Spreadsheet-Based Accounting Application for Private Entity: A Technical and Operational Feasibility Study

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Abstract

The development of a spreadsheet-based basic accounting practice application is needed. The spreadsheet-based accounting practice application must be tested before being used in the actual practice. The research aim is to examine the technical and operational feasibility of a spreadsheet-based basic accounting practice application. This research model adapts the research and development steps from the Planning, Production, and Evaluation (PPE) model by Richey and Klein (Richey and Klein, 2007). The research procedure consists of several stages: 1) Planning, which includes determining the application and analyzing application needs; 2) Production, which is the development of spreadsheet-based basic accounting practice materials following Indonesian SAK for private entities (SAK EP); and 3) Assessment, namely by conducting an assessment of spreadsheet-based basic accounting practice materials following Indonesian SAK for private entities (SAK EP). The research data type is quantitative, namely user assessment data of a spreadsheet-based basic accounting practice application. Data were collected from primary and secondary sources using several methods, namely interviews, observations, and documentation. The instrument used is a questionnaire regarding the feasibility of spreadsheet-based basic accounting practice material according to SAK for private entities (SAK EP). This instrument uses a five-point Likert scale, from 1 (strongly disagree) to 5 (strongly agree). The sampling technique used in this study was purposive sampling. The sample taken was 75 application users. The data was evaluated utilizing percentage analysis methods. Analyze the results of user testing of spreadsheet-based basic accounting practice materials according to Indonesian SAK for private entities (SAK EP). The results showed that the spreadsheet-based basic accounting practice application met technical and operational feasibility.

Keywords: accounting practice, spreadsheet application, SAK EP, working paper

1. Introduction

Practice is a form of learning carried out in workshops/workshops/classes so that students can practice applying theories, concepts, procedures, and general and specific skills in real or artificial situations in a programmed/structured manner under supervision or guidance or independently. Practical and practicum learning is regulated by following established standard operating procedures. The credit load for practice/practicum in the Accounting Department curriculum of the Bali State Polytechnic reaches 55% - 60% in the Diploma Study Program and 50% - 55% in the Applied Bachelor (S1) Study Program (SNPT Bali State Polytechnic).

The Basic Accounting Practice is given in various study programs in the Accounting Department of the Bali State Polytechnic. The Basic accounting practice lectures are carried out to provide students with competencies in the application of accounting cycles in service and trading companies manually and based on spreadsheets which include: 1) understanding general company information (company information, chart of accounts, trial balances, vendor lists, customer lists, and inventory lists; 2) transaction documents; 3) initial setup; 4) managing special and general journals; 5) managing general and subsidiary ledgers; and 6) preparing financial reports (trial balance, worksheet, financial statements, list of accounts payable and receivable, closing trial balance).

The basic accounting practice is part of financial accounting course. Financial accounting is a branch of accounting that tries to create a company's financial information that is relevant to stakeholders as users of financial statements in making decisions regarding investment and credit, understanding financial position, financial performance, and cash flow. Financial statements are prepared following Financial Accounting Standards (Kartikahadi Dkk., 2012), (Martani, Dwi, 2016), (Kieso, Weygandt and Warfield, 2014). Basic accounting practices are carried out to provide students with competencies in the application of accounting cycles in service and trading companies manually and based on spreadsheets, which include: 1) understanding general company information; 2) transaction documents; 3) initial settings; 4) managing journals; 5) managing general and subsidiary ledgers; and 6) preparing financial reports.

Practical materials are essential in learning basic accounting practices. Practical materials consisting of cases and applications of basic accounting practice used must follow applicable financial accounting standards (SAK). Basic accounting practice materials used in the Accounting Department refer to SAK Entities Without Public Accountability (SAK ETAP). Basic accounting practice materials used in the Accounting Department have not anticipated the implementation of Indonesian SAK for private entities in 2025 with earlier implementation permits. SAK EP will replace SAK ETAP to meet the financial reporting needs of private entities that do not have public accountability and publish general-purpose financial statements for external users (https://web.iaiglobal.or.id/SAK-IAI/).

The development of basic accounting practice materials is needed: 1) to adjust basic accounting practice materials to comply with SAK EP (Private Entity). SAK EP has significant differences with SAK ETAP, such as in the use of the concept of other comprehensive income and others (https://web.iaiglobal.or.id/SAK-IAI/); 2) to adjust practice materials to actual practices in entities without public accountability; and 3) support the green accounting program by reducing paper-based practice materials and replacing them with spreadsheet-based work papers. The development of basic accounting practice materials is carried out based on spreadsheets. Spreadsheet applications are still widely used for accounting and other operations in companies along with other software (Leblanc and Grossman, 2014), (Chaamwe and Shumba, 2016), Spreadsheet applications are used for transaction processing, financial reporting systems, and as a supplement to financial information system (Olusegun, 2016), (Ariana and Bagiada, 2017), (Ariana *et al.*, 2023) and (Hassan, 2023). Spreadsheet applications are easy to use and flexible (Ariana and Bagiada, 2018), (Kaligis, Walukow and Rengku, 2023) and (Pebralia *et al.*, 2023). Spreadsheet applications are the most important software for newly hired accountants (Gitahi, 2022). Practitioners in small and medium accounting firms require spreadsheet skills (Maisurah *et al.*, 2018). Spreadsheet applications such as Excel are often used in learning (Chaamwe and Shumba, 2016),(Benning and Agyel, 2016).

The spreadsheet-based basic accounting practice application must be tested before being used in actual practice. Application testing consists of its technical and operational feasibility (Ariana, 2017), (Koul and Eydgahi, 2018), (Hardika and Ariana, 2019), and (Deslonde and Becerra, 2019). Technical feasibility consists of hardware and operating system capabilities, simplicity of applications, and ease of use. Operational feasibility includes the user's ability to use the application, the application's ability to produce the information needed, and the application has application control (Sevim, Yüncü and Eroğlu Hall, 2017), (Ariana, Bagiada and Sukayasa, 2018), (Ariana, Jaya and Mahayana, 2019). This research needs to be done immediately so as not to be late in anticipating the needs of student competencies related to the implementation of SAK EP as a replacement for SAK ETAP.

2. Method

The research model adapts the research and development steps of the Planning, Production, and Evaluation (PPE) model by Richey and Klein (Richey and Klein, 2007). The research procedure consists of the following stages: 1) Planning, which includes determining the application to be developed and analyzing application needs; 2). Production, which is the development of basic accounting practice materials based on spreadsheets following Indonesian SAK for private entities (SAK EP); and 3) Assessment, which is by assessing basic accounting practice materials based on spreadsheets following Indonesian SAK for private entities (SAK EP).

The data types used are quantitative namely user assessment data on spreadsheet-based basic accounting practice materials according to Indonesian SAK for private entities (SAK EP). Data are gathered from both primary and secondary sources. Data was collected using several methods: interview, observation, and documentation. The instrument used is a questionnaire on the feasibility of spreadsheet-based basic accounting practice materials according to Indonesian SAK for private entities (SAK EP). The instrument uses a five-point Likert scale, from 1 (strongly disagree) to 5 (strongly agree). The sampling technique used was purposive sampling. The sample is

determined based on the research objectives. The sample is 75 application users. The data was evaluated utilizing percentage analysis methods to analyze the results of user testing of spreadsheet-based basic accounting practice materials according to Indonesian SAK for private entities (SAK EP). The feasibility level and revision criteria are in Table 1.

Table 1. Feasibility Level and Revision Criteria

Value Range	Feasibility Level
20% < 36%	Very Less Feasible
20% < 36%	Not Feasible
52% < 68%	Sufficient
68% < 84%	Feasible
84% <= 100	Very Feasible

3. Discussion

The basic accounting practice case developed is a spreadsheet-based basic accounting practice case according to the Indonesian SAK for private entities (SAK EP). The basic accounting practice case includes general company information, task details, and practice worksheets. General company information includes company identity, business field, accounting policies, chart of accounts, accounts receivable balance list, accounts payable balance list, inventory balance list, and transaction documents. Transaction documents include various transactions during the period, such as purchase transactions, sales, cash disbursements, cash receipts, and petty cash. Details of the practical tasks include initial setup (general company information, chart of accounts, trial balance, list of vendors and debt balances, list of customers and receivable balances, and inventory). The practical tasks also include the special and general journals, general ledgers, and subsidiary ledgers, financial statements preparation, and closing of the general ledger. Practical work papers include all forms needed for basic accounting practices (general company information, list of accounts, trial balance, list of vendors and debt balances, list of customers and receivable balances, and inventory).

The spreadsheet-based accounting application can be used as an accounting information system that produces financial reports. A proper accounting information system can improve the quality of financial reports (Friyani, 2022), (Wahyu and Zulma, 2023). The spreadsheet-based basic accounting practice application must be tested before being used in actual practice. Application testing consisted of its technical and operational feasibility. Technical feasibility consists of hardware and operating system capabilities, simplicity of application, and ease of use. Operational feasibility includes the user's ability to use the applications, the application's ability to produce the information needed, and the accounting application has application control. The results of the spreadsheet-based basic accounting practice (BAP) application feasibility test are as follows:

Table 2. Technical Aspect Assessment Results

No.	Indicators	SD	DA	N	A	SA	Amount	Percentage
Hardware and operating system capabilities								
1	Central Processing Unit can respond quickly.	-	-	3	8	64	75	96,27%
2	The operating system supports the BAP application.	-	-	5	17	53	75	92,80%
Simplicity and ease of use								
1	The BAP application is easy to learn.	-	-	21	31	23	75	80,53%
2	The BAP application is easy to use.	-	-	19	31	25	75	81,60%
3	The BAP application provides a guiding dialogue that directs the user in filling in data.	-	-	25	45	5	75	74,67%
4	Menu structure makes it easy for users of BAP applications.	-	-	23	49	3	75	74,67%

Table 2 shows that the hardware and operating system capabilities indicate that the central processing unit has a

fast response (96.27%) and the operating system supports the applications used (92.80%). Simplicity and ease of use indicate that the application is easy to learn (80.53%), the application is easy to use (81.60%), the application provides a guided dialog that directs users in filling in data (74.67%), and the menu structure makes it easy for users of the accounting cycle application (74.67%).

The data in Table 2 reflects responses from 75 participants, evaluating both the technical capabilities of the hardware and operating systems and the simplicity and ease of use of the BAP application. The responses are categorized across a five-point Likert scale: Strongly Disagree (SD), Disagree (DA), Neutral (N), Agree (A), and Strongly Agree (SA). The percentage indicates the overall. With a high percentage of agreement (96.27%), the CPU's responsiveness is rated as very feasible. The hardware is well-suited to run the BAP application efficiently, ensuring minimal lag or delays, which is critical for real-time accounting tasks. The compatibility of the operating system with the BAP application also received a high feasibility rating (92.80%). The application is likely designed or optimized for the operating systems commonly used by the participants, which enhances usability and reduces technical barriers to adoption.

The percentage of agreement (80.53%) places this indicator in the "Feasible" category. While most users find the application easy to learn, the relatively lower percentage of the technical indicators suggests there may be a learning curve, particularly for users unfamiliar with such systems. Improvements in onboarding processes or tutorials could enhance this aspect. This indicator also falls within the "Feasible" category with 81.60% agreement. Although the application is generally perceived as user-friendly, there is room for improvement in interface design or user experience enhancements to push this metric closer to the "Very Feasible" range. With a percentage of 74.67%, this indicator is rated as "Feasible" but closer to the "Sufficient" range. The lower percentage of strong agreement suggests that while the application offers some guidance, it might not be intuitive enough for all users. Enhancing the clarity and comprehensiveness of these guiding dialogues could significantly improve the user experience. The percentage of agreement (74.67%) indicates that menu structure is feasible but not optimal. The high level of neutrality suggests that the menu design could be more intuitive or customizable. Simplifying the menu structure or making it more user-centered could lead to higher satisfaction rates.

The overall analysis suggests that the BAP application is technically robust, with high ratings for CPU responsiveness and operating system compatibility, both rated as "Very Feasible." However, the simplicity and ease of use aspects, while still within the "Feasible" range, indicate areas where user experience could be improved. Consider developing more comprehensive tutorials, tooltips, and user guides to assist users in learning and using the application more effectively. Review and potentially redesign these features to make them more intuitive and responsive to user needs.

The operational effectiveness of accounting applications is crucial for ensuring that users can efficiently and accurately manage financial data. This analysis assesses the feasibility of the BAP (Business Accounting Practice) application based on user capability, the ability to generate required information, and the presence of application controls. The results are categorized into different indicators and evaluated based on user responses. The high percentage indicates that the application is user-friendly and can be adopted rapidly by most users. The application's design likely emphasizes intuitive interfaces and straightforward navigation, contributing to its positive reception. Although users are confident in resolving issues, the presence of difficulties suggests areas where user support or further training may be beneficial. It could involve improving help resources within the application or offering tutorials.

Table 3. Operational Aspect Assessment Results

No.	Indicators	SD	DA	N	A	SA	Amount	Percentage
	User's ability to use the BAP application							
1	Users can quickly use the BAP application.	-	1	18	47	9	75	77,07%
2	Users can overcome their difficulties in using BAP applications.	-	7	19	41	8	75	73,33%
	The ability of the BAP application to generate the required information							
1	The BAP application can generate financial reports.	-	-	-	70	5	75	81,33%
2	The BAP application can generate detailed information.			9	62	4	75	78,67%
3	The BAP application can generate information that can be displayed on the monitor.	-	-	-	71	4	75	81,07%
4	The BAP application can generate information in the form of paper documentation (print).	-	-	-	74	1	75	80,27%
	The BAP application has application control							
1	The BAP application is equipped with adequate passwords.	-	-	27	46	2	75	73,33%
2	The BAP application has validation test, accuracy test, reasonableness, completeness, etc.	-	2	31	38	4	75	71,73%
3	The BAP application has output control.	-	3	32	38	2	75	70,40%

Table 3 shows that the assessment results show that most users can quickly (77.07%) and users can overcome difficulties in using the application (73.33%). Regarding the ability to produce information, the assessment results show that the application can create financial reports (81.33%), the information produced is also quite detailed (78.67%), the application allows displaying information on the monitor (81.07%) and printing information in the form of documents (80.27%). Regarding application control, the application is equipped with adequate passwords (73.33%). Other controls (71.73%) and output control be improved to ensure consistency with other parts (70.40%).

The high feasibility percentage reflects that applications meet essential reporting requirements. This aspect is critical, as the generation of accurate financial reports is a primary function of accounting software. The application can create comprehensive and detailed data, which is vital for in-depth financial analysis. This ability ensures applications can drill down into specific financial metrics as needed. Efficient on-screen information display is crucial for real-time data analysis and decision-making. The high level of agreement suggests that the application performs well, facilitating user interaction with data. The ability to generate hard copies of reports is still essential in many businesses, despite the digital shift. The BAP application meets this need, ensuring the application can produce physical documentation when required.

Strong password protection is fundamental to safeguarding sensitive financial data. While the results are generally positive, there is a suggestion that security measures could be further strengthened to enhance user confidence. The presence of various controls is crucial for ensuring the accuracy and reliability of financial data. However, the lower percentage compared to other indicators might indicate a need for improving or better communicating these controls to users. The majority of users are confident in the application's output control, relatively lower score suggests potential areas for enhancement. It could involve more robust reconciliation processes or clearer output validation features.

The assessment of the BAP application reveals a generally favorable user experience, with most indicators reflecting a feasible level of operational effectiveness. However, there are opportunities for improvement, particularly in enhancing security controls and user support features. These findings suggest that while the BAP

application is a strong tool for private entity financial accounting, ongoing development, and refinement will be key to maintaining its relevance and effectiveness in a dynamic business environment.

4. Conclusion

The research results show that spreadsheet-based basic accounting practice applications met technical feasibility. Hardware can respond quickly, and the operating system supports the application. The application is easy to learn and use and provides a menu and a guiding dialogue for the user. Spreadsheet-based basic accounting practice application met operational feasibility. Application includes the user's ability to use the application, the application's ability to produce the information needed, and the application has application control.

Based on the research conclusions, the suggestions are 1) The accounting department should consider using spreadsheet-based basic accounting practice applications according to SAK EP in learning to improve student competency, and 2) Further researchers should be able to replicate this research by developing spreadsheet-based basic accounting practice applications in various types of companies to increase the diversity of types of accounting practice materials.

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