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Evaluation of the Unilak Press ISBN Submission Statistics Dashboard and a Roadmap for Artificial Intelligence Adoption: A Case Study

Muhammad Fitra Hamidy[1*], Hadira Latiar[2]
[1,2]*Universitas Lancang Kuning, Pekanbaru, Indonesia*
*Corresponding author: fitra@unilak.ac.id | ORCID: https://orcid.org/0000-0002-2738-9744

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ABSTRACT

Background: University presses increasingly publish ISBN submission statistics through online dashboards, yet few studies examine how such dashboards are built, read, and enhanced with artificial intelligence (AI). **Objective:** This study evaluates the ISBN submission statistics dashboard of Unilak Press by reconstructing its workflow and assessing its content and visual design, and then formulates a phased roadmap for AI adoption. **Method:** A descriptive qualitative case study analyzing five screenshots (data sheet, data connector, chart gallery, dashboard editor, and public page), complemented by a review of 20 references published in 2021–2025. Figures were read from the screenshots and derived values were recalculated. **Results:** The dashboard records 169 submissions from 32 study programs. The top three study programs account for about 31.4% and the top ten for about 66.9% of submissions. Design gaps include a ten-slice pie chart, truncated axis labels, the absence of a time trend, and color-dependent encoding. The data sheet shows inconsistent spelling of categories and contains personal data. The literature points to AI opportunities in data cleaning, chart recommendation, natural-language querying, automated narratives, and accessibility, accompanied by risks of hallucination, bias, and exposure of personal data. **Conclusion:** Improvements to design and basic data entry should precede AI. AI components should read only aggregate data, and their output should be reviewed by humans before publication.

Keywords: *artificial intelligence; dashboard; data visualization; Looker Studio; university press; ISBN; roadmap*

1. Introduction

Universities generate large amounts of service data, from library circulation and institutional repositories to book publishing. Data that remain stored only as rows and columns are hard to use for decision-making; their value becomes apparent only once they are summarized visually. This need has grown as university library services in Indonesia shifted to virtual formats during the pandemic (Winata *et al.*, 2021) and as studies of digital libraries have underscored the importance of ease of use for the academic community (Kato *et al.*, 2021). University presses face a similar situation. Unilak Press handles ISBN requests through an online form; each submission is recorded in a Google Spreadsheet, and the summary is published on the Statistics page at press.unilak.ac.id/statistik. The ISBN submission statistics dashboard records 169 submissions from 32 study programs. This number is large enough to reveal patterns but still small and recent, so a single erroneous entry can change the reading. At the same time, artificial intelligence (AI) is now present at almost every stage of visualization work, which raises a practical question: what can AI add to a dashboard of this kind, and what risks come with it? It should be noted that Looker Studio is fundamentally a visualization and *business intelligence* tool, not a generative AI

system. The term "AI adoption on dashboards" in this article covers (1) automation features in visualization tools and (2) complementary approaches such as natural-language interfaces and large language models (LLMs) that can be placed on top of a dashboard.

On the campus dashboard side, Ramadhan *et al.* (2023) visualized the distribution of school origins of 1,122 new students at IAIN Metro in 2022 using Looker Studio, while Latiar *et al.* (2025) described three stages of library data visualization (preparation, processing, and visualization), starting from data in .xls format. Both studies show that the tool is easy to adopt, but both focus on building dashboards rather than evaluating readability or data risks. Firat *et al.* (2022) remind us that reading charts is a skill that must be trained, not something users possess automatically. On the AI-for-visualization side, Wu *et al.* (2022) mapped the application of AI to data visualization into three purposes: creation, refinement, and analysis. Luo *et al.* (2022) proposed ncNet, which translates natural-language questions into chart specifications, while Shen *et al.* (2023) and Zhang *et al.* (2024) reviewed natural-language interfaces for visualization and tabular data, including the influence of LLMs. LLM-based systems such as Chat2VIS (Maddigan & Susnjak, 2023), LIDA (Dibia, 2023), and LLM4Vis (Wang *et al.*, 2023) respectively turn free-form questions into chart code, break the analysis process into modules, and recommend visualizations together with explanations. In the literature reviewed, these systems are introduced as general methods or tools; none is demonstrated on a small institutional dashboard based on form entries.

In library services, Cox and Mazumdar (2024) identified five types of AI use cases, including services to users and analysis of user behavior data, and pointed to ethical and equity issues. Okunlaya *et al.* (2022) developed a framework for AI-based library services for the digital transformation of higher education and noted the low adoption of AI in university libraries. Dwivedi *et al.* (2023) compiled 43 expert contributions on the opportunities and challenges of generative AI and found views still divided on whether restrictions are needed. On accessibility and risk, Kim *et al.* (2021) developed a seven-dimension design space for visualizations accessible to people with visual disabilities, and Kim *et al.* (2023) found limited support for alternative text and data tables in popular visualization tools. Ji *et al.* (2023) surveyed the problem of hallucination in natural language generation, Bender *et al.* (2021) warned of bias and the need for data curation, and Kasneci *et al.* (2023) emphasized user competence and human oversight in the use of LLMs.

In the literature reviewed, studies of Looker Studio dashboards in campus settings (Latiar *et al.*, 2025; Ramadhan *et al.*, 2023) focus on building dashboards, whereas studies of AI for visualization (Luo *et al.*, 2022; Maddigan & Susnjak, 2023) focus on systems and methods. No study has been found that evaluates the ISBN statistics dashboard of a university press by combining the reading of real data, an evaluation of design and accessibility, and a mapping of AI opportunities and risks. Unlike these studies, this article treats one operational dashboard as a case and derives a phased roadmap that places design and data-quality improvements before AI. This study aims to evaluate the ISBN submission statistics dashboard of Unilak Press, that is, to reconstruct its workflow and assess its content and visual design, and then to formulate a roadmap for AI adoption together with its risk management.

2. Research Method

This study is a descriptive qualitative case study of one operational dashboard, namely the ISBN submission statistics dashboard of Unilak Press. The case was chosen because it displays

the entire work chain, that is, the form, data sheet, visualization tool, and public page, within a single institution. The primary data are five screenshots: (1) the worksheet *Pengajuan ISBN Buku UNILAK PRESS (Jawaban)* (ISBN submissions for books, UNILAK PRESS, responses) in Google Spreadsheet (Figure 2); (2) the *Tambahkan data ke laporan* (Add data to report) screen with the Google Spreadsheet connector (Figure 3); (3) the Looker Studio editor with the chart-type gallery (Figure 4); (4) the editor of the Statistik Unilak Press dashboard with the properties and data panels (Figure 5); and (5) the page press.unilak.ac.id/statistik (Figure 6). All five screenshots were analyzed without sampling because their number is limited and each represents one stage of the workflow.

Figures were read directly from the screenshots; percentages and derived totals were recalculated by the authors and rounded to one decimal place. The analysis was carried out in five steps (Figure 1): reconstructing the data flow, reading the dashboard figures, evaluating the visual design, mapping AI opportunities based on the literature, and analyzing risks. The first three steps follow the preparation–processing–visualization pattern used by Latiar *et al.* (2025). The design evaluation draws on two references, namely chart readability (Firat *et al.*, 2022) and visualization accessibility (Kim *et al.*, 2023). The evaluation in this study takes the form of a descriptive assessment of the content (figures and data categories) and visual design of the dashboard, not a usability test with users.

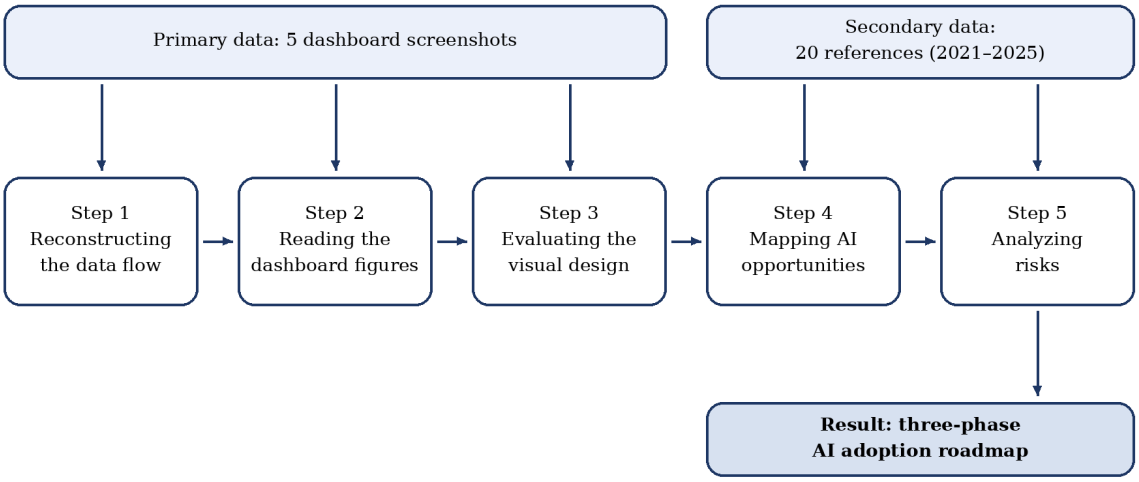


Figure 1. *Research method flow: two types of data are processed through five steps to produce a phased roadmap.*

Secondary data were searched through web search engines and publisher and repository pages, using the keywords *Looker Studio*, library dashboard, *data visualization*, *natural language to visualization*, *large language model*, *AI in libraries*, *accessible visualization*, and *hallucination*. The inclusion criteria were publication in 2021–2025, possession of a DOI, and relevance to data visualization, AI, libraries, accessibility, or language-model risks. The search yielded 20 references in the form of journal articles and conference papers, and every DOI was checked against the publisher or repository record. Validity was maintained through triangulation across screenshots (data sheet, dashboard, and public page) and consistency checks of the figures, for example the total of 169 and the faculty percentages recalculated from the table. The study involved no human participants. Because the data sheet contains applicants' email addresses, WhatsApp numbers, and links to ID card (KTP) files, these columns were blurred in Figure 2 and are not reported. The

tools observed were Google Spreadsheet and Looker Studio; no additional analysis software was used.

3. Results and Discussion

3.1 Finding 1: The data flow is direct and simple

The screenshots show five stages of the workflow (Table 1). Applicants fill in an online form, and their responses go into the *Form Responses 1* sheet (Figure 2). The visible columns include *Timestamp*, *Email Address*, *Nama Lengkap* (full name), *No. Whatsapp* (WhatsApp number), *Email*, *KTP (PDF)* (ID card), *Judul Buku* (book title), *Jenis Naskah* (manuscript type), and *Nama Penulis* (author name). In Looker Studio, the Google Spreadsheet connector is selected with the options *Gunakan baris pertama sebagai header* (use the first row as headers) and *Sertakan sel yang disembunyikan dan di filter* (include hidden and filtered cells) switched on, and the screen reminds users that column headers must be unique (Figure 3). The chart gallery offers tables, scorecards, time series, bar, pie, map, and other chart types (Figure 4), and the resulting dashboard is embedded on the Statistics page (Figures 5 and 6).

Table 1. *Workflow stages of the ISBN submission statistics dashboard of Unilak Press*

Stage	Evidence in the screenshots	Notes
1. Collection	*Form Responses 1* sheet in the spreadsheet *Pengajuan ISBN Buku UNILAK PRESS (Jawaban)* (Figure 2)	Data enter from the online form; the first visible row is dated 27/02/2025
2. Connection	Google Spreadsheet connector with the header option enabled (Figure 3)	Column headers must be unique; columns with empty headers are not loaded
3. Modeling	Data panel and properties panel (Figure 5)	Dimension *Program Studi* (study program); metric *Jumlah* (count of rows); date dimension *Timestamp*
4. Visualization	Chart gallery and dashboard editor (Figures 4 and 5)	Selected: table, scorecard, pie chart, bar chart
5. Publication	Page press.unilak.ac.id/statistik (Figure 6)	Dashboard embedded; the site menu lists Statistics next to ISBN Application Tracking

Source: authors' screenshots (Figures 2–6).

This pattern is consistent with the three stages reported by Latiar *et al.* (2025) but differs in the data source: Latiar *et al.* started from an .xls file, whereas the Unilak Press dashboard connects directly to the form-response spreadsheet, so new submissions can appear without re-uploading a file. This advantage shifts the burden to the quality of the entries, because what an applicant types immediately becomes a category in the chart. Figure 2 gives an example: the *Jenis Naskah* (manuscript type) column contains the spelling *Buku Refensi* in sheet row 2 and *Buku Referensi* (reference book) in sheet row 5, so a single manuscript type would split into two categories if grouped. This finding adds one note to earlier campus dashboard studies (Latiar *et al.*, 2025; Ramadhan *et al.*, 2023), which focused on building dashboards: the quality of entries in the data source determines the categories displayed, and a visualization tool does not correct them.

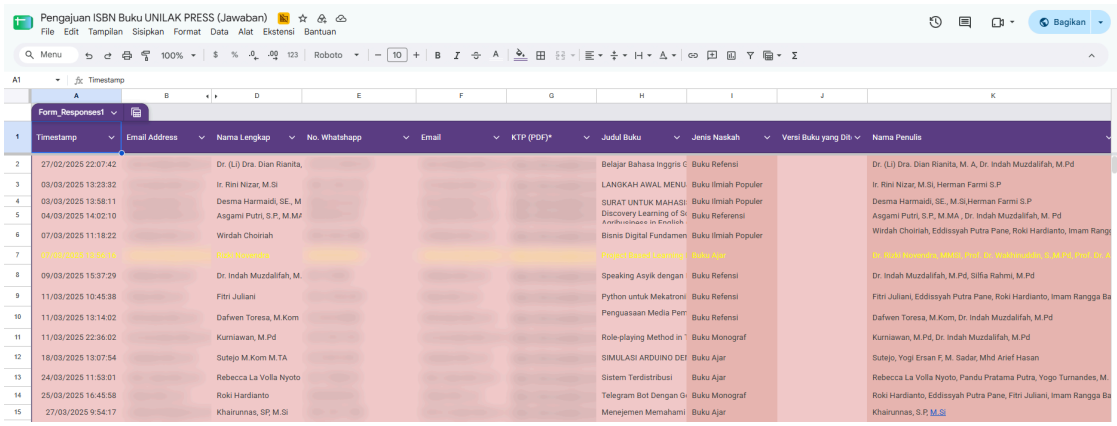


Figure 2. *Data sheet Pengajuan ISBN Buku UNILAK PRESS (Jawaban) in Google Spreadsheet. The email, WhatsApp number, and ID card link columns are blurred. Source: authors' screenshot.*

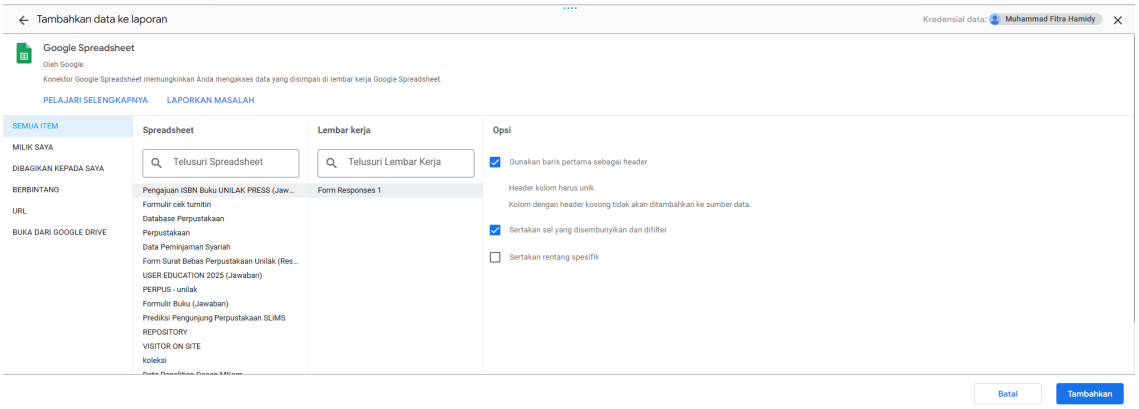


Figure 3. *The Tambahkan data ke laporan (Add data to report) screen: selection of spreadsheet, worksheet, and header options in Looker Studio. Source: authors' screenshot.*

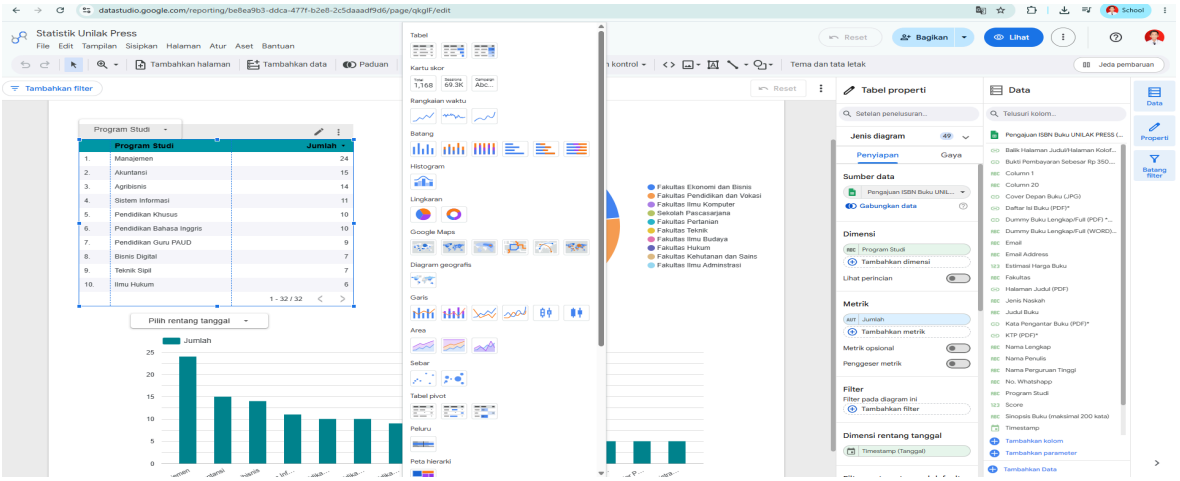


Figure 4. *Looker Studio editor with the chart-type gallery panel. Source: authors' screenshot.*

3.2 Finding 2: Submissions are concentrated in a few study programs and faculties

The dashboard records 169 submissions from 32 study programs (scorecard in Figure 5). Table 2 shows the top ten study programs. The top three, namely Management, Accounting, and Agribusiness, account for 53 submissions or about 31.4%, while the top ten account for 113 submissions or about 66.9%. The remaining 22 study programs share 56 submissions, an average of about 2.5 per study program, compared with an average of 11.3 for the top ten.

Table 2. *The ten study programs with the most ISBN submissions*

No.	Study program	Count	Percentage of total (%)
1	Management	24	14.2
2	Accounting	15	8.9
3	Agribusiness	14	8.3
4	Information Systems	11	6.5
5	Special Education	10	5.9
6	English Language Education	10	5.9
7	Early Childhood Teacher Education	9	5.3
8	Digital Business	7	4.1
9	Civil Engineering	7	4.1
10	Law	6	3.6
	Top ten	**113**	**66.9**
	22 other study programs	56	33.1
	Total (32 study programs)	**169**	**100.0**

Source: Statistik Unilak Press dashboard (Figure 5); percentages calculated by the authors and rounded to one decimal place.

The pie chart by faculty shows the Faculty of Economics and Business as the largest contributor (23.1%, about 39 submissions), followed by the Faculty of Education and Vocational Studies (19.5%, about 33), the Faculty of Computer Science and the Graduate School at 13.6% each (about 23), the Faculty of Agriculture at 8.9% (about 15), and the Faculty of Engineering at 7.7% (about 13). Four other faculties (Cultural Studies, Law, Forestry and Science, and Administrative Sciences) together account for the remainder, about 13.6% (about 23). The figure of 39 equals the sum of Management and Accounting in Table 2, which is consistent with the supposition that these two study programs form that faculty's share. This supposition needs to be confirmed with the *Fakultas* (faculty) column in the source data, because the screenshots do not display the mapping of study programs to faculties.

This concentration may reflect the number of lecturers who actively write, the intensity of outreach, or the availability of other publishing channels, but the data do not distinguish among these causes. Because the data are self-reported entries and reflect only applicants who use Unilak Press, concluding that study programs with few submissions are less productive would be mistaken. Cox and Mazumdar (2024) place user-data analysis among the AI use cases in libraries; the finding here shows that the analytical value of such use depends on careful reading. Like other campus dashboards (Ramadhan *et al.*, 2023), this dashboard answers the question "how many" well but does not yet answer "why." Because data have only been collected since February 2025, trend forecasting is not yet feasible; a monthly descriptive analysis is more candid about the limits of the data.

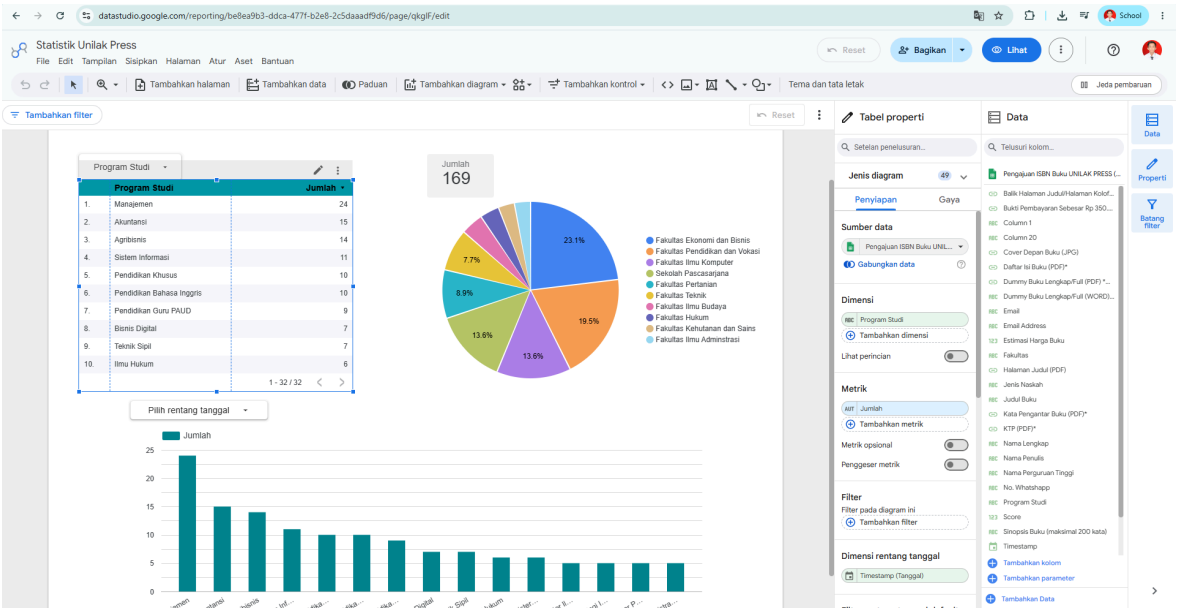


Figure 5. *Editor of the Statistik Unilak Press dashboard: table, scorecard, pie chart, bar chart, and properties and data panels. Source: authors' screenshot.*

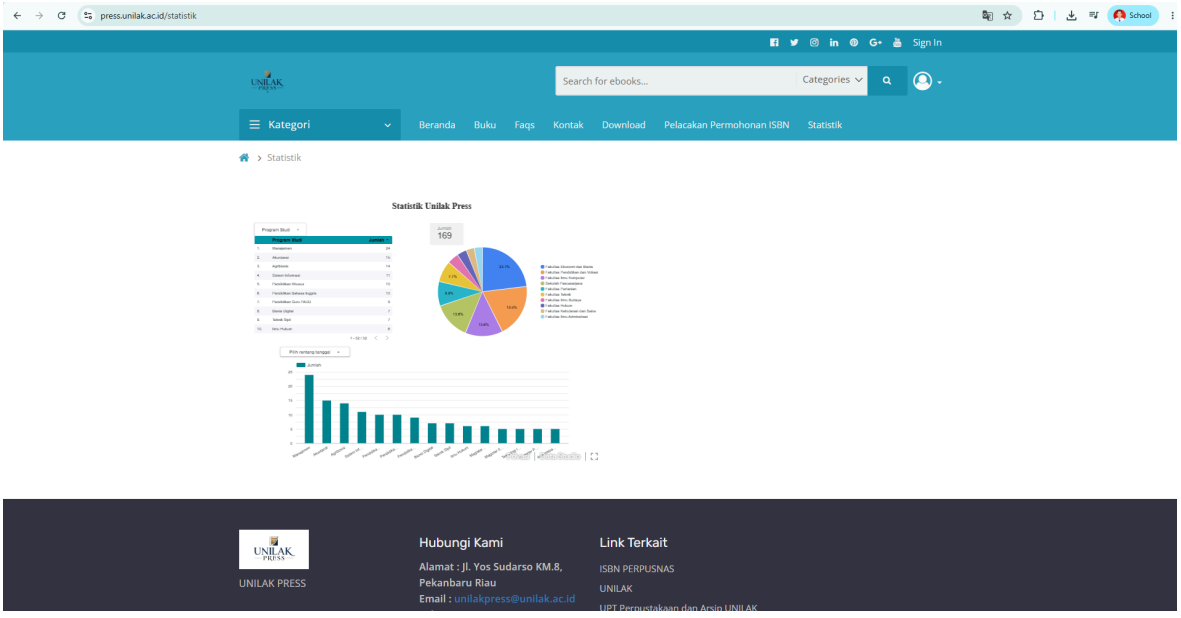


Figure 6. *Final view of the dashboard embedded in the Statistics page at press.unilak.ac.id/statistik. Source: authors' screenshot.*

3.3 Finding 3: The visual design is compact but has readability and accessibility gaps

The dashboard has several strengths: a consistent teal palette, a scorecard that gives the key figure directly, a date-range control that lets readers filter the period themselves, and a ranking table that complements the bar chart because it presents the same ordering in numerical and visual form. However, six gaps are clearly visible in Figures 5 and 6 (Table 3).

Table 3. *Visual design gaps in the ISBN submission statistics dashboard of Unilak Press*

Aspect	Finding on the dashboard	Impact on readers	Reference
Pie chart	Ten faculties in ten different colors	Small slices are hard to compare; readers go back and forth to the legend	(Firat *et al.*, 2022)
Bar chart axis labels	Study program names are truncated (ellipsis) and slanted	Bars are hard to identify without consulting the table	(Firat *et al.*, 2022)
Ranking table	Only 10 of 32 rows are shown, with pagination and no explanatory note	Readers may think there are only 10 study programs	Authors' observation
Time dimension	*Timestamp* is used only as a control; there is no time-series chart	The monthly submission trend is not visible	Authors' observation
Title and period	No indication of the data range or the time of the last update	The context of the figures is unclear	Authors' observation
Color coding	Faculties are distinguished by color alone	Difficult for readers with visual disabilities; no alternative text or companion data table for the pie chart in the screenshot	(Kim *et al.*, 2021; Kim *et al.*, 2023)

Source: authors' analysis of Figures 5 and 6.

The first and second gaps show that a rich chart gallery (Figure 4) does not guarantee the right choice; the selection still depends on the manager. This is in line with the warning by Firat *et al.* (2022) that visualization literacy is not equal among all users, so that a public dashboard should reduce, not add to, the reading burden. On the sixth gap, the finding of Kim *et al.* (2023) on the limited support for alternative text and data tables in popular tools is echoed here: the ranking table does serve as a companion data table for the bar chart because both are organized by study program, but there is no similar companion for the pie chart by faculty. Accessible design as described by Kim *et al.* (2021) therefore needs to be designed deliberately rather than expected to emerge from default settings.

3.4 Finding 4: The strongest AI opportunities lie in data quality, presentation, and access

Based on the literature, AI opportunities for the Unilak Press dashboard can be mapped by work stage (Table 4).

Table 4. *Mapping of AI opportunities on the dashboard by work stage*

Stage	Role of AI	Example on the Unilak Press dashboard	Reference
Data preparation	Proposing unification of spelling and naming	Unifying *Buku Refensi* and *Buku Referensi*	(Bender *et al.*, 2021)
Chart selection	Recommending chart types together with the reasons	Proposing a sorted bar chart to replace the ten-slice pie chart	Wang *et al.* (2023); Wu *et al.* (2022)
Chart creation	Translating natural-language questions into charts	A visitor types: show Faculty of Law submissions per month	(Dibia, 2023; Luo *et al.*, 2022; Maddigan & Susnjak, 2023; Shen *et al.*, 2023; Zhang *et al.*, 2024)
Interpretation	Composing narrative summaries and analytical questions	Automatic sentence: the top three study programs account for about 31%	(Dibia, 2023)
Accessibility	Creating alternative text and companion data tables	Text descriptions of each chart for screen readers	(Kim *et al.*, 2021, 2023)
Service planning	Analyzing user data for outreach	Highlighting study programs with low submission numbers	(Cox & Mazumdar, 2024; Okunlaya *et al.*, 2022)

Source: authors' synthesis of the cited literature.

In data preparation, the example of *Refensi*/*Referensi* in Finding 1 shows that split categories are carried straight into the chart. AI can propose unification, but the final decision still needs to be verified by the manager, in line with the principle of data curation emphasized by Bender *et al.* (2021). In chart creation, systems such as Chat2VIS and LIDA show that a question-and-answer flow can be built on top of an ordinary table (Maddigan & Susnjak, 2023), and LLM4Vis shows that a model can recommend visualizations while explaining its reasons (Wang *et al.*, 2023). In interpretation, the goal-exploration module in LIDA shows that a model can propose analytical questions from a data summary (Dibia, 2023), so that automatic narratives can help lay readers provided that every sentence can be traced back to its source figure.

A critical reading of this literature yields two observations. First, the systems in the literature generally presuppose a tidy table; in this case, inconsistent spelling would split categories and produce answers that look correct but are wrong. The authors' inference is that a drop-down choice field on the form is cheaper and more reliable than an AI data cleaner, so upstream improvement should precede AI. Second, unlike Latiar *et al.* (2025), who framed a Looker Studio dashboard as an application of AI, this article separates the dashboard as a *business intelligence* tool from additional AI components; this separation allows the benefits and risks of AI to be assessed on their own. The low adoption of AI in university libraries noted by Okunlaya *et al.* (2022) also indicates that manager capacity is the realistic limit, so a phased approach makes more sense than simultaneous implementation.

3.5 Finding 5: The risks of hallucination, bias, and privacy require governance before AI is installed

Language models can produce output that is fluent but unfaithful to the source (Ji *et al.*, 2023). On a public dashboard, an erroneous narrative sentence is more dangerous than no narrative at all because it appears official; mitigation consists of limiting the model to figures that have already been calculated, displaying the source of the figures, and providing a channel for reporting errors. In terms of bias, submission data are self-reported entries that reflect only applicants of Unilak Press, and Bender *et al.* (2021) stress the need for curation and documentation of data before they are used by models, a principle that also applies at a small scale.

Privacy is the most concrete risk because the data panel in Figure 5 shows that the fields *Email*, *Email Address*, *No. Whatsapp*, and *KTP (PDF)* are available in the dashboard's data source. The dashboard displays only aggregates, but because these fields exist in the same source, sharing settings and the columns loaded need to be reviewed, and personal data must not be sent to external LLM services. Maddigan and Susnjak (2023) show that prompts can be designed so that only a description of the schema, not the contents of the data, is sent to the model, and this design is suitable for a Unilak Press prototype. Kasneci *et al.* (2023) affirm that the use of LLMs demands competence and continuous human oversight, while Dwivedi *et al.* (2023) show that experts themselves have not agreed on the limits of generative AI use; an internal policy on who reviews AI output before publication therefore needs to be drawn up before the features themselves. Cox and Mazumdar (2024) add that ethical and equity issues are inherent in the application of AI in libraries.

3.6 Synthesis, implications, and limitations

The five findings form a single argument: the Unilak Press dashboard is already adequate as a summary, but the greatest added value comes from upstream improvement (quality of entries) and downstream improvement (design and accessibility), with AI as a third layer that is legitimate only if its risks are managed. This order is formulated as a three-phase roadmap in Table 5.

Table 5. *Phased roadmap for AI adoption on the Unilak Press dashboard*

Phase	Activities	Outputs
1. Basic improvements (without AI)	Replacing free-text entries with drop-downs for study program and manuscript type; replacing the pie chart with a sorted bar chart; adding a time-series chart; fixing axis labels; adding a title and a period note	A more readable dashboard and cleaner data
2. Limited AI assistance	Building a natural-language question-and-answer prototype on top of the aggregate table; composing automatic narratives that are reviewed by managers before publication; adding alternative text	A prototype tested internally
3. Evaluation and governance	Testing answer accuracy, usability, and accessibility; establishing a policy on personal data and on review of AI output	A decision to continue or stop based on evidence

Source: authors' synthesis.

Theoretically, this study connects two strands of literature that have so far run separately, namely campus dashboards built on Looker Studio and AI for visualization, through a single operational case. Practically, the roadmap in Table 5 can be used by Unilak Press managers and similar units, including libraries, that manage service data through forms and spreadsheets. The limitations of this study include: the analysis is based only on screenshots without visitor behavior data; it is a single case, so generalization is limited; the AI component is a literature-based design and has not been implemented; percentages were read from charts and are therefore approximate; the mapping of study programs to faculties is not visible; and data have only been recorded since February 2025.

4. Conclusion

The ISBN submission statistics dashboard of Unilak Press is built through a workflow of online form, Google Spreadsheet, Looker Studio, and an embed on the website. The dashboard presents 169 submissions from 32 study programs with a concentrated distribution: the top three study programs account for about 31.4%, the top ten for about 66.9%, and the Faculty of Economics and Business for 23.1%. The presentation is adequate as a summary, but a ten-slice pie chart, truncated axis labels, the absence of a time trend, and color-dependent encoding limit its readability and accessibility, while the source data contain inconsistent category spelling and applicants' personal data.

The contribution of this article is a three-phase roadmap that places improvements in design and entry quality before AI, with AI components limited to aggregate data and their output reviewed by humans before publication. The opportunities for AI in data cleaning, chart recommendation, natural-language querying, automated narratives, and accessibility are beneficial only if the risks of hallucination, bias, and exposure of personal data are managed.

Managers are advised to start with validation of form entries, replace the pie chart, and add a time series, and only then test a question-and-answer prototype on top of an aggregate table. Further research can measure visitors' usability and satisfaction, compare the accuracy of natural-language queries with that of human analysts, and evaluate the accessibility of the dashboard together with screen-reader users.

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Author Contributions

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Conflict of Interest

The authors declare that they have no conflict of interest related to this study, its authorship, or publication.

Ethical Approval

Ethical approval was not required for this study because it did not involve human participants or human-subject experimentation. Personal information belonging to ISBN applicants in the screenshots used for documentation was anonymized to protect individual privacy.

Data Availability Statement

The raw data supporting the findings of this study are not publicly available because they contain personally identifiable information belonging to ISBN applicants. The data have been withheld to ensure the protection of personal privacy and confidentiality.