Data Article

# The quality dimensions and acceptance of the newly launched e-procurement system (SIPLah) in Indonesian schools: Insights from a comprehensive dataset

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## ARTICLE INFO

## ABSTRACT

The Indonesian Ministry of Education and Culture launched a new e-procurement system for schools, known as SIPLah, in June 2019. This paper introduces a dataset comprising responses from middle school principals to a questionnaire focusing on the quality dimensions of the newly implemented e-procurement system and their acceptance of this technology. The dataset encompasses responses from 3110 middle schools, representing nearly all Indonesian provinces, and offers valuable indicators for assessing the system's quality dimensions and acceptance. These quality dimensions include processing, content, usability, training, and professionalism, while constructs for evaluating system acceptance comprise perceived ease of use, perceived usefulness, attitude, and intention to continue using. Data collection occurred from August 31 to September 30, 2023, utilizing an online questionnaire administered via Google Forms. Collaboration with the Indonesian Ministry of Education, Culture, Research, and Technology facilitated the distribution of the survey questionnaire to middle school principals across Indonesia through WhatsApp Messenger. This dataset holds

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significant potential for research exploring the impact of e-procurement system quality on schools' acceptance and for providing insights to policymakers and government officials regarding schools' perceptions of the system's quality and acceptance. As supplementary material, the dataset is made available to facilitate its reuse and further analysis by the research community.

## Specifications Table

| Subject | Social Sciences |
|---|---|
| Specific subject area | Educational Technology |
| Type of data | Table, Raw |
| Data collection | The survey was implemented through Google Forms, a widely utilized online survey tool. In collaboration with the Ministry of Education, Culture, Research, and Technology of Indonesia, the online survey questionnaire was disseminated to the heads of middle school divisions in district/city services across Indonesia via WhatsApp Messenger. Subsequently, these officials distributed the survey to school principals in their respective districts/cities. The data collection period spanned from August 31 to September 30, 2023. To ensure respondent privacy, all survey responses were treated confidentially, and the survey was conducted in Bahasa Indonesia to facilitate respondent comprehension. |
| Data source location | The online survey encompassed a sample of 3110 middle schools (2422 public schools and 688 private schools) from 35 provinces across Indonesia. |
| Data accessibility | Repository name: Mendeley Data<br>Data identification number: 10.17632/7bkdbfkj7c.2 [1]<br>Direct URL to data: https://data.mendeley.com/datasets/7bkdbfkj7c/2 |

## 1. Value of the Data

- The dataset provides valuable indicators for assessing the quality of the newly launched e-procurement system (SIPLah) within the educational sector, specifically at the middle school level in Indonesia. Encompassing dimensions such as processing efficiency, content relevance, usability, training adequacy, and professionalism, it provides a comprehensive understanding of SIPLah's performance.
- Additionally, this dataset includes information on the acceptance of SIPLah among middle schools in Indonesia, covering factors such as perceived ease of use, usefulness, attitude, and intention to continue using the system. These insights are important in investigating the effectiveness and user satisfaction of SIPLah within the school landscape.
- This dataset will be useful for researchers to examine the impact of SIPLah's quality dimensions on schools' intention to continue using it, contributing to a deeper understanding of technology adoption within educational contexts. By analyzing how these dimensions influence acceptance continuity levels, researchers can identify areas for improvement and inform future developments in e-procurement systems.
- Furthermore, the dataset can serve as a valuable reference for policymakers and/or the government to gain insights into schools' perceptions of SIPLah's quality and acceptance. By understanding users' experiences and feedback, policymakers can make informed decisions to enhance SIPLah's adoption and usability, ultimately improving procurement processes and transparency within the educational sector.
- Moreover, the dataset can be used as a point of reference for other researchers to compare with datasets collected from different countries/territories or similar research investigating e-procurement systems in other disciplines. This cross-referencing facilitates international

knowledge sharing and collaboration, enriching the discourse on e-procurement practices in educational settings globally.

## 2. Background

The Indonesian Ministry of Education and Culture launched the "Sistem Informasi Pengadaan Sekolah (SIPLah)" in June 2019, aiming to modernize procurement practices in Indonesian schools. SIPLah enhances transparency, streamlines administrative processes, and promotes economic inclusion by allowing micro, small, and medium enterprises to participate as suppliers.[1] The government intends to make SIPLah mandatory in all Indonesian schools,[2] signifying a significant step towards modernizing the education sector. Given the recent introduction of this system and the varying contexts of Indonesian schools, we were motivated to collect datasets on schools' perceptions of its quality dimensions and their acceptance. Understanding schools' perceptions of SIPLah is crucial for policymakers seeking to optimize its implementation and maximize its benefits.

The collection of datasets was guided by the Technology Acceptance Model (TAM) theory, initially proposed by Davis [2] and further developed by Davis et al. [3]. Additionally, we extended the TAM by incorporating quality aspects of e-procurement, as suggested by Brandon-Jones [4] and Brandon-Jones & Kauppi [5]. Our aim in applying the extended TAM was to assess the quality dimensions of the newly launched e-procurement system and understand its acceptance among Indonesian schools from a theoretical perspective.

## 3. Data Description

This paper presents a comprehensive dataset consisting of responses from middle school principals to a questionnaire focusing on the quality dimensions of the newly introduced e-procurement system (SIPLah) and their acceptance of this technology. The dataset encompasses responses from 3110 middle schools, which represent nearly all Indonesian provinces. Table 1

**Table 1**
Demographic and sample characteristics ($n = 3110$).

| No | Category | Sub-category | Frequency | % |
|---|---|---|---|---|
| 1 | Status | Public | 2422 | 77.878 |
| | | Private | 688 | 22.122 |
| 2 | Accreditation | A | 1314 | 42.251 |
| | | B | 1247 | 40.096 |
| | | C | 472 | 15.177 |
| | | No accreditation | 77 | 2.476 |
| 3 | Gender | Male | 1773 | 57.010 |
| | | Female | 1337 | 42.990 |
| 4 | Education degree | Diploma/Bachelor's degree | 2258 | 72.605 |
| | | Master's degree | 843 | 27.106 |
| | | Doctorate degree | 9 | 0.289 |

illustrates the composition of the sample, comprising 2422 public middle schools and 688 private middle schools. The majority of these schools hold good accreditation status, with categories A and B being the most prevalent. Additionally, Table 1 provides data on the gender

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[1] See, for more details: https://siplah.kemdikbud.go.id/index.php/tentang_siplah/entry/manfaat-siplah-untuk-satuan-pendidikan.

[2] Please see: Regulation No. 14 of 2020 by the Ministry of Education and Culture of Indonesia, which provides guidelines for the procurement of goods and services by educational units.
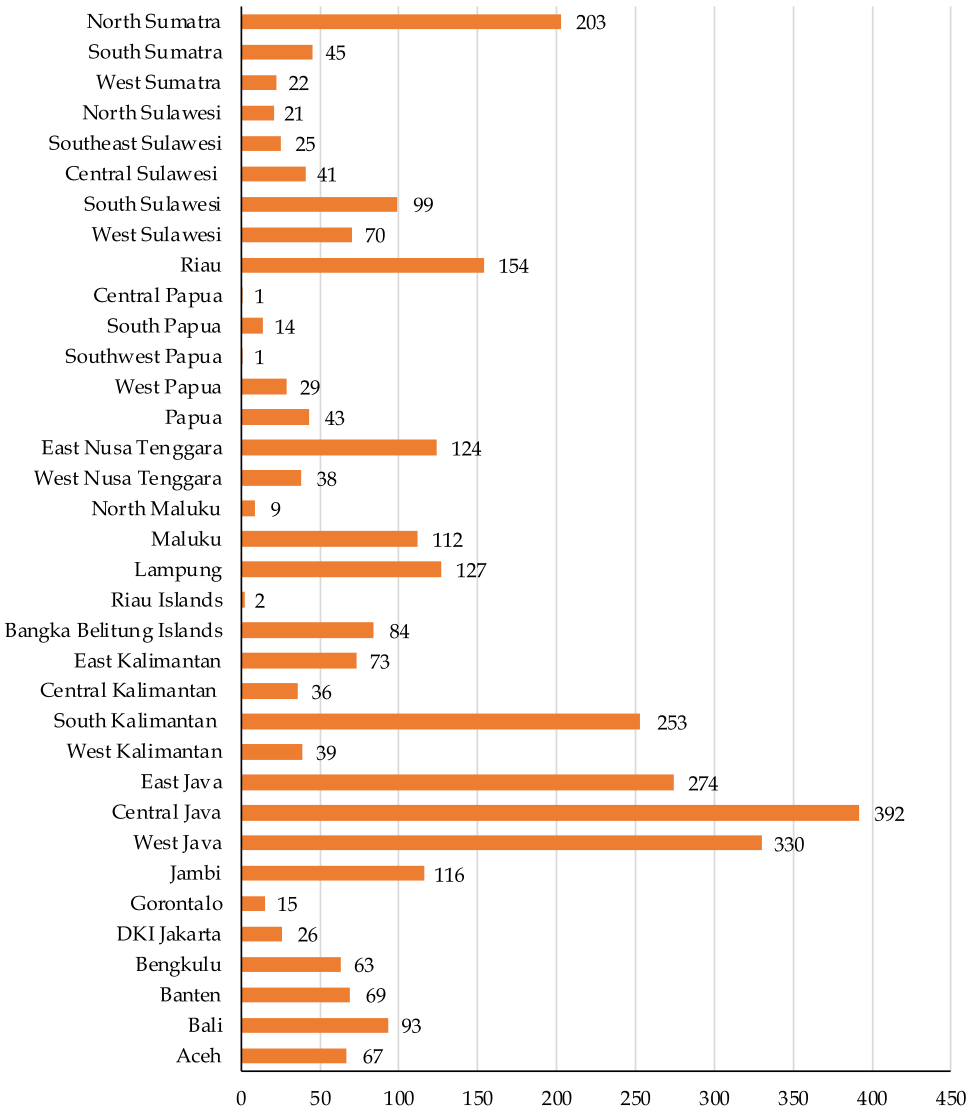
**Fig. 1.** Sample distribution by province.

distribution of respondents, with 1773 male and 1337 female participants. Regarding education level, the majority of respondents hold a Diploma/Bachelor's degree, followed by those with a Master's degree, and a small percentage with a Doctorate degree. These schools are dispersed across 35 provinces in Indonesia, with the highest proportions located on the densely populated Indonesian island of Java, particularly in Central Java, West Java, and East Java (Fig. 1).

The dataset includes indicators to assess the quality dimensions of the e-procurement system, such as processing, content, usability, training, and professionalism, alongside indicators measuring its acceptance, including perceived ease of use, usefulness, attitude, and intention to continue using. Furthermore, Table 2 provides details on the items used for each construct and its corresponding code. Additionally, this paper is accompanied by a Microsoft Excel Work-

**Table 2**
Survey Instrument.

| Variable | Code | Item |
|---|---|---|
| **Quality dimensions of the e-procurement system** | | |
| 1. Processing (P) | P1 | The e-procurement system ensures orders are processed quickly. |
| | P2 | The e-procurement system ensures orders get to suppliers quickly. |
| | P3 | The e-procurement system reduces the lead time of orders. |
| | P4 | The e-procurement system ensures that orders arrive on time. |
| 2. Content (C) | C1 | The e-procurement system has the right number of suppliers loaded. |
| | C2 | The e-procurement system has the right number of catalogues loaded. |
| 3. Usability (U) | U1 | The e-procurement system is available at all times. |
| | U2 | The e-procurement system moves quickly from one screen to the next. |
| | U3 | The e-procurement system allows easy navigation through the order process. |
| 4. Training (T) | T1 | The government provided me with timely training to use the system. |
| | T2 | The government provided me with appropriate training to use the system. |
| 5. Professionalism (Pr) | Pr1 | The government is always available to deal with my queries or problems. |
| | Pr2 | The government responds quickly to my queries or problems. |
| | Pr3 | The government is knowledgeable when dealing with my queries or problems. |
| | Pr4 | The government is flexible when dealing with unusual requests or problems. |
| | Pr5 | The government deals effectively with any mistakes they make. |
| | Pr6 | The government is friendly when dealing with queries or problems. |
| | Pr7 | The government shows concern when dealing with my queries or problems. |
| **The acceptance of the e-procurement system** | | |
| 1. Perceive ease of use (PEU) | PEU1 | Using the e-procurement system takes too much time from my normal duties (*reverse*). |
| | PEU2 | Working with the e-procurement system is so complicated, it is difficult to understand what is going on (*reverse*). |
| | PEU3 | Overall, I believe that the e-procurement system is easy to use. |
| | PEU4 | Learning to operate the e-procurement system is easy for me. |
| 2. Perceive usefulness (PU) | PU1 | I find the e-procurement system useful in my job. |
| | PU2 | Using the e-procurement system enables me to accomplish my ordering activities more quickly. |
| | PU3 | Using the e-procurement system increases my productivity. |
| | PU4 | Using the system makes it easier to do my job. |
| 3. Attitudes toward the e-procurement system (A) | A1 | Introducing the e-procurement system was a good idea. |
| | A2 | The e-procurement system makes my work more interesting. |
| | A3 | Ordering something through the e-procurement system is fun. |
| | A4 | I like working with the e-procurement system. |
| 4. Intentions to continue using e-procurement system (IU) | IU1 | I expect to keep using the e-procurement system. |
| | IU2 | If a product or service can be ordered through the e-procurement system, I will surely do so. |
| | IU3 | If possible, I would rather order a product or service outside of the e-procurement system (*reverse*). |

sheet as supplementary material, containing respondents' agreements or disagreements with the questionnaire statements. Each statement includes 3110 entries of encoded answers, with respondents evaluating their agreements and disagreements using a 5-point Likert scale, where 5 represents "completely agree" and 1 denotes "completely disagree." The questionnaire data are anonymous, i.e., schools' names and respondents' names were not included in the data to maintain privacy.

## 4. Experimental Design, Materials and Methods

We drew upon previous studies to develop the survey instrument. Initially, we conducted a review of the literature to identify relevant dimensions for assessing the quality and acceptance of e-procurement systems. Based on this review, we identified key constructs, including processing, content, usability, training, and professionalism, for evaluating the quality dimensions of the e-procurement system. These constructs were adapted from validated scales proposed by Brandon-Jones [4] and Brandon-Jones & Kauppi [5]. Additionally, to assess the acceptance of the e-procurement system, we selected constructs such as perceived ease of use, perceived usefulness, attitude, and intention to continue using, drawing from the works of Brandon-Jones & Kauppi [5], Davis et al. [3], Moore & Benbasat [6], and Venkatesh et al. [7].

Following the identification of constructs, a draft survey instrument was developed with items corresponding to each construct. These items aimed to capture various aspects of the quality dimensions and acceptance of the e-procurement system. Initially drafted in English, the survey was later translated into Bahasa Indonesia by two bilingual experts and reviewed by a language specialist to ensure consistency and accuracy. Before official data collection began, a pilot test of the survey instrument was conducted to evaluate the clarity and relevance of the questions. Three academic researchers and five school principals provided valuable feedback, which was used to refine the survey instrument by revising ambiguous items and clarifying instructions. All survey items were assessed using a 5-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree). This scale allowed respondents to express varying degrees of agreement or disagreement, providing a nuanced measurement of their perceptions regarding the quality of the newly launched e-procurement system and their acceptance of it.

The data collection for this study occurred from August 31 to September 30, 2023, using an online questionnaire administered via Google Forms. In collaboration with the Ministry of Education, Culture, Research, and Technology of Indonesia, we distributed the survey to middle school division heads in district/city services across Indonesia through WhatsApp Messenger. These officials subsequently shared the survey with school principals within their districts/cities. Our survey specifically targeted middle schools that have implemented SIPLah. Through a convenience sampling method, we obtained a total of 3118 responses during the data collection process. However, upon screening, 8 responses were found to be incomplete and were therefore excluded from the final analysis. Consequently, our final sample comprises 3110 valid responses.

## Limitations

Our dataset has several limitations. First, despite the large sample of 3110 schools, it only includes middle schools from Indonesia. Second, although our sample covers middle schools from nearly all Indonesian provinces, there are no representative schools from three provinces: the Special Region of Yogyakarta, North Kalimantan, and Highland Papua. Additionally, some provinces have a limited number of sampled schools, with fewer than 10 schools represented, such as Southwest Papua (1 middle school), Central Papua (1 middle school), Riau Islands (2 middle schools), and North Maluku (9 middle schools).

## Ethics Statement

The survey received approval from the Ethics Commission of the Faculty of Teacher Training and Education, Universitas Sebelas Maret, Indonesia (approval letter code: 11/UN27.02.11/PP/EC/2023). Informed consent was obtained from each participant prior to their involvement in the survey. Participants were informed that their participation was voluntary. All data collected from voluntary participants were anonymized. We ensured that all survey responses were treated confidentially.

## Credit Author Statement

**Harnowo Susanto:** Conceptualization, Investigation, Project administration, Writing – original draft, Writing – review & editing. **Trisno Martono:** Supervision, Methodology, Writing – review & editing. **Dewi Kusuma Wardani:** Supervision, Data curation, Writing – review & editing. **Khresna Bayu Sangka:** Supervision, Methodology, Writing – original draft. **Budi Wahyono:** Methodology, Formal analysis, Software, Writing - original draft.

## Data Availability

Dataset on the quality dimensions and the acceptance of the e-procurement system (SIPLah) in Indonesia (Original data) (Mendeley Data).

## Acknowledgments

## Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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