



Customs Performance Measurement – the Evidence from North Macedonia

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Abstract: *Improving the effectiveness and efficiency of each customs administration largely depends on understanding the complexity of customs performance measurement. There are two basic reasons. Firstly, different customs administrations have different priorities: some are focused on law enforcement and the protection of society, others are focused on fair and effective revenue collection, and others are focused on trade facilitation and security. Secondly, it is recognized that developing key performance indicators (KPIs), or metrics, is very challenging and there is no “one- solution- fits- all” for the KPIs. This study attempts to offer an analysis of performance measurement in customs and to present a list of essential KPIs for Macedonian customs. The study revealed a series of difficulties with calculating the indicators as a result of the absence of sufficient data. The study provides general recommendations that should serve as a basis for the development of a more practical model for measuring the performance of Macedonian customs.*

1. INTRODUCTION

Customs authorities are constantly looking for ways to become more effective and more efficient by using resources better. Performance Measurement should help customs administrations to improve their effectiveness while optimizing their efficiency. One way to gauge an organization’s effectiveness and efficacy is by comparing it to other customs organizations (good practices), and the other one is by comparing it to the organization’s own history. Various studies have discussed performance measurement in customs administrations (Ireland et al., 2011; Cantens et al., 2013). These studies have found that the central purpose for using measurements in customs should be to help an agency improve its effectiveness and optimize its efficiency. Ratio analysis, horizontal analysis, and vertical analysis are a few of the methods that are used in this sense. Key performance indicators (KPIs) are task-specific metrics designed to synthesize important operating indicators into a convenient set of management tools. Although, Key performance indicators (KPIs), are increasingly being used by customs organizations to measure the effectiveness of an entity’s operations, developing key performance indicators (KPIs), or metrics, is very challenging and there is no “one-solution-fits-all”. Certain aspects of the performance of Macedonian customs have been discussed by several authors (To-sevska-Trpcevska, 2014; Miloshoska, 2016, 2018, 2022), but insufficient attention has been paid to developing key performance indicators. None of these studies have proposed a set of essential indicators that should serve as a basis for measuring the performance of Macedonian customs. This study attempts to offer an analysis of performance measurement in customs and to present a list of essential KPIs for Macedonian customs.

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2. LITERATURE REVIEW

Performance measurement as a research topic appeared in the late 1980s and 90s when many academics criticized the problems with traditional financial measures (Dixon et al., 1990; Goldratt & Cox, 1986; Hayes & Abernathy, 1980; Johnson & Kaplan, 1987; Kaplan & Norton, 1992; Neely et al., 1995). Since then, several performance measurement frameworks have emerged. Neely (1999) reports more than 3600 articles on performance measurement published from 1994 to 1996.

Performance measurement is defined as “the process of quantifying effectiveness and efficiency of actions,” and a performance measurement system is defined as “the set of metrics used to quantify both the efficiency and effectiveness of actions” (Neely et al., 1995). “A performance measurement system is an information system that supports managers in the performance management process mainly fulfilling two primary functions: the first one consists in enabling and structuring communication between all the organizational units (individuals, teams, processes, functions, etc.) involved in the process of target setting. The second one is that of collecting, processing, and delivering information on the performance of people, activities, processes, products, business units, etc.” (Forza & Salvador, 2000, p. 359). Waggoner et al. (1999) claim that performance measurement in the business allows for monitoring performance, identifying weaknesses in certain areas, improving communication, and strengthening motivation and responsibilities.

Performance management in the public sector has intensified during the past three decades, increasing formalized planning, control, and reporting in the public sector across all OECD countries (Bouckaert & Halligan, 2007, p. 29). Various groups of authors have contributed to the development of performance management theory, including public administration, and public management. Performance management in the public sector has been introduced as part of reforms aimed at making public management more like private management in terms of efficiency and effectiveness. It has been accused of neglecting the specificities of public administrations such as higher goal ambiguity, fewer economic incentives, higher levels of bureaucracy, a greater number of stakeholders, and higher relevance of public values (Bozeman, 1987; Perry & Rainey, 1988; Lee et al., 2009; Hvidman & Andersen, 2014). The literature identifies differences between performance management approaches in the private sector and public administration. For instance, in the private sector, sales represent a prompt and objective indicator that reflects the success of the company. When it comes to public administration, it is difficult to determine prompt and objective indicators that will reflect the performance of the administration. Even, if certain indicators are identified, their interpretation depends on the context as well as on the activities of the specific public administration being measured. One of the most widespread performance management frameworks for public administration is the Balanced Scorecard (BSC) developed by Robert Kaplan and David Norton and introduced in 1992. According to Hoque (2014), even when discussing other systems or frameworks developed since then, the BSC is broadly mentioned and sometimes used as a starting point.

Customs Performance Measurement is a continuous gathering and analysis of data, in order to assess outputs and outcomes for determining the effectiveness of strategies and operations, identify areas of improvement, and address any deficiencies or shortcomings. Customs performance measurement is most effective when it takes into account the aims unique to the Customs service and the specific political, social, economic, and administrative conditions in the respective country (Ireland et al., 2011).

Performance Measurement should help customs administrations to improve their effectiveness while optimizing their efficiency. Effectiveness refers to the extent to which the organization is achieving the outcome. Efficiency refers to the ratio of relevant outputs to relevant inputs and can include costs, steps in a process, or time, for example (WCO, 2012). Cantens et al. (2013) conclude that the central purpose for using measurements or any other technique in customs and tax reform should be to help an agency improve its effectiveness and optimize its efficiency. Ireland et al. (2011) conclude that performance measurement should primarily be about improving the effectiveness and efficiency of Customs administration functions and that secondarily it can be beneficial for attracting donor funding. According to the World Bank (WB) (2008), the effectiveness and efficiency of a country's public sector are vital to the success of development activities, sound financial management, an efficient civil service and administrative policy, an efficient and fair collection of taxes, and transparent operations. When these are relatively free of corruption, they all contribute to the good delivery of public services. The importance of performance measurement in customs is recognized by the World Customs Organization (WCO) by developing the Achieving Excellence in Customs (AEC), consisting of 20 indicators to measure policy implementation of members in the four primary areas: Trade Facilitation and Security; Fair and Effective Revenue Collection; Protection of Society; and Institutional and Human Resource Development.

3. MATERIALS AND METHODS

In order to overcome the limitations of the one-dimensional approach of measuring performance by analysing only the financial results, the multidimensional approach of Kaplan and Norton is used in this study. Financial results show what happened in the past, not where the organization is or should be going. The multidimensional approach of a balanced scorecard system aims to provide a more comprehensive view to stakeholders by complementing financial measures with additional metrics that gauge performance. The balanced scorecard approach was laid out in a 1992 paper published in the Harvard Business Review by Robert S. Kaplan and David P. Norton. The balanced scorecard system allows the translation of the strategic goals of the customs administrations into a set of organizational performance objectives that, in turn, are measured, monitored, and changed if necessary to ensure that an organization's strategic goals are met. The main method used in the study is system analysis, which enables the identification of principles and patterns for constructing a list of essential KPIs for Macedonian customs. In order to specify the relative importance of a KPI (its weight) the method of Weight of a metric is used. The weight of the metric shows its relevant importance compared to other metrics of a hierarchical scorecard expressed as a percentage. The total for all metrics in the scorecard must equal 100%.

4. RESULTS

An analysis of legal documents covering customs activities, especially the Strategic Plan of the Customs Administration of the Republic of North Macedonia until 2024, identified four key areas that are incorporated into the following strategic goals: Trade facilitation, Protection of the society, Revenue collection and protection of the financial interests and Organizational and infrastructural development. The balanced scorecard (BSC) is a comprehensive approach that allows converting an organization's strategic goals into a set of organizational performance objectives that, in turn, are measured, monitored, and changed if necessary to ensure that an organization's strategic goals are met. The balanced scorecard approach analyses performance from four aspects: Financial analysis, Customer analysis, Internal analysis of business processes, and

Learning and growth perspective of the employees. The application of a balanced scorecard approach to customs activities requires customized scorecards to fit their different situations, strategic goals, and specific political, social, economic, and administrative conditions.

As Kaplan and Norton (1992) stressed that the balanced scorecard “is not a template to be applied... in general”, customized scorecards for assessing the performance of customs authorities can be introduced. Based on the BSC, four proposed areas of performance assessment of Macedonian customs are: 1. Revenue collection (Financial perspective); 2. Trade facilitation (Customer perspective); 3. Protection of the society (Business perspective); 4. Organizational and infrastructural development (Learning and growth perspective). The proposed areas of performance assessment require the development of key performance indicators (KPIs) for each identified area. Key performance indicators should be designed with care and attention. The purpose of KPI must be not to reflect the activity of the customs service but to its results and performance-that is the improvement in its effectiveness and efficiency in carrying out its mission. Focusing on results, rather than its activity, serves to point the entire organization toward its mission. Accountability is also enhanced when the focus shifts to outcomes (Niven, 2003). The proposed system of performance indicators of Macedonian customs is presented in Table 1.

To achieve their intended purpose, key performance indicators must be SMART. The acronym “SMART KPI” stands for “Key Performance Indicators” which are “Specific, Measurable, Achievable, Relevant, and Time-specific.” SMART KPIs are measurable metrics used to assess customs performance.

Table 1. List of essential key performance indicators (KPIs) for Macedonian customs

Strategic goals	Performance objectives	Key performance indicators (KPI)	Weight %
1. Revenue collection and protection of the financial interests	Ensuring efficient revenue collection	<ol style="list-style-type: none"> Forecast revenue vs. actual collected amount (Rate of revenue target achievement) Proportion of revenue split by import duty, tax, and excise Proportion of revenue collected for each: red, yellow, and green imports Proportion of revenue collected post-clearance audit and excise audit Variation (increase or decrease) of customs collection over time as a percentage of GDP by type of tax (customs duties, VAT, excise duties, and so on) Proportion of customs collection of total revenue collected (in monetary value and as a percentage of GDP) Level of customs collection relative to the variation (growth or reduction) of international trade Proportion of customs collection over time by type of procedures Amount of revenue recovered and related penalties collected because of customs intervention (valuation liftings, origin correction, tariff classification, suspensive regimes misuse, exemptions, unreported goods, smuggled goods) 	30
2. Trade facilitation	Harmonization of the national Customs Legislation with the legislation and best practices of the European Union Digitization of customs and excise procedures Modernization of customs IT infrastructure to support operations Trade facilitation through regional economic integration	<ol style="list-style-type: none"> Release time in hours for imports that do not undergo physical inspection Release time in hours for exports that do not undergo physical inspection Release time in hours for imports that do undergo physical inspection Release time in hours for exports that do undergo physical inspection Number of improved customs procedures developed in consultation with traders Total value of cross-border imports executed by AEO traders Total value of cross-border exports executed by AEO-accredited traders Improvement in the traders’ perception of cross-border facilitation 	30

3. Protection of the society	Fight against illegal trade and organized crime	1. Trends in the percentage of import declarations processed through each selectivity channel 2. Offense rate on import declarations: Physical and documentary inspection 3. Offense rate on import declarations: Documentary inspection 4. Offense rate on export declarations: Physical and documentary inspection 5. Offense rate on export declarations: Documentary inspection 6. Proportion of examinations that result in seizures 7. Proportion of released consignments within the total number of consignments 8. Proportion of consignments for which customs inspection was conducted within the total number of consignments 9. Proportion of consignments in which violations were detected within the total number of consignments	25		
	Ensuring efficient management of excise goods				
	Strengthening the area of „prohibitions and restrictions“				
4. Organizational and infrastructural development	Measures for the Prevention of misconduct and Conflict of interest			1. Ratio of the total number of official offenses to the total number of customs officials 2. Number and type of investigations- % change in investigations 3. Proportion of key customs functions and processes that have a risk map 4. Number of measures implemented to reduce officers' discretion 5. Variation in the number of officers conduct complaints 6. Variation of the perception of corruption by the trade community 7. Training and Development Effectiveness 8. Percentage of Performance-based Promotions 9. IT System Response Time 10. Budget Execution Rate	15
	Improvement of the quality control of the working processes				
	Strengthening Human Resources Management				
	Development of IT support systems				
	Strengthening the mid-term budgeting				
	Promotion and international cooperation				

Source: Author

5. DISCUSSION

The revenue collection strategic goal focuses on ensuring efficient revenue collection. Calculation of the Rate of revenue target achievement requires constructing theoretical revenue that could have been collected. Customs administration does that only when misdeclaration or fraud is discovered. However, not all misdeclaration or fraud is discovered, so determining forecast revenue requires considerable effort. A list of 9 KPIs is given in Table 1, which should help to measure customs performance in the area of revenue collection. The need to specify the relative importance of a KPI (its weight) should be done according to the set vision and mission of the Macedonian customs. To reflect this idea, the assigned weight to the indicators for Revenue Collection and Protection of the financial interests on a scale from 1% to 100% is 30%.

Indicators related to trade facilitation usually focus on time spent at the border and for clearance. This is part of the TRS+ (time-release study) implemented by the World Bank. Time Release Study (TRS) is a unique tool for measuring the performance of customs and other border agencies related to trade facilitation at the border. Regularly conducting a Time Release Study (TRS) is an obligation of World Trade Organization membership. As a member, the Republic of North Macedonia (MK) has committed to implementing Articles contained in the WTO Trade Facilitation Agreement (TFA), including Article 7.6 of the TFA, which recommends Members measure and publish the average release time of goods both periodically and consistently. The TRS was conducted in 2015 and 2022.

According to the set vision and mission of the Macedonian customs the assigned weight to the indicators for Trade Facilitation on a scale from 1% to 100% is 30%.

The main performance objective of the protection of society is to fight against illegal trade and organized crime. In Table 1 the proposed KPIs for the protection of the society of the Macedonian

customs reveal two main groups: I. Indicators on crime detection II. Indicators on the implementation of risk management approach (Miloshoska, 2016). The TRS and ASYCUDA data can provide a good indication of how the risk management operations, in terms of security and safety, are operated. According to the set vision and mission of the Macedonian customs the assigned weight to the indicators for Protection of the society on a scale from 1% to 100% is 25%.

Indicators related to organizational and infrastructural development analyze multiple aspects such as the prevention of misconduct and conflict of interest (integrity and corruption), strengthening human resources management, improvement of the quality control of the working processes, development of IT support systems, and promotion and international cooperation. But for Macedonian customs, the main performance objective in this area is the promotion of integrity and the fight against corruption. According to Miloshoska “Macedonian customs remains one of the most vulnerable sectors exposed to high levels of corruption. The corrupt behavior of customs officers in their everyday operations causes erosion of the integrity of Macedonian customs” (Miloshoska, 2022). According to the set vision and mission of the Macedonian customs the assigned weight to the indicators for Protection of the society on a scale from 1% to 100% is 15%.

6. CONCLUSION

While measuring the performance of Customs is an important part of improving Customs performance, developing KPIs is a very challenging question. Based on the BSC four proposed areas of performance assessment of Macedonian customs are: 1. Revenue collection; 2. Trade facilitation; 3. Protection of society; 4. Organizational and infrastructural development. The proposed areas of performance assessment of Macedonian customs served as a framework for establishing performance objectives and developing a list of essential key performance indicators (KPIs) for each identified area. The purpose of KPI must be not to reflect the activity of the customs service but to its results and performance—that is the improvement in its effectiveness and efficiency in carrying out its mission. Future research on customs performance measurement should focus on establishing a more practical model for measuring the performance of Macedonian customs. Furthermore, while this study proposed a list of essential KPIs, future studies are required to gain more insight into the calculation of the KPIs, both quantitative and qualitative.

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