



# THE EFFECT OF CASH MANAGEMENT SYSTEM EFFECTIVENESS AND GOVERNMENT CREDIT CARD ON FRAUD INDICATIONS THROUGH THE INTERNAL CONTROL SYSTEM

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## Abstract

This research aims to empirically test and analyze the effectiveness of the Cash Management System (CMS) and the Government Credit Card (KKP) on fraud indications, while also assessing the role of internal control systems (ICS) as a mediating variable. The research was conducted across work units of the Central Bureau of Statistics (BPS) in South Sulawesi Province using a quantitative explanatory approach. Data were collected through questionnaires administered to 96 financial management officials, including Budget User Authorities, Commitment Making Officials, Payment Order Signatories, and Expenditure Treasurers. The data were analyzed using the Partial Least Squares - Structural Equation Modeling (PLS-SEM) method.

The results indicate that the effectiveness of CMS and KKP significantly influences internal control systems. However, internal control systems do not have a significant effect on fraud indications and do not serve as a mediating variable. This means that the influence of CMS and KKP on fraud is direct, and not mediated through internal control systems. These findings suggest that the implementation of non-cash transactions such as CMS and KKP plays a direct role in reducing fraud risks, even though the current internal control systems are not yet sufficiently effective as an intervention mechanism. Therefore, strengthening and restructuring internal controls is necessary to enhance their role in fraud prevention. This study provides practical implications for government institutions in promoting financial transparency through digital payment systems and in reinforcing control over the use of public funds.

**Keywords:** Cash Management System, Government Credit Card, Internal Control System, Fraud Indication, Non-Cash Transactions.

## INTRODUCTION

The realization of effective governance requires professional, transparent, and responsible state financial management, based on the 1945 Constitution. Law Number 1 of 2004 regulates the management of the State Revenue and Expenditure Budget by Treasury officials, from planning to accountability in each Ministry/Institution and work unit. The concept of management by administrators is emphasized in Article 6 of Law Number 17 of 2003. The President has the authority to manage finances, delegated to the Minister of Finance (CFO) and the Head/Minister of Budget Users (COO). Both maintain the principle of checks and balances, ensure clear responsibilities, and increase the professionalism of government projects.

Accountability and transparency are key to financial management to improve cash effectiveness, one way being through the implementation of information technology and non-cash payment methods, such as fintech. Based on the Theory of Acceptance Model (TAM), financial applications must be easy to use and useful to gain user acceptance and support performance. However, the availability of cash carries the risk of fraud, as outlined in the Fraud Diamond Theory: pressure, opportunity, ability, and rationalization. Easily accessible cash triggers fraud, such as withholding of BLT-DD (Village Direct Cash Assistance) by village heads (Ismail et al., 2023) or gratuities through tips (Kakkar & Li, 2022), in line with the findings of Jayakody et al. (2023).

Fraud cases involving cash in the treasury continue to occur. For example, a state-owned enterprise teller in Central Jakarta is suspected of embezzling Rp 9.8 billion for online gaming. The former village head of Simpang Raya and former village treasurer, Sri Handayani, embezzled Rp 444 million in village funds, while the treasurer of Kadubeureum Village, Banten, embezzled Rp 570 million into a personal account. The 2024 ACFE report stated that asset misuse accounts for 89 percent of cases, with cash-on-hand fraud in the Asia Pacific region accounting for 8 percent. In Indonesia, a 2019 ACFE survey showed that 28.9 percent of cases involved asset misuse, with losses accounting for 20.9 percent. Impacts include corruption and fictitious financial reports.

Corruption in Indonesia includes embezzlement and falsification of financial reports, which harm the state. Cash also presents external risks, such as theft by external parties. For example, the treasurer of the Langkat General Elections Commission (KPU) lost Rp 150 million and the treasurer of SMKN 2 Tasikmalaya lost Rp 320 million. Cash management increases storage costs and the risk of loss. The Supreme Audit Agency (BPK) recommended that the Minister of Finance improve cash management, considering that the 2022 BPS Financial Statements Report (LKKL) findings showed late cash deposits and discrepancies in physical balances. The implementation of the Cash Management System (CMS) and Virtual Accounts since 2020 has encouraged electronic payments for disbursing treasurers, in accordance with PMK 230/2016, 162/2013, and 183/2019.

The government is implementing plastic cards, specifically the Government Credit Card (KKP), to increase the efficiency and effectiveness of APBN payments. The implementation of KKP is regulated in Article 66 paragraph (5) of Government Regulation Number 50/2018 and related Ministerial Regulations, including PMK 178/2018, 196/2018, 97/2021, and the Director General of Treasury Regulation Per-17/2017. These regulations govern the proportion of KKP UPs, usage mechanisms, management, and transaction administration. PMK 97/2021 increases the limit on KKP usage to support government financial reform and modernization. The Covid-19 pandemic has encouraged non-cash methods, while the Cash Management System (CMS) as internet banking for work units remains low in implementation, especially for operational expenses, official travel, and honorarium payments.

The implementation of cashless transactions in the community and at work units remains minimal due to various obstacles. The Central Statistics Agency (BPS) (2023) noted that in 2022, only 17.74 percent of consumers used cashless payments, although 37.46 percent of businesses implemented e-commerce. The use of CMS in work units is also low; the Pangkalan Bun KPPN reported that 46 percent of virtual accounts did not use CMS, and the South Sulawesi DJPB Regional Office reported 48.61 percent. Obstacles include human resources, procedures, infrastructure, internet networks, and communication with banks. The system sometimes experiences errors, impacting financial reporting and work unit interest. Internal factors, regulations, service quality, and controls also determine the success of cashless transactions.

Many studies have been conducted on cashless transactions, including the implementation of CMS and Government Credit Cards (KKP) in various work units (Novitasari & Halim, 2020). Digital payment adoption is influenced by age, education, income, security, information, and management support (Aurazo & Vega, 2021; Rahman et al., 2022). Several studies have shown that digital transactions reduce corruption (Setor et al., 2021; Ismail et al., 2023), but others have found an insignificant effect on fraud (Sandyasmoro, 2021). This study reviews the effectiveness of CMS and KKP in the central government, focusing on the AIS components of human resources, procedures, infrastructure, data, and security controls, as well as the role of the internal control system as an intervening variable.

This study presents a novel approach by integrating an Accounting Information Systems (AIS) perspective in assessing the effectiveness of the CMS and KKP, while also incorporating the internal control system as an intervening variable. This approach allows for a more comprehensive analysis of the factors influencing non-cash transactions, not only from a technical perspective but also from a control, procedural, and human resource perspective. The research findings are expected to provide a more appropriate policy basis for improving the effectiveness of the CMS and KKP, while simultaneously reducing the risk of fraud within the central government.

## **LITERATURE REVIEW**

### **Risk Management Theory**

Risk management theory serves as the conceptual foundation for this research to understand the importance of risk management in the public financial system, particularly in preventing fraud. According to ISO 31000:2018, risk management is a structured approach that includes risk identification, analysis, evaluation, control, and monitoring. Fraud is categorized as a strategic risk that must be minimized through policies, procedures, and internal controls. The implementation of the Cash Management System (CMS) and Government Credit Card (KKP) is a form of risk mitigation to increase efficiency, accountability, and early detection of irregularities, thereby enhancing the effectiveness of the digital payment system and internal controls to reduce the risk of fraud.

### **Diamond Fraud Theory**

Wolfe & Hermanson's Fraud Diamond Theory identifies four factors that contribute to fraud: pressure, opportunity, capability, and rationalization. Pressure stems from a lavish lifestyle, personal needs, or workload (Khamainy et al., 2022; Ratmono & Frendy, 2022). Opportunity arises from weak controls, unfavorable standard operating procedures (SOPs), and full access to cash (Smith et al., 2021). Capability is the perpetrator's specific ability in the financial sector (Ruankaew, 2016; Arifa & Fitri, 2022). Rationalization allows the perpetrator to justify their actions as job compensation. This

theory is relevant for analyzing the fraud risk of disbursement treasurers who manage state cash and financial assets.

### **Cash Management Concept**

Cash management is the efficient and accountable management of government cash in accordance with Government Regulation Number 71 of 2010 and Minister of Finance Regulation Number 162/PMK.05/2013. Cash includes cash on hand and bank account balances (Kieso et al., 2014). The disbursement treasurer manages cash reserves, the Treasurer's SPM LS, and payment deductions that are the state's right. The treasurer's account is now based on a virtual account (Ministry of Finance Regulation Number 230/PMK.05/2016) to facilitate electronic transactions. Cash management aims to minimize idle balances, reduce storage costs and operational risks, and support other financial policies, so that accountability for the use of APBN funds can be maintained and efficiency achieved.

### **Thinking Framework**

This study uses two independent variables, namely Cash Management System Effectiveness (X1) and Government Credit Card Effectiveness (X2), the dependent variable Fraud Indication (Y), and the intervening variable Internal Control System (Z) which mediates the relationship between the independent and dependent variables. The conceptual framework connects the indicators of each variable according to the research questions.

#### **1. The Influence of Cash Management System Effectiveness on Fraud Indications**

CMS improves financial transparency, efficiency, and accountability through documented cashless transactions. This system limits cash access, reduces fraud opportunities, and creates a digital footprint. According to the Fraud Diamond, CMS reduces the pressure, opportunity, ability, and rationalization of perpetrators. Research shows that cash digitization effectively reduces the risk of fraud in cash management and financial reporting.

#### **2. The Influence of Government Credit Cards on Fraud Indications**

The Ministry of Maritime Affairs and Fisheries (KKP) reduces the risk of fraud because transactions are automatically recorded by the bank and can be audited in real time. Based on the Fraud Triangle, the Ministry of Maritime Affairs and Fisheries (KKP) reduces opportunities for fraud. Research confirms that the Ministry of Maritime Affairs and Fisheries (KKP) improves control and accountability of public spending, particularly official travel. The Supreme Audit Agency (BPK) recommends using the KKP for fraud-prone spending to reduce indications of financial irregularities.

#### **3. The Influence of Internal Control Systems on Fraud Indications**

Internal controls (SPI) encompass policies, procedures, and oversight mechanisms to prevent and detect fraud. Based on the Fraud Triangle, SPI reduces opportunities for fraud through segregation of duties, multiple levels of authorization, and regular audits. Research shows that strong SPI improves the integrity of cash management, procurement, and financial reporting, thereby minimizing the risk of fraud in government work units.

4. The Influence of Cash Management System Effectiveness on Internal Control System

A CMS improves financial efficiency, transparency, and accountability. Digital and documented processes strengthen control, communication, and monitoring activities within the Internal Audit Unit (IAU). The COSO framework emphasizes that information systems are essential to the effectiveness of internal control. Research shows that an integrated CMS reduces recording errors, minimizes opportunities for fraud, and improves the quality of financial oversight.

5. The Impact of Government Credit Card Effectiveness on Internal Control Systems

The KKP serves as a non-cash payment instrument and transaction control mechanism, leaving a digital audit trail. The KKP's effectiveness supports Internal Control System (SPI) through control, transaction reporting, and monitoring. Research shows that the KKP strengthens internal oversight, improves reporting accuracy, minimizes misuse of funds, and enhances transparency and compliance with government financial procedures.

6. The Influence of Cash Management System Effectiveness on Fraud Indications through Internal Control Systems

A CMS effectively reduces fraud both directly and through internal controls. Real-time electronic transactions facilitate financial tracking, monitoring, and reporting. Strong internal controls reduce opportunities and rationalization of fraud through segregation of duties, authorization, and accurate reporting. Research confirms that a CMS improves the quality of internal controls, which significantly contributes to fraud prevention in government financial management.

7. The Influence of Government Credit Cards on Fraud Indications through the Internal Control System

The KKP reduces fraud indications when integrated with the Internal Audit System (SPI). The SPI regulates, monitors, and evaluates the use of the KKP, ensuring transactions comply with procedures and are audit-ready. The information system records transactions in real time. Research shows that the SPI, as a moderator, strengthens the influence of the KKP and organizational culture in reducing fraud. The stronger the SPI, the more effective the KKP is in reducing fraud risk.

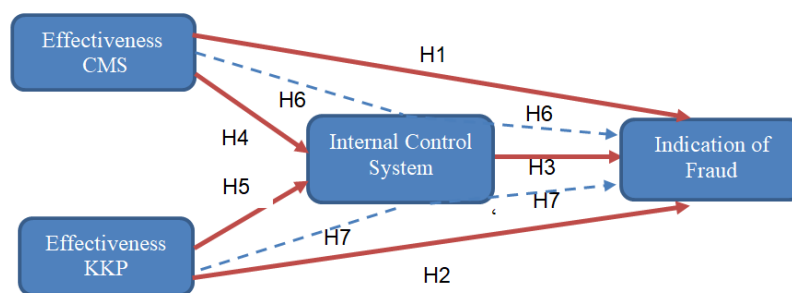


Figure 1 Thinking Framework

## Hypothesis

From the description of the conceptual framework above, the hypothesis proposed is as follows:

- H<sub>1</sub> : Effectiveness *Cash Management System* has a negative and significant effect on the indication *Fraudat* BPS work units throughout South Sulawesi
- H<sub>2</sub> : Effectiveness of Government Credit Cards has a negative and significant effect on the indication *Fraudat* BPS work units throughout South Sulawesi
- H<sub>3</sub> : Internal Control System has a negative and significant effect on Indications *Fraudat* BPS work units throughout South Sulawesi
- H<sub>4</sub> : Effectiveness *Cash Management System* has a positive and significant impact on the Internal Control System in BPS work units throughout South Sulawesi
- H<sub>5</sub> : The effectiveness of Government Credit Cards has a positive and significant impact on the Internal Control System in BPS work units throughout South Sulawesi.
- H<sub>6</sub> : Effectiveness *Cash Management System* has a negative and significant effect on the indication *Fraud* through the Internal Control System at BPS work units throughout South Sulawesi
- H<sub>7</sub> : The effectiveness of Government Credit Cards has a negative and significant effect on the Indication *Fraud* through the Internal Control System at BPS work units throughout South Sulawesi

## METHOD

### Types of research

This study uses quantitative methods to obtain numerical data that are analyzed statistically. The type of research used is a survey, namely data collection from natural conditions with certain instruments, such as questionnaires or structured observations (Creswell, 2017). The survey was chosen to determine the effect of the Effectiveness of the Cash Management System and Government Credit Cards on Fraud Indications through the Internal Control System at the Vertical Office of the Statistics Indonesia (BPS) of South Sulawesi Province, which covers 23 BPS Regencies/Cities and 1 BPS Province.

### Population and Sample

**Population** The study covered all Financial Management Officers at the Provincial/District/City BPS Offices implementing CMS and KKP, a total of 96 people. The population encompassed all

characteristics relevant to the research focus, including Budget User Authorization, Commitment Making Officer, Expenditure Treasurer, and SPM Signing Officer (Neuman, 2014).

The sample was drawn using a saturation technique, where all members of the population are sampled. This method was chosen because the population was relatively small and the researchers wanted to obtain representative information from each relevant individual, resulting in more in-depth and accurate data. The sample size remained at 96 individuals from 24 BPS Work Units in South Sulawesi.

### **Data Types and Sources**

The study used primary data from respondents' responses to a questionnaire using a Likert scale (1–5). The variables measured included CMS Effectiveness (ECMS), KKP Effectiveness (EKKP), Fraud Indications (IF), and Internal Control Systems (SPI). All data were sourced from the financial management of the Central Statistics Agency (BPS) in South Sulawesi. The Likert scale was used to measure respondents' level of agreement with the prepared statements.

### **Method of collecting data**

The research data was collected in two stages. First, a literature review was conducted to obtain relevant theories, concepts, and research foundations. Second, an online questionnaire using Google Forms was distributed to all respondents, allowing them to complete and submit their responses conveniently and efficiently. This method ensured valid data, fast collection, and ready for analysis.

### **Data Analysis Techniques**

The analysis was conducted descriptively and inferentially using PLS-SEM. The stages included: specification of the structural and measurement models, data collection and examination, path model estimation, measurement model assessment (convergent validity, discriminant validity, reliability), structural model evaluation (VIF, path coefficients,  $R^2$ , effect size, blindfolding), and interpretation of the results and conclusions. This analysis examined the relationships between exogenous, endogenous, and mediating variables according to the research theory and hypotheses (Hair et al., 2013).

## **RESEARCH RESULTS AND DISCUSSION**

### **Descriptive Analysis of Research Variables**

Descriptive analysis was conducted to describe respondents' perceptions of the five research variables. Each statement in the questionnaire used a Likert scale of 1–5: 1 = Strongly Disagree (STS), 2 = Disagree (TS), 3 = Undecided (R), 4 = Agree (S), 5 = Strongly Agree (SS). The analysis used the mode and average (mean) to assess the tendency of respondents' answers.

Table 1 Frequency, Mode, and Mean of Cash Management System (CMS) Effectiveness Variables

| Indicator | SS | S  | R  | TS | STS | Modus | Mean |
|-----------|----|----|----|----|-----|-------|------|
| X1.1      | 60 | 34 | 2  | 0  | 0   | 5     | 4,60 |
| X1.2      | 46 | 49 | 1  | 0  | 0   | 4     | 4,47 |
| X1.3      | 56 | 39 | 1  | 0  | 0   | 5     | 4,57 |
| X1.4      | 32 | 61 | 2  | 1  | 0   | 4     | 4,29 |
| X1.5      | 23 | 62 | 11 | 0  | 0   | 4     | 4,13 |
| X1.6      | 38 | 56 | 2  | 0  | 0   | 4     | 4,38 |
| X1.7      | 52 | 44 | 0  | 0  | 0   | 5     | 4,54 |
| X1.8      | 31 | 58 | 7  | 0  | 0   | 4     | 4,25 |
| X1.9      | 37 | 59 | 0  | 0  | 0   | 4     | 4,39 |

Average CMS score = 4.40 (Source: Primary data processing results, 2025)

The average perception shows a tendency from “Agree” to “Strongly Agree”. The highest indicator X1.1 (4.60) is related to commitment to completing tasks, the lowest indicator X1.5 (4.13) is related to CMS usage guidelines.

Table 2 Frequency, Mode, and Mean of the Effectiveness Variable of Government Credit Cards (KKP)

| Indicator | SS | S  | R | TS | STS | Modus | Mean |
|-----------|----|----|---|----|-----|-------|------|
| X2.1      | 22 | 67 | 7 | 0  | 0   | 4     | 4,16 |
| X2.2      | 23 | 63 | 9 | 1  | 0   | 4     | 4,13 |
| X2.3      | 39 | 57 | 0 | 0  | 0   | 4     | 4,41 |
| X2.4      | 35 | 59 | 2 | 0  | 0   | 4     | 4,34 |
| X2.5      | 38 | 57 | 1 | 0  | 0   | 4     | 4,39 |
| X2.6      | 27 | 64 | 4 | 1  | 0   | 4     | 4,22 |

Average KKP score = 4.27 (Source: Primary data processing results, 2025)

Respondents rated the KKP as effective, with the highest being the multi-level inspection (X2.5 = 4.39) and the lowest being the adequate system (X2.2 = 4.13).

Table 3 Frequency, Mode, and Mean of Fraud Indication Variables

| Indicator | SS | S  | R | TS | STS | Modus | Mean |
|-----------|----|----|---|----|-----|-------|------|
| Y1        | 63 | 33 | 0 | 0  | 0   | 5     | 4,66 |
| Y2        | 57 | 38 | 1 | 0  | 0   | 5     | 4,58 |
| Y3        | 58 | 36 | 2 | 0  | 0   | 5     | 4,58 |
| Y4        | 59 | 36 | 1 | 0  | 0   | 5     | 4,60 |

Average Fraud Indication Score = 4.61 (Source: Primary data processing results, 2025)

All indicators tend to “Strongly Agree”, especially Y1 (4.66) regarding reducing the use of personal cash.

Table 4 Frequency, Mode, and Mean of Internal Control System (ISC) Variables

| Indicator | SS | S  | R | TS | STS | Modus | Mean |
|-----------|----|----|---|----|-----|-------|------|
| Z1.1      | 33 | 61 | 1 | 1  | 0   | 4     | 4,31 |
| Z1.2      | 24 | 61 | 9 | 2  | 0   | 4     | 4,11 |
| Z1.3      | 33 | 59 | 3 | 1  | 0   | 4     | 4,29 |
| Z1.4      | 29 | 62 | 5 | 0  | 0   | 4     | 4,25 |
| Z1.5      | 34 | 59 | 3 | 0  | 0   | 4     | 4,32 |
| Z1.6      | 23 | 67 | 6 | 0  | 0   | 4     | 4,18 |
| Z1.7      | 42 | 53 | 1 | 0  | 0   | 4     | 4,43 |

Average SPI score = 4.27 (Source: Primary data processing results, 2025)

Respondents rated SPI as good, the highest being Z1.7 (4.43) regarding audit follow-up.

## Hypothesis Analysis and Testing

The PLS-SEM path model is used to test the relationship between variables. The reflective model shows the direction of the arrow from the construct to the indicator.

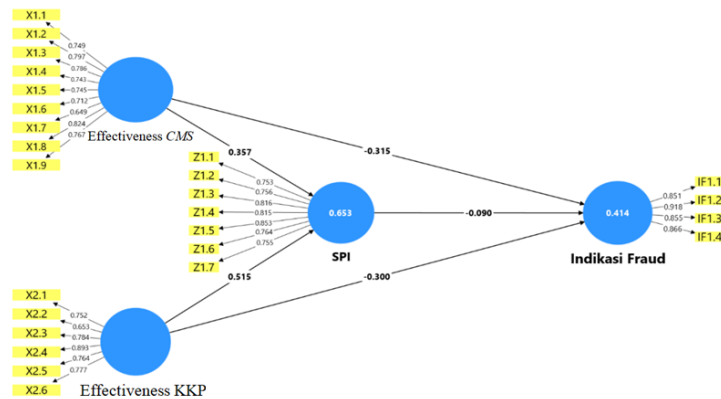


Figure 1 PLS-SEM Path Model Estimation

## Measurement Model Test Results

### 1. Convergent Validity Test

The convergent validity test assesses the extent to which respondents understand the latent variable indicators. Outer loadings  $\geq 0.7$  are valid,  $< 0.4$  are removed, and  $0.4-0.7$  are analyzed using AVE.

Table 5 Convergent Validity Test Using Outer Loading Values

|      | CMS Effectiveness | Effectiveness of KKP | Indications <i>Fraud</i> | Internal Control System |
|------|-------------------|----------------------|--------------------------|-------------------------|
| X1.1 | 0.749             |                      |                          |                         |
| X1.2 | 0.797             |                      |                          |                         |
| X1.3 | 0.786             |                      |                          |                         |
| X1.4 | 0.743             |                      |                          |                         |
| X1.5 | 0.745             |                      |                          |                         |
| X1.6 | 0.712             |                      |                          |                         |
| X1.7 | 0.649             |                      |                          |                         |
| X1.8 | 0.824             |                      |                          |                         |
| X1.9 | 0.767             |                      |                          |                         |
| X2.1 |                   | 0.752                |                          |                         |
| X2.2 |                   | 0.653                |                          |                         |
| X2.3 |                   | 0.784                |                          |                         |
| X2.4 |                   | 0.893                |                          |                         |
| X2.5 |                   | 0.764                |                          |                         |
| X2.6 |                   | 0.777                |                          |                         |
| Y1   |                   |                      | 0.753                    |                         |
| Y2   |                   |                      | 0.756                    |                         |
| Y3   |                   |                      | 0.816                    |                         |
| Y4   |                   |                      | 0.815                    |                         |
| Z1   |                   |                      |                          | 0.753                   |
| Z2   |                   |                      |                          | 0.756                   |

|    | CMS Effectiveness | Effectiveness of KKP | Indications <i>Fraud</i> | Internal Control System |
|----|-------------------|----------------------|--------------------------|-------------------------|
| Z3 |                   |                      |                          | 0.816                   |
| Z4 |                   |                      |                          | 0.815                   |
| Z5 |                   |                      |                          | 0.853                   |
| Z6 |                   |                      |                          | 0.764                   |
| Z7 |                   |                      |                          | 0.755                   |

Source: Results of primary data processing, 2025

Based on Table 5.5, most outer loading values are above 0.7, thus valid. Two indicators are in the 0.4–0.7 range analyzed using AVE, which shows a value above 0.5, confirming the validity of the indicators in Table 6.

Table 6 Nilai Average Variance Extracted (AVE)

| Variables                | Average variance extracted (AVE) |
|--------------------------|----------------------------------|
| CMS Effectiveness        | 0.569                            |
| Effectiveness of KKP     | 0.598                            |
| Indications <i>Fraud</i> | 0.762                            |
| Internal Control System  | 0.622                            |

Source: Results of primary data processing, 2025

The AVE value in the table above shows a value greater than 0.5 so that the outer loading in the range of 0.4 to 0.7 is valid and the indicator can be used.

## 2. Discriminant validity test

Discriminant validity testing aims to ensure each construct is distinct from the others. Using the Fornell-Larcker method, the square root of the AVE of each construct must be higher than the highest correlation with other constructs, ensuring that the construct is considered unique and capable of capturing distinct phenomena within the research model.

Table 7 Discriminant Validity Test Using Fornell Larcker

|                          | CMS Effectiveness | Effectiveness of KKP | Indications <i>Fraud</i> | SPI   |
|--------------------------|-------------------|----------------------|--------------------------|-------|
| CMS Effectiveness        | 0.754             |                      |                          |       |
| Effectiveness of KKP     | 0.707             | 0.774                |                          |       |
| Indications <i>Fraud</i> | -0.593            | -0.592               | 0.873                    |       |
| SPI                      | 0.721             | 0.768                | -0.548                   | 0.788 |

Source: Results of primary data processing, 2025

Table 7 shows the square root of the AVE in the blue cell, which is greater than the correlation with other constructs. The Fornell-Larcker results demonstrate discriminant validity, confirming each construct is unique and captures phenomena not represented by other constructs in the research model.

## 3. Reliability Test

Reliability testing is conducted to assess the consistency of answers to questionnaire questions or statements. Reliability testing uses Cronbach's alpha, which assumes that all indicators are equally reliable.

Table 8 Reliability Test Using Cronbach Alpha

|                          | Cronbach's alpha |
|--------------------------|------------------|
| CMS Effectiveness        | 0.904            |
| Effectiveness of KKP     | 0.863            |
| Indications <i>Fraud</i> | 0.896            |
| SPI                      | 0.898            |

Source: Results of primary data processing, 2025

Based on Table 8, all variables in this study demonstrated Cronbach's Alpha values above 0.80, indicating that all constructs met reliability criteria based on instrument testing standards. This reinforces the belief that the questionnaire used has high internal consistency and is suitable for further analysis.

### Structural Model Test Results

The structural model analysis begins by assessing collinearity between constructs using the Variance Inflation Factor (VIF) value. Based on Table 5.9, all VIF values range from 1.997 to 2.881, which is below the threshold of 5. This indicates no multicollinearity, so the relationship between variables can be interpreted validly.

Path coefficient testing was conducted to assess the direct and indirect effects between constructs. Table 5.10 shows that the Effectiveness of the Financial Management Information System (ECMS) has a significant negative effect on fraud indications (-0.315;  $p=0.021$ ) and a significant positive effect on the Internal Control System (SPI) (0.357;  $p=0.000$ ). The Effectiveness of the Government Credit Card (EKKP) also has a significant negative effect on fraud indications (-0.300;  $p=0.024$ ) and a significant positive effect on SPI (0.515;  $p=0.000$ ). However, SPI's effect on fraud indications is not significant (-0.090;  $p=0.510$ ), so SPI does not act as a significant mediator.

The indirect effect through SPI is shown in Table 5.11, with ECMS and EKKP having coefficients of -0.032 and -0.047, respectively, on fraud indications, both of which are insignificant. This finding implies that strengthening SPI is not sufficient to directly reduce fraud, even though ECMS and EKKP strengthen the internal control system.

Table 9 Path Coefficients and Significance of Relationships Between Variables

| Connection        | Coefficient (O) | P-value | Significance |
|-------------------|-----------------|---------|--------------|
| ECMS -> IF        | -0,315          | 0,021   | Say.         |
| EKKP -> IF        | -0,300          | 0,024   | Say.         |
| SPI -> IF         | -0,090          | 0,510   | No Sig.      |
| ECMS -> SPI       | 0,357           | 0,000   | Say.         |
| EKKP -> SPI       | 0,515           | 0,000   | Say.         |
| ECMS -> SPI -> IF | -0,032          | 0,539   | No Sig.      |
| EKKP -> SPI -> IF | -0,047          | 0,514   | No Sig.      |

Source: Processed Data, 2025

### Hypothesis Testing

Table 5 Hypothesis Test Results

| Hypothesis          | Results                             |
|---------------------|-------------------------------------|
| H1: ECMS → IF       | Negative & significant (Accepted)   |
| H2: EKKP → IF       | Negative & significant (Accepted)   |
| H3: SPI → IF        | Negative & insignificant (Rejected) |
| H4: ECMS → SPI      | Positive & significant (Accepted)   |
| H5: EKKP → SPI      | Positive & significant (Accepted)   |
| H6: ECMS → SPI → IF | Negative & insignificant (Rejected) |
| H7: EKKP → SPI → IF | Negative & insignificant (Rejected) |

Source: Processed, 2025

The table above presents the results of the research hypothesis test regarding the effect of Cash Management System Effectiveness (ECMS) and Government Credit Card Effectiveness (EKKP) on Fraud Indications (IF) and the role of the Internal Control System (SPI) as an intervening variable. The results show that ECMS and EKKP have a direct and significant negative effect on IF, meaning that increasing the effectiveness of these two systems can reduce the potential for fraud. Conversely, SPI has no significant effect on IF and is unable to mediate the relationship between ECMS or EKKP and IF. Meanwhile, ECMS and EKKP significantly strengthen SPI, with an SPI  $R^2$  value of 0.653 indicating that 65.3% of the variation in SPI is explained by these two variables, while the IF  $R^2$  of 0.414 indicates the model's ability to explain 41.4% of the variation in fraud indications. Overall, this model shows moderate to strong predictions of the phenomenon studied.

## DISCUSSION

### 1. The Influence of Cash Management System Effectiveness on Fraud Indications

The path analysis results show that Cash Management System (ECMS) Effectiveness has a significant negative effect on Fraud Indications (IF) with a coefficient of -0.315 and  $p = 0.021$ . This indicates that the more effective the CMS is used, the lower the fraud indications. CMS improves transparency, audit trails, and automated controls, thereby reducing the opportunity for fraud. This finding aligns with the Fraud Triangle Theory and the Technology Acceptance Model, as well as research by Anggia (2024). Data from the South Sulawesi BPS shows that CMS transactions have reached 94.7%, indicating optimal CMS implementation.

### 2. The Influence of Government Credit Card Effectiveness on Fraud Indications

The effectiveness of Government Credit Cards (KKP) has a significant negative effect on fraud indications with a coefficient of -0.300 and  $p = 0.024$ . The negative trend indicates that the higher the effectiveness of KKP, the lower the chance of fraud. KKP improves transparency, accountability, and real-time monitoring, in line with the Fraud Triangle Theory and Agency Theory. Research by Kurniati & Nugroho (2020) and Sun et al. (2023) supports this finding. Data from the South Sulawesi Statistics Agency (BPS) shows that KKP transactions have partially met the target, but implementation still needs to be improved.

### 3. The Influence of the Government's Internal Control System on Fraud Indications

The analysis results show that SPI has no significant effect on Fraud Indications (coefficient -0.090;  $p = 0.510$ ). Although SPI is designed to reduce fraud opportunities according to the Fraud Triangle Theory, its implementation in the field remains weak. Many agencies only implement SPI administratively without internalizing a control culture. ISO 31000 and SPIP regulations emphasize the importance of risk-based controls, but SPI at BPS South Sulawesi has not been fully effective in reducing fraud.

#### 4. The Influence of Cash Management System Effectiveness on Internal Control Systems

The effectiveness of a CMS has a significant positive effect on SPI (coefficient 0.357;  $p = 0.000$ ). A CMS provides real-time, accurate, and transparent financial data, supporting communication and control within internal control. Agency theory emphasizes the role of a CMS in reducing conflicts of interest between management and principals. Research by Indrawati & Suharyono (2019) and Suryanto (2021) supports this finding. With proper CMS implementation, internal control becomes more efficient, reduces the potential for fraud, and improves the accuracy and efficiency of financial reporting.

#### 5. The Impact of Government Credit Card Effectiveness on Internal Control Systems

The effectiveness of the Ministry of Finance (KKP) has a significant positive effect on Internal Control System (SPI) (coefficient 0.515;  $p = 0.000$ ). The KKP strengthens control activities through automated transaction documentation and real-time monitoring. The Technology Acceptance Model explains that ease of use and system benefits increase KKP acceptance, strengthening internal control. Research by Puspitasari & Arifin (2020) and Rahmadani (2021) supports these findings. The KKP is an important instrument in increasing transparency, accountability, and integrity in government financial management.

#### 6. The Influence of Cash Management System Effectiveness on Fraud Indications Through Internal Control Systems

The test results show that SPI does not significantly mediate the effect of ECMS on IF (coefficient -0.032;  $p = 0.539$ ). Although ECMS directly strengthens SPI, internal control has not been able to significantly channel this effect to reduce fraud indications. SPI implementation is still administrative and has not been integrated into the organizational culture. Research by Prabowo & Karpriana (2023) and Indrawati (2020) aligns with these findings, emphasizing the importance of strengthening systems, human resource integrity, and a culture of oversight for effective SPI.

#### 7. The Influence of Government Credit Card Effectiveness on Fraud Indications Through the Internal Control System

Internal Control System (SPI) does not mediate the effect of EKKP on IF (coefficient -0.047;  $p = 0.514$ ). Although EKKP strengthens SPI, the internal control system has not been effective in channeling its influence towards fraud reduction. The original sample was negative according to COSO theory (2013), but SPI failed to reduce fraud intentions. Research by

Hasnawati & Amin, and Herawaty & Hernando, showed that SPI was insignificant in preventing fraud and GCG. The implementation of SPI in Regency/City BPS is not optimal, so the socialization and internalization of sub-indicators need to be improved.

## CONCLUSION

This study aims to provide empirical evidence regarding the effectiveness of the Cash Management System (ECMS), the effectiveness of the Government Credit Card (EKKP), and the Internal Control System (SPI) on fraud indications in Statistics Indonesia (BPS) Work Units (Satker) throughout South Sulawesi. Furthermore, this study also examines the role of SPI as a mediating variable in the relationship between ECMS and EKKP on fraud indications. Indications of fraud in this study are reflected through behaviors that lead to misuse of assets, corruption, and fraud in financial reporting. Based on the results of the data analysis, several important conclusions can be drawn.

*First*, ECMS is proven to have a negative and significant effect on fraud indications, which shows that the implementation of an effective CMS can reduce the risk of fraud. *Second*, EKKP also has a significant negative impact on fraud indications, emphasizing the importance of transparent and accountable use of government credit cards. *Third*, SPI has a negative but not significant influence on fraud indications, indicating that existing internal controls are not yet fully effective in directly suppressing fraud. *Fourth* And *fifth*, ECMS and EKKP have a significant positive effect on SPI, indicating that these two financial instruments support strengthening the internal control system. *Sixth* And *seventh*, mediation testing shows that SPI does not significantly mediate the influence of ECMS or EKKP on fraud indications, which indicates the need to improve the quality of internal control implementation, both in terms of procedures, organizational culture, and HR commitment.

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