

Public procurement practices and policies: Implications for public research and development in the Philippines

Nelson Jose Vincent B. Querijero^{1,3*}, Rhea L. Gumasing^{1,4},
Arlene C. Gutierrez², Ruth Anne T. Ruelos^{1,5},
and Charina Krissel D. Tingson¹

ABSTRACT. This study examines procurement practices and policies that hinder or facilitate public research and development. An online survey and interviews with key informants in 44 research development institutions (RDIs) in the Philippines were conducted. Participants include Project Leaders, members of the Bids and Awards Committee (BAC), the BAC secretariat, chief accountants, technical working groups, and suppliers. The results show that some procurement policies, workflows, and capacities of the procuring entities contribute to procurement delays. A lack of qualified or suitable suppliers and a limited market of highly specialized and scientific equipment are also factors affecting procurement efficiency. It is recommended that the Government Procurement Policy Board and various national government agencies engage in a dialog regarding potential changes to Section 53.6 of the 2016 Implementing Rules and Regulations that govern public procurement so that RDIs can review their procurement policies, management structures, and practices to better meet the needs of the R&D process.

Keywords: *Policy, procurement, research and development, SUCs*

¹ College of Public Affairs and Development, University of the Philippines Los Baños (UPLB), Laguna, Philippines

² College of Economics and Management, UPLB, Laguna, Philippines

³ <https://orcid.org/0000-0002-5892-4930>

⁴ <https://orcid.org/0000-0003-1948-0086>

⁵ <https://orcid.org/0000-0001-7690-3722>

*Corresponding author: nbquerijero1@up.edu.ph

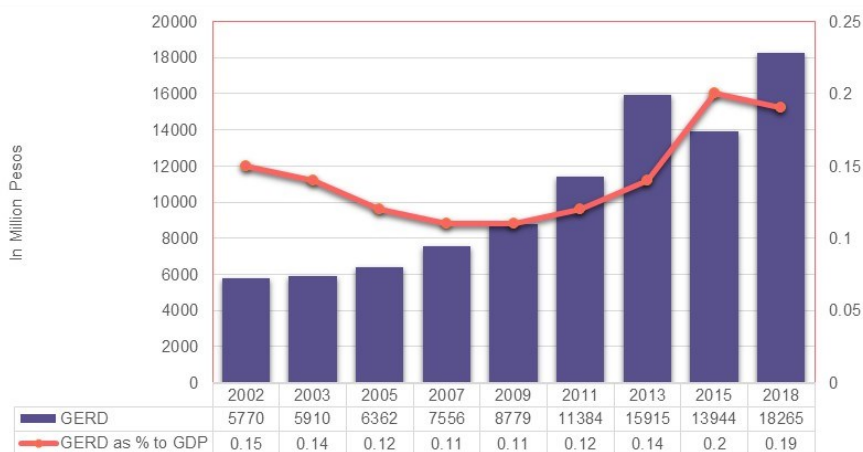
INTRODUCTION

Science and technology is a key driver of the economy of any state, including the Philippines. Yet, it is known that research and development is not given substantial allocation in the country. In 2020, it was noted that the total R&D spending, both public and private, was only 0.15% of the country's GDP (Arayata, 2020). This figure remains well below the 1% benchmark set by the World Bank and United Nations Educational, Scientific and Cultural Organization (UNESCO) for developing economies. Meanwhile, GDP expenditure on research and experimental development (GERD) spending increased from PhP 13,944 million (or USD 256,300) in 2017 to PhP 18,265 million (or USD 344,000) in 2018 although its share of GDP declined (Figure 1).

Figure 1

Trends of gross expenditures for R&D from 2002 to 2018

(Source: DOST, 2021; UNESCO, 2015, DOST R&D Survey Report, 2018)



Recent years have seen significant increases in R&D investment due mainly to public investments flowing through public research institutes. The General Procurement Reform Act of 2003 (GPRA)¹, officially known as Republic Act 9184, governs all procurement activities in the public sector, including R&D operations and expenditures. As opposed to bureaucratic service delivery mechanisms, the unpredictable nature of R&D makes it difficult to adhere to prescribed and standardized financial policies.

¹ The GPRA took effect on January 10, 2003 with the recent Revised IRR effective on October 28, 2016.

The procurement system has had a detrimental effect on the scientific community. According to the Research Triangle Institute (RTI) International (2014), the GPRA makes it difficult to conduct scientific research in this country due to its restrictive and inflexible regulations. This is particularly noticeable in the procurement of specialized equipment, supplies, and consumables (e.g., chemicals, reagents) for research projects. While there are possibilities of doing early procurement short of the award, it is difficult for the R & D ecosystem to adhere to the rigorous pre-planning that the procurement process emphasizes. Further, in some cases, there are delays in the release of funds for research due to other organizational dynamics between the grant-giving organization and the recipient organization that impede the implementation timeline. Anecdotal evidence also suggests that public R&D Institutes suffer from inefficiencies and ineffectiveness due to difficulties in procuring equipment and supplies. Likewise, they struggle with inadequate spending as procurement activities are delayed.

The purpose of this paper is to assess the public procurement system for public R&D activities. The paper examines the specific provisions of RA 9184 and recent implementing rules and regulations that negatively impact the procurement of selected Research and Development Institutes (RDI) in the country and provides recommendations on how to overcome these constraints.

Procurement Law and Related Issues in Science and Technology

In 1993, when RA 9184 (GPRA) was passed into law, it revolutionized government procurement by standardizing and regulating it. It was a response to the World Bank's report on the "dysfunctional" procurement system of the Philippines, which was previously governed by several laws, oftentimes inconsistent and full of loopholes (Cadapan-Antonio 2008; Clarete & Pascua, 2016; Furnas 2013; Senate Economic Planning Office [SEPO], 2008). The system was then noted to be prone to abuse and a breeding ground for corruption.

SEPO (2008) noted the GPRA covers the acquisition of goods, consulting services, and infrastructure projects, regardless of where the money comes from, i.e., local or foreign, as long as it is implemented by public organizations. The governing principles of GPRA are transparency, competition, harmonization of inconsistent policies, rules and regulations, accountability, and checks and balances. GPRA has implemented key reforms in support of these principles, including developing the Government Procurement Policy Board (GPPB), implementing the Philippine Government Electronic Procurement System (PhilGEPS),

conducting public bidding as the default method of procurement, and involving civil society organizations in procurement (Clarete & Pascua, 2016; Navarro & Tanghal, 2017).

While the GPRA is considered a world-class law by the World Bank, the procurement system in the country is problematic in numerous ways. To correct these issues, reforms have been introduced through revisions of the Implementing Rules and Regulations (IRR) between September 2009 and August 2016. Despite this, there are still many failures in actual compliance and implementation. Various reports show corruption, delays in procurement, restrictive approved budget for the contract (ABC) approaches, lack of procurement personnel and officials, varying interpretations of the law, and restrictive procedures for foreign and international bidders (ADB, 2016; Furnas, 2013; Jones, 2010; SEPO, 2008; The Manila Times, 2015).

RTI International (2014) identified the restrictive and inflexible regulations under GPRA as significant barriers to efficient scientific research in the country, particularly when it comes to acquiring equipment, supplies, and consumables such as chemicals and reagents. Specific to equipment, several stages are required in the prescribed procurement process before the equipment can be purchased. With this it is usual to hear claims of unmet procurement targets from scientists. RTI further noted the peculiar nature of research, which makes it difficult for R&D organizations to comply with GPRA. Compared to a normal bureaucratic service delivery organization where operations tend to be predictable and stable over time, it would be nearly impossible for researchers to forecast all the consumables needed before the project began. Additionally, there are only a few willing and eligible suppliers for equipment and supplies in the domestic market; hence, bid failures are common. Suppliers were reported to be hesitant in participating in public procurements because of a lack of understanding of procedures and because some public research and development institutions pay late. Additionally, researchers are limited to purchasing specialized equipment due to the lowest bid requirement set by the GPRA as some are forced to use "less than adequate equipment that can perform optimally the required procedures," as mentioned by some respondents.

METHODOLOGY

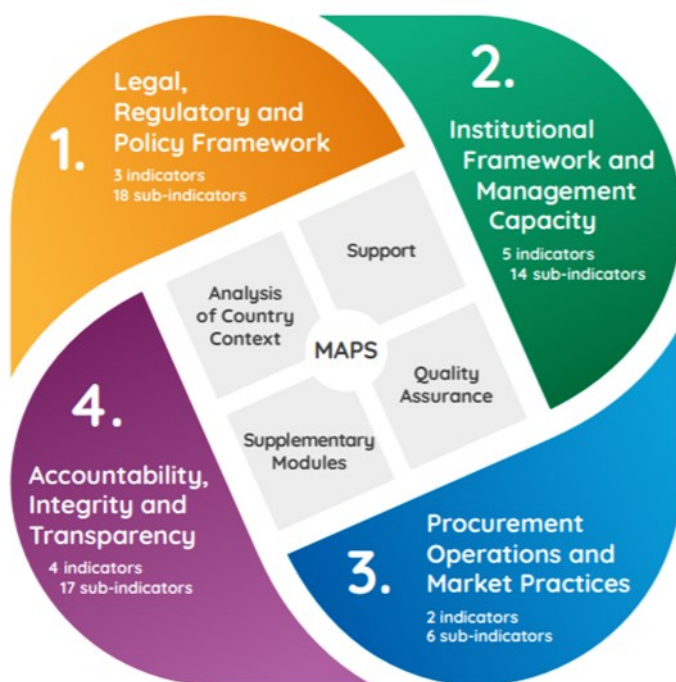
The Procurement Systems Assessment Methodology (MAPS) framework, jointly developed by the World Bank and the Development Assistance Committee to assess government procurement worldwide was adopted. Four pillars guide the process: legal, regulatory, and policy

framework; institutional framework and management capacity; procurement operations and market practices; and accountability, integrity, and transparency (Figure 2). The study, however, limits itself to looking at the first three pillars.

Figure 2

Overview of MAPS

(Source: *Mapsinitiative.org*, 2018)



Sampling and Selection of Respondents

All projects funded by the Department of Science and Technology – Philippine Council for Agriculture, Aquatic and Natural Resources Research and Development (DOST-PCAARRD), Department of Environment and Natural Resources – Ecosystems Research and Development Bureau (DENR-ERDB), and Department of Agriculture – Bureau of Agricultural Research (DA-BAR) from 2016 to 2020 were analyzed. Said agencies are national government funding agencies that support agriculture, fisheries, forestry, and natural resources. Further, organizations from the three largest island groups of the Philippines were sampled using stratified sampling. The projects were then selected by simple random sampling per island group.

To increase response rates during the pandemic, multiple data collection methods were used. An online platform was used to collect data, including key informant interviews. Project leaders and Bids and Awards officers received online survey questionnaires using Google forms. Additionally, as some areas did not have internet connectivity, printed copies of the questionnaires were sent to the project leaders.

The survey instrument was validated and pretested by experts. In this survey, the purpose was to characterize the working environment of the implementing organization, as well as its procurement practices.

Additionally, virtual interviews were conducted with procurement officers, project leaders, and their staff. Furthermore, key informant interviews (KII) with noted researchers, experts, and research directors of various organizations were conducted.

RESULTS AND DISCUSSION

Some 91 projects out of 158 or 58% responded, which comprised 74 from Luzon, 9 from Visayas, and 8 from Mindanao. They came from 44 RDIs that received funding grants from the three national government agencies mentioned above. Moreover, most of the respondents were representatives of the Bids and Awards membership² (committee members, members of technical working groups, and secretariat) (Table 1). Meanwhile, most of the respondents have post-graduate degrees (Table 2), and most of the projects were from the natural and physical sciences and were funded by DOST-PCAARRD (Table 3).

The legal and regulatory framework was explored following the MAPS framework. The GPRA and its latest 2016 IRR are the policies governing public procurement in general. Specifically, we examined Section 53.6 on “Scientific, Scholarly, or Artistic Work, Exclusive Technology and Media Services” among others, since it was included by

² The BAC or Bids and Awards Committee refers to the body, or its designated organic office, responsible for the agency's procurement activities from pre-procurement conference up to the recommendation of the award.

The BACSEC or BAC Secretariat is an organic office within the agency that acts as Secretariat, to be the main support unit of BAC.

The TWG or Technical Working Group is created by BAC composed of technical, financial and or legal experts to assist in the eligibility screening and evaluation of bids.

For complete details on the roles and composition of the BAC, BACSEC and TWG, please refer to the 2016 IRR of RA 9184 (<https://www.gppb.gov.ph/wp-content/uploads/2023/07/Updated-2016-Revised-IRR-of-RA-No.-9184-as-of-03-July-2023.pdf>)

Table 1
Percentage of respondents by sex

Personnel	Female (%)	Male (%)
TWG	49.00	51.00
BAC	42.00	58.00
BACSEC	72.00	28.00
Project Leader	58.00	42.00

Table 2
Percentage of respondents by educational attainment

Personnel	Bachelor (%)	Masters (%)	Doctorate (%)
TWG	43.00	38.00	19.00
BAC	16.00	51.00	33.00
BACSEC	45.00	51.00	4.00
Project Leader	6.00	37.00	57.00

Table 3
Type of project

Personnel	Female (%)
Natural/Physical Science	79.00
Social Sciences	21.00

the Government Procurement and Policy Board, which is tasked with streamlining procurement processes. This section was placed by GPPB to facilitate procurement activities, especially for the R&D sector. Specific procurement of goods, infrastructure projects, and consulting services can be contracted by the procuring entity to a particular supplier, contractor, or consultant as decided by the head of the procuring entity without going through competitive bidding, which is the default mode, providing conditionalities have been met. Only 1 of the 44 RDIs surveyed used the policy as an alternative procurement strategy.

Some 34% of respondents noted that the language of the policy is unclear, while 68% said for the provision to be fully implemented, the language needs to be clearer, easier to understand, and devoid of doubt as to what can be considered. According to them, the absence of the words ‘research services’ and ‘supplies and equipment’ in the current version has made them hesitant to use this provision. Apart from the language of the section, the officers said that the requirements are unclear, and a step-by-step guide would be helpful. As the majority of the project leaders are unaware of this provision, they wait for BAC and BAC-Sec officers to give the green light if this provision could be used as competitive bidding remains the “default mode” of procurement.

Additionally, another mode of procurement that procurement officers found to be inconvenient is shopping. One-third of project leaders and staff said it was difficult to comply with the shopping conditionality of obtaining three price quotes from bona fide suppliers, stating that suppliers that were given the bid document hardly met the listed requirements, were unresponsive, or did not provide quotes. Furthermore, 15% of the 91 research projects cited a lack of qualified or eligible suppliers willing to participate in the bidding process.

Another requirement of the law is to award the contract to the bidder with the lowest calculated and responsive bid (LCRB) for goods and infrastructure and highest rated responsive bids for consulting services. However, practice dictates that after the bids are post-qualified, the lowest complying responsive bid is awarded. Considering that the lowest bid is supposed to be the most advantageous to the government, the focus on a short-term cost-saving strategy does not bode well for the government's financial health. Low costs do not necessarily equate to high-quality. Many key informants pointed out that most of the time the lowest-cost bid awarded items are substandard. Cheaply procured items do not provide value for money according to project leaders. A third of the BAC-Sec officers said they encountered suppliers delivering products with different specifications than those specified in the bid documents.

The third policy provision that has an impact on public R&D procurement activities is Section 18, which prohibits the reference to brand names in the bid documents except for one case, which is, if the acquiring organization already has an item or part that is compatible with their existing equipment of the same name or brand.³ Research project leaders who have seen the effectiveness of certain brands of laboratory equipment

³ Pursuant to Section 18: Reference to Brand names. Specifications for the procurement of Goods shall be based on relevant characteristics, functionality and/or performance requirements. Reference to brand names shall not be allowed except for items or parts that are compatible with the existing fleet or equipment of the same make and brand, and to maintain the performance, functionality and useful life of the equipment.

This Section shall also apply to the goods component of Infrastructure Projects and Consulting Services:

Sec. 22.1 (pre-bid conference)

Sec. 25.2 (contents of 1st envelope)

Sec. 30.3 (two stage bidding procedure)

Additional specifications may be required by the procuring entity as long as it is necessary to meet its needs and it shall not restrict competition. The end-user shall state the needs to be satisfied by the procurement and clearly define what it wishes to buy; what the bidder is expected to supply or perform; can use Philippine or International standards against which inspections, test and quality checks are made. It focuses directly on what affects the quality and performance of the items purchased, works constructed or services provided and the price for the tested performance in terms of durability and reliability.

or items – as these products yielded the best results during their experiments – have expressed concerns about this provision. The research community they belong to also supports this, as they have tried and used the brand in their projects. Therefore, some end-users take extra steps to adapt some of the technical specifications to suit their preferred brand. When the technical specification becomes too generic as in most cases, it has been observed that when such are delivered, the same do not perform as well as branded ones. The project leaders noted that known brands would be included, as they have been subjected to R&D performance testing and quality control procedures. While the unbranded ones are less expensive, they do not produce the same results as the branded ones. Over half of the BAC officers observe that procuring entities or end-users still mention their preferred brand names in various procurement documents. As a result, the bid documents are deemed non-compliant – due to the brand name – and are returned to the end-users for a new round of bidding. Additionally, around 49% of BAC-Sec respondents pointed out that writing the technical specification was among the problems they encountered with project leaders and staff members. The procurement process can sometimes be delayed due to incomplete or inaccurate specifications from end-users.

The concept of the approved budget for the contract is the last provision that has been met with difficulty by the project leaders and staff members. The ABC duly approved by the head of the procuring entity sets the limit for each line item. As long as the users conduct a market survey regarding current prices, this can be accomplished. In addition to incidental expenses (freight, insurance taxes, installation costs, and training costs), the ABC should also include inflation and the cost of money. Moreover, because the ABC is the upper limit for bid prices, if a supplier's bid price exceeds the ABC, then they will be disqualified. BAC officers have noted that end users are less diligent when it comes to conducting market research. About a third of them said that the ABCs of bid documents are sometimes either insufficient or too high. If the ABCs are too low, suppliers do not participate in the bidding process; if the ABCs are too high, the government loses considering that suppliers tend to stick close to the ceiling price. Additionally, they note that end-users would normally have inadequate ABCs whenever goods (equipment and supplies) are being imported from overseas, as other incidental fees are not included in ABCs.

The second pillar of the MAPS framework assesses the managerial and technical capabilities of the procurement offices of the RDIs. Table 4 shows the average number of years BAC personnel have worked in procurement. Some 91% of the BAC Secretariat interviewed have regular plantilla appointments. It is required that those with regular appointments

Table 4
Average years as a BAC personnel

BAC personnel	Average years
TWG	5
BAC	4
BAC Secretariat	7

work 8 hours daily in procurement and have no other duties. On average, TWG members have 5 years of experience conducting procurement activities; 4 years for BAC members; and 7 years for the chair and members of the BAC Secretariat.

Of the three categories of procurement officers, the BAC-Sec respondents had the most average hours of training as compared to the TWG and BAC committee members themselves. It should be noted that the BAC committee members and TWG members are doing their procurement tasks on top of their usual duties as employees of their organizations (Table 5).

Table 5
Average years as a BAC personnel

BAC personnel	Female (%)	Male (%)
TWG	38	8
BAC	46	9
BAC Secretariat	93	19

BAC offices, on the other hand, must conduct training sessions for their end-users and suppliers to increase their awareness and familiarity with BAC's procedures. Figure 3 shows that the majority of BAC offices from all islands offer training for project leaders and suppliers. Specifically, 100% of BAC offices from Mindanao conduct training for project leaders and suppliers. However, only 75% and 57% of BAC offices in Luzon and Visayas, respectively, offer procurement training. In some BAC offices from Luzon and Visayas, the staff can avail themselves of the GPPB's scheduled training.

Self-Assessed Knowledge of BAC, BAC-Secretariat, and TWG Members

BAC personnel were asked to self-assess their knowledge about their responsibilities. On a scale of 1 to 4, where 4 represents the task that they are most knowledgeable about, and 1 represents the task that they are least knowledgeable about. All members of the BAC, BAC Secretariat, and TWG have adequate knowledge of the procurement process as shown in Table 6.

Figure 3
Conduct of training by the BAC office



Table 6
Average rating of knowledge in the procurement process

BAC personnel	Knowledge	Interpretation
TWG	3	Adequate knowledge
BAC	3	Adequate knowledge
BAC Secretariat	3	Adequate knowledge

In addition to their self-assessed knowledge, the study also asked the BAC personnel about their competencies. Most of the BAC personnel’s competencies are based on their experience and knowledge of research activities and internal processes. For members of the BAC Secretariat, trustworthiness and proficiency in the procurement process are their main competencies while training and good attendance are for members of the BAC. Most of the TWG members have specialized knowledge and experience in their field.

The Capacity of the Project Team Members

Project team members commonly consist of the project leader, project staff who assist in the day-to-day activities of project implementation, and contractual staff hired on a full-time basis for the particular project (Table 7). It is the responsibility of the project lead to ensure that project outputs are delivered on time. While project leads in science and technology activities generally possess technical background,

Table 7
The average number of personnel by project type

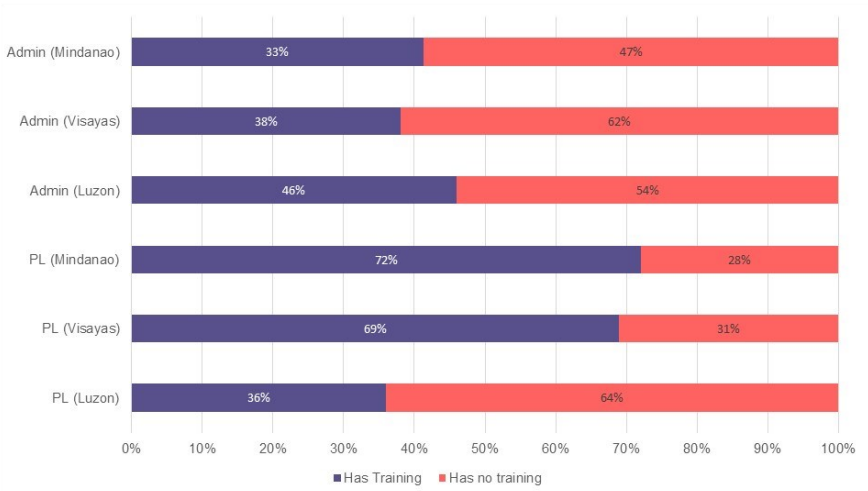
BAC personnel	Female (%)	Male (%)
TWG	38	8
BAC	46	9
BAC Secretariat	93	19

they are also expected to take on the role of an administrator in managing and planning procurement activities. In general, project leads and staff members devote 20% of their regular workweek to implementation.

According to the survey, 48% of projects do not have an administrative staff whose primary function is clerical work, such as procurement. Project leads generally rely on the regular administrative staff of RDIs for assistance.

Regarding procurement training of project leads, Figure 4 shows that 72% of project leads from Mindanao have attended procurement training, 69% from the Visayas, and only 36% from Luzon. Between project leads and administrative staff in Luzon, there is a greater number of administrative staff that have procurement training than the project leads.

Figure 4
Percentage of respondents that did and did not undergo procurement training



There are two types of administrative staff members: those hired regularly and those hired on a contract basis. The contractual administrative staff usually has a high turnover rate, which contributes to a lower retention of knowledge at the organization level, gained from procurement training. Based on the previous figure, most of the BAC offices in the three island groups conduct procurement training, but not all project personnel have been trained.

Self-Assessed Knowledge of the Project Team members

A survey was sent to project leads and their administrative staff members asking for their knowledge of the procurement process. On a scale of 1 to 4, where 4 represents the task that they are most knowledgeable about, and 1 represents the task that they are least knowledgeable about. Table 8 shows that project leads have adequate knowledge regarding the preparation of the proposed budget but have only minimal to basic knowledge regarding other procurement activities such as conducting the market survey, preparing PPMPs, and writing technical specifications. There was little knowledge of procurement activities among the administrative staff members. Even though most administrative staff members have attended procurement training and are directly involved in procurement activities, their self-assessed knowledge falls under basic knowledge.

Additionally, Table 9 shows that the higher the educational attainment, the more knowledgeable the project lead is about the procurement process.

Figure 5 shows that project leads with ages 56 to 65 years old tend to have superior knowledge of procurement activities. Specifically, 54% of the project leads in the 56 to 65 years old bracket range have adequate knowledge of the procurement process, and 50% from ages 65 to 75 years old have adequate and superior knowledge in procurement. Also, 57% of project leads aged from 46 to 55 have adequate knowledge. While 60% of project leads from ages 25 to 35 have minimal knowledge. While public officials have a compulsory retirement age of 65, some have been retained by the projects as consultants/leaders.

In addition to age, the years of experience as a project lead were also considered. Some 66% of project leads with 4 to 7 years of experience are knowledgeable about procurement-related tasks, and 46% of those with less than 1 year of experience to 3 years have adequate knowledge as well. According to Figures 5 and 6, educational attainment, age, and frequency as project leads played key roles in their knowledge of procurement activities.

Table 8
Average rating of knowledge in the procurement process

Process	Project leader	Interpretation	Administrative staff	Interpretation
Preparation for proposed project budget	4	Superior knowledge	2	Basic knowledge
Conduct of market survey	2	Basic knowledge	2	Basic knowledge
Preparation of PPMP	3	Adequate knowledge	2	Basic knowledge
Preparation of APP	3	Adequate knowledge	2	Basic knowledge
Preparation of request for quotation form with technical specifications	3	Adequate knowledge	2	Basic knowledge
Preparation of purchase request	3	Adequate knowledge	2	Basic knowledge
Preparation of purchase order	3	Adequate knowledge	2	Basic knowledge
Preparation of abstract of bids	2	Basic knowledge	2	Basic knowledge
Preparation of inspection and acceptance report	2	Basic knowledge	2	Basic knowledge
Preparation of disbursement voucher	2	Basic knowledge	2	Basic knowledge

Table 9
Average rating in the procurement process by educational attainment

Educational attainment	Average	Interpretation
Bachelor level or equivalent	1	Minimal knowledge
Master level or equivalent	2	Basic knowledge
Doctoral level or equivalent	3	Adequate knowledge

Figure 5
Percentage of the self-assessed knowledge of project leads by age group

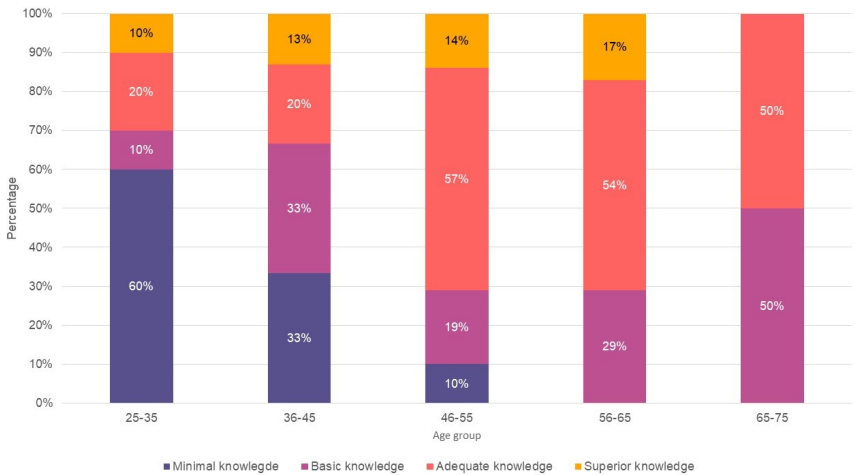
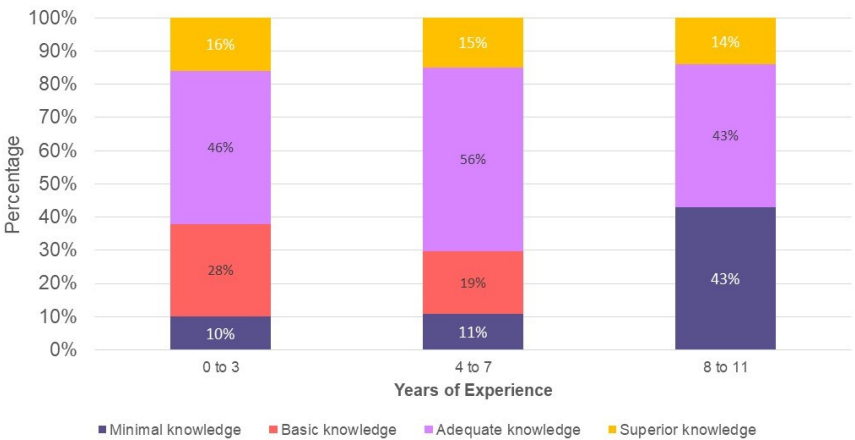
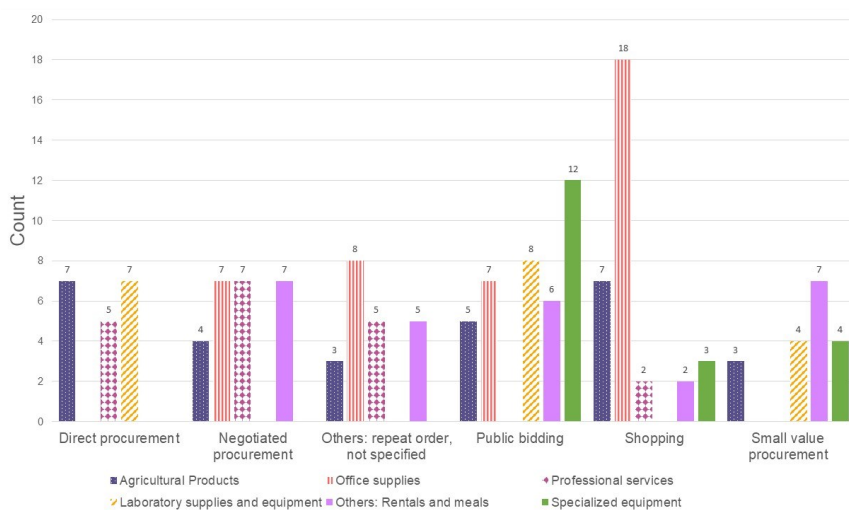


Figure 6
Percentage of the self-assessed knowledge of project leads by years of R&D experience



The third pillar of the study covers the procurement operations and market practices of the RDIs. Even though public competitive bidding is the preferred method of procurement under GPRA, the study found that there were multiple methods of procurement per category of goods procured. The majority of goods are procured through shopping, with 18 projects procuring office supplies through this method. Public bidding was used for specialized equipment for 12 projects (Figure 7).

Figure 7
Mode of procurement per category of goods



Suppliers, on the other hand, participate in all modes of procurement as seen in Table 10.

Table 10
Participated mode of procurement of suppliers

Mode of procurement	Percentage
Public bidding	100
Limited source bidding	33.00
Direct contracting	60.00
Repeat order	73.00
Shopping	87.00
Small value procurement	100
Negotiated procurement	87.00

Note: Contains multiple responses

Project leads were asked what the easiest and hardest tasks are during the procurement process. They identified conducting the market survey as the easiest task (17%) and preparing the disbursement voucher (12%) (Table 11). They considered it easier to conduct the market survey because it did not require signatures from offices within the organization. However, among the Project leads, the PPMP preparation is considered the most difficult task by 19%, followed by preparing the purchase request (13%), and thirdly, requesting a quotation with technical specifications (11%). Project leads regarded the preparation of the PPMP as the most challenging task because it encompasses the technical and financial aspects of the project. A line-item budget for the project is included in this task, which is an important part of the project start-up process. Estimating the cost of the project and writing the technical specifications of products necessary for the project is also part of this process.

Table 11
The easiest and hardest tasks in procurement

Process	Easiest (%)	Hardest (%)
Preparation of proposed project budget	6.00	9.00
Conduct of market survey	17.00	6.00
Preparation of PPMP	5.00	19.00
Preparation of request for quotation form with technical specifications	11.00	11.00
Preparation of purchase request	6.00	13.00
Preparation of purchase order	9.00	10.00
Preparation of abstract of bids	11.00	8.00
Preparation of inspection and acceptance report	9.00	11.00
Preparation of disbursement voucher	12.00	10.00

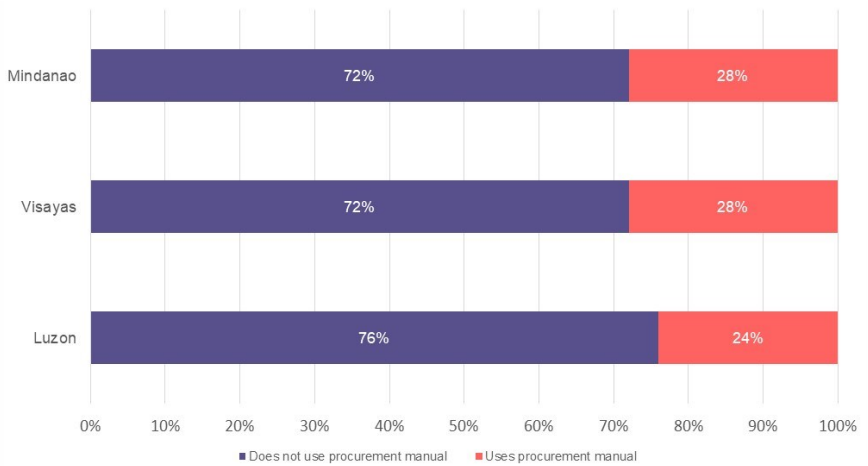
When the project commences and the project can hire contractual staff, project leads typically delegate administrative tasks, including procurement activities to contract personnel. Table 12 shows that 53% of the projects have contractual project staff members acting as the focal person for procurement activities. Only 22% of project leads are the focal persons for procurement activities.

Figure 8 shows that the majority of project leads do not use an R&D procurement manual. Without a procurement manual, the project leads and staff members rely heavily on procurement training and experience to conduct procurement activities for their R&D projects. Also,

Table 12
Focal person for administrative activities

Project personnel	Percentage
Project leader	22.00
Project staff	25.00
Contractual staff	53.00

Figure 8
Use of procurement manual by island



among the project leaders and staff members interviewed, the majority of them use institution-approved or revised procurement documents. Specifically, all project leaders from Mindanao use their institution’s format of procurement documents (Figure 9). According to the IRR of RA 9184, the GPPB has a standardized form that institutions can use, but these forms can be customized by the organization depending on the organizational structure of the institutions.

Procurement of Goods

The most commonly procured goods among projects are office supplies (33%) and laboratory supplies and equipment (18%), as shown in Figure 10. Natural science projects as well as social science projects frequently procure office supplies. The survey also found that 53% of the project leaders are mostly satisfied with office supplies compared to other supplies or specialized equipment. Particularly, 45% of the project leads are least satisfied with specialized equipment. These include, for example, scanning electron microscopes, water purification systems, analyzers, and sonicators. Apart from specialized equipment, they are also unsatisfied with laboratory supplies such as agricultural chemicals and reagents.

Figure 9
Use of procurement document by island



Figure 10
Procured goods/services

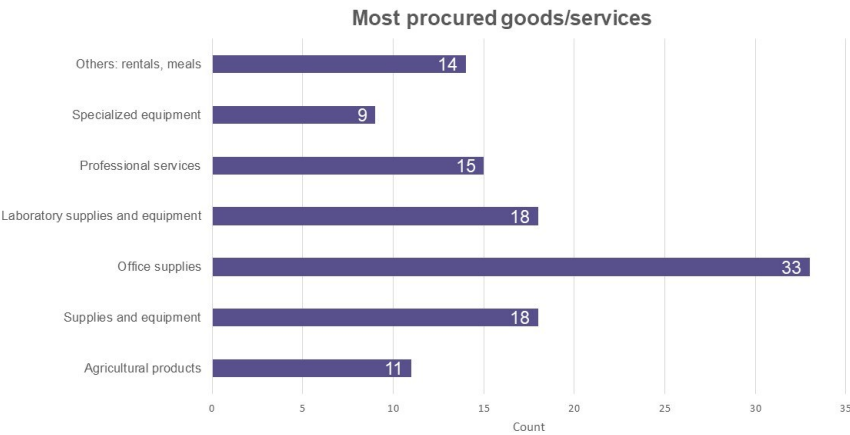
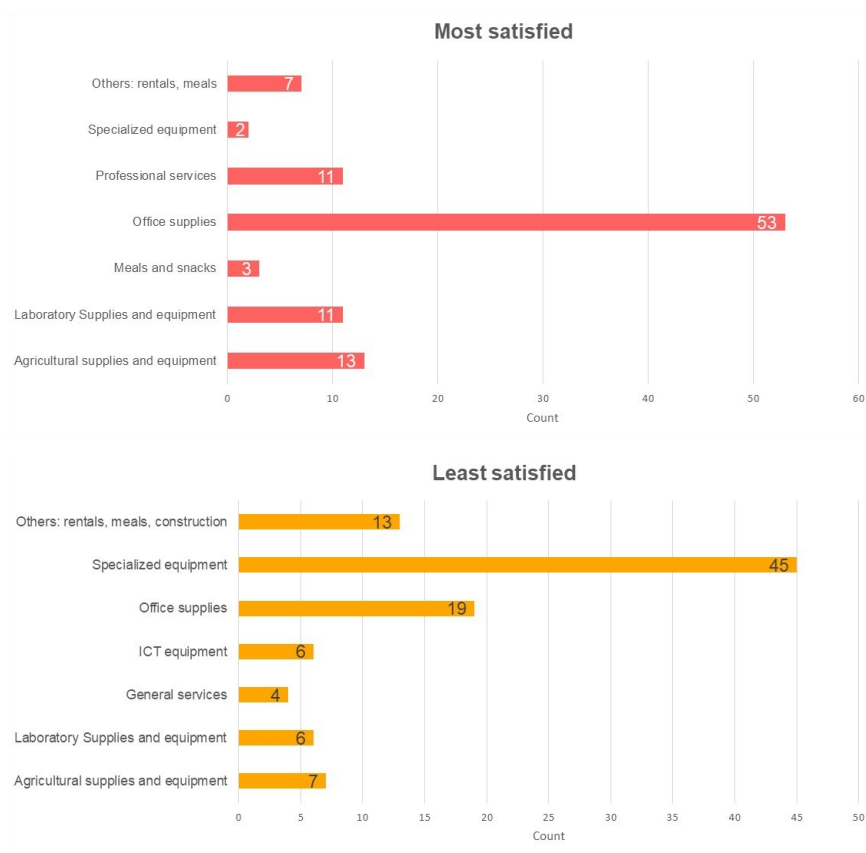


Figure 10 (continued)
Procured goods/services



Procurement Documents

Both BAC and BAC-Sec respondents mentioned that plans, drawings (architectural designs), and technical specifications (70%) are the documents with the most insufficient or incomplete information submitted by the procuring entity. The prospective bidder's statement of all current government and private contracts (83%) is the document most often submitted with incomplete information (Table 13).

Issues Encountered in the Conduct of R&D

Table 14 shows the factors affecting effective and efficient procurement. Twenty-six percent of the respondents indicated that the entire process is lengthy because there are many steps to complete,

Table 13***Bidding documents from end-users that are mostly non-compliant***

Bidding document	Percentage
ABC	8.00
Eligibility Requirements	29.00
Terms of Reference, for Consulting Services	32.00
Scope of work, where applicable	31.00
Plans/Drawings and Technical Specifications	70.00
Form of Bid, Price Form, and List of Goods or Bill of Quantities	28.00
Delivery Time or Completion Schedule	23.00
Form, Amount, and Validity Period of Bid Security	6.00
Form, Amount, and Validity of Performance Security and Warranty	3.00
Form of Contract and General and Special Conditions of Contract	7.00

Note: Contains multiple responses

Table 14***Bidding documents from end-users that are mostly non-compliant***

Factors	Percentage
Lack of suppliers, unavailability of equipment & supply in the local market	9.00
Communication with suppliers	5.00
Quality of goods and services	6.00
Too many papers work/ requirements, hard-to-accomplish requirements	9.00
No standardized form	2.00
Lengthy processes (including too many signatories)	26.00
Intra-organization communication (different interpretations, requirements, execution of offices)	12.00
Changing procurement policies imposed by the institution	11.00
Market risks (inflation, costs)	7.00
Release of budget	14.00

including the number and waiting times for signatories.⁴ It takes time and eats up days that could be used for implementing the research. This is followed by 12% of respondents who said that intra-organizational communication between different offices (e.g., BAC office, Accounting office) causes delays due to different interpretations, instructions, and requirements placed on procuring entities. Some 14% of respondents also said that late or delayed release of the budget such as the second and/or third tranches lead to implementation problems because equipment, supplies, and materials are not procured on time.

Furthermore, a State University and College (SUC) in the Visayas said that they are having difficulty in conducting market surveys due to limited qualified/eligible local or area-based suppliers. Many of the research projects especially for natural science research need materials and highly specialized equipment, which are not readily available in the country. Some research projects also experienced market risks including price increases due to inflation and the pandemic.

Among the interviewed suppliers, they stated that the average number of successful biddings they participated in a year was 32, while an average of 23 failed bid attempts occurred in a year. With regards to issues encountered by suppliers, 80% of them expressed that on-time deliveries and logistics were among the hurdles they encounter in delivering their services to the end-users, followed by unavailability of goods (67%), and increased cost due to Covid-19 restrictions (60%) (Table 15).

Table 15
Issues encountered with the supply of goods

Issues	Percentage
On-time deliveries/Logistics	80.00
Phased out items	47.00
Out-of-stock and availability issues	67.00
Increased cost due to Covid-19 restrictions	60.00
Customers unable to match the increased costs of goods	47.00
Customers demand faster and better service	40.00
Infrastructure not yet digitally ready to accommodate e-commerce transactions	13.00

⁴ Pursuant to Section 6, 2016 Revised IRR of RA 9184, "To systematize the procurement process, avoid confusion and ensure transparency, the procurement process, including the forms to be used, shall be standardized insofar as practicable. For this purpose, the GPPB shall pursue the development of generic procurement manuals and standard bidding forms, the use of which once issued shall be mandatory upon all Procuring Entities." There are only two prescribed signatories in the PPMP.

To assess the factors that contribute to an effective and efficient procurement process, two models were performed. These models were the Generalized Linear Model (GLM) and Binary Logistic Regression (BLG). A GLM was performed for several months of project completion, and utilization rate since its variable type is a ratio. On the other hand, BLG was performed for dependent variables that have responses like Yes or No. All inferential tests were performed using the R.

Six models were assessed. These are the number of months of project completion, utilization rate, procured all goods and services, delivery of outputs, performed all necessary procedures to obtain expected results, and utilized the necessary budget. All models have 17 independent variables namely: type of project, amount of budget, months of budget release, time spent by the project leader, number of project staff, number of contractual staff, number of enumerators, number of consultants, number of administrative staff members, training of project leads, training of administrative staff members, knowledge of project staff on procurement, knowledge of the administrative staff member on procurement, number of days of the procurement process, number of signatures on forms, number of months of project extension, and realignment of funds.

At 5% level of significance, the first model (Y = the number of months of project completion) showed one significant variable, the number of enumerators, while the second model (Y = utilization rate) showed no significant factors. Additionally, two significant factors were found in the third model (Y = procured all goods/services): the S&T type of the project and the knowledge of the project lead. The fourth model (Y = delivery of outputs) showed that the knowledge of the project lead and administrative staff member are the significant factors that affect the delivery of the project outputs. Meanwhile, the fifth model (Y = performed necessary procedures to obtain expected outputs) showed that the number of enumerators and realignment of funds was significant in the model. Lastly, for the sixth model (Y = utilized necessary budget), the amount of budget and number of project staff members were found to be significant in the model. Only the significant factors can be concluded that affected the efficiency and effectiveness of the procurement process of the R&D projects.

Table 16*Dependent Variable: Number of months of project completion*

Coefficients	Estimate	Std. error	P-value	Interpretation
(Intercept)	2.60E+01	6.64E+00	0.00020	Significant
Number of enumerators	-1.78E+00	8.81E-01	0.04685	Significant

Table 17*Dependent variable: Procured all goods and services (Yes or No)*

Coefficients	Estimate	Std. error	P-value	Interpretation
Type of project	1.95E+00	8.46E-01	0.0209	Significant
Knowledge of project leader	-4.23E-01	1.93E-01	0.0287	Significant

Table 18*Dependent variable: Delivery of outputs (Yes or No)*

Coefficients	Estimate	Std. error	P-value	Interpretation
Knowledge of project leader	-4.47E-01	1.85E-01	0.0157	Significant
Knowledge of administrative staff	3.11E-01	1.40E-01	0.0267	Significant

Table 19*Dependent variable: Performed all necessary procedures to obtain expected results (Yes or No)*

Coefficients	Estimate	Std. error	P-value	Interpretation
(Intercept)	-2.43E+00	1.19E+00	0.0407	Significant
Number of enumerators	-5.36E-01	2.62E-01	0.0411	Significant
Re-alignment of funds	2.15E+00	8.31E-01	0.0098	Significant

Table 20*Dependent variable: Utilized the necessary budget (Yes or No)*

Coefficient	Estimate	Std. error	P-value	Interpretation
(Intercept)	-3.87E+00	1.42E+00	0.0064	Significant
Budget	8.63E-08	3.62E-08	0.0171	Significant
Number of project staff	-3.30E-01	1.44E-01	0.0219	Significant

Major Findings on the Procurement Act

Section 53.6 of IRR 2016 of RA 9184 was specifically included by GPPB to facilitate procurement for R&D, and yet this policy has been poorly utilized.⁵ The BAC respondents mentioned being hesitant about the provision because the language of the section was unclear and vague. On the other hand, the majority of project leads were not even aware of the provision.

The institutional policies and implementation set by the RDIs in relation to the GPRA have also caused bottlenecks, especially in having numerous signatories in the several procurement documents such as PPMP and APP. Apart from this, delays in the procurement timeline have also been caused by the limited capacities of project leads and project staff members in conducting procurement activities. The majority of BAC offices conduct training, but only a few of the project leads attend. Most of the training sessions conducted by BAC are attended by contractually employed personnel in the administrative field. In the course of their R&D activities, project leads do not refer to any procurement manual.

According to BAC and BAC-Sec respondents, plans, drawings (architectural designs), and technical specifications (70%) are the documents with the most insufficient or incomplete information submitted by the procuring entity. Suppliers also expressed their difficulties in accomplishing the bidding documents, 71% of them stated that the statement on ongoing and completed government and private contracts is difficult to comply with. Other factors include the lack of qualified suppliers and a limited market of highly specialized and scientific equipment. On the other hand, the organization of the RDIs also played a role in influencing the speed of procurement. The limited signing authority of some SUC Presidents and the lack of decision power affect large-scale procurements, which are critical to the growth and development of these institutions.

⁵ Please refer to Annex H of the GPRA IRR 2016 for Section 53.6 guidelines.

CONCLUSION AND RECOMMENDATIONS

Despite the World Bank rating RA 9184 as one of the best procurement laws in the world, the Philippine procurement system remains problematic, especially when it comes to the implementation of public R&D projects. Particular challenges arise where the current procurement law attempts to impose stricter measures to regulate government procurements without taking into account the nuanced nature of R&D. The principles and established protocols of scientific research make it difficult for R&D to adhere to strict and standardized financial policies and this is particularly true for activities in the natural and physical sciences.

There are specific provisions in the RA 9184 policy and implementation by the RDIs that contributed to the problems in the public R&D.

One, on the low usage rate of *Section 53.6: Scientific, Scholarly or Artistic Work, Exclusive Technology and Media Services*, the provision needs to be made clear to end-users, both in terms of content and procedure, to facilitate R&D procurement.

Two, the RDI's policies and structures, as well as the capabilities of its procurement office, project leads, and project staff members may have directly resulted in bottlenecks and delays, that prevent effective delivery of R&D. Further, RDIs have imposed additional documentation requirements and signatories at their discretion, which also hinder the procurement process.

Three, another factor compromising procurement efficiency is the lack of qualified and eligible suppliers and a limited market source of highly specialized and scientific equipment.

And fourth, certain conditions for foreign suppliers, as well as prescribed rules for competitive bidding may have to be rethought of by GPPB.

In view of the above, the following recommendations build upon the principles of the GPRA to reflect the critical role of the different actors and levels of governance in public procurement to achieve efficiency and effectiveness. The following recommendations are advanced:

1. Facilitate access to Section 53.6 so public RDIs can purchase the necessary equipment and services. To accomplish this, GPPB should have clear and simple guidelines in place so that end-users and the procurement office can use and prescribe section 53.6. The procurement office may have to retool, focusing specifically on R&D operations to support end-users in promoting the use of section 53.6.
2. In Section 52, Shopping, provide access to single-use procurement where restrictions on suppliers are justified. Although the competitive procedure should be the norm in procurement, if limitations exist in terms of suppliers' availability and qualifications, competitive tendering and the use of single-use procurement may be acceptable, subject to adequate oversight that considers corruption and manipulation risks.
3. RDI should develop its procurement personnel to deliver value for money. It will be necessary to develop measures to promote the use of Section 53.6 and tie them to the performance of the procurement office. Initiatives of this kind will require adjustments related to incentives and the development of human resources, where innovation, efficiency, and effectiveness are valued over simply compliance. It is also recommended that accountability mechanisms, including complaints and sanctions, be in place. In addition, a dedicated team might be needed for research and development management exclusively responsible for planning and implementing R&D projects.
4. Streamline the public procurement system of the RDIs by identifying operational overlaps, inefficient processes, and other causes of delays. If possible, public procurement should emphasize service over compliance and regulation.
5. Develop a procurement manual applicable for the public RDI's peculiarities and research ecosystem.

REFERENCES

- Arayata, M. C. (2020, November 25). *PH needs to spend more for R&D: DOST chief*. Philippine News Agency. <https://www.pna.gov.ph/articles/1122963>
- Asian Development Bank. (2016). *Local government finance and fiscal decentralization reform program, subprogram 2: Report and recommendation of the president*. <https://www.adb.org/projects/documents/phi-lg-finance-and-fiscal-decentralization-reform-program-sp2-rrp>
- Cadapan-Antonio, M. (2008). *Transparency in public procurement training module*. Silliman University.
- Clarete, R., & Pascua, G. (2016). The TPP agreement and government procurement: Opportunities and issues for the Philippines. *Philippine Journal of Development*, 43(2), 67–96. https://pidswebs.pids.gov.ph/CDN/PUBLICATIONS/pidspjd2016-2_procurement.pdf
- Department of Science and Technology. (2021). *Compendium of science and technology statistics*. <https://www.dost.gov.ph/phocadownload/Downloads/Statistics/Compendium-of-ST-Statistics-as-of-Aug-2018.pdf>
- Department of Science and Technology. (2018). *Research and development survey report*. <https://instat.uplb.edu.ph/wp-content/uploads/2021/05/RTableD-Survey-Report-2018.pdf>
- Furnas, A. (2013). *Transparency case study: Public procurement in the Philippines*. Sunlight Foundation. <https://sunlightfoundation.com/2013/10/07/case-study-public-procurement-in-the-philippines/>
- Jones, D. S. (2010, August 26–28). *Reforming public procurement in the Philippines: Progress and constraints* [Comparative procurement session]. Fourth International Public Procurement Conference, Seoul, South Korea. <https://www.ippa.org/IPPC4/Proceedings/01ComparativeProcurement/Paper1-14.pdf>
- Mapsinitiative.org. (2018). *Methodology for assessing procurement systems (MAPS)*. <http://www.mapsinitiative.org/methodology/MAPS-methodology-for-assessing-procurement-systems.pdf>
- Navarro, A., & Tanghal, J. (2017). *The promises and pains in procurement reforms in the Philippines* [Discussion paper series no. 2017-16]. Philippine Institute for Development Studies. <https://pidswebs.pids.gov.ph/CDN/PUBLICATIONS/pidsdps1716.pdf>
- RTI International. (2014). *Science, Technology, Research, and Innovation for Development (STRIDE)*. RTI Global Gender Center. <https://gendercenter.rti.org/node/1601>

- Senate Economic Planning Office. (2008). *Plugging the loopholes of the Philippine procurement system* [Policy brief no. 08-05]. Senate of the Philippines. <https://legacy.senate.gov.ph/publications/PB%202008-05%20-%20Plugging%20the%20Loopholes.pdf>
- The Manila Times. (2015, March 8). *A second look at the procurement law*. <https://www.manilatimes.net/2015/03/08/featured-columns/columnists/a-second-look-at-the-procurement-law/168027>
- UNESCO. (2015). *UIS online database (2007–2015)*. Institute for Statistics, UNESCO. <http://stats.uis.unesco.org>