

# Cashless Transactions and Retail Fraud

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**Abstract**—This study focuses on the role of cashless transactions in mediating the relationship between these factors and local government spending fraud. Researchers conducted literature searches, observations, and interviews with respondents and obtained baseline data through the distribution of questionnaires. Respondents to this survey are civil servants who were and still are involved in the local government spending process in Indonesia from 2013 to the fiscal year 2020. 324 The questionnaire was responded to, but only 307 responses could be processed because 17 data were damaged because they were filled in by the same person and not written by the authorized official. The data obtained were processed by SmartPLS. The results showed that cashless transaction implementation, law enforcement, and protection had a negative and significant impact on in-store fraud, but the technology did not have a significant impact on fraud. at the store. Law enforcement and protection variables, as well as technology, have a positive and significant impact on the execution of non-monetary transactions, the variable implementation of non-monetary transactions mediates the relationship between law enforcement and protection against fraud in local government spending, but not the technological variable. This study is limited to the factors that contribute to the success of non-monetary transactions.

**Keywords**—cashless, retail fraud

## I. INTRODUCTION

Non-cash transactions (TNT) is a transaction in which funds other than cash are used to convert physical money into digital currency or to transfer information between transaction partners [1]. Since 2016, the President has ordered non-monetary transactions to be completed by January 1, 2018. However, after four years of delegation, non-cash transactions are still in progress. The principle of cashless transactions established by each local government differs from region to region. Unlike some developed countries that have implemented excellent non-cash payment systems, in most regions in Indonesia, the mandatory practice of non-cash transactions only applies to expenditures.

There are several reasons for using a cashless payment system, including reducing the risk of loss of theft, efficient transaction times and managing money and physical transactions, and reducing fraud, corruption, and money laundering [2]. Under the Decree of the President of Republik Indonesia No. 10 of 2016 "On measures to prevent and eradicate corruption." Besides, TNT can facilitate transactions between regions, including between countries (international), and reduce costs, especially for payroll or benefits, based on cost factors. The technology behind TNT has replaced much of human labour and made payments more efficient and effective. The local government process is a political practice and requires trade-offs between budget actors with different preferences so that different aspects can influence budget allocation decisions within local government [3]. The budget execution statement for expenditure is prepared and presented based on the principles established in the accounting standards and guidelines of local authorities [4].

The acceptance of the community, including those within the local government, for non-cash transactions is not the same and this right causes the practice of non-cash transactions in each region in Indonesia to be different. This fact is not different from what is obtained by the following two studies, first Pal et al [5] concluded that the implementation of cashless payments in India and Nigeria has not been as successful as in Canada, Sweden, England, France, and China and Ishak [6] added that in Japan, the implementation of non-cash transactions is also better than the two countries. Although the number of non-monetary transactions in India increased, this goal was achieved after India worked hard to introduce the factors that support this policy. Therefore, i want to know what factors influence the successful implementation of non-cash transactions in the expenditure sector by the Indonesian government and whether this policy is appropriate to reduce fraud.

II. LITERATURE REVIEW

Cashless transactions are characterized by transactions with payment instruments other than physical currencies that enhance the role of the banking system, leave a digital footprint, and benefit from greater financial transparency [7]. A cashless economy describes an economic situation in which financial transactions are performed not with cash in the form of banknotes or physical coins, but through the transfer of digital information between the parties to the transaction [6]. TNT is focusing on using payment methods other than physical cash, empowering the banking sector, providing digital fingerprints, and increasing financial transparency.

Law enforcement and protection are factors that affect the performance of non-monetary transactions. Technology is also one of the variables that contribute to the success of non-cash transactions and one of the reasons for India. not as successful as Belgium, France, Canada, US, UK, Saudi Arabia, etc. because they have not been able to convince the public that the technology, they have developed is capable of protecting non-cash transactions from online crimes. For the success of non-cash transactions, low-cost and crime-free technology is needed.

Enforcement and protection are government efforts to provide legal certainty and protection to TNT companies [7]. People using TNT are entitled to state protection. Also, their legal basis for using TNT is government choice. Thus, existing legal instruments should provide consumers/society with legal understanding and certainty. There are no adequate legal processes to tackle massive identity theft from banks or corporate databases [8].

Enforcement and protection are government efforts to provide legal certainty and protection to TNT actors [7]. TNT users are entitled to represent protection. Also, the legal basis for using TNT is government choice. As good as the legal process is, people are more creative in identifying weaknesses in the process and using what they know. According to a 2017 survey, there is no due process of law to address the issue of massive identity theft incorporate banks or databases [8]. Halbouni et al [9] found that technology can prevent and reduce fraud.

Based on the above description, the following model was built:

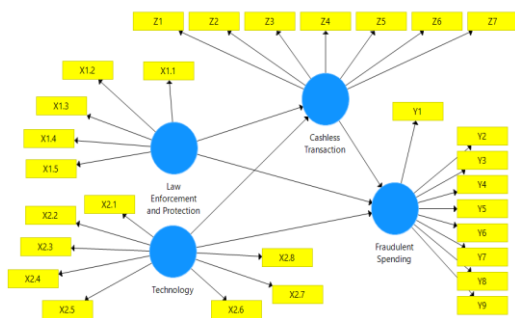


Fig. 1. First study model. Source: Processed data (2020).

Consumer Protection Act No. 8 of 1999 (Consumer Protection Act) gives the Indonesian people the hope of protection from losses resulting from trade in goods and services. UCPK guarantees the legal security of the consumer (<https://bpkn.go.id/uploads/document/99427398FAQs.pdf>) There are concerns that cybercrime is undermining the trust of TNT users and discouraging the use of TNT in government payments. There is a positive and significant relationship between the non-cash economy and transparency, accountability, and the reduction of foreign exchange fraud. Natural transactions, especially those using biometric identifiers (fingerprints, eye scans), are a very safe option because they are difficult to copy. Cashless transactions are not only profitable but also make user data vulnerable to theft. A study [10] found that perceived ease of use of technology has a significant effect on a person's interest in online transactions.

- H1: Non-cash transactions have a negative effect on local government spending
- H2: Law Enforcement and Protection with Negative Impacts against Fraud in Local Government Expenditures
- H3: Technology has a negative impact on fraud in local government spending
- H4: Legal protection and application have a positive effect on the implementation of non-cash transactions.
- H5: Technology has a positive effect on non-cash transactions.
- H6: Cashless transactions mediate between law enforcement and legal protection with fraud in local government spending
- H7: Non-cash transaction mediates in the relationship between technology and fraud in local government spending.

III. RESEARCH METHODS

Research design is a process of data collection, measurement, and model analysis. This study is a causal study that examines the impact of law enforcement and protection, technology, the implementation of non-cash transactions on fraudulent spending by local governments. The survey was conducted in Indonesia with a homogeneous sample, all samples were taken from the relevant population, namely government employees involved in the shopping process in Indonesia.

The questionnaire developed uses a five-point Likert scale to measure respondents' answers. We know that Likert's research is about getting information in the form of responses that show how positive or negative they feel about the subject under study. Data collection in this study was carried out using literature studies and questionnaires. Measure survey variables using a Likert scale. The measurement variables in this study were divided into five weight categories: strongly disagree

(STS) with weight 7, slightly disagree (ATS) weight 6, disagree (TS) weight 5, neutral (N) weight 4, agree (S) weight 3, slightly agree (US) weight 2, and strongly agree (SS) weights 1.

The structural comparison model (SEM) was used to analyse the data from this study. The comparative model test for this study uses the PLS (Partial Least Squares) method. PLS analysis is carried out in three stages, namely the external model analysis stage, internal model analysis, and hypothesis testing. PLS is a Comparative Structural Equation Modelling (SEM) model based on components or options.

PLS is an alternative approach that moves from a covariance-based SEM approach to a variant-based approach. PLS is a powerful analytical technique, often referred to as a soft model because it eliminates the assumption of standard least squares regression (OLS) because data usually need to be multivariate. There is no multicollinearity problem between exogenous variables. In addition, PLS-SEM analysis usually consists of two sub-models, namely the measurement model or often called the outer model, and the structural model or often referred to as the inner model.

#### A. External Model Analysis

The external model analysis is performed to ensure that the dimensions are used to match these dimensions. It is used to check the validity of variables and the reliability of the instrument. A validity test is used to determine how well a research instrument can measure what it should be [10]. Reliability tests are used to measure concepts but can also be used to measure the consistency of respondents when answering questions in a questionnaire or research tool.

A moderate model equation for structural comparisons to investigate fraud with an independent variable for non-monetary intermediation is Technology and Technology Law Enforcement and Protection and reads as follows:

$$KB = \gamma_1 PPH + \gamma_2 T + \gamma_3 TnT \quad (1)$$

An external or ratio or measure model defines that each measure block is associated with its hidden variables. The basic model equation of this model can be written as follows:

- Exogenous latent variable (X):  $X = \lambda \times \zeta + \delta$  in
- The endogenous latent variable (Y) is equal to  $Y = \lambda \times \eta + \varepsilon$ ,

Here  $\lambda$  (lambda) is the weight between the latent variable and the indicator,  $\zeta$  (KSI) is the exogenous latent variable,  $\eta$  (eta) is the endogenous latent variable,  $\varepsilon$  (epsilon) is the endogenous indicator error measure,  $\delta$  (Delta) is the exogenous indicator measurement error. For the above equations, the model for measuring each variable is presented in (Table 1).

Alternatively, the external model can be said to determine the relationship between each indicator and its hidden variable. Tests are carried out on an external model:

- Convergent fidelity, i.e., the value of the latent stressor variable with its indicator. Expected value  $> 0.7$ .
- Discriminatory confidence, that is, the value of the lateral load factor useful in determining whether a variable has sufficient discrimination for the load value of the target variable to be greater than the load value. Other variables.
- Average variance extracted (AVE). Expected AVE  $> 0.5$ .
- Combined reliability. Data with an overall reliability  $> 0.7$  is very reliable.
- Cronbach Alpha. Cronbach Alpha improves reliability testing. The expected value is  $> 0.6$  for all variables.

Two methods were used to validate the variables, namely convergent validity and discriminant validity [11,12] with an AVE value  $\geq 0.5$  [13], and the reliability test method is Composite Reliability and Cronbach Alpha. Composite reliability is used to measure the true confidence value of a variable, and Cronbach's alpha is used to measure the lower bound of a variable's confidence value. The internal consistency test cannot be performed if the validity of the concept is satisfied because the actual construction is a reliable variable. In contrast, robust variables are not necessarily valid [14].

If any indicators do not meet the validity requirements, they should be removed from the study and re-analysed before the results are discussed.

#### B. Internal Analysis of the Model

After the indicators for plotting the variables become reliable and valid, an analysis of the internal model is performed. Internal model analysis / structural model analysis is performed to ensure that the resulting structural model is reliable and accurate. The internal model score can be tested using the coefficient of determination (R<sup>2</sup>), predictive relevance (Q<sup>2</sup>), and quality index (GoF) to obtain information about the extent to which the hidden dependent variable also depends on the independent hidden variable. Significance test to test the significance of a relationship or influence. Between Variables [15]. The control parameter (R<sup>2</sup>) is used to measure the feasibility of the predictive model in the range from 0 to 1. The higher the value of R squared, the stronger the effect of exogenous latency variables on endogenous latency variables. The R<sup>2</sup> value can reflect the direct influence of exogenous variables on endogenous variables. Changes in the R<sup>2</sup> value are used to assess the effect of individual explanatory variables on the content of the dependent variable [15].

#### C. Hypothesis Testing

The probability value ( $\alpha = 5\%$ ) and t statistic (tabular value  $t > 1.96$ ) were used to test the hypothesis. The hypothesis cannot be rejected if the probability (p-value) is less than 0.05 or if the t-statistic is greater than 1.96. Hypothesis testing can

also be based on pathway factors and the overall influence of the investigated variables. The importance of this effect was tested using the bootstrap method. If this value is significant, the research hypothesis cannot be rejected.

IV. RESULTS AND DISCUSSION

The questionnaires were completed by at least 324 respondents, including 17 damaged, incomplete, completed by the same respondent, and not completed by the manager, so the questionnaire could not be included in the data processing. The data processing results show that some indicators do not meet the criteria for processing, since the validity and reliability of the design are less than 0.7 and therefore should be excluded. Concerning the above explanation, the assessment of the validity and reliability of the reflexive variables of the quasi-study can be summarized as follows:

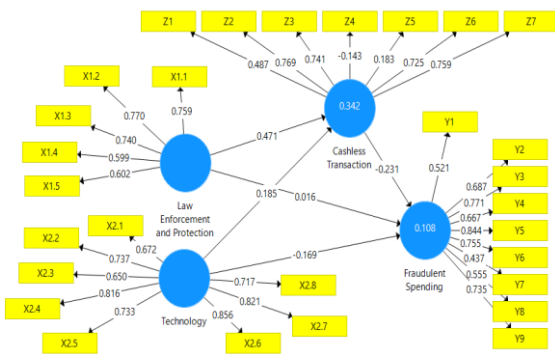


Fig. 2. Reliability Test Pattern. Source: Processed data (2020).

Treatment was continued, and after decreasing the unreliable variables, the relief value described in Table 1 below was found:

TABLE I. OUTER LOADING

Indicators	Fraudulent Spending	Cashless Transaction	Law Enforcement and Protection	Technology
X1.1			0,821	
X1.2			0,751	
X1.3			0,810	
X2.2				0,758
X2.4				0,838
X2.5				0,784
X2.6				0,882
X2.7				0,847
X2.8				0,742
Y3	0,718			
Y5	0,871			
Y6	0,829			
Y9	0,805			
Z2		0,757		
Z3		0,765		
Z6		0,752		
Z7		0,797		

The research model with reliable indicators is described as follows:

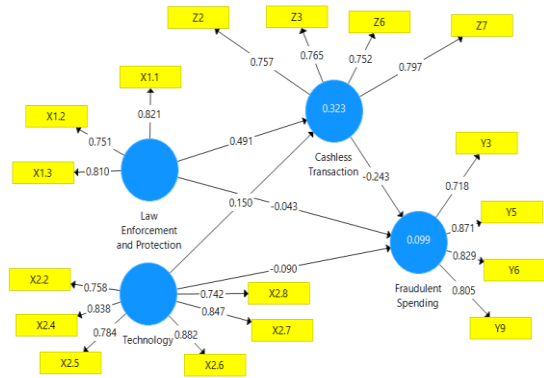


Fig. 3. Model with research indicators is robust. Source: Processed data (2020).

This is done by testing a reflection measurement model measured using the Cronbach alpha confidence value.

TABLE II. CRONBACH'S ALPHA VALUE

	Cronbach's Alpha
Cashless Transaction	0,768
Fraudulent Spending	0,822
Law Enforcement and Protection	0,721
Technology	0,895

Source: Processed data (2020)

Cronbach's alpha value > 0.70 means the study value is reliable. The AVE value is a criterion for verifying the converged validity of a metric at the concept level. The test results show that the reconstructed mean deviation (AVE) value is more significant than 0.5, which means that all constructs that make up the variables are valid. A covert research variable may indicate that the variance of each measure is greater than 50%, and the absolute correlation between the covert variable and the measure or external pressure is > 0.7.

TABLE III. AVE VALUE

	Average Variance Extracted (AVE)
Cashless Transaction	0,590
Fraudulent Spending	0,652
Law Enforcement and Protection	0,631
Technology	0,657

Source: Processed data (2020)

The following table explains what the relationship between variables means.

TABLE IV. MEANING OF VARIABLES

Variables	Original Sample (O)	T Statistics (O/STDEV)	P Values
Cashless Transaction -> Fraudulent Spending	-0,243	3,513	0,000
Law Enforcement and Protection -> Cashless Transaction	0,491	5,891	0,000
Law Enforcement and Protection -> Fraudulent Spending	-0,043	0,568	0,570
Technology -> Cashless Transaction	0,150	2,231	0,026
Technology -> Fraudulent Spending	-0,090	1,161	0,246
Law Enforcement and Protection -> Cashless Transaction-> Fraudulent Spending	-0,119	2,913	0,004
Technology -> Cashless Transaction -> Fraudulent Spending	-0,036	1,704	0,089

Source: Processed data (2020)

The meaning of the relationship between variables is described as follows:

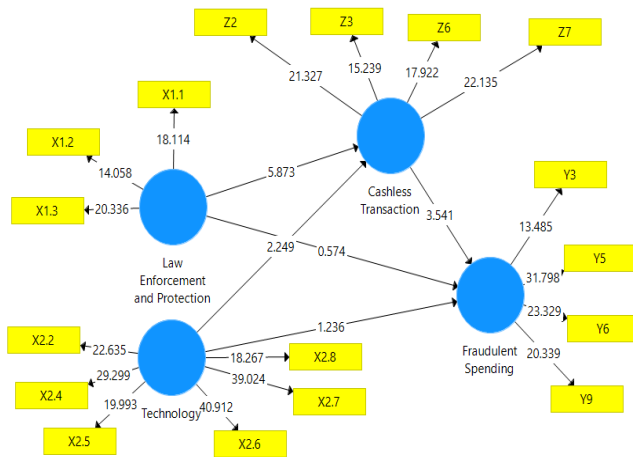


Fig. 4. The importance of relationship between variables. Source: Processed data (2020).

TABLE V. MODIFIED R-SQUARE

Variables	R Square	R Square Adjusted
Cashless Transaction	0,323	0,318
Fraudulent Spending	0,099	0,090

The model of the relationship of independent factors with the above two variables is weak, there is a 31.8% relationship between the independent factors and non-monetary transactions, and the model of fraudulent spending is built on only 9% of the variables. research, so there are other independent variables. Research is a constructed variable for non-cash transactions and commercial fraud.

In-kind transactions have a negative and significant impact on retail fraud. The better the quality and volume of non-cash transactions, the less fraudulent expenses for local governments, which means that the measures taken by the government of the Republic of Indonesia to speed up cashless transactions in local governments. The local authorities are fine, but the situation is different from law enforcement agencies. This variable has no significant effect. When it comes to spending fraud, this empirical evidence can be found explaining that officials who conduct non-cash transactions

with the government do not believe that governments are enough to enforce the rules and protect the entities that conduct transactions. cashless. Like the law enforcement and defense variable, the technology variable does not have a significant effect on retail fraud. Respondents believe that technology affects fraud, but respondents do not see or feel the important role that technology plays in reducing fraud.

It can be explained that the relationship between law enforcement and protection and non-monetary transactions is positive and significant for the sample value (+). T variable > 1.96. The T score for law enforcement and protection is 5.891 and the T score for technology is 2.231. This means that this hypothesis is accepted and that this evidence is consistent with the research of Okoye and Ezejiolor [7] showing that in Nigeria, where physical transactions are not performed due to various factors, law enforcement, and consumer protection are not accepted by players in Canada. ... became cash transactions in Nigeria. Ishak 2020 also concluded that law enforcement and security measures are needed, and that the government must ensure that the country's existing laws are sufficient to address any concerns and protect transaction participants from cybercrime. And unlike the use of non-cash transactions in business, which is more diverse and extensive, non-cash transactions in local governments do not require advanced technology. In-kind transactions reflect the relationship between law enforcement and protection against commercial fraud, but not the relationship between technology and commercial fraud.

V. CONCLUSION

A series of tests using responses to the aforementioned questionnaire concludes that the measures taken by the Government of the Republic of Indonesia to conduct cashless transactions with local authorities are reasonable as they reduce retail fraud and strengthen law enforcement and protection against fraud. Mediation in expenditure laws, However, non-cash transactions with the state do not yet require advanced technology. Other researchers should note that due to the weakness of the research model, the study of cashless transactions and retail fraud in local government should be considered using other variables and survey models. Research of Zulkarnain et al [16] shows that consumers who consume and trust their products may not be easy to abandon or replace with another brand. Cash transactions are changes in the behaviour of transactions using physical money and cashless

and non-cash transactions. These are local government spending options that fall under key spending categories and limits and are influenced by the decisions of stakeholders and policymakers dealing with specific local conditions, fraud, and behavioural governance. Further exploration of variable enrichment in accounting science and psychology.

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