

**MEASURING THE LEVEL OF AWARENESS OF COSO INTERNAL CONTROL STANDARDS  
IN METROPOLITAN MUNICIPALITIES IN TURKEY****Gokhan Baral**,  ORCID: <https://orcid.org/0000-0003-2801-4415>

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**Abstract:** *Internal control is a management control built by managers to achieve organizational goals and ensure sustainability. COSO (Committee of Sponsoring Organizations), consisting of five independent organizations in the USA (United States of America), pioneered the internal control system to become a standard structure. COSO's internal control model covers five primary dimensions: control environment, risk assessment and management, control activities, information and communication, and monitoring. Through these five closely related dimensions, it serves to ensure organizational effectiveness by building an orderly system. It is a structure developed for organizations to manage the risks they encounter successfully and ensure the sustainability of organizational processes. In this way, organizations provide advantages such as reducing risks, increasing the reliability of financial statements, and becoming more compliant with the laws and regulations that must be complied with. It is essential to know about these standards and their implementation for organizations. Implementing these standards in the public sector is also noteworthy, and it has especially come to the fore in the activities of metropolitan municipalities. This research aims to determine the level of awareness of COSO internal control standards in metropolitan municipalities in Turkey. The general secretary, deputy general secretaries, and authorized persons in strategic planning and financial services (N = 149) working in 30 metropolitan municipalities in Turkey participated in the research. The sample group comprises officials selected by the purposive sampling method. Data were obtained by online survey. Frequency analysis, analysis of descriptive statistics, tests to examine differences, and correlation analysis was used in the data analysis. According to the findings, it has been determined that the efficiency of the COSO internal control standards in metropolitan municipalities is almost at the expected level. A strong correlation was obtained between the structures comprising the COSO internal control standards. The findings are discussed from a theoretical and practical point of view. Then, various suggestions are presented for decision-makers and future research.*

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**Introduction.** There are different practices and approaches within the scope of internal control. However, the COSO (Committee of Sponsoring Organizations), which consists of five independent organizations in the USA, pioneered the internal control system to make a standard structure. The COSO internal control model consists of activities such as internal control environment, risk assessment and management, control activities, information and communication, and monitoring. It is a multi-dimensional system combined with the objectives of management and businesses, such as effective, efficient, and reliable financial statements (Turedi et al., 2014).

Internal control systems should be specific to the organization in which they are located and appropriate to its nature and demands. In this system, the number, content, and form of controls vary according to the institution. Thus, any institution should adopt internal control according to its internal structure. Some units or departments in public institutions, such as municipalities, will adopt internal control. Since many public institutions prefer to implement the COSO internal control system, most studies are carried out with the COSO internal control system (Jemaa, 2022; Littan, 2019; Wang, 2019). The people who have a role in the operation of the internal control systems in municipalities are the mayor, strategy departments, accounting, and financial services units, and internal audit units. All public employees working in municipalities should know that they have a role in the internal control system and should be interested in the tasks they will take on for this role (Nogueira and Jorge, 2017; Lambovska and Yordanov, 2020)

Knowing about these standards and implementing COSO internal control standards is essential. For this reason, some features come to the fore in using COSO standards, which consist of the control environment, risk assessment, control activities, information and communication, monitoring, and evaluation standards, by practitioners. In addition, implementing these standards in the public sector is also noteworthy. COSO internal control standards come to the fore in the activities of metropolitan municipalities in public applications (Borissov, 2018; Pattanawongchaikul and Aungvaravong, 2017; Yılmaz and Karakaya, 2020). Therefore, this study focuses on whether these standards are effectively implemented in metropolitan municipalities in Turkey. In this context, this study is essential to know the dominance of both municipalities and employees on the subject. Since establishing an internal control system in the public sector has become mandatory, especially in municipalities, especially metropolitan municipalities, this system works properly and is always necessary to do well. As the number of personnel in institutions such as municipalities increase, the organization chart should be designed more carefully. Good organizational work determines targets aligned with the institution's objectives, and possible risks are foreseen (Prasad, 2020). This shows that the need for an internal control system in metropolitan municipalities is more critical than in many other institutions. The system established here effectively provides the necessary information and control to the system's administrator. It becomes the most significant assistant of the mayor in institutions such as the municipality (Yılmaz and Karakaya, 2020) Making internal standards in an organization healthy gives an idea about the high level of healthy implementation of all managerial processes. In non-institutionalized organizations, there are many structural and functional problems, not only the internal control system. Its incidence is higher, especially in underdeveloped countries. In developing countries, however, the structural and functional issues in organizations are still high, but the developed systems in the world are followed more intensively. At this point, it is vital to measure how effectively the COSO standards, widely used internationally, are used in Turkey, a developing country. In particular, the efforts of municipalities to become established and institutionalized in internal control systems are also critical for developing countries (Yılmaz and Karakaya, 2020).

From this point of view, the purpose of this research was to examine the effective use of COSO standards based on internal control systems in metropolitan municipalities in Turkey. In this context, we tried to answer the question, «To what extent are the COSO internal control standards known in metropolitan municipalities operating in Turkey?» The answer to this question; is among the critical issues that practitioners, researchers, academics, and policymakers should evaluate.

**Literature Review.** The control environment works as the main factor in this system as a combination of all other elements. The basis of internal control is the control environment. A situation that determines the effect of internal control provides discipline within the internal control system (Ozbilgin, 2010).

In the COSO model, the control environment creates the basis for all other elements by increasing the internal control awareness of internal and external people. A robust control environment indicates the importance that managers attach to effective management within the organization, and clear strategic directives and controls indicate this from the upper level (Dalton and Hilbers, 1999; Reding et al., 2009). Some factors are essential in establishing an effective control environment. These are (Gurbuz, 1985; Willingham and Carmichael, 1989):

- Honesty and ethical values;
- Management's working style and philosophy;
- Organizational structure;
- Distribution of powers and responsibilities;
- Human resources policies and skills obligations.

Top management's overall approach to the control environment is an essential element of internal control. Effectively controlled organizations strive to employ qualified personnel, increase commitment to honesty and control awareness, and create a positive working environment at the highest level (Ozbek, 2002).

Since organizations cannot eliminate their total risks, managing risks to achieve their goal has become necessary. This process is stated as a process that all employees of the organization should be involved in (Badara and Saidin, 2013; Mulyandani, 2022). The determination and evaluation of risks are defined as the evaluation of the internal and external risks that may prevent the realization of the goals and objectives of the organizations by systematically examining and determining the measures to be taken (TR Ministry of Finance Internal Control Guidance, 2014). Organizations may face many risks that may come from within the organization or from outside. If the risk arises, it may also negatively affect the organization's ability to achieve its goals. Organizations should be able to manage and eliminate the risks they face in the best possible conditions to achieve their goals. Risk management; is an issue where managers and employees are all active in organizations (Siahkoohian, 1992; Tadesse et al., 2022).

Control activities are the main practices that assist the organization in risk management activities and managing orders and instructions. The control activities implemented by the organizations must be effective and efficient to achieve their objectives in internal control. Therefore, it is essential to shape and implement control activities to ensure that risks can be controlled. In addition, the control activities applied should be at a sufficient level and should be consistent with other organizational objectives. Control activities should be established at all institutional levels and for all activities and functions (Candan, 2006; Gonen, 2009; Higgins, 2012; Pickett and Pickett, 2005).

The data should be prepared in the desired format for the internal control system. The related information should be presented to the relevant people in a more suitable environment. For this reason, the information system prepared by the organizations will also help the progress of the organization's activities and the control of these activities (Siahkoohian, 1992; Schandl and Foster 2013; Galligan and Rau 2015). Communication includes a clear understanding of internal control policies and procedures and the responsibilities of individuals belonging to these policies and procedures. Communication may be written or verbal, depending on the organization's size. The reverse flow of information in an organization is also covered by communication. Conversely, communication channels should be open, and management should be inclined to solve problems initially (Demirbaş, 2005; Ozbirecikli et al., 2015; Usul, 2015).

Monitoring the controls includes the internal control system's effectiveness, success, and quality by monitoring and evaluating it in specified periods. Continuous improvement can only be achieved by monitoring, evaluating, and improving these processes. (Addy and Berglund, 2020; Guner, 2009). The monitoring element is vital in determining the quality of internal control. In this respect, whether specific processes are carried out until the end of the process should be monitored on time (Schandl and Foster 2013; Galligan and Rau 2015). For organizations to achieve their goals, there must be an unmediated commitment between these components of internal control and its internal structure. In other words, the ability of organizations to achieve their goals is closely related to the ability to operate internal control components (Pehlivanlı, 2014; Yılançı, 2015).

COSO internal control components, on the other hand, have particular principles within each other. Ethical values and honesty are at the forefront in the control environment. Moreover, other regulations such as oversight of the organization's management, creating structural responsibility, commitment to competence, and accountability are also important in the control environment. The risk assessment includes principles such as determining the objectives suitable for internal control, defining and analyzing these risks, evaluating the fraud risk in the components, and determining and analyzing. As for the principles of control actions, choosing and developing these actions and creating procedures for these actions come to the fore. The Information and Communication principles emphasize the use of information, solid internal communication in the system to be built, and solid external relations. In monitoring, regulations such as ensuring continuous and all-around valuation and reporting inadequacies came to the fore (Turedi et al., 2015).

There are many metropolitan municipalities in Turkey. Intense efforts are made to reduce these organizations' structural, functional, and administrative problems. In this direction, there are several improvement initiatives, such as adapting the organizational structure to the modern age, using resources

effectively, applying strategic plans in municipalities, and applying savings practices. However, many areas still need improvement in many public and private institutions due to the large population compared to many European countries, the uncertainties due to its geographical location, and dealing with the main problems developing countries face. There is a lot of desire and effort to implement COSO standards in internal control processes effectively. However, there is insufficient empirical evidence about how effectively these standards are applied. Just like in other developing countries, it is difficult to argue that COSO internal control standards can be applied very effectively in municipalities in Turkey. However, it is expected that the level of effectiveness of COSO standards in Turkish municipalities will be high (although not excessively high), especially in recent years, with the steps taken to give more importance to the new public management approach, transparency, accountability, and efficient use of public resources. In this direction, the hypothesis of the research was determined as follows.

**Hypothesis:** The effective use of COSO standards based on internal control systems in Turkish municipalities in Turkey is high.

**Methodology and research methods.** The study population consists of authorized persons in strategic planning and financial services, the secretary general, and the deputy general secretary of the metropolitan municipalities in Turkey. The study sample was selected from among the authorities in 30 metropolitan municipalities in Turkey with the help of judicial (purposive) sampling, one of the non-probability sampling techniques. The reason for applying this method is that people who follow the internal control processes in municipalities or who have a role and knowledge in the administrative processes in municipalities should participate in the research. If the convenience sampling method had been used, random participants would have been included in the research instead of the relevant persons in the municipalities. This would not have been sufficient to answer the research question.

The questionnaire technique was used as a data collection tool in the research. The online questionnaire prepared with the help of Google Forms was applied between 01.11.2019-01.05.2020 to reach the research sample participants. Considering the time and financial constraints, the online survey technique was used because it was not possible to collect the sample face-to-face as the duration was the COVID-19 period. The online questionnaire was sent via e-mail to the authorized persons in strategic planning and financial services of 30 metropolitan municipalities in Turkey. One hundred sixty-five responses were received; 16 questionnaire forms were excluded since they were sloppy. The answers of 149 participants were evaluated and used for the related analysis.

COSO internal control standards were measured within five sub-dimensions. These dimensions are; control environment (24 items), risk assessment (17 items), control activities (12 items), information and communication (11 items), and monitoring and evaluation (9 items). Therefore, there are 73 items in total on the scale. Participations rated their agreements with the items (1 = Totally Disagree, 5 = Totally Agree). The Public Internal Control Standards Communiqué (Official Gazette, 2007) was taken as the basis for creating the scale. In addition, the studies carried out by Akçay (2012) and Şimşek (2019) were also taken as references in creating the scale. The items of the scale were examined by three academicians who are experts in the subject, three metropolitan municipality managers (general secretary, head of the strategic planning department, and head of financial affairs), sworn financial advisors, and metropolitan municipality internal auditors. Considering the expert opinions, the scale items were piloted with 35 people. As a result of the pilot study, the questionnaire was finalized by correcting the missing and incomprehensible parts.

75.2% of the participants are male. The age distribution of the participants is 18-30 (19.5%), 31-40 (33.6%), 41-50 (32.2%), and 51 and over (14.8%). Findings related to education level; High school (7.4%) is the associate degree (28%), undergraduate (55.5%), and graduate (18.8%). The income level of the participants is 5001 TL -7000 TL (55.7%), 3000 TL -5000 TL (20.1%), 7001 TL -10000 TL (18.8%), and 10001 TL and above (5.4%). Findings for the total working year in municipalities are 1-3 years (7.4%), 4-10 years (24.8%), 11-20 (49.0%), and 21 and more (18.8%) (Table 1).

Within the scope of the analysis, descriptive statistics (mean, standard deviation, Skewness, and Kurtosis values), Cronbach's Alpha internal consistency test (Table 2), and correlation analysis were carried out to examine the linear relationships among the sub-dimensions (i.e., control environment, risk assessment, control activities, information and communication, monitoring and evaluation standards) (Table 3). All the analysis was conducted by using the SPSS software.

**Table 1. Demographic Characteristics**

Category	Variables	frequencies	%
<b>Gender</b>	Female	37	24.8
	Male	112	75.2
<b>Age</b>	Between 18-30	29	19.5
	Between 31-40	50	33.6
	Between 41-50	48	32.2
	51 and more	22	14.8
	High school	11	7.4
<b>Education Level</b>	Associate Degree	28	18.8
	Bachelor	82	55.0
	Graduate	28	18.8
<b>Total working years in municipalities</b>	1-3 years	11	7.4
	4-10 years	37	24.8
	11-20 years	73	49.0
	21 and more	28	18.8
<b>Income Level</b>	Between 3000 and TL-5000 TL	30	20.1
	Between 5001 TL-7000 TL	83	55.7
	Between 7001 TL-10000 TL	28	18.8
	10001 TL and more	8	5.4

Note. TL = Turkish Lira, Since the data was collected between 01.11.2019 - 01.05.2020, it reflects the incomes of these dates  
Sources: developed by the authors.

**Results.** Table 2 shows the average scores of the answers the participants gave regarding the COSO standards (between 3.65 and 3.73). Considering the average scores, it is seen that the level of knowledge and implementation of the COCO standards is high. However, it should be noted that the average scores could be higher. Skewness and Kurtosis values show that the data was normally distributed. In addition, the internal consistency coefficient of the scale is very high.

**Table 2. Descriptive Statistics and Internal Consistency Scores**

	<i>M</i>	<i>SS</i>	<i>Sk</i>	<i>K</i>	<i>α</i>
<b>COSO</b>	3.69	1.13	-.50	-1.06	0.99
<b>Control Environment</b>	3.65	1.10	-.30	-1.16	0.98
<b>Risk assessment and management</b>	3.62	1.20	-.37	-1.21	0.98
<b>Control Activities</b>	3.71	1.17	-.51	-1.13	0.98
<b>Information and Communication</b>	3.73	1.17	-.60	-.91	0.98
<b>Monitoring</b>	3.76	1.18	-.61	-.93	0.98

Note. N = 149, M – Mean, SS – Standard Deviation, Sk – Skewness, K – Kurtosis, α – Cronbach's Alpha  
Sources: developed by the authors.

Correlations of COSO standards with each other are shared in Table 3. As can be seen, an extremely high correlation was obtained among the sub-standards.

**Table 3. Correlation Analysis Findings**

Variables	(1)	(2)	(3)	(4)	(5)
<b>1. Control Environment</b>	1				
<b>2. Risk assessment and management</b>	.96***	1			
<b>3. Control Activities</b>	.95***	.95***	1		
<b>4. Information and Communication</b>	.93***	.92***	.96***	1	
<b>5. Monitoring</b>	.92***	.91***	.96***	.95***	1

Note. \*\*\* p<0.001

Sources: developed by the authors.

**Conclusions.** In recent years, one of Turkey's most significant changes in public financial management and control is the enactment of Law No. 5018. With this change, a new regulation was made following the applications of international standards for public administration and public financial control. With this law, the main goal is to use public resources more effectively and transparently and implement an accountable management approach. Here, internal control is a process that must be implemented to minimize the uncertainties for the municipalities to reach the targets they have determined. The internal control process

strengthens the hand of the administration by detecting the opportunities and problems that may arise in advance, allowing the municipality to make quick decisions.

Since municipalities are structures dependent on people with political authority, it is essential that an internal control system is established and operates more effectively in such institutions. Here, municipalities are politically managed public administrations that cannot be generally institutionalized and depend on individuals to serve society using many public resources effectively (Bayraktar et al., 2022). Municipalities are important institutions that should determine risks aligned with their strategic objectives and help reduce them. An internal control system that will give confidence to the management and the people they are responsible for should be established and implemented effectively.

In this context, examining the extent to which the COSO internal control standards are known in metropolitan municipalities operating in Turkey is the focus of this research. The results show that the authorized persons in the municipalities know the internal control standards. We assumed that this situation partially overlaps with other European countries (Nogueira and Jorge, 2017). However, in general, it cannot be claimed that the level of knowledge here is very high. For this reason, it is thought that awareness and training activities on the subject in municipal institutions should continue. However, the findings obtained supported the research hypothesis.

Although the findings obtained within the scope of the research are largely at the expected level, the high level of effectiveness of the COSO internal control standards in Turkish municipalities, as emphasized in other studies (Al-Mahdi, 2022; Setyawan et al., 2021). It also points out that the relevant standards have found widespread acceptance and use in the international arena. Another issue that stands out in the research is that the COSO internal control standards are highly correlated. This finding indicates that the COSO standards are compatible with each other.

As in every study, there are also some limitations in this study. The main limitation of this study is the limited number of samples reached. In addition, measurements were carried out only at the self-report level.

Future research suggestions:

- COSO's internal control system regulations should be instantly monitored by researchers and other countries' practices, especially in public institutions. The results of COSO's internal control system applications in all public institutions except municipalities should also be examined.

- Apart from metropolises, these studies can be carried out in municipalities with a certain level of the population (for example, district municipalities in cities such as Istanbul, Ankara, İzmir, and Bursa), and it can be revealed what kind of internal control structure exists in non-big city municipalities.

- In examining COSO standards, qualitative research can obtain in-depth information.

Suggestions for decision-makers:

- Since COSO standards are predominantly applied in public institutions in Turkey, decision-makers should actively follow new regulations.

- The senior management of municipalities is obliged to prepare a strategic plan and performance plan every year as required by national regulations. To achieve the objectives and targets set in this program, it will benefit the senior management to determine possible risk areas and take the necessary precautions by using internal control.

- The management of purchasing and payments in the municipal internal control system also consists of high-risk mechanisms where mistakes can occur. With an effective internal control system, faults and cheats that will appear here can be reduced to a minimum.

- It would be suitable for municipalities to leave the management and responsibilities of the internal control system to professional managers. However, the top management members should be able to see the operation and manage the institution more effectively instead of controlling and dealing with these issues by themselves.

- Training and raising awareness of the employees in the internal control system is the primary condition for the system to be successful and institutionalized. Since innovation and continuous development are required in internal control systems, the internal control system should not be established once and left in public institutions and organizations. Since internal control systems do not tolerate stagnation, the system must be adequate, up-to-date, and continuous. If the system is to be always up-to-date and successful, it must always follow innovations and developments. Suppose an internal control system is not established in public institutions or is not installed and operated correctly. In that case, there will not be effective audits and examinations in all units in the internal audit and internal control fields.

- Municipalities are subject to the provisions of the procurement legislation in their purchases and sales. Although municipalities operate under market conditions, it is recommended to carry out studies on performance measurement in internal control and internal audit in municipalities since performance measurement is more complex than in market companies.

To sum up, it has been determined that the knowledge of COSO internal control standards is high, in which the relevant authorities working in 30 metropolitan municipalities in Turkey participated. However, there is still a need to increase knowledge and awareness regarding COSO standards. In this respect, the recommendations highlighted above should be considered by decision-makers.

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### **Оцінювання рівня обізнаності щодо стандартів внутрішнього контролю COSO у муніципалітетах Туреччини**

Внутрішній контроль – це управлінський контроль, метою якого є досягнення цілей організації та забезпечення її стійкості. COSO (Комітет спонсорських організацій), який складається з п'яти незалежних організацій у Сполучених Штатах Америки (США), започаткував стандартизацію структури системи внутрішнього контролю. Модель внутрішнього контролю COSO охоплює п'ять основних вимірів: систему контролю, оцінювання та управління ризиками, контрольні заходи, інформацію та комунікації, моніторинг. Завдяки цим п'яти тісно пов'язаним аспектам вона служить забезпеченню організаційної ефективності шляхом побудови впорядкованої системи. Ця структура розроблена з метою успішного управління ризиками, з якими вони стикаються, та забезпечення сталості організаційних процесів. Таким чином, організації отримують такі переваги, як зменшення ризиків, підвищення надійності фінансової звітності та забезпечення більшої відповідності законам і нормативним актам, які необхідно дотримуватися. Впровадження цих стандартів у державному секторі також заслуговує уваги, особливо в контексті діяльності муніципалітетів країни. Метою цього дослідження є визначення рівня обізнаності зі стандартами внутрішнього контролю COSO в муніципалітетах Туреччини. Вихідна вибірка дослідження сформована з результатів онлайн-опитування генеральних секретарів, заступників генеральних секретарів та уповноважених осіб зі стратегічного планування та фінансових служб (N = 149), які працюють у 30 столичних муніципалітетах Туреччини. Цільову групу дослідження обрано методом цілеспрямованої вибірки. У статті використано частотний аналіз, аналіз описової статистики, тести для перевірки відмінностей у вибірці та кореляційний аналіз. За результатами дослідження визначено, що ефективність стандартів внутрішнього контролю COSO у муніципалітетах Туреччини знаходиться майже на очікуваному рівні. Встановлено сильну кореляцію між структурами, що складають стандарти внутрішнього контролю."

**Ключові слова:** внутрішній контроль, стандарти внутрішнього контролю COSO, муніципалітети, Туреччина.