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The Impact of QRIS and AI on The Effectiveness of Cash Flow Management and Decision-Making in SMEs in Yogyakarta, Indonesia

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ABSTRACT

Bookkeeping is an important process in accounting management in SMEs. Lack of financial literacy and expertise in bookkeeping presents difficulties for the development of SMEs in Indonesia. The potential of QRIS to be simple bookkeeping and AI ChatGPT as digital consultant can be adopted to overcome the complexities inherent in cash flow management and decision-making in SMEs. This study uses a mixed method of quantitative and qualitative research using questionnaires, experiments, and interviews on 205 SMEs in Teras Malioboro 1 and the Yogyakarta area with 20 SMEs conducting experiments by integrating QRIS and AI ChatGPT to carry out cash flow management and decision- making which were analyzed using SEM PLS 3.2.9 and SPSS 24. The results of this study provide a new system innovation called FlowAI as a QRIS and AI ChatGPT integration system in cash flow management and decision-making in SMEs.

ABSTRAK

Pembukuan adalah proses penting dalam manajemen akuntansi di UKM. Kurangnya literasi keuangan dan keahlian dalam pembukuan menimbulkan kesulitan bagi perkembangan UKM di Indonesia. Potensi QRIS sebagai pembukuan sederhana dan AI ChatGPT sebagai konsultan digital dapat diadopsi untuk mengatasi kompleksitas yang melekat pada manajemen arus kas dan pengambilan keputusan di UKM. Penelitian ini menggunakan metode campuran antara penelitian kuantitatif dan kualitatif dengan menggunakan kuesioner, eksperimen, dan wawancara terhadap 205 UKM di Teras Malioboro 1 dan wilayah Yogyakarta dengan 20 UKM yang melakukan eksperimen dengan mengintegrasikan QRIS dan AI ChatGPT untuk melakukan manajemen arus kas dan pengambilan keputusan yang dianalisis menggunakan SEM PLS 3.2.9 dan SPSS 24. Hasil dari penelitian ini memberikan sebuah inovasi sistem baru yang dinamakan FlowAI sebagai sistem integrasi QRIS dan AI ChatGPT dalam manajemen arus kas dan pengambilan keputusan pada UKM.

PENDAHULUAN

Cash flow management plays a crucial role in Small and Medium Enterprises (SMEs) is crucial to ensure smooth operations and financial stability. Cash flow management helps to oversee cash inflows and outflows, manage deficits or surpluses, and schedule financial flows effectively to avoid shortages and the primary objective of cash flow management is to balance cash inflows with cash outflows in a matched approach to financing working capital (Nicholas, 2024). In conditions of economic uncertainty, businesses, especially SMEs, should focus on cash flow analysis and identify and respond to risk using financial management tools (Iwona, 2024). The process of monitoring all sources of cash inflows and outflow necessary to achieve budgetary aims (Tomas, 2022). The intricate cash flow component independently affects financial stability, and the cumulative influence significantly determines vulnerability to financial distress (Pratiwi, 2024). The SMEs in Yogyakarta get credit loans from banks and the government, they need to manage the cash flow effectively. To manage cash flow, enterprises need to forecast cash flow and build their optimal budget model, because cash flow forecast is essential in the financial plan, enterprise must have a plan to raise capital and use capital in the case of cash flow shortage and cash flow surplus. Analyzing cash flow financial data effectiveness using AI enhances financial reporting by handling complex financial scenarios (Klaus, 2023). Leveraging AI, these providers can gain a deeper understanding of cash flow dynamics across different SMEs, logistic providers, and ecosystem risks, ultimately enabling the provision of more efficient trade finance solutions to the market (Alirezaie, 2024). Cash flow management is important for organizational sustainability, especially in uncertain economic environments. The integration of cash flow and financial worksheets aids in tracking expenses, savings, investment, and insurance, contributing to a comprehensive approach to cash flow management (Oriekhova, 2022). Focusing on cash flow analysis and identifying and responding to risk accordingly, requires a proactive approach and the use of modern financial management tools to develop a contingency plan, prioritize expenses, and build stable relationships with suppliers to increase the company's flexibility (Przychocka, 2024). A well-executed cash flow management system is fundamental for the success, financial health, and sustainable growth in decision-making of SMEs.

Decision-making for operational effectiveness in Small and Medium enterprises (SMEs) is a process in various fields, including management, efficiency evaluation, and technology that is crucial for their success and productivity. SMEs face challenges in making decisions related to technology adoption, which helps in the accounting field use AI to process manually reporting process moved to automatization capabilities will give operational effectiveness. A business can also adopt the power of artificial intelligence (AI) and big data, and the smart use of digital technologies to enhance productivity and performance, paving the way for innovation (Tawil, 2024). Studies show that the internationalization decision-making process in SMEs involves a combination of causation and effectuation, where firm resources, capabilities, and entrepreneurial self-efficacy play crucial roles. AI can assist in managing risk, such as predicting collisions between space objects (Zhang, 2023), and be utilized to improve decision-making by creating models that stakeholders can use to deliberate on organizational practices to fit, compare, evaluate, and

discover model of decision behavior. The application of a financial decision support system can have a positive impact on enterprise financial decision-making, including making financial analysis more comprehensive and accurate, providing decision-making useful information, under the condition of ensuring the principle of cost and benefit, expanding the scope of financial decision support. The human judge is important part before implementing the decision-making, the emotional in financial decision-making influence and modify financial decision- making switched from a notion that they are only a side product of choice concept positing that feeling may be a pivotal and casual factors that serve as an informative cue in the decision-making process (Zaleskiewicz, 2020).

Currently, Indonesia uses QRIS for all payment applications from any organization, both bank or nonbank use by the public, stores, merchants, stalls, parking, and all virtual transactions with the QRIS logo, although QRIS providers at merchants are different from the application provided used by the public. Merchants only need to open an account or account with one of the QRIS organizers who have been licensed by Bank Indonesia. Furthermore, merchants can accept payment from the public using QR from any application of the organizer (Bank Indonesia, 2022). The Quick Response Code Indonesian Standard (QRIS) has various benefits in the digital payment and economy in Indonesia. QRIS facilitates quick and efficient transactions by scanning printed or images of barcodes stored in smartphones (Ricky, 2023). QRIS integrated with digital wallets to expand sales opportunities for MSMEs, reducing cash usage, minimizing counterfeit risks, and simplifying non-cash transactions (Ayu, 2022). Based on Rodiana (2022) the MSMEs in the city of Depok, Indonesia implemented at Culinary MSMEs was given an efficiency impact with rime-saving, energy saving, and easy transactions. A transaction using QRIS gives the record by the application and gives the simple practice of bookkeeping that gives information about the transaction performance, ensuring better cash flow management through improved payment process.

Artificial Intelligence (AI) has an important role in business and other fields to plays role in decision-making processes and cash flow management within businesses (Niels, 2023). AI enables organizations to extract valuable insights from vast amounts of data, leading to more informed decision- making processes and significant advantages in efficiency, accuracy, and innovation (Anupama, 2023). AI can analyze the amount of historical data, identify patterns and trends, and also help predict future cash inflows and outflows based on customer payment behavior, sales trends, and economic indicators (Tom, 2024).

AI for example ChatGPT or Chat-based Generative Pre-trained Transformer is an application developed by OpenAI that utilizes powerful generate context-appropriate text responses to users (Resti, 2023; Rima, 2023). ChatGPT offers significant potential to help SMEs in various aspects such as customer engagement, content generation, and data collection also can revolutionize business decision-making processes by providing insight on mergers, investment, and consumer behavior (Som, 2023).

This research related with a theory that can be illustrated below:

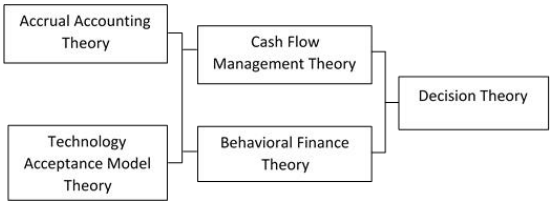

Figure 1. The Relevant Theory

The accounting theory provides a framework for reporting financial transactions and evaluating financial performance support by a new technology acceptance model to use and adopt QRIS and AI. The financial performance can be identified by the cash flow management which informs financial condition and risk management. The behavioral factors including investment decisions and fund management are relevant to the process of bookkeeping, decision-making, and investment decisions the effectiveness in SMEs is made including identifying a decision, gathering information, and assessing alternative resolutions based on decision theory.

The research based on the knowledge about the aspect of accounting theory discusses bookkeeping as the first process of how accounting impacts the enterprise SMEs in the Yogyakarta area in general used the accrual accounting method to do financial reports as the reporting expenses and revenue. The reporting will give information on the financial process at that time and can be evaluated every year or quarterly to do decision-making. The modern era faces to a new technology, Indonesia in 2020 implementing a new technology QRIS as the QR payment to support cashless, the new technology is based on the technology acceptance model (TAM) to implement QRIS and AI to help SMEs do simple bookkeeping-based on the report in QRIS transaction and analyze with AI to give evaluation of the financial reporting for decision-making. The AI will answer the difficulty of SMEs analyze cash flow management.

Cash flow management informs the process of the financial, condition of the enterprise, and risk management that can be done by SMEs. The information process to figure out the sustainable business model to decide on investment and get funds. The process of bookkeeping, decision-making, and deciding to invest and also get funds is the behavioral finance theory.

The theory system give the research framework that can be described as a process of implementing QRIS and AI ChatGPT that effect the cash flow management and decision-making for the effectiveness of operational.

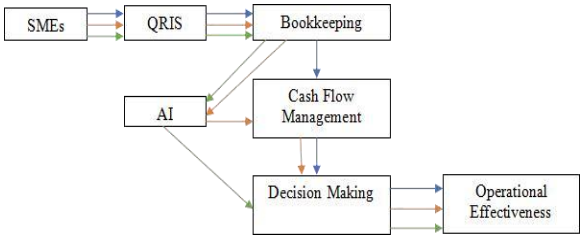

Figure 2. The Research Framework

Definition:

- SMEs used QRIS for transaction collecting data to be simple bookkeeping to analyze the business process or cash flow to decide on the operational effectiveness.
- SMEs used QRIS for transaction collecting data to be simple bookkeeping and use AI to analyze the cash flow management to decide on the operational effectiveness.
- SMEs use QRIS for transaction collecting data to be simple bookkeeping and use AI to analyze the decision-making for operational effectiveness based on the bookkeeping that represents the business process.

METODE PENELITIAN

The research is mixed method with Qualitative and Quantitative to answer the hypothesis. The collecting data of this research are:

Questionnaire

The questionnaire will be shared with 205 SMEs in Teras Malioboro and Yogyakarta area this method to collect quantitative data that assesses the current impact of QRIS among SMEs, and their perceived effectiveness in managing cash flow and decision-making also a general assessment of the prospect and challenge to use QRIS. The structure of the questionnaire divided into five parts: Demographic information, Part A to measure the variable QRIS and Cash flow management, Part B to measure the variable QRIS and Decision-making, Part C is for the general assessment, and Part D for Using QRIS or implementing QRIS. The analysis of the data will utilize SEM-PLS 3.2.9 to analyze the model the relationship between the X variable and Y variable, assess direct and indirect effects, and test the significance of the hypothesis about the impact of QRIS in cash flow management and decision-making in SMEs in Yogyakarta.

Experiment

The experiment method to empirically evaluate the impact of AI on cash flow management and decision- making. The experiment was done in 20 SMEs in Yogyakarta with sampling. The experiment uses AI ChatGPT to help SMEs analyze the cash flow management and decision-making based on the transaction in QRIS, Cash, and Debit cards integrated with Ms. Excel. Researchers use Prompt to help SMEs easily make sure the cash flow management and decision-making. To analyze the effectiveness the design used pretest and post-test share before and after the experiment.

1. Pretest: Conduct a baseline assessment of cash flow management and decision-making practice.
2. Intervention: Provide training sessions of resources to help SMEs implement AI ChatGPT using the transaction from QRIS, Cash, and Debit cards integrated with Ms. Excel to know the income and expenses to do cash flow management and decision-making. A researcher will give training before the experiment is done and evaluate after the experiment.
3. Post-test: After the intervention, reassess the same metrics used in the pretest to evaluate change in cash flow management and decision- making effectiveness.

The analysis of the experiment used a statistical paired t-test in Ms. Excel to compare the pretest and post-test scores. The result will help to determine whether there were significant improvements attributable to the interventions.

Interview

The interview gathers qualitative data that offer deeper insights into the challenges and prospects associated with adopting QRIS and AI ChatGPT in cash flow management and decision-making. The interview was done with 20 SMEs same as the sampling to experiment. The data collection with transcribed and recorded interviews with consent to ensure accuracy in data analysis. They employ thematic analysis to identify recurring themes, patterns, and insights. This qualitative data will help contextualize the quantitative findings from the questionnaire and experiment.

Theoretical Analysis

The theoretical analysis is to analyze the mechanism action of variable X and variable Y as bellow:

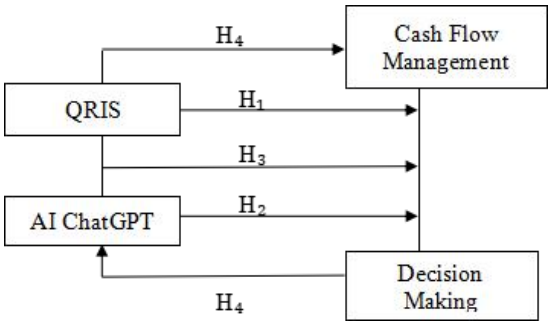

Figure 3. The Mechanism Action of X and Y

X_1: QRIS (Quick Response Code Indonesian Standard)
X_2: AI ChatGPT
Y_1:Cash Flow Management Y_2: Decision-Making

The impact of QRIS (Quick Response Code Indonesian Standard) and AI ChatGPT on the effectiveness of cash flow management and decision-making in SMEs in Yogyakarta, Indonesia, is fundamentally rooted in the principle of efficiency. QRIS enhances operational efficiency by streamlining transaction processes, allowing SMEs to process payments quickly and securely. This reduction in transaction time leads to faster cash inflows, significantly improving cash flow management for these businesses. With timely access to funds, SMEs can allocate resources effectively, make informed investments, and respond promptly to financial needs, which is crucial for their growth and sustainability in a competitive market. Meanwhile, AI ChatGPT contributes to this efficiency by offering advanced data analysis and insights, enabling SMEs to make better-informed decisions. By automating the analysis of financial data and providing real-time insights, AI helps these

businesses identify cash flow trends, forecast future financial scenarios, and reduce reliance on guesswork. Together, QRIS and AI create a synergistic effect that optimizes cash flow management and enhances decision-making capabilities, ultimately fostering greater financial resilience and adaptability for SMEs in Yogyakarta.

Hypothesis Test

The hypothesis test will answer with the analysis data by Questionnaire, Experiment, and Interview illustrated as follows:

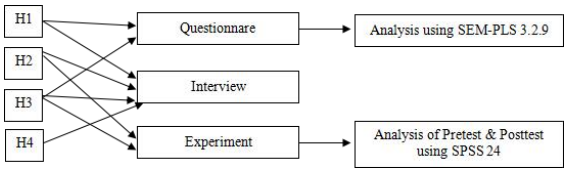

Figure 4. The analysis of the hypothesis Information:

Hypothesis 1: used observation, questionnaire, and interviews to collect the data and analysis by SEM-PLS 3.2.9 to answer that there is effectiveness for SMEs in implementing QRIS for Cash flow management and decision-making.
Hypothesis 2: used interviews and experiences to teach what and how is AI ChatGPT for Cash flow management and decision-making. The experiment used a pretest and post-test to measure before and after implementing AI ChatGPT the analysis of the pretest and post-test used Paired T-test SPSS 24.
Hypothesis 3: used all the methods of collecting the data with analysis more than relevant to answer the hypothesis that QRIS and AI ChatGPT are effective in knowing Cash flow management and decision-making in SMEs.
Hypothesis 4: used interviews to collect the data to answer the challenge and prospect of implementing QRIS and AI ChatGPT for cash flow management and decision-making in SMEs.

Hypothesis Analysis

The hypothesis analysis based on the theoretical analyze is:
H_1: Implementing QRIS to improve the effectiveness of cash flow management and decision-making in SMEs in Yogyakarta, Indonesia. The H1 will be analyzed using questionnaire responses from 205 SMEs in Yogyakarta and will support information from the interview and experiment test. The questionnaire will be analyzed using SEM-PLS 3.2.9 after expert judgment for the instrument. The item will answer as empirical information that using QRIS in cash flow management and using QRIS in AI ChatGPT will have a significant effect and effectiveness for the operational.
H_2: Implementing AI will enhance decision-making processes, resulting in more informed and strategic financial decisions in SMEs in Yogyakarta, Indonesia. This research using AI ChatGPT for the technology consultant will cut the expenses for SMEs to do training in cash flow management, also be more effective no spend to much time. The implementation of AI

ChatGPT using experiments to give information to SMEs who can't understand AI ChatGPT The analysis of the test using paired t-test by SPSS 24.

H_3: The combined implementation of QRIS and AI will improve cash flow management and enhance decision- making processes, leading to operation effectiveness in SMEs in Yogyakarta, Indonesia.

H_4: The challenges and prospects of implementing QRIS and AI to improve cash flow management, decision-making strategy, and operational effectiveness in SMEs in Yogyakarta, Indonesia.

The implementation based on the theoretical basis gives information on a new theory and technology about QRIS and AI ChatGPT to help SMEs in cash flow management and decision-making. The hypotheses of H3 and H4 will be analyzed based on the interview results.

HASIL DAN PEMBAHASAN

HASIL

Analysis of Empirical Result

This section presents the research findings which briefly contain the demographics of the responses to each variable and also presents the condition received by SMEs in Yogyakarta. In the data analysis section, there are three main parts two main analyses in the Structural Equation Model (SEM), namely the Outer model analysis and the Inner model analysis. Furthermore, it is a test of the hypothesis through indirect test values and direct influences in the predictive model.

Tabel 1. Respondent Demographics

No	Type of Business	Frequency	%
1	Clothes	40	20%
2	Food and Beverage	117	57%
3	Accessories	19	9%
4	Phone & Accessoris	16	8%
5	Craft	8	4%
6	Groceries	3	1%
7	Rental	2	1%
	Amount	205	100%

No	Length of Business	Frequency	%
1	Clothes	7	3%
2	Food and Beverage	70	34%
3	Accessories	55	27%
4	Phone & Accessoris	73	36%
	Amount	205	100%

The respondent demographics are dominant in the food and beverage type of business with a length of business of more than 5 years. Mostly they are 3rd or 2nd generation to continue their business. Teras Malioboro is the place for business incubation in Yogyakarta and they use QRIS for transactions.

Measurement Model Analysis (Outer Model)

Validity testing on question items on each variable involves convergent validity and discriminant validity. The results of each variable validity test are as follows.

(1) Convergent validity

Convergent validity has to know the validity of each relationship between indicators and constructs or latent variables. Constructs not only influence related variables but also unrelated variables (Krabbe, 2017). Question items that have a loading factor value of less than 0.5 will be dropped in this study. Convergent validity also uses the average variance extracted (AVE) if the AVE of a variable is greater than 0.5 then the variable is said to be valid (Hair, 2021). The testing of the loading factor of the question items is as follows:

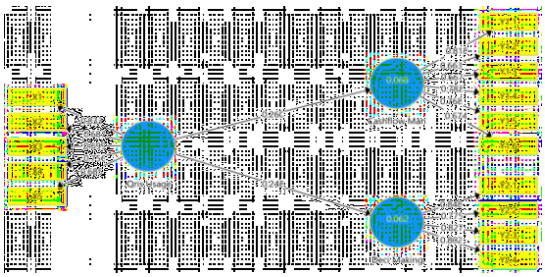

Figure 1. Hypothesis Model

The hypothesis model of the variable with QRIS usage as the X variable, cash flow management, and decision-making as the Y variables.

Table 2. Loading Factor of Research

	Variables		
Item	Cash Flow Management	Decision-Making	QRIS Usage
X1			0.833
X2			0.687
X3			0.699
X4			0.756
X5			0.685
Y1.1	0.818		
Y1.2	0.663		
Y1.3	0.667		
Y1.4	0.782		
Y1.5	0.768		
Y1.6	0.674		
Y2.1		0.848	
Y2.2		0.775	
Y2.3		0.827	
Y2.4		0.802	

Based on Table 2 The loading factor of the research variables described that the value of all items statement on variable QRIS Usage, Cash flow management, and Decision-making has a loading factor value greater than 0.5, which means that the variables are valid. The next evaluation of the outer model is seen from the average variance extracted (AVE) value below:

Table 3. Average V ariance Extracted

Variable	Average Variance Extracted (AVE)
Cash Flow Management	0.535
Decision-Making	0.662

Variable	Average Variance Extracted (AVE)
QRIS Usage	0.539

Based on Table 3 The average variance extracted shows that the average variance extracted (AVE) value variable QRIS Usage, Cash flow Management, and Decision-Making greater than 0.5 means that the variable is valid (Hair, 2021).

Discriminant validity

Discriminant validity is a test to see the extent to which a test or measure deviates from other measures whose basic constructs are conceptually unrelated to it. The provisions of the discriminant validity test, if the value of the indicator used has a higher cross- loading value on its construct compared to other constructs, it is concluded that it meets the provisions. The results of the discriminant validity test of the variables as follows:

Table 4. Cross-Loading of Self-Esteem Variable Items

Item	Variables		
	Cash Flow Management	Decision-Making	QRIS Usage
X1	0.274	0.267	0.833
X2	0.125	0.126	0.687
X3	0.187	0.087	0.699
X4	0.206	0.195	0.756
X5	0.089	0.167	0.685
Y1.1	0.818	0.278	0.296
Y1.2	0.663	0.241	0.084
Y1.3	0.667	0.211	0.120
Y1.4	0.782	0.189	0.202
Y1.5	0.768	0.264	0.186
Y1.6	0.674	0.169	0.099
Y2.1	0.309	0.848	0.250
Y2.2	0.226	0.775	0.127

Item	Variables		
	Cash Flow Management	Decision-Making	QRIS Usage
Y2.3	0.220	0.827	0.226
Y2.4	0.242	0.802	0.161

Table 4. Cross-loading of self-esteem variable items shows that the indicators for the variable QRIS Usage, Cash flow management, and Decision-Making have a cross-loading value higher on its construct, and smaller on the other construct. So the variable has met the requirements for discriminant validity.

Reliability Test

The reliability testing of the instrument in this study is based on the composite reliability value and Cronbach's alpha value. If these values meet the rule of thumb (> 0.7), then it can be said that the instrument has the reliability to be used more than once on the same topic.

Table 5. Cross-Loading of Self-Esteem Variable Items Composite Reliability and Cronbach's Alpha

Variable	Cronbach's Alpha	Composite Reliability
Cash Flow Management	0.837	0.873
Decision-Making	0.834	0.887
QRIS Usage	0.793	0.853

Based on Table 5 of composite reliability and Cronbach's alpha the value of all is >0.70. So it can be concluded that the variables in this study have reliability (Hair, 2021).

Goodness of Fit

The goodness of fit testing refers to the Standardized Root Mean Square (SRMR) and Normal Fit Index (NFI) values. In SRMR, the provisions used, the model is considered suitable if it has a value <0.10 or <0.08. While in NFI, the model is considered more suitable when the value is closer to 1 (Hu and Bentler, 1999). The results for model fit can be seen below:

Table 6. Model Fit Summary

Model	Saturated Model	Estimated Model
SRMR	0.072	0.096
NFI	0.812	0,800

The SRMR from the table the value is 0.096 the value is lower than 0.10 can be concluded that this research model is suitable for use. In addition, the NFI value result is 0.800 a value closer to 1.000 means that this research is quite appropriate between the model and the data (Hair, 2022).

Determination coefficient test on endogenous constructs

The coefficient of determination (R2) shows the ability of the exogenous construct to describe the variability of the endogenous construct. The value of the coefficient of determination is symbolized by the value R square Adjusted. The results of the research determination coefficient test are as follows:

Table 7. R-Square Adjust

Variable	R Square	R Square Adjusted
Cash Flow Management	0.068	0.068
Decision-Making	0.062	0.057

In Table 7 the result of the R-Square adjusted value of cash flow management as a dependent variable is 0.063, while in Decision-making the R- square adjusted value is 0.057. This value means that the suitability of the research model prediction is 6.3% for cash flow management and 5.7% for decision-making.

Hypothesis testing

The final stage in evaluating the PLS-SEM model is to analyze the significance value of the test through the Bootstrapping procedure with a margin error in this test is 5%.

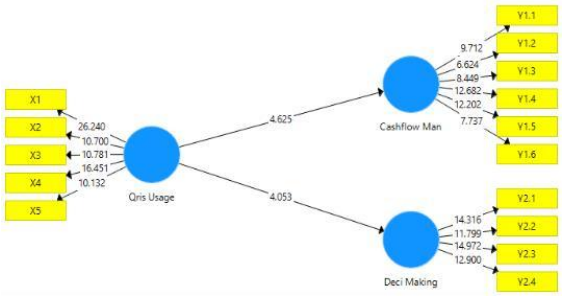

Figure 2. The Coefficient Line (Bootstrapping)

The analysis of this study is to directly analyze the effect of QRIS on cash flow management and decision- making. In this study, the result of the hypothesis test and

significance can be seen at the P-value and original sample. T statistics are not used, because both have the same function. The result of the hypothesis test of direct influence between variables are:

Tabel 8. Hypothesis Test of Direct Influence Between Variable

Hypothesis	Original Sample	P Values	Conclusion
QRIS Usage→Cash Flow Management	0.260	0,000	Hypothesis Supported
QRIS Usage→Decision Making	0.248	0,000	Hypothesis Supported

Based on the table hypothesis can be explained as follows:

The coefficient value of the QRIS usage variable towards Cash flow management, symbolized by the original sample (O), is 0.260, which is positive, and the p-value is 0.000, where the p- value is <0.05, so it can be concluded that QRIS Usage has a significant impact on Cash flow management.

The coefficient value of the QRIS usage variable to decision making is symbolized by the original sample (O) of 0.248 which is positive and the p-value is 0.000 where the p-value is <0.05, so it can be concluded that QRIS usage has a positive and significant effect on decision making.

Pretest and Post-test Examination

The implementation of AI used AI ChatGPT to analyze cash flow management and decision making by experiment and interview for the deep question in 20 SMEs randomly chosen in Yogyakarta. The result of the experiment was measured by pretest and posttest with scoring using the Linkert scale (Appendix 3) and analysis with SPSS 24 as below:

Tabel 9. Paired Sample Statistic

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pretest	13,05	20	1,820	,407
	Post-test	19,65	20	2,907	,650

Based on table 9 in the output using SPSS 24 shows a summary of descriptive statistics results from the two samples that were studied, namely the Pretest and Posttest values. For the pretest value, the average mean is 13.05, and for the posttest value mean is 19.65. The total number of respondents or SMEs used as a research sample is 20 SMEs. The

value of Std. Deviation (standard deviation) on the pretest is 1.820 and post-test is 2.907 and the Std. Error mean for the pretest is 0.407 and the pretest is 0.650.

The average value of the experiment result in the pretest was 13.05 < posttest 19.65, which means descriptively that there is a difference in the average experiment result between the pretest and the posttest result.

Tabel 10. Paired Sample Correlation

Hypothesis	Original Sample		P Values	Conclusion
		N	Cor.	Sig.
Pair 1	Pretest & Post-test	20	-.215	.362

Based on Table 10 is the result of the correlation test or the relationship between the two or the relationship between the pretest variable and posttest variable. The value of Sig. 0.362 > probability 0.05, then it can be concluded that there is no relationship between the pretest and post-test variables. From the output above, it is known that the value of the correlation coefficient (correlation) is -0,215 with a significant value of Sig. 0.363 with significance, because the value of Sig. 0.362 > probability, then it can be said that there is no relationship between the pretest and posttest.

Tabel 11. Paired Sample Test

Paired Differences						t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Pair 1 Pretest Post-test	- 6,60 - 0	3,747	,838	- 8,354	- 4,846	- 7,877	19	,000

The result of the paired sample test is the important output of this experiment. A paired sample test to find whether or not the use of the ChatGPT in cash flow management and decisions in SMEs, the hypothesis formulation is to interpret the number. The formulation of the research hypothesis is:

H_0= There is no average difference between the impact of AI ChatGPT in cash flow management and decision- making of the pretest and posttest which means that there is no significant in implementing AI ChatGPT in SMEs in the Yogyakarta area.

H_1= There is an average difference between the impact of AI ChatGPT in cash flow management and decision- making of the pretest and posttest which means that there is an improvement in the effectiveness of implementing AI ChatGPT in cash flow management

and decision-making. According to Santoso (2014), the description of the output result in paired sample t-test based on the significant value (Sig.) of SPSS 24 is as follows:
1. If the value of Sig. (2-tailed) <0.05, the H0 is rejected and H1 is accepted
2. If Sig. (2-tailed) > 0.05, the H0 is accepted and H1 is rejected

Based on the pared sample test output, the value of Sig. (2-tailed) is 0.000 < 0.05, then H_0 is rejected and H_I is accepted. So there is a difference between the result of the pretest and the pretest after the experiment which means there is an influence of the use of AI ChatGPT in cash flow management and decision-making in SMEs in Yogyakarta. The other information based on the table contains information about the value of Mean Pared Differences which is -6.600. This value showed the difference average of the pretest and posttest. The different average means there is an effective after SMEs use AI ChatGPT in cash flow management and decision- making.

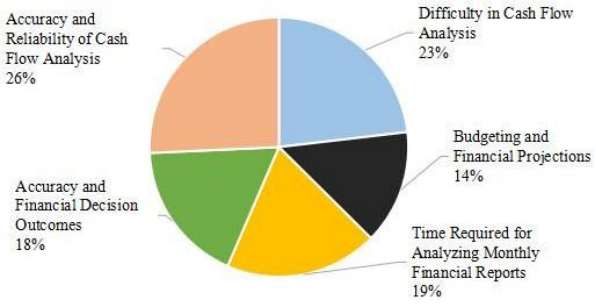

Diagram 1. The different between pretest and posttest

The difference between the pretest and post-test increased after giving the stimulant with used AI ChatGPT to help SMEs analyze their transaction in cash flow management and decision making, from the data above the difficulty in cash flow increased by 23% means that SMEs helpful after operating AI ChatGPT for cash flow analysis, 14% in budgeting and financial projection, the result is lower than the other because budgeting and financial projection need the real condition of their business, skill in budgeting and knowledge in financial projection.

SMEs commonly need more than 5 hours to analyze monthly financial reports but after they tried to use AI ChatGPT 19% or need 3-5 hours to analyze financial reports, they need more time to calculate and analyze the condition of their business. The accuracy and final decision in 18% mean that SMEs still need their feeling and thinking not trust what AI ChatGPT gives, SMEs need to analysis more the advice from AI ChatGPT. However, SMEs can improve their skill, learn from AI ChatGPT advice, and arrange their strategy so the accuracy and reliability of cash flow analysis just increase by 23%.

Interview

The interview and experiment respondents were chosen randomly from 20 SMEs in Yogyakarta. After the Experiment, the interview was needed to elaborate and make sure deep questions and to know the feelings, concerns, and suggestions from SMEs after using QRIS and AI ChatGPT for cash flow management and decision making. The interview was

held face-to-face with the respondent using the open question (Appendix 2) and the researcher took a note from it. The SMEs use QRIS, cash, and debit for payment tools, but they still need more knowledge in financial reporting because they do not need to do that. The regulation in SMEs to do financial reporting is low so SMEs just remember the omzet in a day and split it to pay expenses but there are some problems because QRIS not in a real-time deposit to seller account depending on providing bank, some them get charged if use QRIS for payment and the charge applied to seller not buyer.

Unreal time deposits made SMEs need to take a photo of an invoice transaction to prevent buyers do fraud, but SMEs have difficult cash flow at that time ruining the financial management and decision making. QRIS also gives benefits to sellers and buyers in effectiveness and efficiency time and gives simple bookkeeping for sellers, so they don't need to create financial reports. QRIS and AI ChatGPT is a new technology for SMEs in Yogyakarta, they still focus on traditional tools like manual recording, and difficult to make the decision-making in financial strategy. AI ChatGPT gives new information and smart technology for SMEs but they also need a standard operation to operate QRIS and AI ChatGPT for cash flow management and decision making, they need prompt to ask in ChatGPT that will answer cash flow management based on financial condition. The interview gave an overview for the researcher to create a system that integrated transactions in QRIS, Cash, and Debit using Ms.Excel or manual record to calculate because it's easy for SMEs in Yogyakarta to operate it. The record will give information about omzet on that day and use proper prompts in AI ChatGPT will give advice and answer the strategy and what strategy to manage cash flow, then SMEs can choose the best advice based on their real business condition and do decision-making.

PEMBAHASAN

Implementing QRIS to Cash Flow Management and Decision-making

The result of the Questionnaire, analysis by SEM-PLS 3.2.9 gives the overview of the impact of each X variable and Y variable that there is the effect of using QRIS for cash flow management and using QRIS for decision-making. The validity test consists of convergent validity and discriminant validity, convergent validity is to know of each relation between indicators and construct or latent variable and discriminant validity is to verify that a reflective construct exhibits a stronger relationship with is own indicators than with those of any other construct in the PLS path model. The result of the Average Variance Extracted (AVE) is to measure the quantifies how much variance a construct captures to measurement error, if the result of AVE >0.05 the indicator of the instrument is valid with the variable. The AVE of cash flow management (Y1) is 0.535, decision- making (Y2) is 0.662, and QRIS Usage (X) is 0.539 based on the result the validity of AVE is valid. The reliability test based on the reliability value and Cronbach's alpha value > 0.7 means that the indicator of the instrument is reliable. The result of the reliability in cash flow management is 0.837, decision-making is 0.834, and QRIS usage is 0.793 means that the value is > 0.7 so is reliable.

The NFI or Normal fit index with the value of the estimated model is 0.800 a value closer to 1.000 means that the research is appropriate between the model and the data. The

SMRS or standardized root mean square is 0.096 the value is lower than 0.1000 so it means that the model is suitable to use. The R-Square adjust with the result of variable cash flow management is 0.063 or 6.3% and for decision-making is 0.057 or 5.7% means that the model will be accurate for future data.

After the validity and reliability, the hypothesis test with the result of bootstrapping the effect of using QRIS in cash flow management and decision- making can be seen as the result of the original sample (O) and the P-Value of the original sample (O) of QRIS usage with cash flow management is 0.0260 with P-Value 0.000 <0.05 means that there is a significant impact of using QRIS for cash flow management. The coefficient of QRIS usage with decision-making, the original sample (O) is 0.248 and the P-value is 0.000 <0.05 means there is a significant effect of using QRIS for decision-making. The implementation of QRIS in cash flow management and decision-making helps

SMEs get payment transactions that will be used for simple bookkeeping and calculated with other payments such as cash and debit cards. The data of transactions will give information on income, omzet, and expenses. This information will help SMEs to understand their business condition and situation also their cash flow to make decision-making in financial operations. This hypothesis was accepted that implementing QRIS in cash flow management and decision- making is effective for SMEs in Yogyakarta.

Implementing AI ChatGPT for Cash Flow Management and Decision- Making

The results of the pretest and post-test give the information increasing effectiveness after giving stimulation to operate AI ChatGPT to help SMEs analyze cash flow management and decision-making. The pretest and post- test have the same question indicator: the difficulty in cash flow analysis, the budgeting and financial knowledge, the time required for analyzing monthly financial reports, the accuracy and financial decision outcomes, and the accuracy and reliability of cash flow analysis. The indicator to use Linkert value to measure the effectiveness before and after implementing AI ChatGPT in cash flow management and decision-making.

The examination of the pretest and posttest using the Paired T-test SPSS 24 the result based on paired sample statistics with a mean of the pretest 13.05 and posttest 19.65 There different 3.60 points and pretest < posttest, with N is 20 as the respondent and standard deviation on pretest is 1.820 and posttest 2.907. The paired sample correlation with Sig 0.362> probability 0.05, then there is no relationship between the pretest and postest variables. The significance of the pretest and posttest is low based on the mean of just 3.60 differences, but also can be concluded that AI ChatGPT is effective in some situations and conditions of SMEs in Yogyakarta. SMEs in Yogyakarta mostly need more to do training and get more information about AI.

The paired sample test gives the result as the conclusion of the pretest and posttest with Sig. (2-tailed) is 0.000 so the H1 has been accepted means that there is a difference between the impact of AI ChatGPT in cash flow management and decision-making, and there is an improvement in the effectiveness of implementing AI ChatGPT. SMEs find it easy to get new information in cash flow management and decision –making with AI ChatGPT events they still need to decide based on their real business condition and situation.

The percentage of the pretest and posttest with a high percentage in the indicator of accuracy and reliability of cash flow analysis and difficulty in cash flow analysis. The indicator of accuracy and reliability of cash flow analysis is 26%, SMEs without a finance background difficult to do cash flow analysis they do the business based on their experience, so sometimes they confuse the decision-making in cash flow analysis.

After implementing AI ChatGPT they are more insightful with the advice and answer from AI ChatGPT. The advice more easier to understand and SMEs still can ask again and again until they understand and get a suitable answer for their business. The difficulty in cash flow analysis is 23% means that after using AI ChatGPT, SMEs just need to read the AI ChatGPT advice and choose the best advice and suitable for their business. The lower indicator is budgeting and the financial projection is 14% means that SMEs need training to do budgeting, Even though AI ChatGPT gives the answer ad advice, they should have the basic budgeting knowledge so they can easy without using AI ChatGPT.

The interviews done after the experiment from that SMEs more understand how to analyze their cash flow based on their income, omzet, and expenses after calculating all transactions. The simple bookkeeping will help SMEs to deeply analysis the cash flow management and do decision- making. The function of AI ChatGPT be a consultant for SMEs digitally, they can ask anything to get the answer, but the researcher gives a prompt that helps SMEs to get the answer to their cash flow even if they lack financial knowledge. The decision making done after SMEs get the advice and best answer from AI ChatGPT but they need to analyze the advice based on their business situation and condition. The hypothesis of the effectiveness of implementing AI ChatGPT for cash flow management and decision-making is accepted.

Implementing QRIS and AI ChatGPT to Cash Flow Management and Decision-Making for Operational Effectiveness

The results of Hypotheses 1 and 2 give the overview that QRIS and AI ChatGPT are effective when working together, but SMEs still need a supervisor and training to implement them with ease and effectiveness for operational. The interview gave more deeply information that SMEs need a system to work and also a standard operation to use it. So from the flow to implementing QRIS and AI ChatGPT for cash flow management and decision-making, the researcher created an innovation system called FlowAI the system is as follows:

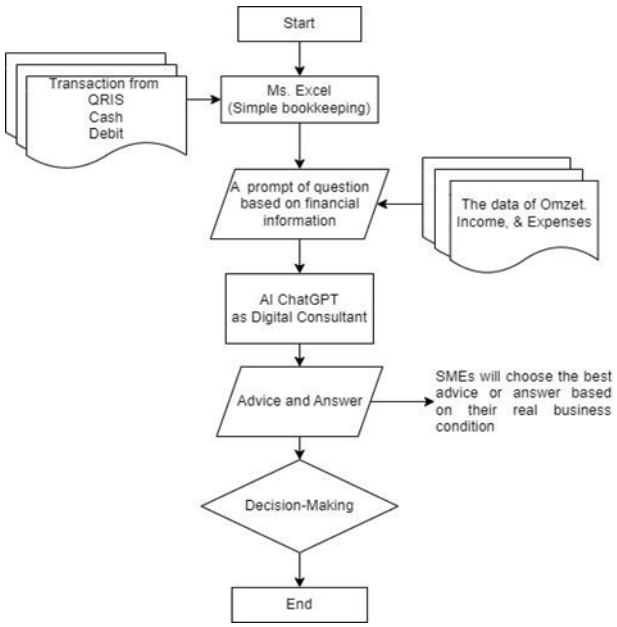

Figure 3. The system information of FlowAI

The system of FlowAI for the output of this research is to give effectiveness to use the integration of QRIS and AI ChatGPT for cash flow management and decision-making in SMEs in Yogyakarta.

The Prompt to ask and to know the information of Cash flow management and decision-making for example are:

1. Assessing cash flow: “I have revenue of (Rp 5.000.000) and expenses of (Rp 4.000.000) this month. Is my cash flow positive or negative, give some advice on the strategy to do decision-making?”
2. Improving cash flow: “My cash inflow is (Rp 3.000.000) and cash outflow is Rp (2.500.000) last month. What can I do to increase cash flow next month?”
3. Managing expenses:” My monthly expenses are Rp 2.000.000, but I want to invest some, how can I reduce my expenses without compromising the quality of my product?”

The SMEs can elaborate more based on their question to answer to help them in cash flow management and decision-making. FlowAI is an innovation system in accounting that integrates with QRIS and AI ChatGPT. The benefits of FlowAI are that SMEs can increase cash flow management and decision-making.

Over time, this system can lead to providing automated and integrated financial services. Furthermore, this integration between QRIS and AI ChatGPT called FlowAI will simplify the financing process, reducing administration and enhancing effectiveness. The innovation in the financial system will help SMEs easily understand how to prepare simple bookkeeping by collecting invoices from QRIS, Cash, and Bank cards. The system will bring the data to Ms.Excel to calculate the income, expenses, and omzet. Some SMEs just stop on this step because they can’t find the strategy because of a lack of financial knowledge management.

AI ChatGPT will show the specific advice based on the data used in the Prompt. The Prompt is created to analyze cash flow management and decision-making that is suitable based on the data of income, expenses, and omzet. The human expert is to validate the final responses from AI ChatGPT results, especially AI ChatGPT will give the diversity of data sets and varying economic conditions, the researcher emphasizes the involvement of human experts in the validation process. The approach recognizes the involvement of human judgment and expertise in assessing the accuracy and reliability of AI ChatGPT response. The AI ChatGPT will function more as an assistant or digital consultant with FlowAI, and SMEs more guidelines to use AI ChatGPT in effectiveness and efficiency.

Challenge and prospect of implementing QRIS and AI ChatGPT in SMEs

The challenge and prospect based on the questionnaire, experiment, and interview are:

The challenge to use QRIS and AI ChatGPT in SMEs

The questionnaire, experiment, and interview give the overview that QRIS has a weakness in that the transaction with QRIS is not in real- time, so the seller just gets the successful transaction but not in a bank card. There is a discount per transaction and the seller needs to pay it, each bank that issued QRIS has a different amount of discount. SMEs need to wait for 1x24 hour to receive the money in their bank, they can't do cash flow at that time so this will affect the operational effectiveness of SMEs. The new technology needs training to operate it, same with AI ChatGPT as a new technology, some SMEs need to learn more about how to operate it, and how to create prompts to answer their problem. The new technology will be beneficial in the future, since 2020 QRIS has been more effective in reducing cash transactions, decreasing fake money, and transaction receipts.

The same with AI ChatGPT is e new technology for SMEs in Yogyakarta but after trying to implement AI ChatGPT they concluded that in the beginning they felt challenged to understand and to provide advice or answers that are suitable for their business.

The Prospect of using QRIS and AI Chat GPT in SMEs

The economy of Indonesia grew faster in this decade especially SMEs, which gives stability to the economy. The future will use new technology such as QRIS and AI ChatGPT for operational effectiveness. The deep interview gives the information that this new technology gives a new era for SMEs in Yogyakarta, they get a new perspective to analyze their cash flow management without the need to study more about financial management. AI ChatGPT will be technology that helps and guides SMEs to analyze their problem so they can formulate the effectiveness of operational or strategy. Also, QRIS gives the information of the transaction to be simple bookkeeping for the data to analyze cash flow management and decision-making.

The integration of QRIS and AI ChatGPT is a new system called FlowAI is effectively collaboration with new technology with an easy system to be practiced. SMEs can use the system to analyze more about cash flow management and decision-making in the future.

KESIMPULAN

Kesimpulan

The new technology gives effectiveness in operational, QRIS, and AI ChatGPT in cash flow management and decision-making helping SMEs to formulate a new strategy based on their finansial information. The implementation of QRIS in cash flow management and decision making is significantly effective with P-value <0.05 and AI ChatGPT in cash flow management and decision-making with experiment there is Sig. 0.000 <0.05 is accepted, and AI ChatGPT will be the digital consultant to give advice and answers based on the prompt. The innovation system integration of QRIS and AI ChatGPT is FlowAI will help SMEs understand the working flow to cash flow management and decision-making. The integration of two new technologies in SMEs accepted gives the effectiveness in cash flow management and decision-making based on the result of empirical analysis using SEM-PLS 3.2.9 and SPSS 24 supported experiment and interview.

The system gives operational effectiveness but also challenges and prospects to understand. QRIS and AI ChatGPT need a supervisor and training for fluent in operating it, also updating information about it will give new information about the function, future, strengths, and weaknesses. This paper presents a unique system that integrates QRIS and AI ChatGPT, this innovative approach not only enhances data processing and model performance but also builds on the existing foundation of understanding SMEs' challenges. FlowAI is the innovation for the analysis of data with specific, detailed, and descriptive to help SMEs in cash flow management and decision-making.

Saran

The system of FlowAI needs to be developed more to use effectively and wish there was a new application based on that. The challenge of QRIS is not real-time receiving the payment because QRIS still integrates with E-banking so the regulation and standard operations are based on the bank system. If QRIS has an application like AliPay or We Chat that is integrated with the bank it will be easier to receive the payment in real-time and receive as balance of QRIS application.

The suggestion needs research and development in the future.

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