Data Article

Data to model the effect of awareness on the success of IT Governance implementation: A partial least squares structural equation modeling approach (PLS-SEM)

Uky Yudatama a,*, Achmad Nizar Hidayanto a, Bobby A.A. Nazief a, Kongkiti Phusavat b

a Faculty of Computer Science, Universitas Indonesia, Indonesia
b Kasetsart University, Thailand

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ABSTRACT

This article presents raw inferential statistical data that determine the influence of awareness on the successful implementation of IT Governance. Data were collected from respondents in all regions of Indonesia. Quantitative research methods are used to analyze data. The structured questionnaire was distributed to respondents in all regions of Indonesia who understood the field of IT Governance whose reliability and validity were confirmed. Structural equation modeling (SEM) using Smart PLS software, version 3, is used to present data. SEM path analysis shows an estimate of the relationship of the main constructs in the data. The results obtained from this dataset show a positive relationship between Risk Management, IT Resources, Budget, Stakeholder Involvement, Policy, Business Strategy, Organization, Commitment, Competence, Communication to awareness and consciousness also has a significant influence on the success of IT Governance implementation. However, politics has proven to have a negative and insignificant influence on the awareness and success of implementing IT Governance.

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* Corresponding author.
E-mail address: uky.yudatama@ui.ac.id (U. Yudatama).

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1. Data

Preliminary data were obtained through literature studies, as seen in Table 1. From the literature studies obtained later developed into a questionnaire. The questionnaire through an online survey can be accessed at the URL http://bit.ly/2XLNsPi, this questionnaire is then distributed to various communities that understand the field of IT Governance in all regions of Indonesia, as many as 260 copies of questionnaires are included, through a selection and feasibility process taken only 253 copy (97%). The survey questionnaire was chosen because it was considered the most preferred technique because of its many advantages and good quality [1]. To meet the quality feasibility, this data is then analyzed by considering the values: Cronbach's Alpha (0.6), Composite Reliability (0.7), AVE (0.5) and Loading Factor (0.7) [2,3]. To determine the level of a significant path coefficient, the bootstrap and T-Statistic processes are used above 1.96 at the 95% confidence interval [4]. The measurement accuracy data can be seen in Table 2 and the structural model can be seen in Fig. 1. As the last data, Table 3 displays the output model analysis data.

2. Experimental design, materials, and methods

The data presented is based on qualitative and quantitative research. Qualitative data were obtained based on literature studies to obtain awareness variables, as seen in Table 1. While quantitative data were obtained by distributing questionnaires to respondents. The survey method is considered as the right data collection method because it enables standardized data collection that allows researchers to
produce information answering important variable questions that influence the awareness and success in implementing IT Governance. Respondents in the Indonesian country were selected for this study. To test the data, researchers propose a model where Risk Management, IT Resources, Budget, Stakeholder Involvement, Policy, Business Strategy, Organization, Commitment, Politics, Competence, and Communication are considered. The study was conducted to assess the awareness of IT Governance and its impact on implementation success.

### Table 1: Variable in awareness IT Governance for implementation success.

| Area                        | Sub Area                                                                 |
|-----------------------------|---------------------------------------------------------------------------|
| Risk Management (RM)        | - Risk management related to the use and application of IT methodology (RM1). |
|                             | - Risk management related to control and supervision of IT resources (RM2). |
| IT Resources (RS)           | - Resources for availability and fulfillment related to data, technology and applications (RS1). |
|                             | - Resources for management and supervision related to data, technology and applications (RS2). |
|                             | - Resources for portfolio management related to IT strategic assets (RS3). |
| Budget (BG)                 | - The budget for IT investments is related to size and ability (BG1).       |
|                             | - Budget related to the availability of the IT budget needed (BG2).        |
| Stakeholder involvement (SH)| - Stakeholder involvement in the implementation of IT Governance related to commissioners and board of directors (SH1). |
|                             | - Stakeholder involvement in the implementation of IT Governance related to executive managers (SH2). |
| Policy (PC)                 | - Policies related to IT principles and responsibilities (PC1).            |
|                             | - Policies on IT Governance rules and guidelines regarding decisions and compliance (PC2). |
|                             | - Policy towards alignment of integration between business and IT related to strategic decisions (PC4). |
| Business Strategy (BS)      | - Business strategies related to alignment with business with IT (BS1).    |
|                             | - Business strategy towards IT principles and policies related to decision making (BS2). |
|                             | - Business strategies related to IT monitoring of strategic changes (BS3). |
|                             | - Business strategies for control and supervision related to data, technology and applications (BS4). |
| Organization (OG)           | - Organizations related to the atmosphere and climate conducive to organizational culture (OG1). |
|                             | - Organizations related to the performance of directors and executive managers on the existence of a supervisory board (OG2). |
|                             | - Organizations for environmental change related to adaptation (OG3).      |
|                             | - Organization of regulations and external policies related to compliance (OG4). |
|                             | - Organizations related to the climate of empowerment and responsibility (OG5). |
| Commitment (CM)             | - Commitments related to the decisions of the commissioners and the board of directors regarding rules and policies (CM1). |
|                             | - Commitments related to executive manager support for rules and policies (CM2). |
|                             | - Commitments related to IT staff compliance with rules and policies (CM3). |
| Politics (PL)               | - Politics related to decision making (PL1).                               |
|                             | - Politics related to policy formulation (PL2).                           |
|                             | - Politics related to organizational elements (PL3).                      |
| Competence (CP)             | - Competence towards mastery related to IT skills and skills (CP1).       |
|                             | - Competence towards improving the quality of performance related to IT training and education (CP2). |
| Communication (CU)          | - Communication with the board of directors and executive managers regarding feedback and two directions (CU1). |
|                             | - Communication with the board of directors and executive managers regarding the determination of strategy and expectations (CU2). |
| Success of IT Governance Implementation (SC) | - Improved Performance (SC1).           |
|                             | - Provide added value (SC2).                                             |
|                             | - Achieved alignment of objectives (SC3).                                |
|                             | - Risk Reduction (SC4).                                                  |
|                             | - Efficient and Effective (SC5).                                          |
Communication are outcome variables. The model proposed by the researcher must be tested for validity from the proposed model and to determine whether the data, which has been collected in the field, matches the proposed conceptual model. The quality of the measurement model is determined based on its validity and reliability\[2,3\]. The results of testing the validity and reliability of the data are shown in Table 2.

### 2.1. Path model

The PLS estimation results for the structural model, path coefficients values as well as the item loadings for the research constructs are shown in Fig. 1 (Table 3).

The main data source (questionnaire) is used to collect data from respondents in the territory of Indonesia. The Microsoft Excel spreadsheet worksheet is used to enter all data and draw conclusions from the data obtained. The Statistical Package for Social Sciences (SPSS) and Smart PLS software for

| Research Constructs | PLS code item | Scale item Mean | SD | Cronbach's Alpha value | Composite reliability | Average variance extracted (AVE) | Factor loading | P Values |
|---------------------|---------------|-----------------|----|-------------------------|-----------------------|-------------------------------|----------------|----------|
| RM                  | RM1           | 0.512           | 0.059 | 0.750                  | 0.857                 | 0.666                          | 0.772          | 0.000    |
| RM2                 |               | 0.433           | 0.062 |                         |                       |                                | 0.829          | 0.000    |
| RM3                 |               | 0.412           | 0.072 |                         |                       |                                | 0.845          | 0.000    |
| RS                  | RS1           | 0.500           | 0.064 | 0.805                  | 0.889                 | 0.731                          | 0.699          | 0.000    |
| RS2                 |               | 0.523           | 0.064 |                         |                       |                                | 0.919          | 0.000    |
| RS3                 |               | 0.518           | 0.066 |                         |                       |                                | 0.926          | 0.000    |
| BG                  | BG1           | 0.583           | 0.060 | 0.935                  | 0.969                 | 0.939                          | 0.968          | 0.000    |
| BG2                 |               | 0.605           | 0.058 |                         |                       |                                | 0.97           | 0.000    |
| SH                  | SH1           | 0.489           | 0.070 | 0.825                  | 0.896                 | 0.742                          | 0.79           | 0.000    |
| SH2                 |               | 0.579           | 0.061 |                         |                       |                                | 0.897          | 0.000    |
| SH3                 |               | 0.608           | 0.050 |                         |                       |                                | 0.892          |          |
| PC                  | PC1           | 0.647           | 0.055 | 0.831                  | 0.888                 | 0.664                          | 0.829          | 0.000    |
| PC2                 |               | 0.600           | 0.063 |                         |                       |                                | 0.805          | 0.000    |
| PC3                 |               | 0.610           | 0.062 |                         |                       |                                | 0.785          | 0.000    |
| PC4                 |               | 0.691           | 0.047 |                         |                       |                                | 0.839          | 0.000    |
| BS                  | BS1           | 0.462           | 0.059 | 0.896                  | 0.928                 | 0.763                          | 0.855          | 0.000    |
| BS2                 |               | 0.502           | 0.058 |                         |                       |                                | 0.891          | 0.000    |
| BS3                 |               | 0.447           | 0.063 |                         |                       |                                | 0.873          | 0.000    |
| BS4                 |               | 0.481           | 0.060 |                         |                       |                                | 0.874          | 0.000    |
| OG                  | OG1           | 0.634           | 0.046 | 0.947                  | 0.960                 | 0.827                          | 0.869          | 0.000    |
| OG2                 |               | 0.629           | 0.045 |                         |                       |                                | 0.937          | 0.000    |
| OG3                 |               | 0.624           | 0.050 |                         |                       |                                | 0.922          | 0.000    |
| OG4                 |               | 0.627           | 0.045 |                         |                       |                                | 0.946          | 0.000    |
| OG5                 |               | 0.646           | 0.044 |                         |                       |                                | 0.871          | 0.000    |
| CM                  | CM1           | 0.633           | 0.043 | 0.940                  | 0.961                 | 0.893                          | 0.957          | 0.000    |
| CM2                 |               | 0.646           | 0.042 |                         |                       |                                | 0.912          | 0.000    |
| CM3                 |               | 0.637           | 0.044 |                         |                       |                                | 0.965          | 0.000    |
| PL                  | PL1           | –0.058          | 0.052 | 0.594                  | 0.784                 | 0.548                          | 0.721          | 0.270    |
| PL2                 |               | –0.076          | 0.060 |                         |                       |                                | 0.776          | 0.177    |
| PL3                 |               | –0.065          | 0.052 |                         |                       |                                | 0.722          | 0.201    |
| CP                  | CP1           | 0.698           | 0.039 | 0.949                  | 0.975                 | 0.952                          | 0.975          | 0.000    |
| CP2                 |               | 0.722           | 0.034 |                         |                       |                                | 0.976          | 0.000    |
| CU                  | CU1           | 0.697           | 0.039 | 0.892                  | 0.949                 | 0.902                          | 0.947          | 0.000    |
| CU2                 |               | 0.734           | 0.033 |                         |                       |                                | 0.952          | 0.000    |
| SC                  | SC1           | 0.837           | 0.026 | 0.886                  | 0.916                 | 0.687                          | 0.837          | 0.000    |
| SC2                 |               | 0.810           | 0.033 |                         |                       |                                | 0.814          | 0.000    |
| SC3                 |               | 0.781           | 0.033 |                         |                       |                                | 0.783          | 0.000    |
| SC4                 |               | 0.850           | 0.028 |                         |                       |                                | 0.853          | 0.000    |
| SC5                 |               | 0.855           | 0.024 |                         |                       |                                | 0.855          | 0.000    |

Bold values indicates Special attention/Not eligible.
structural equation modeling techniques (SEM) is used to record data and carry out the statistical analysis. In addition, Smart PLS supports exploratory and confirmation research; normal multivariate and good for small sample sizes.

2.2. Ethical considerations

The researcher guarantees that the respondents have adequate knowledge related to the purpose of this research, besides that they also obtain complete and transparent information. Respondents are guaranteed confidentiality about their personal data.

Fig. 1. Measurement and structural model results.
2.3. Academic, practical, and policy implications of this data article

The data presented in this article have implications for academics, for example, awareness directly influences the success of implementing IT governance in a positive and significant way as indicated by the path coefficient of ($\beta = 0.515$).

Therefore, for academics in the field of IT Governance, this discovery can enhance their understanding of the relationship between awareness and success of IT Governance. This is a useful contribution to be used as literature. On the practitioner’s side, the board of directors and executive managers can benefit from the implications of this discovery. For example, there is a strong relationship between awareness and risk management ($\beta = 0.560$), executive managers must pay attention to risk management related to the use of methodology, monitoring of IT resources and evaluating weaknesses and strengths [5,6]. In addition, this data article offers implications for policymakers (board of directors) for the implementation of IT governance in order to improve company performance by paying attention to variables in consciousness. Thus, findings obtained from this research data collection can be used to generate new policies and assist in revising existing policies.

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Conflict of interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.dib.2019.104333.

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