecting low percentages of trust on behalf of the participants in their functioning. A comparative overview of the results shows that TA enjoys the greatest trust of the participants, not only in relation to other State bodies but also in relation to other third parties as representatives of the institutions (Public Enterprises, Private Enterprises, media) (Table 5).

Familiarity with AI topics

The vast majority of taxpayers regarding the concept and content of AI respond positively stating that the concept of AI is known and taxpayers are able to explain the content well. The majority of respondents declare knowledge about the content of the concept but with elements of doubts (Table 6).

Strong expectation of AI application in areas of citizen services, taxation and anti-corruption

Taxpayers strongly believe that AI can be applied and therefore contribute primarily to matters of providing services to citizens in the operation of the PA (as well as in matters of transport), in the operation of the TA and also in matters of corruption (Table 7). In the question "If the use of AI by the PA, can contribute to (a) Health and medical care, (b) Climate change, (c) Finding jobs, (d) Providing services to citizens, (e) Taxation, (f) Corruption, (g) Transport", taxpayers stated that AI can contribute "Very Much" foremost to issues of providing services to citizens as well as transport issues (24.4%) while it is also necessary underscore the high expectation of the participants in the contribution of AI to corruption issues (21.6%). Taxpayers also assess the potential contribution of AI as important in taxation (19.3%), health and medical care (19.2), finding jobs (18.5%) and climate change (14.6%). More specific details are shown in Table 7.

Strong challenges and risks of digital ethics in the application of AI especially in matters of privacy / confidentiality, maintaining jobs and respecting human dignity

Taxpayers may respond positively to the application of AI in important areas of human activity, however significant reservations remain regarding its ethical application. In

Table 2. Survey questionnaire.

(i) Taxpayers' digital maturity in Greece

Q1. I usually use Internet for (a) information seeking, (b) navigation in social media, (c) buying products, (d) e transactions with PA and Banks.

(ii) Taxpayers' attitude towards institutions in Greece

Q2. How much do you trust (a) PA, (b) TA, (c) Private Organizations, (d) Public Organizations, (e) Media

(iii) Taxpayers' familiarity with AI applications

Q3. Are you familiar with the term "Artificial Intelligence"?

(iv) Taxpayers' perceptions on AI integration in PA

Q4. Please state your support for the development of AI in PA depending the use case (a) healthcare, (b) climate change, (c) job finding, (d) public services to citizens, (e) taxation, (f) corruption, (g) transport.

(v) Taxpayers' perceptions on future challenges when integrating AI in PA

Q5. Please state your possible concerns about future challenges when integrating AI in PA in the future a) transparency in decision making, (b) accuracy of results, (c) AI applications and capacity of public servants, (d) bias and discrimination, (e) human dignity, (f) privacy (g) job maintaining.

(vi) Taxpayers' perceptions on future decision making when integrating AI in PA

Q6. After the development of AI in PA, I can trust decision-making (a) by human exclusively, (b) by computer but after human control, (c) by computer (automated decision making)

(vii) Taxpayers' trust in e services provided by PA and TA

Q7. Please state your trust in the use of e services provided by (a) PA, (b) TA.

(viii) Taxpayers' needs and e services in TA

Q8. When I use of e services in TA a) all my needs are met, b) most of my needs are satisfied, (c) my needs are not usually met and physical access is required

(ix) Taxpayers' attitude when using e services in TA

Q9. When using e services in TA (a) language is simple and understandable, (b) personal data are kept with safety, (c) personal data are not processed for another purpose, (d) benefits of e services are understood, (e) no more than the necessary information is required (f) the electronic environment is taxpayer-friendly.

(x) Taxpayers' attitude towards risks and data in TA

Q10. Please state your possible concerns about future risks when integrating AI in TA in the future (a) information leaks, b) data transmission to third parties, (c) fully automated decision making in the future for crucial issues, (d) exclusion of citizens due to lack of access to electronic services.

(xi) Taxpayers' attitude towards digital ethics and AI integration in TA

Q11. Please state your possible concerns about digital ethics when integrating AI in TA in the future (a) transparency and explainability, (b) safety, (c) accountability, d) fairness and nondiscrimination, (e) human control over AI applications, (f) efficiency, (g) human rights protection.

(xii) Taxpayers' attitude towards areas of AI integration in TA

Q12. I would prefer the development of AI (a) when processing complex tax issues, (b) for submitting my tax returns, (c) for simple usual instructions of tax interest, (d) for simple information, (e) for no reason.

(xiii) Taxpayers' attitude towards anticorruption strategy

Q13. In your opinion, anti-corruption strategy in Greece is (a) indifferent, (b) in the wrong direction, (c) in the right direction

(xiv) Taxpayers' attitude towards electronic services and corruption

Q.14.A The use of electronic services in PA (a) contributed drastically to the reduction of corruption, (b) contributed to reducing corruption but not drastically, (c) did not result in any substantial change in the reduction of corruption

Q.14.B The use of electronic services in TA (a) contributed drastically to the reduction of corruption, (b) contributed to reducing corruption but not drastically, (c) did not result in any substantial change in the reduction of corruption

Table 2. Cont'd.

(xv) Taxpayers' perceptions on effective anti-corruption policies

Q.15 Please state your opinion about the effectiveness of the following anti-corruption policies (a) reliable AI, (b) greater social participation, (c) stricter legislative framework, (d) broader transparency, (e) broader use of Code of Ethics, (f) effective legislation for the protection of whistle-blowers.

Table 3. Demographics.

Variable		Number	Percentage
Gender	Male	350	36.30
	Female	613	63.50
	Prefer not to answer	2	0.20
Age	18-30	128	13.30
	31-40	158	16.40
	41-50	431	44.70
	51-65	227	23.50
	65+	21	2.20
Marital Status	Single	305	31.60
	Married	562	58.20
	Divorced	85	8.80
	Prefer not to answer	13	1.30
Education	Undergraduate degree	259	26.80
	Bachelor degree	316	32.70
	Master degree	339	35.10
	PhD	51	5.30
Occupation	Public employee	525	54.40
	Private employee	214	22.20
	Self employed	106	11.00
	Unemployed	92	9.5
	Retired	28	2.9

particular, concerns regarding the possibility of ensuring privacy and confidentiality, the preservation of jobs and respect for human dignity in general are expressed as more important reservations. The risk of lack of transparency during decision-making, the accuracy of results, bias and discrimination, but also the possibility of (proper) management of AI by administrative staff are some of the challenges that taxpayers assess as particularly important when integrating AI into PA (Table 8).

Trust in automated decision-making in the PA, but after human review

The strong acceptance of the application of AI in areas of

operation of the PA, as analyzed above, is combined with the strong acceptance and trust of the taxpayers in automated decision-making after human control. However, the strengthened opinion of taxpayers that in the future, during the operation of the PA, they can trust decision-making exclusively by a computer is also interesting (Table 9).

Greater trust in the use of electronic services of PA in general compared to trust in the use of electronic services of the TA

A comparative overview of Table 10 leads to the conclusion that taxpayers express a high percentage of acceptance and trust in the electronic services provided

Table 4. Taxpayers' digital maturity.

I usually use Internet for			
Information seeking	Not at all	2	0.20%
	A little	18	1.90%
	Moderate	52	5.40%
	A lot	263	27.30%
	Very much	630	65.30%
Navigation in social media	Not at all	63	6.50%
	A little	114	11.80%
	Moderate	220	22.80%
	A lot	242	25.10%
	Very much	326	33.80%
Buying products	Not at all	58	6.00%
	A little	184	19.10%
	Moderate	283	29.30%
	A lot	261	27.00%
	Very much	179	18.50%
e Transactions with public administration, banks etc.	Not at all	23	2.40%
	A little	60	6.20%
	Moderate	154	16.00%
	A lot	306	31.70%
	Very much	422	43.70%

Table 5. Taxpayers' attitude towards trust in institutions in Greece.

How much do you trust			
Public administration	Not at all	59	6.10%
	A little	163	16.90%
	Moderate	466	48.30%
	A lot	227	23.50%
	Very much	50	5.20%
Tax administration	Not at all	45	4.70%
	A little	159	16.50%
	Moderate	424	43.90%
	A lot	259	26.80%
	Very much	78	8.10%
Private organizations	Not at all	71	7.40%
	A little	242	25.10%
	Moderate	475	49.20%
	A lot	153	15.90%
	Very much	24	2.50%
Public organizations	Not at all	62	6.40%
	A little	236	24.50%
	Moderate	479	49.60%
	A lot	161	16.70%

Table 5. Cont'd

	Very much	27	2.80%
	Not at all	422	43.70%
	A little	319	33.10%
Media	Moderate	192	19.90%
	A lot	24	2.50%
	Very much	8	0.80%

Table 6. Taxpayers' familiarity with AI.

Are you familiar with the term artificial intelligence	Yes, and I can explain the content well	441	45.70%
	Yes, but I have doubts about the content	509	52.70%
	No	15	1.60%

both by PA and TA, however expressing a higher preference for the electronic services of the PA in general. This is combined with the participants' statements that the majority of taxpayers' needs (and not all) are met to date through the use of the TA's electronic services (Table 11).

Taxpayers' insights are positive regarding the quality of the TA's electronic services

In the question: "Which of the following responds best when electronic services of the TA are used?" 11.8%, answered 'My needs are not usually met and physical access is required, 76.2%, answered 'Most of my needs are satisfied' and 12.0%, answered that 'All my needs are met' (Table 11). A network of questions regarding the participants' satisfaction with the use of the electronic services of the TA demonstrates the positive opinion and therefore the satisfaction of public opinion with the quality of the services provided. In general, taxpayers express a positive attitude towards e services provided by TA, since they believe that electronic environment is taxpayer-friendly, the language is simple and understandable, no more information is requested than is necessary for the fulfillment of tax obligations, confidence is expressed that personal data is kept securely and is not processed for other purpose and in the end the benefits of electronic services to each individual taxpayer-user are understandable (Table 12).

Challenges and risks when using data by the TA

Taxpayers estimate as a major risk that critical decisions in the future may be taken, within the framework of the operation of the TA, automatically and without human participation. Also, they express their strong concern

regarding the possibility of excluding taxpayers due to not having access to electronic services, the risk of data transmission to other Organizations (not included in TA), while they consider that the data is not kept securely and can be maliciously leaked (Table 13).

Data security, protection of human rights, fairness and non-discrimination, transparency and explainability: Guiding principles for the development of digital ethics rules in the integration of AI in the TA

Digital maturity of the participants as well as the acceptance of the potential contribution of AI to the functioning of the TA does not imply the unconditional acceptance of the integration of AI into the TA. Even taking into account what was previously discussed (Table 14), taxpayers support the need to adopt rules of digital ethics such as data security, the observance of rules of transparency and explainability (e.g. when applying algorithms), the protection of human rights, the avoidance of discrimination and the application impartial criteria, efficiency, accountability and finally the possibility of human control in the applications (Table 14).

Application of AI when processing complex tax issues as well as for common simple instructions of tax interest

The expectation of integrating AI into the operation of the TA is, as above discussed, strong. This is also confirmed by taxpayers' attitude towards the integration of AI for processing of complex taxation issues as well as for usual simple instructions of tax interest. The contribution of AI is also expected in other popular fields of action of the TA, such as the submission of tax returns (Table 15).

Table 7. Taxpayers' attitude on the development of AI in PA per use case.

Please state your support for the development of AI in PA depending the use case			
Healthcare	Not at all	45	4.70%
	A little	115	11.90%
	Moderate	224	23.20%
	A lot	396	41.00%
	Very much	185	19.20%
Climate change	Not at all	51	5.30%
	A little	137	14.20%
	Moderate	274	28.40%
	A lot	362	37.50%
	Very much	141	14.60%
Job finding	Not at all	49	5.10%
	A little	100	10.40%
	Moderate	249	25.80%
	A lot	388	40.20%
	Very much	179	18.50%
Citizen services	Not at all	32	3.30%
	A little	86	8.90%
	Moderate	201	20.80%
	A lot	411	42.60%
	Very much	235	24.40%
Taxation	Not at all	45	4.70%
	A little	104	10.80%
	Moderate	251	26.00%
	A lot	379	39.30%
	Very much	186	19.30%
Corruption	Not at all	69	7.20%
	A little	140	14.50%
	Moderate	256	26.50%
	A lot	292	30.30%
	Very much	208	21.60%
Road traffic and transport	Not at all	35	3.60%
	A little	92	9.50%
	Moderate	214	22.20%
	A lot	389	40.30%
	Very much	235	24.40%

Indifferent policies and measures to deal with corruption

A direct consequence of the above finding is the general opinion of taxpayers regarding the effectiveness of the existing anti-corruption policies. The dynamics of taking anti-corruption measures today is characterized as indifferent (44.2%), while a significant percentage of participants (32%) also state that taking measures is in the

wrong direction (Table 16). Close to this conclusion, it is taxpayers' opinion that the use of electronic services both in TA and PA has contributed to reducing corruption in Greece, but not drastically (Table 17).

More effective anti-corruption measures

Adopting an adequate framework for the protection of

Table 8. Taxpayers' attitude on possible concerns about AI in PA in the future.

Please state your possible concerns about future challenges when integrating AI in PA in the future			
Transparency in decision making	Not at all	61	6.30%
	A little	149	15.40%
	Moderate	240	24.90%
	A lot	321	33.30%
	Very much	194	20.10%
Accuracy of results	Not at all	74	7.70%
	A little	152	15.80%
	Moderate	247	25.60%
	A lot	329	34.10%
	Very much	163	16.90%
AI applications and capacity of public servants	Not at all	32	3.30%
	A little	92	9.50%
	Moderate	253	26.20%
	A lot	378	39.20%
	Very much	210	21.80%
Bias	Not at all	71	7.40%
	A little	134	13.90%
	Moderate	269	27.90%
	A lot	293	30.40%
	Very much	198	20.50%
Human dignity	Not at all	50	5.20%
	A little	110	11.40%
	Moderate	237	24.60%
	A lot	293	30.40%
	Very much	275	28.50%
Privacy and confidentiality	Not at all	50	5.20%
	A little	89	9.20%
	Moderate	209	21.70%
	A lot	304	31.50%
	Very much	313	32.40%
Maintaining jobs	Not at all	58	6.00%
	A little	98	10.20%
	Moderate	244	25.30%
	A lot	268	27.80%
	Very much	297	30.80%

Table 9. Taxpayers' attitude on automated decision making in PA.

In the future, during the operation of PA, I can trust decision-making	By computer (automated decision making)	111	11.50%
	By computer but over a human control	778	80.60%
	By human (exclusively)	76	7.90%

Table 10. Taxpayers' attitude on trust and use of e services in TA and PA.

I trust the use of e services in my transactions with TA	Not at all	14	1.50%
	A little	36	3.70%
	Moderate	252	26.10%
	A lot	409	42.40%
	Very much	254	26.30%
I trust the use of e services in my transactions with PA	Not at all	9	0.90%
	A little	42	4.40%
	Moderate	196	20.30%
	A lot	423	43.80%
	Very much	295	30.60%

Table 11. Taxpayers' attitude when e services of TA are used.

Which of the following responds best when e-services of TA are used?	My needs are not usually met and physical access is required	114	11.80%
	Most of my needs are satisfied	735	76.20%
	All my needs are met	116	12.00%

Table 12. Taxpayers' attitude when using e services in TA.

When using e services in TA			
Language is simple and understandable	Agree	704	73.00%
	Disagree	261	27.00%
Personal details are kept with security	Agree	574	59.50%
	Disagree	391	40.50%
Personal details are not processed for another purpose	Agree	577	59.80%
	Disagree	388	40.20%
Benefits of e services are understood	Agree	868	89.90%
	Disagree	97	10.10%
No more than the necessary information is required	Agree	694	71.90%
	Disagree	271	28.10%
Electronic environment is taxpayer-friendly	Agree	664	68.80%
	Disagree	301	31.20%

public interest whistleblowers and ensuring greater transparency and availability of open data (Table 18). From the grid of questions that follows, it is found that the adoption of a modern and effective framework for the protection of witnesses of public interest is declared as the most effective measure against corruption (45.8%). This is followed by taking measures to ensure greater transparency and availability of open data (43%), the tightening of the existing legislative framework in general

(41.2%), the expansion of social participation (38.1%), the expansion of Codes of Conduct (34.2%) and finally the use of digital media and AI (25.1%).

DISCUSSION AND FUTURE RECOMMENDATIONS

The results of our wide scale survey have important implications for government stakeholders (TA and

Table 13. Taxpayers' attitude on future risks about AI in TA in the future.

Please state your possible concerns about future risks when integrating AI in TA in the future			
Information leaks	Agree	612	63.40%
	Disagree	353	36.60%
Data transmission to third parties	Agree	688	71.30%
	Disagree	277	28.70%
Making automated and without human involvement critical decisions in the future	Agree	721	74.70%
	Disagree	244	25.30%
Exclusion of citizens due to lack of access to electronic services	Agree	757	78.40%
	Disagree	208	21.60%

Government) as they consider how they use and develop public policies in relation to AI in taxation but also in public policy issues. Taxpayers in general express their trust in automated decision making but after human review, indicating their reservations about making automated and without human involvement in critical decisions in the future (Table 9).

Perceptions of bias and discrimination in TA

AI has the potential to reduce human biases that influence human decision making. However, eliminating bias is not a simple case even for AI. AI learns from data, much of which has been generated from human activity. Creating models free from that bias remains a significant technical challenge, even for TA. For example, the case of “toeslagenaffaire,” or the child care benefits scandal in TA of Netherlands should be taken into account. More specific in 2019 it was revealed that the Dutch tax authorities had used a self-learning algorithm to create risk profiles in an effort to spot child care benefits fraud. Authorities penalized families over a mere suspicion of fraud based on the system's risk indicators. Tens of thousands of families, often with lower incomes or belonging to ethnic minorities were pushed into poverty because of exorbitant debts to the tax agency (Beebe, 2023). In order to avoid bias and discrimination issues, an administrative regulatory body is strongly recommended to be designed. In particular, an AI Ethics National Agency could be established, responsible for ensuring that AI implementation and research in AI related technologies made use by PA (and TA) are carried out in an ethical manner in accordance with national and international law.

Explainability, transparency and auditability

Data processing activities and automated decisions must make sense for taxpayers. The purpose and interests of

data processing must be clearly understood by the individual in terms of understanding risks, as well as social, ethical and societal consequences (Tranberg et al., 2018). In some cases, in TA, such as black box models for AI in taxation, it may be impossible to understand how a recommendation or decision was derived, even for tax fraud or tax evasion purposes. TA in United States, for example made use a risk assessment tool for tax fraud, called COMPAS. However, as argued (Faundez –Ugalde et al., 2020), the use of this assessment tool has been criticized after *State v. Loomis* case. It is within the scope of establishing the above-mentioned AI Ethics National Agency for setting standards for AI explainability, transparency and auditability. Since the explainability and risk assessment of AI use cases may be complex, requiring an understanding of the different governance objective and topics, different AI Development Teams could be established for different government areas (among which taxation), supported by experienced public officials, technical experts, and legal and risk professionals.

Balanced pilot cases in TA

TA will need to select carefully how and where launch pilots for taxation purposes. Although taxpayers in Greece express their willingness for AI assistance to be implemented into for complex tax issues, TA should identify simple use cases that will deliver the greatest benefit from experimentation, balancing at first the difficulty of implementation with the benefits, including the potential impact for taxpayers.

Taxpayers' participation

TA and Government should also consider how to involve taxpayers in these pilots. Italy, for example, is improving the delivery of services to taxpayers making use of “Citizen Voice System” to determine how well the services,

Table 14. Taxpayers' attitude on digital ethics and AI in TA in the future.

Please state your possible concerns about digital ethics when integrating AI in TA in the future			
Transparency and explainability	Not at all	7	0.70%
	A little	24	2.50%
	Moderate	41	4.20%
	A lot	236	24.50%
	Very much	657	68.10%
Security	Not at all	11	1.10%
	A little	20	2.10%
	Moderate	33	3.40%
	A lot	168	17.40%
	Very much	733	76.00%
Accountability	Not at all	13	1.30%
	A little	21	2.20%
	Moderate	49	5.10%
	A lot	240	24.90%
	Very much	642	66.50%
Fairness and non-discrimination	Not at all	11	1.10%
	A little	24	2.50%
	Moderate	44	4.60%
	A lot	194	20.10%
	Very much	692	71.70%
Human control over AI applications	Not at all	11	1.10%
	A little	31	3.20%
	Moderate	90	9.30%
	A lot	266	27.60%
	Very much	567	58.80%
Efficiency	Not at all	9	0.90%
	A little	18	1.90%
	Moderate	45	4.70%
	A lot	216	22.40%
	Very much	677	70.20%
Human rights protection	Not at all	10	1.00%
	A little	23	2.40%
	Moderate	39	4.00%
	A lot	169	17.50%
	Very much	724	75.00%

Table 15. Taxpayers' attitude towards AI integration in TA.

I would prefer the integration of AI in the TA	For simple information	107	11.10%
	For simple usual instructions of tax interest	274	28.40%
	For submitting my tax returns	212	22.00%
	When processing complex tax issues	321	33.30%
	For no reason	51	5.30%

Table 16. Taxpayers' perceptions on corruption strategy in Greece.

Corruption strategy in Greece	Is in right direction	229	23.70%
	Is in wrong direction	309	32.00%
	Is indifferent	427	44.20%

Table 17. Taxpayers' perceptions on e services and corruption strategy in Greece.

The use of e services in P.A.	Did not result in any substantial change in the reduction of corruption	216	22.40%
	Contributed to reducing corruption but not drastically	599	62.10%
	Contributed drastically to the reduction of corruption	150	15.50%
The use of e services in T.A.	Did not result in any substantial change in the reduction of corruption	194	20.10%
	Contributed to reducing corruption but not drastically	601	62.30%
	Contributed drastically to the reduction of corruption	170	17.60%

Table 18. Taxpayers' perceptions on effective anti-corruption policies.

Please state your opinion about the effectiveness of the following anti-corruption policies			
Reliable AI	Not at all	34	3.50%
	A little	81	8.40%
	Moderate	251	26.00%
	A lot	357	37.00%
	Very Much	242	25.10%
Greater social participation	Not at all	11	1.10%
	A little	61	6.30%
	Moderate	182	18.90%
	A lot	343	35.50%
	Very Much	368	38.10%
Stricter legislative framework	Not at all	22	2.30%
	A little	68	7.00%
	Moderate	194	20.10%
	A lot	283	29.30%
	Very Much	398	41.20%
Broader transparency	Not at all	12	1.20%
	A little	40	4.10%
	Moderate	150	15.50%
	A lot	348	36.10%
	Very Much	415	43.00%
Broader use of code of ethics	Not at all	24	2.50%
	A little	61	6.30%
	Moderate	215	22.30%
	A lot	335	34.70%
	Very Much	330	34.20%
Effective protection of whistleblowers	Not at all	17	1.80%
	A little	44	4.60%
	Moderate	161	16.70%
	A lot	301	31.20%
	Very Much	442	45.80%

rules and accountability frameworks in place will reassure taxpayers' trust and confidence that AI is being used responsibly and ethically.

Build AI capabilities inside TA

As TA adopts AI, tax officials need to be re-educated and get prepared for wider AI implementation by building internal capabilities. Tax officials should be supported and empowered to navigate new career pathways through lifelong learning and more tailored AI career guidance. The Greek government should prepare for the substantial workforce conditions through policy measures. Identifying the right mix of current and future skills will be critical to enabling TA officials to scale up future AI-related efforts.

Conclusion

The capture of public opinion and taxpayer's perceptions on high impact issues such as AI implementation and tax reforms, efficiency and corruption is, understandably, critical to planning government policies and making decisions of wider interest. Despite the systematic efforts to build trust between taxpayers and TA, or citizens and PA in Greece, significant problems continue to exist, causing low returns in areas of transparency, efficiency and tax compliance. Since, trust is hard to earn and easy to lose specially in a country where, following the 2008 financial crisis, Greek citizens faced hardship as they set about repairing the damage done to Greek economy and to public finance, it is evident that a careful assessment of public opinion on matters of AI, transparency, efficiency and good governance is needed.

Limitations

The main limitations of this work are the following. First of all, the focus of the analyses is represented by a descriptive analysis. Consequently, it is suggested that further research should be developed to investigate qualitative elements of the research filed. Moreover, there is no previous research examining both PA and TA taxpayers' attitude in digital ethics in other OECD countries, so it would be useful to repeat the analyses in the future, after new research results.

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