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THE UTILIZATION OF STANDARD COSTS IN PERFORMANCE-BASED BUDGETING SYSTEM IN INDONESIAN GOVERNMENT INSTITUTIONS

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ABSTRACT
Research Originalty — The Indonesian government has implemented performance-based budgeting (PBB) for more than 20 years since 2003. The main goal is to increase accountability of financial management. Standard cost is one of the three basic instruments of PBB. However, there are several issues in standard cost utilization both in central and local governments.
Research Objectives — This research was conducted to provide an overview of the implementation process of the standard costs in Indonesia and to propose future improvements.
Research Methods — We used a content analysis approach as the main instrument to provide inter-correlated information on various materials used as research data. The data analysis was deductive with developed analysis structure based on previous knowledge.
Empirical Results — The results showed that although output-based standards were the most appropriate tool for the PBB, input-based cost standards were predominantly used. Various efforts need to be made to improve the suitability of standard costs to ensure they remain relevant and aligned with market prices.
Implications — Several other factors are also important to apply standard costs. These are regulatory consistency, stakeholder understanding of the standard components use, and the use of information system solutions to facilitate integration of the budgeting process.

Keywords: Budgeting systems, government agencies, performance-based budgeting, standard cost
JEL Classification: H100, H110, H500, H610, H720, M410
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INTRODUCTION

Since the early era of government reform in Indonesia, from the late 1990s to the early 2000s, the government has established that the budgeting system across all government institutions shall be based on three approaches: the unified budgeting approach, the medium-term spending framework, and performance-based budgeting (Government of Indonesia, 2003). These three approaches are adaptations of business-like practices, specifically aimed at enhancing the accountability of state financial management.

The adaptation of business-like systems is part of a broader global movement in governance reform known as New Public Management (NPM) (Mauro et al., 2019). Indonesia is among the countries that have sought to implement NPM principles, particularly through improvements in five key areas: (1) service-oriented public management, (2) budgeting systems, (3) performance management, (4) accounting systems, and (5) audit and evaluation mechanisms (Jatmiko et al., 2017). The direction of governance reform in Indonesia has focused on enhancing public service delivery by optimizing the outcomes and impacts of every program and activity implemented. The application of a budgeting system that facilitates the allocation of financial resources and is performance-based serves as a critical instrument in achieving the objectives of NPM implementation in Indonesia. This budgeting concept is commonly referred to as performance-based budgeting (PBB).

The concept of performance-based budgeting (PBB) has been implemented in Indonesia for more than two decades, since its initial introduction through Law Number 17 of 2003 on State Finance. Since then, the budgeting system, particularly expenditure budgeting, has been gradually developed and continuously refined. Various developments grounded in institutional theory have been undertaken by the government.

APPLICATIONS FOR PRACTICE

- The implementation of output-based expenditure standards should be further encouraged, as they align more closely with the concept of performance-based budgeting (PBB), rather than input-based price standards.
- A shared understanding of regulatory frameworks and user comprehension is essential to ensure the holistic utilization of standard costs and the effective implementation of PBB.
- The standard cost update process should be carried out at least once every 1–3 years to maintain the relevance of the standards across periods.
- Adjustments to standard costs must be based on appropriate methodologies, including the use of data analytics-based information systems. Additionally, the update process should be made more participatory.

The first area of improvement relates to socio-political and economic aspects, including the promotion of anti-corruption values, transparency, public accountability, and the decentralization of financial management. The second area concerns organizational aspects, carried out through the refinement of the structure and functions of government organizations, the delineation of authority and responsibility among agencies, and the implementation of reward and punishment systems. The third component of this institutional model involves agents, particularly through the enhancement of the capabilities and knowledge of government personnel (Dillard et al., 2004).

Another critical aspect required for the effective implementation of performance-based expenditure budgeting is the alignment between the prepared budget documents, actual expenditure, and the corresponding accountability reports. However, this alignment remains an unresolved issue. For instance, audit findings from the Audit Board of Indonesia (BPK) regarding the central government's financial management in 2019 identified misallocations in goods expenditure amounting to IDR 390.18 billion across 34 ministries or agencies, and in capital expenditure totaling IDR 4.3 trillion across 26 ministries or agencies (BPK, 2020). Additional findings from the Ministry of Finance also indicate persistent issues related to the use of excessively high unit costs, which may result in inefficient expenditure and hinder the financing of other priority programs (Ministry of Finance, 2019).

Another ongoing issue in the implementation of performance-based budgeting (PBB) in Indonesia is the inconsistency in regulations. Although the highest-level regulation explicitly states that PBB is the budgeting approach to be used, the implementing regulations issued by ministries or agencies essentially continue to apply line-item and incremental budgeting concepts (Jatmiko et al., 2017). Line-item and incremental budgeting should no longer be employed in the current era of modern governance and should be replaced by program-based budgeting or other approaches (Jones & Pendlebury, 2010). Line-item budgeting restricts implementers to focusing on the accountability of input components as the basis for work outcomes, whereas the implementers should be more focused on outputs. Meanwhile, incremental budgeting limits the creation of new programs or work methods because it relies heavily on previous years' achievements. Both of these practices hinder efforts toward innovation and the optimization of public service delivery.

Regulations on the financial administration side should ideally emphasize the management of financing standards and standard costs. This has been partially addressed by the Ministry of Finance through the issuance of Minister of Finance Regulation Number 62 of 2023, which governs budget planning, budget execution, as well as accounting and financial reporting. However, an analysis of the effectiveness of its implementation is needed to assess the extent to which this regulation assists practitioners in preparing budgets according to actual needs.

This study was conducted to provide an overview of the expenditure budgeting process in Indonesia, particularly concerning the application of standard costs used in the budgeting process. Based on the provided overview, a review of improvements that addressed various shortcomings encountered was carried out by applying the concept of performance-based budgeting and utilizing information technology. One potential use of technology is data transparency and big data, which can offer significant benefits to the budgeting process and activity-based organizational management (Ibrahim et al., 2021).

The implementation of performance-based budgeting (PBB) does not always produce positive impacts on the budgeting process itself or on public sector expenditure and financial management, and previous studies have revealed various challenges. Aliabadi et al. (2019) investigated factors contributing to the failure of PBB implementation at public universities and research institutions in Iran, highlighting the role of budget actors' perceptions in transforming the budgeting process. Meanwhile, Jatmiko et al. (2017) examined whether public sector reforms in developing countries align with the principles of New Public Management (NPM), namely market orientation, budgeting, performance management, financial reporting, and audit systems. Their findings revealed that these reforms were not fully consistent with NPM's

philosophy regarding efficiency and effectiveness in public service delivery. Kurniawan (2017), in his research, analyzed the implementation of standard unit prices (*Satuan Harga Standar* - *SSH*) and performance indicators in applying performance-based budgeting in local governments during the 2015–2016 periods. The study found that, generally, regional work units (*Satuan Kerja Perangkat Daerah* - SKPD) had not adhered to the *SSH* standards in their budget preparation processes. Previous research has recommended improvements focusing on enhancing the quality of human resources in planning and budgeting fields.

The novelty of this study lies in its focus on improving standard costs and discussing the enhancement of these standards through information technology to improve the quality of the performance-based budgeting system. Practically, this study is expected to provide benefits not only for expenditure budgeting but also for the treasury process and management of government agency activities in Indonesia. This improvement is possible because refining the accuracy of standard costs can increase the effectiveness and efficiency of expenditure. The study examines standard costs in central and regional government agencies in Indonesia over an extended period of time, spanning up to 12 years.

LITERATURE REVIEW

Performance-Based Budgeting

Expenditure budgeting is a documented plan for managing costs in an effort to produce goods or services within a specific expenditure period (Hansen & Mowen, 2002). Proper management of expenditure budgets is a significant and strategic aspect of the successful implementation of governmental systems. Budgeting systems are used as fiscal mechanisms to mobilize, allocate, and manage economic resources to achieve objectives (Horngren et al., 2007). This implies that the success of service delivery and government financial management must be preceded by the proper management of the budgeting system.

Among the various budgeting principles, performance-based budgeting (PBB) is one of the most widely used, especially in governmental organizations. According to Dixon (2005), PBB has seven fundamental characteristics, which include: 1) budget management using a medium-term spending framework, 2) output-based financing guided by the concept of activity-based costing (ABC), 3) strengthening procurement management, 4) optimizing financial management functions and fund control through the implementation of accrual accounting, 5) reinforcement of financial and performance reporting systems, 6) improvement of asset management, and 7) strengthening of internal audit functions.

Performance-based budgeting (PBB) ideally enables program implementers to focus on managing their activities in order to achieve the desired outcomes. Meanwhile, relevant stakeholders, such as policymakers, financial planners and analysts, as well as internal and external auditors, can support these programs to ensure that the use of financial resources is conducted appropriately, effectively, efficiently, and transparently based on the spending activities incurred (Sirat, 2017). Output- or performance-based budgeting is considered superior to the line-item approach, which was widely used in government agencies in previous decades, not only in Indonesia but also in other countries. The line-item approach tends to focus more on detailed activity inputs rather than on the expected impact or outputs produced (Blöndal et al., 2009). The use of PBB means shifting the budgeting pattern from input-based to output-based and outcome-based budgeting.

Similar to the current practices in Indonesia, Jones and Kettl (2004) state that various countries have implemented reforms transitioning their budgeting systems to performance-based budgeting, including the United States, the United Kingdom, Australia, China, Iran, South Korea, Malaysia, and many others. The United States has seriously applied the performance-based approach since the 1950s, China began its budget reform in 1999, and Australia replaced its line-item budgeting system with this more advantageous budgeting system in the late 1980s (Funnell et al., 2012; Jatmiko et al., 2017; Mackellar, 2016; Ozdil & Hoque, 2017).

The Government Budgeting Cycle in Indonesia

Every country has its own budget management characteristics. Although the philosophies and frameworks are similar, each country usually has a scheme that has been adapted to the political, social and economic conditions in their respective regions. As stipulated in Law No. 17/2003, Indonesia has at least ten main activities related to the budgeting system, ranging from the preparation of budget policies to the reporting of accountability. The ten stages are grouped into three main functions: 1) budget preparation, 2) budget execution, and 3) budget reporting (Table 1).

Seen from the institutional theory approach, the budgeting system in Indonesia can be grouped into two organizational classifications, namely budgeting at the central and local governments. The principle of regional autonomy means that local governments have the same authority as the central government in the budgeting process. However, the central government retains authority for guidance and coordination of local government budgeting, which is carried out by the Ministry of Home Affairs.

Table 1 The Budgeting Cycle of the Indonesian Government

No	Function	Activity	Actor
1	Budget formulation	Formulation of fiscal policy and macroeconomic framework at the central or regional level	Central or regional government involving relevant stakeholders
2		Formulation of general policy and budget priorities at the central or regional level	Central or regional government and the legislature
3		Preparation of draft budgets by ministries or state agencies or regional work units	Ministries or state agencies or regional government work units
4		Formulation of the National or Regional Budget (APBN/APBD) and their revisions	Central or regional government and the legislature
5		Preparation of budget implementation documents	Ministries or state agencies or regional government work units
6		Approval of budget implementation documents	Central or regional government
7	Budget implementation	Implementation of the budget by ministries or state agencies or regional government work units	Ministries or state agencies or regional government work units
8		Execution of treasury functions for budget spending	Central or regional government
9	Budget reporting	Preparation and submission of financial reports by ministries or state agencies or local units	Ministries or state agencies or regional government work units
10		Consolidation and reporting of financial accountability for the implementation of the National (APBN) or Regional Budget (APBD)	Central or regional government

Source: Law Number 17 of 2003

METHODS

This research employed a content analysis technique, which is used to collect written research data, subsequently analyzed to produce findings and utilization in accordance with the relevant discussion context (Lacy et al., 2015). In this study, content analysis was mainly used to facilitate the identification of cost standard groups and sub-groups, the continuity of use within a specified period of time, and the development of cost standard values from year to year.

Content analysis research can be conducted qualitatively or quantitatively, as long as it can fulfill the validity and reliability aspects of the research. The qualitative approach is intended to obtain interpretation, understanding, or construct from text data, while the purpose of quantitative approach is to calculate and measure the numerical value of the data (Boettger & Palmer, 2010; Kleinheksel et al., 2020; Lacy et al., 2015; Rourke & Anderson, 2004). In this study, quantitative analysis was carried out to calculate how many cost standards were used, as well as to measure their changes over time. The data analysis process was carried out through a deductive approach. This approach is used when the structure of the analysis process is operationalized based on prior knowledge (Elo & Kyngäs, 2008).

This research adopted research stages from Duriau et al. (2007). In these stages, the content analysis process consists of: 1) data collection, 2) coding, 3) data analysis, and 4) interpretation of results. Rourke and Anderson (2004) state that in conducting content analysis with a qualitative approach, measurements and tests that are coherent with the process of interpreting the results must be carried out. The stages of content analysis in this study are divided into three main stages. The first is data selection and collection. Data selection can be done in content analysis if the analysis process is not possible for the entire research population. The selection process is carried out by considering the data source, document type, and specific words to be analyzed (Duriau et al., 2007). The data collection process depends on the research objectives, methodological approach, and availability of initial information. Data selection in this study involved the standard expenditure components of honorarium and personnel-related costs in standard input costs (*SBM – Standar Biaya Masukan*), and standard costs of goods in SSH. The main selection criterion was based on predetermined expenditure groups. In the cost standard documents collected, we found several name changes, changes in expenditure groupings, additional expenditure components, and price changes in the years studied. Therefore, it is necessary to go through the following stage, which is the codification of cost standards.

The second stage is the codification or grouping of material content. To facilitate the process of analyzing and understanding the data collected, the research data need to be categorized. Research with content analysis involves the process of classifying text into several categories using a coding system (Beattie et al., 2004). In this study, data codification was carried out based on the generalization of the standard cost group of the analyzed expenditure line-items. Under the SBM (*Standar Biaya Masukan* or Standard Input Costs), codification was organized into 36 expenditure groups, comprising up to 105 standard expenditure line-items (cost types), out of a total of 59 expenditure groups in the standard. The analysis of SBK (*Standar Biaya Keluaran* or Standard Output Costs) and SSH (*Standar Satuan Harga* or Standard Unit Prices) was conducted on all expenditure line-items. This study used spreadsheets to facilitate the codification process. An example of changes in the naming of standard costs includes the honorarium for lecturers conducting academic activities, which became honorarium for lecturers conducting academic and student-related activities. An example of changes in cost groupings is the thesis supervisor category, which previously comprised professors and doctorate holders, and they were changed to main supervisors and co-supervisors. Meanwhile, additional expenditure components were also introduced, for example, the honorarium for proposal review committees and/or reviewers, and the honorarium for research output assessment committees and/or reviewers. Naturally, adjustments need to be made to these changes to ensure that the analysis process can be conducted appropriately.

The third stage is the analysis and interpretation of the results. To ensure the quality of the codification process, two guiding principles are adopted: intra-coder reliability, which tests the consistency of coders over time, and inter-coder reliability, which ensures consistency between coders (Lacy et al., 2015). This research uses a cross-researcher and cross-time analysis approach to improve research reliability. Cross-researcher analysis was conducted by dividing the roles of researchers as coders and data collectors and reviewers, then analyzing the results of data recapitulation together. Cross-time analysis was conducted by examining trends in standard cost changes according to the research data period in each code group.

Technological developments have enabled computer-assisted analysis in addition to manual processing (Beattie et al., 2004). To facilitate the interpretation process and ensure the validity and reliability of the data collected, text analysis was carried out with spreadsheet tools. The use of spreadsheets is helpful in identifying the root of words or sentences from various documents analyzed, even though they have some differences in word types.

To complement the analysis of the research data, this study also conducted a survey using a questionnaire on the utilization of various pricing standards, especially in the preparation of annual work plans and budgets (*RKAT*). The survey involved 75 respondents from 12 government agencies in Indonesia, consisting of team leaders, team members, and other elements involved in the preparation of RKAT in their respective agencies. The respondents were selected by probability sampling using a cluster random approach. In this approach, data is collected by random sampling based on unique clusters in a large research population, in this case, work units that use standard costs in budget preparation in all ministries or government agencies in Indonesia. The survey was created using Google Forms to facilitate and speed up research data collection. The distribution of respondents in the survey is given in Table 2.

Table 2 Distribution of Survey Respondents

Ministry or Agency	Number of Respondents
Coordinating Ministry for Economic Affairs	7
Coordinating Ministry for Maritime Affairs and Investment	2
Ministry of Public Works and Housing (PUPR)	36
Ministry of Finance	12
Ministry of Cooperatives and SMEs	4
Ministry of State-Owned Enterprises (SOEs)	3
Ministry of Trade	2
Ministry of Industry	2
Ministry of National Development Planning (Bappenas)	1
Ministry of Religious Affairs	1
Audit Board of the Republic of Indonesia (BPK RI)	4
Statistics Indonesia (BPS)	1
Total	75

Source: Processed by the Author

The subjects analyzed in this study were central and local government agencies in Indonesia. The main data analyzed were standard costs, both those applicable in the central government, consisting of standard input costs (SBM) and standard output costs (SBK), and standard costs in local governments in the form of standard unit prices (SSH). Cost standards in the form of SBM and SBK apply to all central government agencies, in addition to several local government agencies that also adopt these cost standards. The SSH

analyzed in this study was the cost standard in one of the city government agencies in the West Java region, on the grounds that it had variability and complexity of cost standards. The data analyzed in the SBM was the cost standard for the 2012-2023 periods, while the SBK and SSH analyzed in this study were from the 2017-2023 periods. The analysis took into account the start of the use of the standard until the time this research was conducted.

In addition to the various cost standards above, a systematic document review was conducted to examine various literature related to public policy management and government budgeting; policy documents ranging from rules regarding reform of the government system and state finances, budgeting systems, to financial management and supervision in Indonesia; and available budget implementation documentation such as APBN (the National Budget) documents, budget implementation lists, work and budget plans, and examples of government procurement activity budgets. The review provided an overview of how budgeting systems, especially those related to the utilization of cost standards, were implemented by government agencies in Indonesia. A compilation of recommendations and proposals concerning potential actions for managing cost standards in the future was then made.

RESULTS AND DISCUSSION

Utilization of Cost standards

To realize the concept of performance-based budgeting (PBB), three pillars are needed, namely performance indicators, cost standards, and performance evaluation. Among these three indicators, this study focuses more on the second aspect, namely cost standards, because it is an important aspect that will directly affect the implementation of government expenditure activities. Cost standards describe the unit costs that must be incurred according to the volume or activity carried out (Horngren et al., 2007). In the context of the Indonesian government, this is commonly known as the cost standard or price unit standard. This cost standard will later determine the entire budgeting cycle, starting from the budget preparation process, implementation or treasury, to financial reporting.

Although there are various variations of cost standard arrangements in several other countries, the basic concept used is the same. The cost standard is a guide used for planning, implementing, and ensuring accountability of expenditure. Several countries use a line-item basis in their budgeting process. The use of this system can improve the precision and detail of the expenditure budget, thus minimizing the potential inaccuracies in the budget prepared. However, the risk of using this system is that budget managers tend to heavily focus on administrative compliance rather than the fulfillment of performance outputs. Germany is an example of a country that continues to use the line-item basis as the basis for its budgeting process. Local governments can produce up to six thousand budget lines in each fiscal year (OECD, 2015). Meanwhile, in the United States, the budgeting process involves both the federal and state governments, with an emphasis on outcome-focused budgeting (Blöndal et al., 2003).

Essentially, the application of cost standards in budgeting is useful as an estimate. Therefore, it is possible for the amount of costs to be exceeded, especially in certain conditions where the initially planned budget cannot be implemented, taking into account market price conditions, the availability of budget allocations, procurement processes that do not violate or are in accordance with the provisions, and carry out the principles of economy, efficiency and effectiveness of each expenditure activity carried out (Ministry of Finance, 2013).

In the budgeting process, the cost standard is useful to determine the amount of budget that must be prepared to produce outputs in each unit of activity, including details such as material, labor, and overhead costs (Hansen & Mowen, 2007). This is known after multiplying the standard cost by the number of units in each input or output unit. During budget realization, unit costs are used as a baseline for the price. It is expected that the realization of the costs incurred does not differ from the cost standard that has been set. If the cost realization is lower than the budgeted cost, but the planned output is still achieved, it indicates that the budget is used efficiently. Conversely, if the budget realization is greater than the cost standard, relevant parties need to conduct further investigation. This may be due to inaccurate cost standards, changes in market prices, or inefficiency. The comparison between budget and expenditure realization will be part of the financial reporting. The budget realization report can also be useful for evaluating cost standards if adjustments are needed for the next fiscal year.

In the central government, the cost standard reference is prepared by the Ministry of Finance, but other agencies can develop their cost standards if they need specific standards, which can apply in their agencies and other agencies. In general, the cost standard set by the Ministry of Finance is divided into two: the standard input costs (SBM) and the standard output costs (SBK). The underlying difference between the two cost standards is the use of SBM as a cost unit to compile the cost of the output component. The SBK is the amount of cost determined to produce outputs. SBM is also commonly used as one of the cost components used in preparing SBK.

SBM is useful as a standard or guideline for goods or services whose prices are not available in the market, or have very wide variations in terms of both price and quality. Therefore, the government needs to make arrangements that enable related agencies that will procure goods or services to have a basic guideline as a basis for conducting expenditure activities. SBM is also useful as a basis for equalizing the type and amount of unit prices on various goods or services available on the market. SBM is indispensable for all ministries or agencies as a tool to facilitate and accelerate the preparation of work plans and budgets. However, SBM-based expenditure standards are not suitable for use in the PBB paradigm because they are based on input units.

Meanwhile, SBK is applied for adjusting budgeting patterns from input-based to output-based and outcome-based. The use of SBK is a solution that needs to be encouraged for widespread adoption. This standard is mostly in line with the concept of PBB because it illustrates the result orientation of each budget prepared. The implementation of the PBB concept is also in line with the goal of the implementation of accrual-based accounting standards, which is currently being pursued by the Indonesian government. The two concepts will work well together because, in principle, accrual accounting in government will only be successful in government organizations that adopt business-like practices (Christiaens & Rommel, 2008). However, in its implementation, there are limitations on the use of this SBK standard, including goods or services expenditure activities that use SBK are recurring, have clear types and units of measurement, and have clear components and stages of work (Ministry of Finance, 2013).

The SBK policy is the backbone of the implementation of PBB because it improves the clarity of the quality of planning. Specifically, it can directly identify the unit of output to be produced, accelerate the preparation and review of work plans and budgets because it no longer has to break down expenditure requirements into units, and facilitate the implementation of monitoring and evaluation in achieving outputs. In terms of preparation, the formation of SBK has been regulated by considering internal control practices. The process of SBK formation begins with a submission of a proposal by the budget user or authorized budget user. The minister or institution head or authorized official continues the SBK proposal to the Minister of Finance, through the Director General of Budget. The Directorate General of Budget, together with the ministry or agency, then reviews the SBK proposal. The Ministry of Finance and ministries or institutions then monitor and evaluate the implementation of standard output costs in accordance with their authority (Ministry of Finance, 2013). However, its adoption is currently not as widespread as that of the input standard (SBM). The process of reviewing and setting cost standards applicable to various government agencies as practiced in Indonesia is similar to most OECD countries. However, there are differences in some countries, such as the Czech Republic, Finland and Portugal, where the process of setting price limits is not determined by the agency in charge of financial management (OECD, 2018).

In the context of setting cost standards in local government agencies, there is usually a mechanism for preparing cost standards by each local government, be it in provincial, district or city governments. The implementation of cost standards is in the form of standard unit prices (SSH), standard expenditure analysis (*ASB– analisa standar belanja*), basic unit price of activities (*HSPK – harga satuan pokok kegiatan*), or by other names. However, obstacles are often present in implementing these standards. One primary obstacle is that the cost standard is relatively outdated because it has not been revised for a considerable time and is not in accordance with the expenditure needs.

With regards to the use of various cost standards above, it is also important to consider the level of understanding of stakeholders, especially budget compilers, implementers, and auditors in understanding the use of standards as a baseline. This means that if there are other sources of standards or realized costs that are different from the basic budget that has been prepared, the difference in expenditure can be used as long as it can be accounted for, as explained in the previous section. Based on the results of the survey on budget preparation process in 12 ministries or institutions in Indonesia, which involved 75 respondents, SBM was primarily used as the main cost standard, which was around 90% of the total budget expenditure prepared. In addition to the SBM, the cost standards used were standard output costs (SBK), cost structure standards (*SSB– standar struktur biaya),* internal agency policies, billing rates from related associations or organizations, and internet search sources. The survey was also conducted to assess whether the amount of cost standards and groups of expenditure types in the SBM was adequate.

The results of the assessment of the amount of the SBM rupiah value showed that around 20% of respondents thought that the standard was very adequate, 71% thought that it was adequate, and 9% considered it inadequate. In terms of the indicator of the arrangement of groups or types of costs in the SBM, the data showed that 19% of respondents considered the cost standard to be very adequate, 76% considered it adequate, and 5% viewed it as inadequate. The main reasons for the inadequacy of SBM were: 1) the price of certain goods or services in the SBM had not been updated for several years, causing the real costs incurred to be higher than the standard, 2) the addition of standard components of goods or services prices was not in accordance with the latest expenditure needs, 3) differences in the price of the same goods

for different regions was not accommodated in the SBM, and 4) some components of transportation costs could increase the price of goods or services. The respondents articulated a range of expectations regarding the development of standard settings in the SBM to improve the relevance of standards in the future. Some of these expectations include the need to update the SBM value according to market prices and economic situations, the addition of cost components that have not been regulated in the SBM, adjusting cost standards in regions and abroad. This research conducted an in-depth analysis of three forms of cost standards, namely SBM cost standards for the 2012-2023 periods, SBK from 2017 to 2023, and SSH between 2017 and 2023.

Analysis of Standard Input Costs (SBM)

The results of the observations on SBM standards for the periods 2012-2023 showed that there was an increasing trend in the number of regulated expenditure standards from 2012 to 2017. Furthermore, there was a tendency to halt changes in standards during the period from 2017 to 2023, as illustrated in Table 3.

Table 3 Comparison of the Number of Expenditure Standards (2012–2023)

Year	Upper Limit	Estimated Value
2012	1.126	2.262
2013	1.812	4.247
2014	1.968	4.824
2015	3.083	4.386
2016	3.097	4.342
2017	3.378	4.726
2018	3.321	4.764
2019	3.320	4.781
2020	3.319	4.781
2021	3.285	4.781
2022	3.287	4.781
2023	3.287	4.783

Source: Processed by the Author

Table 4 Comparison of Expenditure Standard Categories in 2012 and 2023

No	Expenditure Category	2012	2023
1	Honorarium	22	23
2	Food	5	7
3	Travel, Transportation, Accommodation, and Meetings	9	14
4	Office Supplies and Equipment	7	6
5	Training	2	1
6	Buildings and Vehicles	9	3
7	Education	1	2
8	Other Services	1	3

Source: Processed by the Author

There was an increase in the number of cost standards in the early phase. One reason, among others, is that the standard setters were still in the stage of collecting and refining the expenditure standards. However, no significant increase was observed in the following stage because the compilers did not elaborate on the expenditure needs of budget users. Another reason is related to changes in the classification of expenditure. For example, previous grouping of honorarium, which was based on class, transitioned to being based on region or work area. The last factor is the enlargement of provincial areas due to regional expansion policy, resulting in an increase in the number of standards.

Further analysis of the SBM standards was conducted to determine any changes in expenditure standards. Based on the observations in the 12-year time span, in general, the grouping of SBM standards remained similar, but there were changes in the number of standards regulated, as shown in Table 4.

As shown in Table 4, honorarium expenditure standards continued to predominate the SBM standards in the period from 2012 to 2023. Other expenditure groups that were also relatively high were standards for travel, transportation, lodging, and meeting costs.

The quantitative analysis of the amount of standard costs in each type of expenditure showed that cost standards were not adjusted periodically. Of 105 expenditure line-items analyzed in this study, 78 (74.3%) had not experienced any price changes in the last ten years. In fact, of the 27 expenditure items that experienced changes in the last 10 years, only 14 expenditure items (13.3%) experienced price changes in

more than eight years. This indicates that the remaining 13 line-items (12.4%) have not been revised in eight years. This can certainly result in the budgets prepared by various government agencies being either inaccurate or outdated. In fact, based on the results of the survey, SBM was the main source of cost standards used by all government agencies, especially ministries and institutions in Indonesia.

These findings indicate that the cost standards in the components of the expenditure group in question are no longer relevant due to an inflation during the period of the implementation of the SBM. As a result, prices are likely to become unequal or increase between that time period and the present. The inflation data for the periods of 2012-2023 created by Bank Indonesia showed that there has been an average inflation of around 4.35% per year, or around 47.85% in 12 years. This can cause the value of the budget prepared to produce a considerably low output compared to the need for funds. The renewal of the standard is urgent because based on the results of the survey, SBM remains essential for government agencies, especially in ministries or central government agencies. In addition, the SBM standard is often the basis for the preparation of other cost standards. Appendix 1 shows the results of the analysis of the SBM cost standard from 2012 to 2023.

Analysis of Standard Output Costs (SBK)

Considering the characteristics of standard output costs (SBK) as previously explained, the use of this standard cost arrangement will facilitate users in developing budget plans based on the output or sub-output units they aim to achieve. Relevant agencies will no longer have to deal with the task of determining the unit of input goods or services that form a particular output or sub-output, such as honorarium costs, supplies, transportation, and others. Although the process of setting these standard costs sometimes takes a considerable amount of time and draws controversy due to resistance from parties involved in the expenditure process, these findings are consistent with the results of research conducted by Robson (2008).

The analysis in this study was limited to comparing the number of standards and agencies already regulated within the standard output costs (SBK), as well as the sub-organizational groups of SBK that have been regulated. The analysis began with the 2017 fiscal year SBK, considering that the 2016 SBK and prior years did not regulate standards across ministries or agencies. Based on the analysis, the utilization of SBK by the central government was suboptmial. Not only were there few SBK standards being used, but there was also an unstable trend in the use of these standards. This is evidenced by fluctuations in SBK usage over the last seven years of observation.

Table 5 Comparison of SBK Standard Price from 2017 to 2023

Type of SBK	2017	2018	2019	2020	2021	2022	2023
Number of SBK groups applicable to several/all ministries/agencies*	9	9	10	10	10	10	13
Number of SBK groups applicable only to each respective ministry/agency	67	57	49	50	47	47	55
Number of agencies regulated under SBK for each respective ministry/agency	31	27	28	30	29	33	40

*Number of SBK groups based on the 2023 fiscal year classification

Source: Processed by the author

The findings above were based on an annual comparison of the number of SBK groups or sub-groups regulated and the number of ministries or agencies that had SBK standards. For example, when looking at the number of SBK groups applicable to some or all ministries or agencies, an increase was observed in one SBK group from the 2017-2018 periods to 2019-2022 periods. Additionally, three more expenditure groups were added in 2023. When considering the comparison of SBK groups applicable only to individual ministries or agencies regulated within the SBK over the last seven years, a fluctuating trend was evident. The range of SBK group regulations for these periods (2017-2023) was between 47 and 67 SBK groups. Finally, looking at the number of agencies already regulated within the SBK for each ministry or agency, an increasing trend was observed, particularly in the last two years where it rose significantly from previous 33 agencies to 40, an increase of about 21%. However, from 2017-2021, there was a fluctuating trend in the number of agencies that had SBK, ranging from 31 to 27 organizational units. This number is significantly lower than the total number of ministries or agencies recorded in 2023, which was approximately 190 ministries or agencies (Ministry of Administrative and Bureaucratic Reform, 2021). This indicates that specific SBK regulations have only been implemented for about 21% of all central government agencies. Table 5 illustrates the use of SBK across various central government agencies in Indonesia from 2017 to 2023.

Analysis of the Standard Unit Price (SSH)

In relation to the use of standard pricing in local governments, this study took a sample of standard unit price (SSH) from a city government for the periods 2017–2023. The local government was chosen due

to the variability and complexity of its pricing standards. The analysis focused on the pricing of goods as regulated in the SSH. The data showed that the SSH pricing process for goods was carried out through a survey method of item prices prevailing in the region. The survey method involved directly collecting price data from several suppliers by the drafting team, searching using the internet media, comparing with prices in surrounding areas, or receiving input from regional agencies as potential users of the goods. The results of the survey results showed that the SSH output for the given year impacted the process of updating existing item prices or adding new item line entries.

Most of the standard costs for goods are developed in accordance with price developments in the region. Although over time, the survey-based assessment may lead to a snowball effect, resulting in an increasing number of item line entries in the database, which can potentially confuse budget planners when selecting the required goods. However, this is not a major issue, as the use of SSH in the budgeting process is supported by computer-based information systems, ensuring that SSH data is well-documented in a system database. The SSH standards are updated almost every year, although a comprehensive review is typically conducted only once every three to five years.

A common challenge in determining standard costs at the local government level lies in setting non-goods SSH, as well as ASB and HSPK. For non-goods SSH, the main difficulty is that the availability of price data is relatively more limited compared to that for goods SSH. Similarly, with the ASB and HSPK components, in principle, both standards are quite similar to the SBK standard used by the central government. ASB and HSPK are output-based pricing standards that represent a combination of unit prices for both goods and non-goods. Developing these output-based standards requires greater judgment and knowledge on the part of the compilers, particularly regarding the components that make up the output standard, compared to compiling SSH.

Improving the Utilization of Cost standards

Since the implementation of performance-based budgeting (PBB) in 2003, various development efforts have been undertaken, including the formulation of relevant regulations and standards. However, a more comprehensive approach is needed to achieve the desired objectives, as the budgeting process involves multiple stakeholders and interests.

To minimize discrepancies, one of the steps taken is to develop cost standards that are mutually acceptable. Currently, there remain challenges in establishing such standardized prices. These include certain cost standards that no longer reflect market prices, or the absence of necessary goods or services in the standard pricing list. Therefore, periodic adjustments to cost standards are necessary, both at the central and local government levels. A systematic and periodic update process, ideally every one to three years, is required to ensure that the standards remain relevant in each budgeting cycle. There should be no instances where cost standards go 10 to 12 years without any adjustments.

The adjustment process must be carried out using an appropriate methodology to ensure that the accuracy and completeness of the data reflect actual conditions. In addition, a reporting or complaint mechanism should be established for cases where cost components are found to be outdated or in need of revision. Relevant parties can analyze historical transaction data trends to identify which price classifications are still needed and which are no longer relevant.

Another challenge relates to differences in user perceptions during the budgeting process, including in the use of standard costs. For example, government agency employees may hesitate to use certain cost standards due to differing opinions and fear of the potential for audit scrutiny for using the wrong standard. In this context, misunderstandings between parties regarding the use of existing standards may occur. However, a closer look at the regulations governing the execution of duties for each party reveals a lack of regulatory alignment. This aligns with the findings of Aliabadi et al. (2019), which suggest that in the budgeting process, discrepancies may arise between what is prescribed, what is perceived, and what is actually done. This can result from weak links between formal rules and routine practices, reflecting a disconnect between official discourse and actual behavior in budgeting practice. In other words, there is a discrepancy between formal regulations and actual practices in public budgeting.

For example, although the State Finance Law clearly states that Indonesia adopts a performance-based budgeting (PBB) system, and other regulations explain the implications of implementing this system, the Government Accounting Standards (SAP) and the State Financial Audit Standards (SPKN) have yet to explicitly specify the budgeting system used by the government, particularly regarding the implementation of the PBB concept (BPK, 2017; KSAP, 2020). Therefore, it is important to identify the points of regulatory conflict or misalignment, down to the technical level of implementation guidelines. In addition, continuous outreach and training must be provided to all parties involved in the budgeting system.

The final issue concerns the suboptimal utilization of output-based pricing standards due to different interpretations on the use of appropriate standards among stakeholders. This results in hesitation among budget planners and activity implementers to apply such pricing standards. As a result, they often revert to

using input-based pricing standards, effectively returning to the old budgeting model, input or line-item budgeting. This finding is in line with findings of previous research, including that of Jatmiko et al. (2017). In addition, discrepancies between government pricing standards and those used in the private sector or market prices further contribute to the uncertainty faced by budget planners in applying the existing standards. Solutions to these challenges include improving the pricing standards themselves, conducting more intensive outreach and socialization efforts, and providing ongoing support to budget users.

Improving Cost Standards Through Information Technology

With regards to several improvement proposals presented earlier, the utilization of information technology can serve as a solution to optimize the achievement of these objectives. This includes addressing the need for periodic updates to pricing standards and leveraging information systems to enhance the application of output-based pricing standards. Technology can be used to support data-driven updates of pricing standards, for example, through the use of web crawling technology to collect market price data for goods and services. Web crawling is a method for indexing data from various sources available on the World Wide Web or the internet. By using this technology, pricing standard developers can compile up-to-date price lists of goods and services from various credible sources, based on algorithms they develop themselves.

Furthermore, cost standard analysis can be enhanced through the use of big data analytics techniques, which identify historical transactions within each government agency to detect expenditure trends and support the development of a comprehensive pricing standard proposal system. The use of big data analytics in the public sector has been increasingly common and has proven beneficial in enhancing data exploration capabilities, revealing previously undiscovered relationships, and improving the effectiveness and efficiency of business processes (Alfian et al., 2023; Alzamil et al., 2021). Specifically, these techniques can contribute to the effective development and evolution of management control systems within the budgeting process (Warren Jr et al., 2015). This can be achieved through the application of various available statistical approaches. The ultimate output of developing a comprehensive pricing standard proposal system is to provide up-to-date price suggestions and references for goods and services, thereby preventing the use of outdated or below-market pricing standards. After the proposals are documented in the system database, standard cost compilers can follow up accordingly, and these can serve as the basis for setting cost standards in subsequent periods.

Meanwhile, to optimize the use of output-based pricing standards, government agencies can develop information systems capable of formulating various input components for goods and services, including their units and standard costs, enabling automatic calculation of the output cost of specific goods or services. The information system is expected to be connected to a database that provides updated input-based pricing standards, thereby enhancing the accuracy of output-based pricing formulation. To maximize collaboration with relevant stakeholders in utilizing output-based pricing standards, at a minimum, work units responsible for budget formulation, expenditure implementation, and accountability auditing should have access to the system. Additionally, to support monitoring and evaluation processes, auditors should also be granted access to facilitate electronic review.

CONCLUSION

The findings of this study, particularly regarding the use of cost standards in the form of standard input costs (SBM), standard output costs (SBK), and standard unit prices (SSH), provide several insights into the budgeting process in Indonesia. **First,** there remains inconsistent understanding among stakeholders of the use of cost standards as a baseline and as a tool for budgeting flexibility. **Second,** based on the comparison of SBM cost standards, only 14 out of 105 expenditure items analyzed (13.3%) were updated over the past eight years. **Third,** the current utilization of SBK by central government institutions in Indonesia remains suboptimal. In addition to the limited number of SBK standards in use, there are issues of regulatory inconsistensies across institutions, which require periodic updates. **Fourth,** the analysis of SSH revealed that the determination of goods prices was conducted through surveys on prevailing local prices. However, this survey-based updating approach may carry the risk of item accumulation if outdated items are not removed, potentially causing confusion for budget planners.

Fifth, the findings from the analysis of cost standard documents are consistent with the results of a survey conducted across 12 ministries or agencies in Indonesia. The majority of institutions continued to use SBM as their primary pricing standard. Survey assessments indicated that only 20% of respondents believed that the SBM was highly adequate. Several shortcomings need to be addressed, including market prices being higher than those listed in the SBM, outdated prices within the SBM, regional price variations that are not accommodated, and the presence of transportation cost components that can significantly increase the final price of goods or services.

This study proposes several recommendations to improve the budgeting system within government institutions in Indonesia. One key step is to implement systematic and periodic updates of fixed cost standards. In addition, cost standard adjustments should be carried out using appropriate methodologies and by leveraging advancements in information technology. Technological applications in the budgeting process can follow two main approaches. First, the use of big data analytics in conjunction with web crawling tools, which can be useful for collecting price data for goods and services from credible internet sources. Second, the development of an integrated information system that can assist in formulating the various input components of goods and services, including their units and standard costs, which allows for the automatic calculation of the output costs of specific goods and services.

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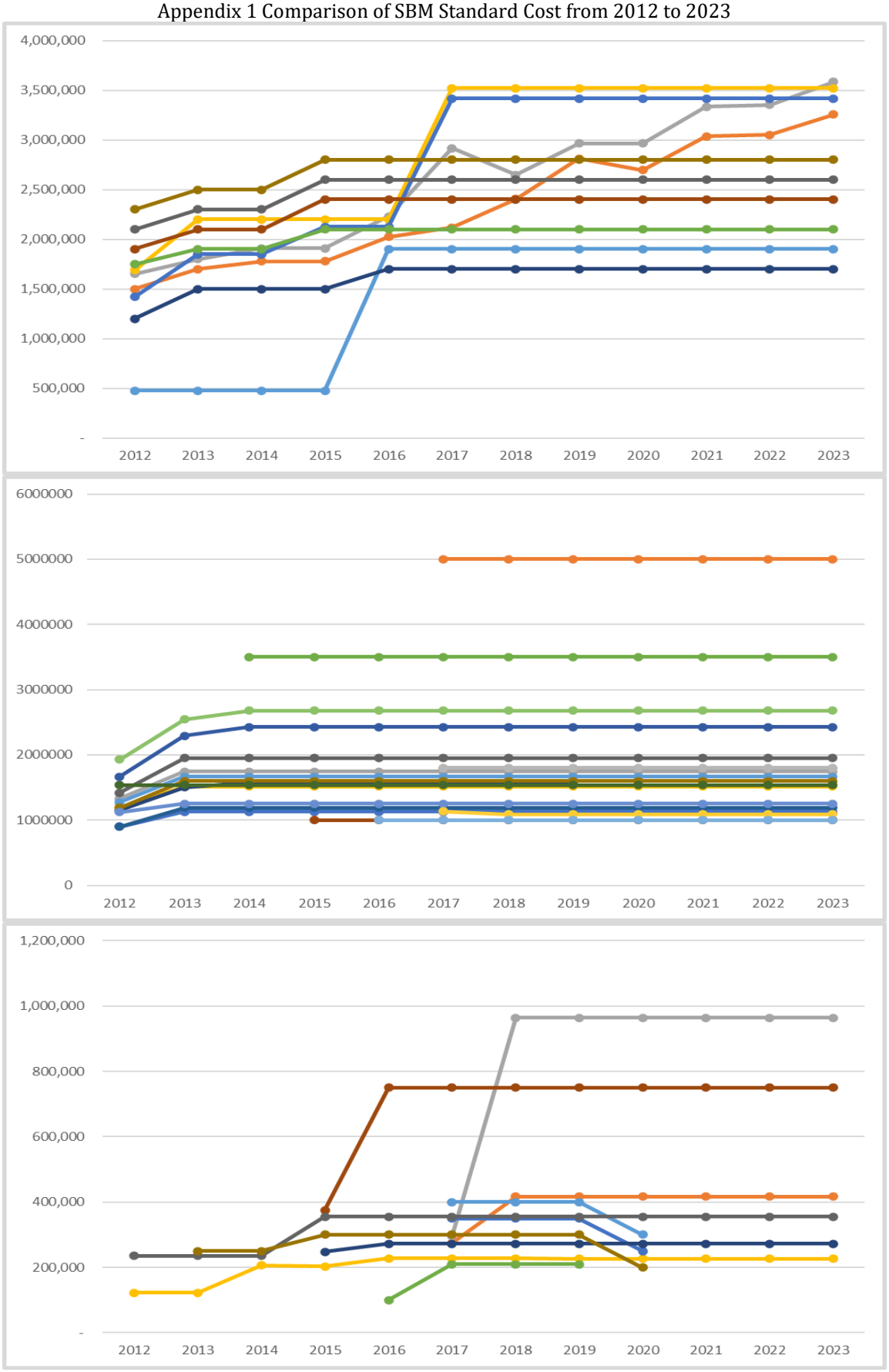
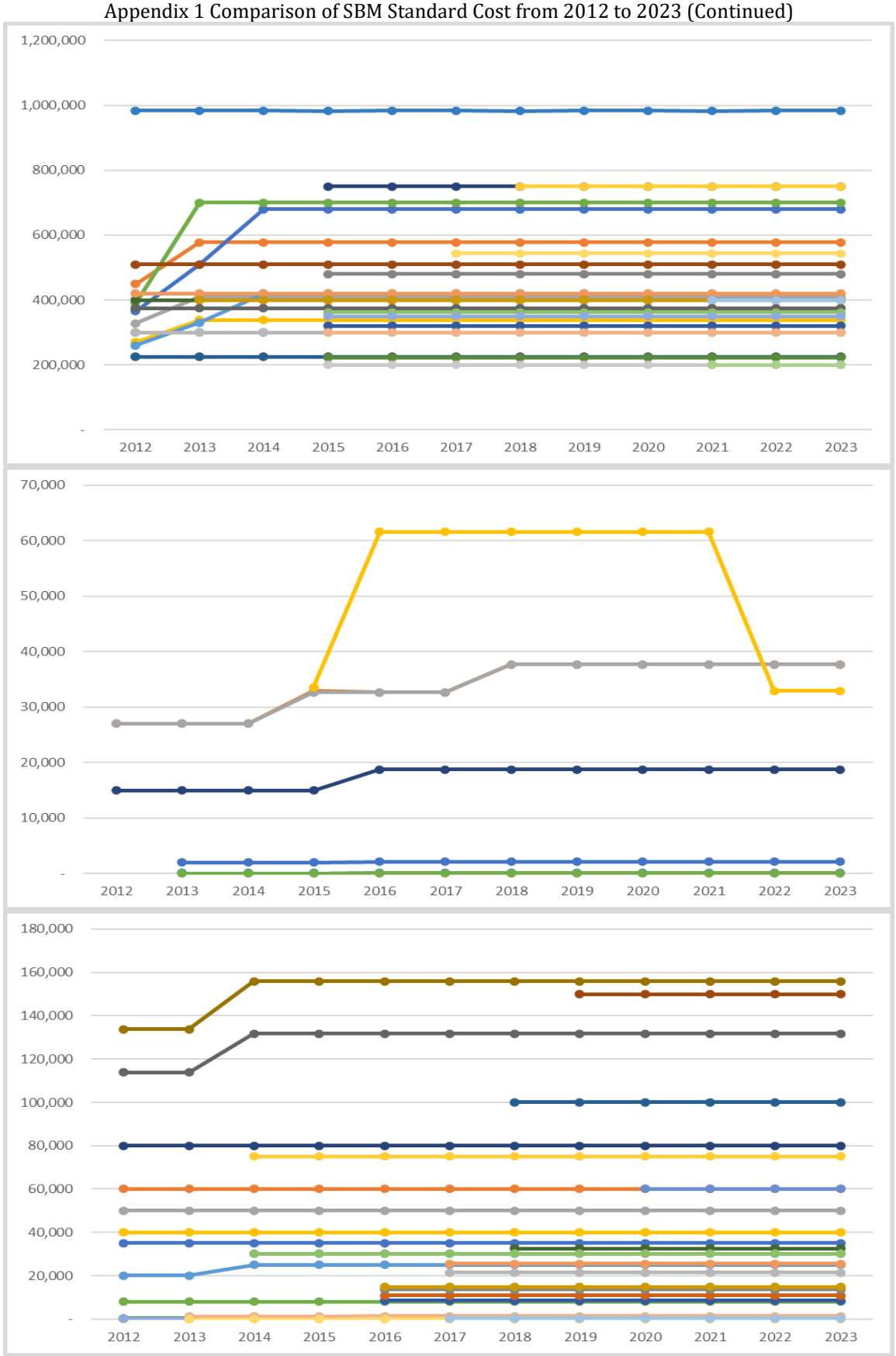
Appendix 1 Comparison of SBM Standard Cost from 2012 to 2023



Source: Processed by the author

Appendix 1 Comparison of SBM Standard Cost from 2012 to 2023 (Continued)



Source: Processed by the author