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# **Fraud prevention capability and organizational culture: A case study of government agencies**

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## **Abstract**

We performed a quantitative method with a probit, logit, and factorial analysis technique to measure the effect of organizational culture on fraud prevention indicators. The importance of the result shows that improving fraud prevention should be associated with organizational culture also financial audit practice, because financial audit practice is not guaranteed by improving fraud prevention. In conclusion, the financial audit opinion is not significant in improving fraud prevention. On the hand, it is important if the whole assumption as we did in treatment effect that improving financial audit practice improve fraud prevention index.

**Keywords:** Treatment, effect, fraud, prevention, indicators.

# Capacidad de prevención del fraude y cultura organizacional: un estudio de caso de agencias gubernamentales

## Resumen

Realizamos un método cuantitativo con una técnica de análisis probit, logit y factorial para medir el efecto de la cultura organizacional en los indicadores de prevención de fraude. La importancia del resultado muestra que la mejora de la prevención del fraude debe asociarse con la cultura de la organización y con la práctica de auditoría financiera, ya que la práctica de la auditoría financiera no está garantizada por la mejora de la prevención del fraude. En conclusión, la opinión de la auditoría financiera no es significativa para mejorar la prevención del fraude. Por otro lado, es importante si todo el supuesto, como lo hicimos en el tratamiento, de que la mejora de la práctica de auditoría financiera mejore el índice de prevención de fraude.

**Palabras clave:** Tratamiento, efecto, fraude, prevención, indicadores.

## 1. INTRODUCTION

This paper aims to quantify the effect of organizational culture on fraud prevention in Indonesia. This paper motivated that the issue between fraud risk management and organizational culture still unclear in terms of behavioral mapping. This paper contributes in two folds, the first contribution is elucidating of a derivation of fraud prevention sub-indicators as well as organizational culture indicators to measure existing behavior in the lowest level of unit analysis. The importance of this approach that is we can assess from individual perspectives, whether the existing system is in-line according to ideal benchmarks as

stated in the theory. The second contribution is we proposed an econometric model with discrete choice (binary outcome) to predict categories of fraud prevention with bounded criteria of weighting dominant factor. This approach has not been introduced by the previous study. We can claim that our approach is a novelty and will contribute to the body of knowledge of fraud prevention and organization culture issues.

In academic perspectives, there is still an ongoing debate between fraud risk management in public sectors. Fraud activity defined as benefit cheats and tax evasion, whereas another view, define fraud is beyond that definition. Fraud is generating financial gain and losses within the public sector value chain, to some extent fraud creates a lack of efficiency and effectiveness for providing public services around the world. In order to reduce fraud risk management, establishing a change in organizational culture will be effective by introducing total quality management. Jackson (2013) identified that mitigating of fraud risk management can be effective by reducing the size, and nature of risk; improving adequate detection and supporting information system; improving risk assessment on fraud procurement; conducting data analysis by examining the network of interacting agents within the organization.

Worldbank emphasized that robust internal control is important to ensure public sector services effectively delivered to society. On the other hands, strong internal control cannot guarantee that no fraud behavior within an organization. Although, the system has been

promoted and amplified through public transparency initiatives such as strengthening financial/accounting system or improving fraud early warning system. The fraudulent behavior still predominantly occurs, especially in emerging markets such as China, Indonesia, and Brazil.

As a government initiative against fraud activities in public sectors, some of the Indonesian government entities such as BPKP, KPK, Ministry of Finance, and regional governments expanding the assessment of fraud prevention with organizational capacity approach alongside accounting system. This approach claim, that creating a culture of honesty and high ethics is an effective instrument to prevent fraud efforts and reducing fraud risk. Consequently, this study attempt to elaborate organizational behavioral mapping which proxy as an organizational culture towards improving fraud prevention mapping in the public sector in Indonesia (Carswell & Bachtel, 2009).

## **2. LITERATURE REVIEW**

Fraud is deliberate deception in order to make financial gain or loss at any point in the public sectors value chain. There are types of fraud in a variety of shapes and size from assets misappropriation, accounting fraud, bribery and corruption; intellectual property tax evasion, money laundering and market fraud. Arens et al. (2014) defined that fraud is an intentional act of deceiving or lying, a deception or dishonest ways to take or deprive money, assets, and legal rights which belongs to the others either because of an act or a fatal

impact of the act. According to Razaee and Riley (2010), Fraud is an act which is against the law, planned deception, and dishonesty.

### *2.1. Fraud Prevention*

Hall (2013) also interpret that fraud prevention is a management function in terms of establishing policy, system, and procedures which assures that taken actions have already been done by all components of the organization to give sufficient confidence on the achievement of established organization's goal. The dimension used in measuring fraud prevention capability comprises of: (a) internal control's component and procedure based on anti-fraud; (b) acceptable and unacceptable behavior (code of conduct); (c) top management from all levels have given a good example (tone at the top); (d) task distribution to encounter fraud; (e) periodic reporting of allegation/fraud practice; (f) identification, quantification, and investigation of loss/damage; (g) Comprehensive fraud exposure analysis; (h) training with a topic/theme associated with fraud for employees; (i) employees and auditors have actively encounter fraud; (j) fraud countermeasures for when it occurs.

Furthermore, Belkaoui (2004) classified fraud types as corporate fraud, fraudulent financial reporting, white-collar crime, audit failure. In addition, the Association of Certified Fraud Examiners (ACFE) categorized fraud violation that is corruption, misappropriation of assets, and fraud of financial statement.

## *2.2. Organizational Culture*

Albrecht and Albrecht (2011) consider that a positive work environment has a positive feeling for an organization such as a feeling of ownership of the organization, feel abused, threatened and ignored. Those factors have associated with a high level of fraud and detract from the positive work environment. According to the description from various references above, (a) Innovation and Compliance on rules. (b) Attention to detail; (c) Outcome Orientation; (d) People orientation; (e) Team orientation; (f) Aggressivity; (g) Stability; (h) Integrity; (i) Professionalism; (j) Accountability.

## *2.3. Government Regulation*

In the policy perspective, the Indonesian Government has enacted to strengthening organizational culture for providing public service that every public sector is mandatory to perform: (a) integrity. discipline, excellent behavior, and dedicated; (b) conducting professionalism by providing adequate competency; and (c) accountable in the process and result.

# **3. DATA AND METHOD**

## *3.1. Data*

We have two data source in order to obtain real (observe) and ideal respond. We collected the data with survey method based upon purposive sampling. The respondent was chosen deliberately for the government services section which strongly indicates by fraud activity. The observed data were retrieved from 21 regional government level consist of 1 province level, 7 municipal levels, and 13 regency level. For the observed data, the total number of the respondent is 147 persons. The ideal respond delivered to the expert. Where the expert filled a similar questionnaire with the respondents to obtain ideal benchmarking. The expert was chosen due to their competency which has been close dealing with regional government (e.g. academic or professional consultant) for more than 10 years.

### *3.2. Method*

Quantitative analysis was conducted to estimate the parameter from equation (1) – (11). The data generating process was performed according to equations (1), (2), (4), (5), (6). Factorial analysis was employed in regard to equations (3) and (7). We ran the probit and logit model to get results from equations (8), (9), (10) and (11).

## **4. RESULT AND DISCUSSION**

### *4.1. Result*

The results were produced with two steps algorithm. At the first step, we produced output to get aggregated results with factor analysis. Unfortunately, factor analysis cannot measure a magnitude parameter between two aggregates behavior whether Fraud Prevention effect on Organizational Culture or vice versa. In order to perform the analysis, we have an empirical model in equation (9) to test the hypothesis. Prior to that analysis, first, we test the aggregate factor from factor analysis to measure whether the organizational culture affects significantly on Fraud Prevention Index. We regressed three Organizational Dominant factors as classified earlier that Team Orientation as F1, Good Communication for Working Process as F2, and Good Communication for Working Result as F3. We estimated with three estimation technique that is OLS (Ordinary Least Square), Probit and Logit as follow:

Table 1: Estimation Result of Dominant Factor

| <b>Variable</b> | <b>OLS<br/>DFPI</b>  | <b>Logit<br/>DFPI</b> | <b>Probit DFPI</b> |
|-----------------|----------------------|-----------------------|--------------------|
| F1              | 0.128 ***<br>(0.042) | 0.694***<br>(0.257)   | 0.395**<br>(0.138) |
| F2              | 0.107**<br>(0.481)   | 0.453*<br>(0.245)     | 0.269<br>(0.147)   |
| F3              | -0.039<br>(0.523)    | -0.052<br>(0.259)     | -0.023<br>(0.156)  |
| Const           | 0.498<br>(0.129)     | .301<br>(10.609)      | -0.013<br>(6.5394) |
| R2/Pseudo       | 0.306                | 0.143                 | 0.142              |

Source: Author Calculation, 2018

According to those results, team orientation and good communication for working process improve fraud prevention index significantly. The marginal effect in probit logit significantly improves the probability of Fraud Prevention Index about 13% when F1 increasing for 1 percent loading factor. Also, it is implied on F2 that good communication for working process will improve the probability of improving fraud prevention index about 14% by increasing 1 percent of loading factor. In this estimation, it is unclear in which variable indicator exactly effect on Fraud Prevention Index. Now we have only information that aggregate organizational culture factor affect Fraud Prevention by provides team orientation and good communication for the working process to prevent fraud acts.

Furthermore, we decompose analysis into indicators to get the result in which fraud prevention indicator is improving and organizational culture significantly effect on fraud prevention. One of the problems in factor analysis, we can not create a treatment effect within the variable, because the loading factor only classified according to eigenvector result. Otherwise, we can use the probit and logit estimation to perform a treatment effect. We estimate both indicators on Fraud Prevention as well as Organizational Culture on Fraud Prevention Index in separate estimation. That is the Fraud Prevention treatment effect and Organizational Culture treatment effect. For each estimation we conduct the OLS method to detect collinearity problem in an indicator variable, we omit the variable and re-run the estimation. After producing the results, we choose the

estimation and generate an average marginal effect (AME) for each significant variable on Fraud Prevention Index and plot onto the graph.

We add control variable Unqualified Opinion frequency to create the simultaneous analysis of whether improving ideal condition = 1 vs non-ideal condition = 0 has a different effect.

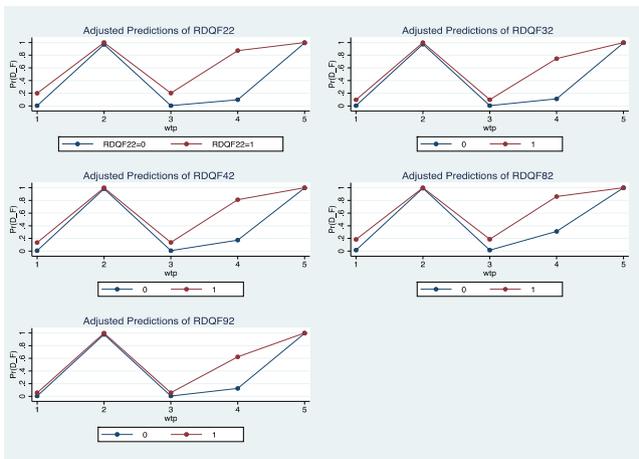


Figure 1: Treatment Effect of Fraud Prevention Sub Indicators through Auditor Opinion on Fraud Prevention Index  
 Source: Author Calculation, 2018

The graph shows that improving ideal condition for Anti Fraud Guidance for external party (RDQF22), Leadership for Anti Fraud (RDQF32), Anti Fraud Unit (RDQF42), Training relate with Fraud Risk (RDQF82), and Auditor capability to relate risk fraud and auditing process (RDQF92) will affect along with public auditor opinion on Improving Fraud Prevention. This treatment is important because we want to assess whether the audit report in public sector

along with reducing Fraud Risk and Improving Fraud Acts. Figure 1, shows that alongside with increasing frequency of receiving Unqualified Opinion.

The next estimation is Organizational Culture indicators on Fraud Prevention Index. We treat the control variable to inform us that organizational culture is not stand alone without association with audit opinion. It will be impossible merely organizational culture and fraud prevention alone covariates in the model. It is necessary that improving fraud prevention and organizational culture should strongly support by improving financial audit practices. If this variable control does not exist in the model so the model result will be silent. We believe accounting report, as well as financial audit practice, is a crucial factor to perform transparency, therefore we interact ideal condition for the whole significant variable with the ideal benchmark in the baseline model.

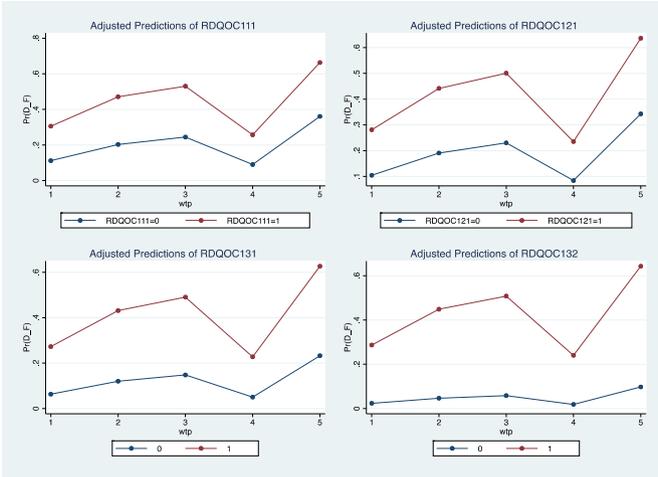
Table 1: The Most Significant Variable of Marginal Effect in Baseline vs Treatment Effect

|             | <b>Baseline</b>      | <b>Treatment</b>     |
|-------------|----------------------|----------------------|
| RDQOC201    | 0.492***<br>(0.117)  | 0.380 ***<br>(0.082) |
| RDQOC171    | -0.291***<br>(0.092) | -0.225***<br>(0.064) |
| RDQOC172    | 0.267***<br>(0.089)  | 0.263***<br>(0.091)  |
| Unqualified | 0.006<br>(0.03)      | 0.278**<br>(0.141)   |
| Pseudo R2   | 0.2856               | 0.3253               |

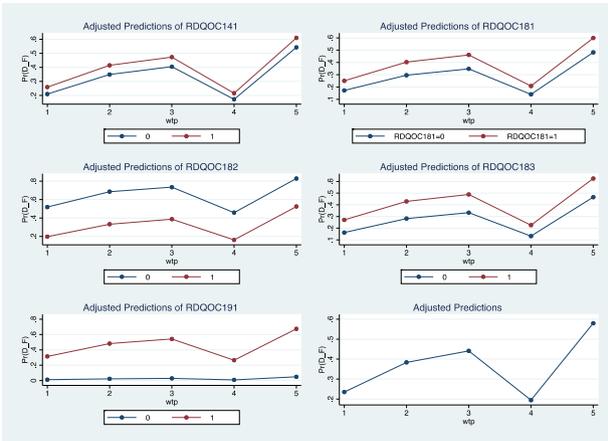
Source: Author Calculation, 2018

The results show that formal channel communication to discuss the process of assignment (RDQOC201) improving the probability of Fraud Prevention Index about 49.2% in baseline and 38% in treatment. Next variable is institution maintain performance stability (RDQOC171) will reduce the probability of Fraud Prevention about 29.1% in baseline and 22.5% in treatment. Working environment stability impact on improving performance in the future (RDQOC172) will improve the probability of Fraud Prevention about 26.7% in baseline and 27.8% in treatment. The result is in accordance with the theory, that along with improving organizational culture as well as improving the practice of public accounting standard prevention of fraud improve significantly noted in the third column in Table 2.

Moreover, we employed similar steps as we have done earlier and produce a treatment effect on variables with statistically significance exclude variables in Table 2. We have chosen 10 variables, that we expect has a strong decision to Fraud Prevention associated with Unqualified Opinion. We classified into employee encouraged to think and act inovatively (RDQOC111), employee encouraged to think and act accurate (RDQOC121), achieved target according to strategic plan (RDQOC131), direction for focus on the result (RDQOC132), benefit for the employee (RDQOC141), good employee behaviour (RDQOC181), employee discipline in every assignment (RDQOC182), complete assignment with the competence (RDQOC183), employee complete assignment correctly (RDQOC191), and urban id.



Panel (a)



Panel (b)

**Figure 2: Treatment Effect of Organizational Culture Indicators through Auditor Opinion on Fraud Prevention Index**  
 Source: Author Calculation, 2018

Figure 2 demonstrates to us that along with Unqualified Opinion, organizational culture indicators increase more than 20% on average. It seems that improving ideal = 1 score increase significantly. This result confirmed that organizational culture should associate with improving the best practice of accounting standard to improve the preventing of fraud. The system should support that reporting system deliberately to reduce fraud risk and risk mitigation.

#### *4.2. Discussion*

Our results have a strong message that an unqualified audit opinion does not guarantee to prevent fraud. This argument confirms after we conduct treatment effect from the baseline with Average Marginal Effect for Unqualified Opinion variable as depicted in Table 2, where Unqualified Opinion is not significant. Which means, the observed data tell us that public sector opinion is not correlated with fraud prevention as Worldbank highlighted. This result is really important to confirm for both academics and practices that organizational culture should effectively align with transparency system.

## **5. CONCLUSION**

Based on the result of this research, it is found that organizational culture has a significant influence on fraud prevention.

At this moment the financial audit opinion is not significant in improving fraud prevention. On the hand, it is important if the whole assumption as we did in treatment effect that improving financial audit practice improve fraud prevention index. Based on the 10 dimensions of fraud prevention that were tested, only a few that have been performed, namely:

- a. Improving the effectiveness of components and procedures of internal control with anti-fraud basis.
- b. Behavior that is acceptable and unacceptable (mostly guidelines for the internal party have already been in place, but the guidelines for external parties that are related to employees have not been possessed by all areas).
- c. Top management on each level has given a good impression.
- d. Segregation of duties to prevent fraud.
- e. Periodical report on fraud suspicion or fraud practice.

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