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DO DIGITAL PAYMENT TRANSACTIONS REDUCE THE RISK OF CORRUPTION? (CASE STUDY IN LOWER MIDDLE COUNTRIES INCOME 2017)

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Abstract

Many studies link digitalization to corruption, although there are still rudimentary studies on the role of digital payments in reducing corruption. With the advancement of Fintech (Financial Technology) innovation, digital payments are also increasingly widespread, followed by the nature of corruption that is increasingly widespread as well, especially in income-earning countries. middle to lower. Using data from Transparency International, FINDEX, and the World Development Index (WDI), the authors tried to analyze the relationship of digital payments to corruption in 33 middle-income countries. down in 2017. The result found no link between digital payments and corruption.

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1. Introduction

Corruption can be interpreted as the abuse of public office for private gain (Lambsdorff, 2007). Corruption is a global issue that adversely affects individuals, communities, and businesses through economic, political and social contingency relationships (Argandona, 2007). According to Benjamin & Pande (2012) although corruption is often associated with the government, public sector, and developing countries, the reality is that corruption is broader and occurs in the business, private, and developed sectors. The widespread and systematic nature of corruption and the existence of a global cultural dimension are the problems in the business world that are difficult to lose.

Rosthstein's (2011) recommendations for multifaceted interventions such as, process simplification, effective control management mechanisms, merit-based recruitment, and payment incentive schemes, as well as broader socio-political changes have greater opportunities to fight corruption than to approach it in stages. Research conducted (Ali, Ben, & Gasmi, 2017, Mistry & J, 2012, Shirish, Theo, & Devaraj, 2016).

Adding digital technology factors to reduce corruption is based on financial transparency principles that address issues of information asymmetry, monopoly, uncertainty, and uncontrolled opportunism. An obstacle to fighting corruption in developing countries or lower-middle-income countries is the excessive circulation of physical money (Singh, Kumar, & Bhattacharya , 2017). In lower-middle-income countries, businesses and individuals make transactions worth billions every day using physical cash.

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Cash payments are often insecure, difficult to track and inefficient. Physical payment attributes can trigger illegal activities that drive the growth of the *shadow economy*. According to Bhattacharjee (2015) the emergence of Fintech including e-money and digital payment options opens up opportunities to control co-op activities and behavior. Considering that in recent decades digital financial schemes such as online payment cards and e-money have spread throughout the world, especially the attraction in countries with lower middle incomes . For example, in Kenya more than 90% of Kenyans have access to e-money and total transactions from Kenyan e-money exceed the value of national GDP (CNBC, 2017).

Although it has not been widely considered scientifically, the relationship between digital payments in reducing corruption is an interesting thing to consider in a policy. For example, in November 2016, the Indian government began interdemonetization, in which more than 80% of banknotes were excluded from circulation because of the role of cash in enabling corruption and black market activities (Amartya, 2020). Although India's demonetisation led to a significant and lasting increase in digital payments it remains unclear how the shift to digital payments affects corruption. Against this background, the purpose of this study is to examine the relationship between digital payments and corruption. This study used data from FINDEX, Transparency International, and the World Development Index on the bottom of the list in 2017 to see the relationship.

2. Research Methods

Types and Sources Of Data

The sample of this study consisted of 33 cross-section dat countries taken from three databases: Global Fincial Inclusion (FINDEX), Transparency International, and World Development Index (WDI). This study was conducted in the 2017 period and used multiple linear regression to look at the relationship between digital payments and corruption.

Variabel dependent on this study is the Corruption Perceptions Index (CPI) taken from Transparency International. The CPI measures the level of public sector corruption in 180 countries and territories using opinion surveys of business people and experts. The authors chose to use CPI over other indices because CPI is a composite index, which combines information from 16 different surveys and assessments from 12 independent agencies including the Africa Development Bank, Economist Intelligence Unit , World Economic Forum and Political and Economic Risk Consultation.

The indpendent varibeli in this study is digital payments taken from FINDEX. Digital payments are proxyed through digital payment transaction data made by the population of 25 years and over. FINDEX was issued by the World Bank in 2011 interviewing more than 150,000 civilians aged 15 and over randomly selected national representatives of more than 140 countries. The survey was conducted three years ago, and the most recent survey was conducted in 2017. The Global Findex database is ideal for this research because it contains financial inclusion indicators that measure how people use financial services to save, borrow and make payments.

The control variables in this study used GDP per capita, legal system, and internet access in a country this data was taken from WDI. From the literature that has examinedthe

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determinants of cross-border corruption, most determinants can be categorized as political, socio-cultural, and economic (Elbhnasawy, G, & Revier, 2012). Therefore, to explain alternative explanations of corruption, we control the potential impact of gross domestic product per capita, the power of the legal system and the breadth of internet access. Research shows a link between economic output and corruption. The World Development Indicators (WDI) database contains global development-related data collected from UN specialized agencies, national statistics offices and other leading institutions). The database was compiled by the World Bank and provides access to time series data (1960–2018) containing more than 1600 development indices and 217 capturing development progress made in areas including agriculture and rural development, education, health, infrastructure, social and urban development.

3. Analyst Methods

The data analysis technique used in this study is a multiple linear regression test using cross-section data and processed using the Eviews 10 program. Regression analysis is a useful statistical technique for examining and modeling relationships between variables. Multiple linear regression is often used to address regression problems that result in relationships between two or more free variables. The model of the multiple linear regression equation is as follows:

$Y = \alpha + \beta 1\ Digital\ t + \beta 2\ PDB\ t + \beta 3\ Law\ t + \beta 4\ Inter\ t + \varepsilon t$

Keterangan :

Y	=Corruption Perceptions Index
α	=Constants
β	= Regression Coefficient
β1 Digital t	= Digital Payment Transactions β2
GDP t	= National Revenue
β3 Law t	=Legal System
β4 Inter t	= Access Interneet
εt	= error term

4. Result and Discussion

Regression Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	25.91101	4.204857	6.162162	0.0000
GDP	0.002795	0.001490	1.876093	0.0715
DIGITAL_PAYMENT	9.427411	10.24445	0.920246	0.3656
INTERNET_AKSES	-0.001066	0.086039	-0.012388	0.9902
KULAITAS_HUKUM	-0.346918	0.433020	-0.801159	0.4300
R-squared	0.209811			
Prob(F-statistic)	0.159530			

Partial t is indicated by a t-statistical value. By looking at the p value of the partial t we can find out the partial connection between the indente variable and the dividend variable. If the value of p value < critical limit α= 0.05 then receiving H1 which is an independent variable has a partial link in the model to the dependent variable. From the table above, there is no partial relationship between independent varibael and depnden because the p value of each independent variable < 0.05.

The beta coefficient in eviews is indicated by the label "*coefficient*". The beta coefficient is the predicted value of a variable in the model against the response variable. We see above the beta GDP coefisen value is 0.002795, Digital Payments is 9.427411, Internet access is -0.001066, and Legal systems -0.346918. Thus, every change in one unit of GDP will result in a change in corruption by 0.2%, every change in one unit of digital payments will increase corruption by 942%, every change in one unit of Internet access will reduce corruption by 0.1%, and a change in one unit of legal quality will reducing corruption by 34%.

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Multiple coefisesntion values in eviews are shown withthe el R-squared lab. From the results above, the R-squared value is 0.209811 which means that a set of predictor variables in the model describes a response variable of 20.9%. While the remaining 79.1% is explained other variables outside the mode.

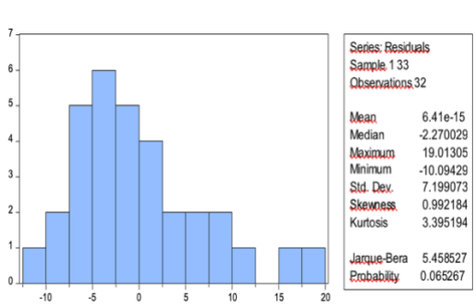
Simultaneous tests in evies are shown with the value of Test F given the F-statistic. From the results of this regression, the Prob value (F-s tatistic) is 0.159530 > 0.05 or the critical limit of the study, so it can be concluded that the independent variables simultaneously do not significantly affect the dependent variables.

Test Classical Assumptions

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	0.812569	Prob. F(2,25)	0.4551
Obs*R-squared	1.953206	Prob. Chi-Square(2)	0.3766

This regression model uses the Breusch-Godfrey LM Test to test autocorrelation in the model. The autocorrelation test aims to see the correlation between the disruptor errors in the previous period. The value of Porb. Chi-Square is 0.3766 where the value of t is greater than the critical value of α= 0.05 so this model is free from the problem of autocorrelation.



Normality tests can see that both dependent varibaelles and independent variables have normal or no distribution in the regression model. The regression model is said to be normally distributed when the Jarque-Fallow value is greater than the critical value α=0.05. In this model, the value of Jarque-Bera is known to be 5.458527 with a p value of 0.065267 > 0.05 then this regression model is said to be a good model because it has a normal distribution.

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
C	17.68082	9.508268	NA
GDP	2.22E-06	9.099629	1.493471
DIGITAL_PAYMENT	104.9488	5.096073	1.169288
INTERNET_AKSES	0.007403	6.814006	1.498346
KULAITAS_HUKUM	0.187507	4.679417	1.087039

To see the correlation between the regression model and the free variable (independent variable), a multicollinerity test was carried out on the model. A good model should be free from the problem of multicollinaryness. Multicholinerity testing can be seen from the value of the Centered VIF, if the value of the centered VIF is more than 10 then the model has a multicollinerity problem. Judging from the Centered VIF value on this model, no one > 10 then this regression model is free from multicollinerity problems.

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	0.217374	Prob. F(4,27)	0.9264
Obs*R-squared	0.998362	Prob. Chi-Square(4)	0.9100
Scaled explained SS	0.851190	Prob. Chi-Square(4)	0.9315

The heterokedaksity test in this study used the glejser test. The heterochedadity test aims to find out whether in the model there is a dissimilarity of variance from residual from one observation to another. Regression models are not said to have heterochedactity problems when the value of Prob.Chi-Square pad Obs*R-squared is greater than the critical value of α= 0.05. The value of Prob.Chi-Square on Obs*R-squared is 0.9100 > 0.05 so this model does not experience heterokedaksity problems.

5. Conclusion

Although digital payments have been touted as restrictions on corrupt behavior (Bhattacharjee, Anol, & Utkarsh, 2015) and increased transparency in financial transactions

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(Corojan, Ana, & Criado, 2012), it remains unclear whether it can reduce corruption. in developing countries where corruption is still widespread. To address this knowledge gap, we used multiple regression analysis with data from the digital payments corss section and CPI to investigate the link between digital payments and corruption in 33 lower-middle-class countries . The results of our analysis confirm there is no link between digital payments and the reduction of corruption. Although there is hope that digital payments can reduce corruption in developing countries (Bhattacharjee, Anol, & Utkarsh, 2015).

Through our results, this study offers a number of prominent implications. These results confirm that digital payments are a tool to try to develop to reduce corruption in lower-middle-income countries, implying that if lower-middle-income countries become cashless economies with high rates of digital payments, there is a high probability that corruption will be reduced. However, for this to happen, lower-middle-income countries must address socio-technical issues such as limited digital payment infrastructure, impoverishment, digital illiteracy, and conflicting cultural beliefs, and widespread adoption of the use of digital payments (Suri, Tavneet, & Jack, 2016). Today, cash remains the "king" in many lower-middle-class countries . As a result, a large volume of corrupt financial transactions still occurs through cash (Syed, Rehan, & Airport, 2019). Thus, lower-middle-income countries need to provide fertile conditions to normalize digital payments in everyday life to create an anti-corruption economy.

Refference

Africa, C. (2017, January 4). *M-pesa has completely transformed Kenya's economy, this is how...* . Retrieved from CNBC Africa: https:// www.cnbcafrica.com/2017/mpesa-economic- impact-on-kenya/

Ali, Ben, M. S., & Gasmi, A. (2017). Does ICT diffusion matter for corruption? An economic development perspective. *Telematics and Informatics*, 1445-1453.

Amartya, L. (2020). The great Indian demonetization. *ournal of Economic Perspectives*, 55-74.

Argandona, A. (2007). The United Nations convention against corruption and its impact on international companies. *Journal of Business Ethics*, 481-496

Benjamin, O., & Pande, R. (2012). Corruption in developing countries. *Annu. Rev. Econ*, 479-509. Bhattacharjee, Anol, & Utkarsh, S. (2015). ICT as a Corruption Deterrent: A Theoretical

Perspective. *ICTS IN GLOBAL DEVELOPMENT.*

Corojan, Ana, & Criado, I. J. (2012). E-government for transparency, anti-corruption, and accountability: Challenges and opportunities for Central American countries. *Handbook of research on e-government in emerging economies: Adoption*, *e-participation*, *and legal frameworks*, 328-350.

Elbhnasawy, G, N., & Revier, C. F. (2012). The determinants of corruption: Cross-country-panel- data analysis. *The Developing Economies*, 311-333.

Lambsdorff, J. G. (2007). *The institutional economics of corruption* and *reform: Theory, evidence and policy.* Cambridge: Cambridge University Press.

Mistry, & J, J. (2012). The Role of eGovernance in mitigating corruption. *Accounting and the Public Interest*, 137-159.

e-ISSN 2807-6842
p-ISSN 2808-1633

Rosthstein. (2011). Anti-corruption: the indirect 'big bang' approach. *Review of International Political Economy*, 228-250.

Shirish, S. C., Theo, T. S., & Devaraj, S. (2016). "You Can't Bribe a Computer: Dealing with the Societal Challenge of Corruption Through IC. *MIS,* 511-526.

Singh, Kumar, S., & Bhattacharya, K. (2017). Does easy availability of cash affect corruption?

Evidence from a panel of countries. *Economic System*, 236-247.

Suri, Tavneet, & Jack, W. (2016). The long-run poverty and gender impacts of mobile money.

Science , 1288-1292.

Syed, Rehan, & Airport, W. (2019). Controlling corruption in developing country public sector: A process ecosystems perspective. *In Proceedings of the 40th International Conference on Information Systems (ICIS.*