

# The Influences of Organizational Citizenship Behavior (OCB) Key Users to the Performance of Manufacturing Companies in Implementing Enterprise Resources Planning (ERP) technology

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**Abstract** - Enterprise Resources Planning (ERP) is an integrated information technology system which is used by world class companies to improve their business processes. There are two major questions being discussed in this research, i.e. firstly, how to determine the influence of OCB dimensions to enterprise performance; secondly, how to determine the obedience key user, moral key user, loyalty key user and participation key user, their influence to enterprise performance. According to a survey which was conducted by means of interviews and questionnaires to 35 manufacturing industry practitioners in this research, it is found that in the preparation for an enterprise to implement ERP. The result of an obedience and moral key user will not impact enterprise performance. On the other hand, loyalty and participation will give significant contribution to the performance of the enterprise.

**Key words:** ERP implementation, obedience key user, moral key user, loyalty key user, participation key user, OCB and enterprise performance.

## I. BACKGROUND OF THE STUDY

Enterprise Resources Planning (ERP) is a method to manage company resources with the help of information technology (Spathis and Constantinides, 2003), and this method is equipped with hardware and software. This technology works to coordinate and integrate informational data collected from every business process to enable the managers to make quick and accurate decisions as the result from the availability of financial analysis and reports, on-time sales reports, and accurate production and inventory reports (Gupta, 2000). Helping companies with a wide span of business processes, this ERP technology utilizes specific management database and reporting tools. Business processes are groups of activities that need one or several kinds of input to create value to consumers as the output. ERP software supports the efficiency of managing business processes by integrating all business activities such as sales, marketing, manufacturing, logistic, accounting, and staffing (Leon, 2005).

According to Gillooly (1998) as quoted by Gargeya (2005), approximately 70% from all ERP projects are failure in the implementation, even after 3 years of implementation. This failure cannot be the responsibility of a certain person because the implementation involves all company components and personnel. In general, Gillooly mentions 2 levels of failures: total failures and partial failures. For the total failures, the ERP project may be terminated after the commencement of the program or during the implementation process. As a result, the company long-term finance is significantly affected. While for the partial failure, the implementation of ERP may disturb the daily routine performance of a company. In some successfully implemented ERP projects, the companies enjoy good performances even though there is still some discomfort or downtime.

Generally, implementing ERP in an organization is considered as something complicated and complex that causes reluctance for top management and other users to utilize ERP in the company (Razmi et al., 2009). An interesting finding is

that the success of implementing ERP depends on the key users that are supported by top management and users (Amoako and Gyampah, 2004). Research conducted by Wu and Wang (2007) reveals that ERP products, consultation services, knowledge management and continuous improvements are key factors that are measured to achieve key user's satisfaction. Wu and Wang propose further research to study the influence of key users to the success of implementing ERP. Referring the statement by Wu and Wang, there are still many companies that are eager to utilize ERP, but they are in discouraged by how to implement ERP effectively, especially the effectiveness of the project team members (Wu and Wang, 2007)

The effectiveness of the project team members depends on the obedience, loyalty, participation, and moral of the members which are reflected by their commitment to the company. Research by Olorunniwo et al., (2006) reveals that there is a positive influence in tangible, responsiveness, knowledge, and recovery that creates quality service and organizational citizenship behavior (OCB). A research by Huang, et al., (2004) reveals a positive correlation between job satisfaction and company variable support, and this company variable support has a positive influence to OCB which can increase company's profit.

Long term ERP implementation will result to the bigger cost provided by the company. Implementing ERP program addresses 2 types of users: key user and end user. Key users are team members who are involved directly in the project. They also can make changes directly to the working procedures in their departments. Key users are selected based on their field expertise, and usually are heads of departments. End users are the users of ERP which is designed and developed by key users. Key users will focus on their expertise, and divide ERP system according to key users' specialization; key users will act as coaches, educators, advisors, help-desk resources, and agents for end users (Wu and Wang, 2007). End users master only specific knowledge

from their partial system that they need to accomplish. Looking at this, the role of the key users is very important for the success on the implementation process because the key users set the pace for the program to reach the optimum results.

Several manufacturing companies start to identify the key business drivers that can become the criteria for planning and designing the ERP implementation program, such as:

- The fast growth and development of business environment in Indonesia in facing highly customer demand
- The needs to possess integrated business process to support the best business process and effective management control
- Financial report that is accountable and accurate, and on time monthly accounting report
- Accurate operational costing without removing various market pricing
- Integrated supply chain management with the accurate and latest data availability and information in the computer system

Those manufacturing companies have already enjoy the impacts of implementing ERP in their industry, that is assisting the analysis and making decisions, creating integrated information and business process system, increasing control and speeding up the planning process, lowering the inventory usage up to 40%, and improving customer service levels.

Implementing ERP for Indonesian companies will open hopes for faster business processes, greater efficiency, and bigger revenue creations. The potential problems may occur in implementing ERP because there are many factors that can obstruct the process. One of the factors is the failure of management to set up a good project team. This project team needs credible team members because the process of implementing ERP needs team members that are competent, creative, committed, and responsive. The team members should also be under the effective leader who can sort out overlapping job responsibility, unclear work ethics, and unclear goals (Warta Ekonomi, 2002). Therefore, as stated by Schneider et al., (2005), to maintain the competitive spirit in an organization, the top management needs to set up and implement OCB to the company.

II. CONCEPT FRAMEWORK

This research framework is to find benefits of ERP software and hardware to increase company performance by customizing ERP program, designing an effective business process, and managing ERP data. This framework is described in detailed in Figure 1.

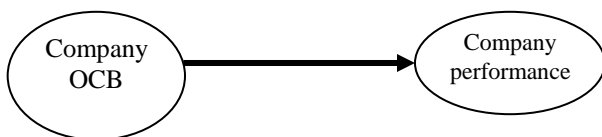


Figure 1. Research Conceptual Framework

Based on the OCB framework above, this research will follow several variables, such as obedience, moral, loyalty, and participation. Research by Bradford & Florin (2003) indicates that top management commitment to support ERP implementation team, in this case the functional managers (key user) and users, increases working effectiveness significantly. Top management supports the team by giving clear company vision and mission, and communicates properly with the team members concerning obedience, moral, loyalty, and participation. The top management also pays attention to the creation of good working condition in the organization, because the good working condition will trigger better performance.

To achieve better business processes, organization creates some rules and policies for the organization members. All organization members have to comply with those sets of rules and policies to reach organization goals. Growing organizations will encourage their human resources in decision making. This participation will generate information exchange, and the exchange will lead to workable information. Zhang et al., (2005) affirm that the commitment of top management by setting rules to avoid conflicts among users and providing proper support will give positive influence and will speed up the implementation process significantly. During the process of implementing ERP, it is not only installing and changing ERP software, but also re-establishing company systems for a better business achievement.

A research by Mashari et al., (2003) indicates that culture changes built through OCB and organizational structure bring positive impacts to the project team members. Group cohesion or organization learning commitment gives also positive impacts on the success of implementing ERP, because there is a learning process among the employees who are parts of the key users. Zhang et al., (2005) mention that organization culture in terms of employee professionalism, employee responsibility, employee communication, and management transparency will give also positive impacts because it can speed up the implementation process of ERP.

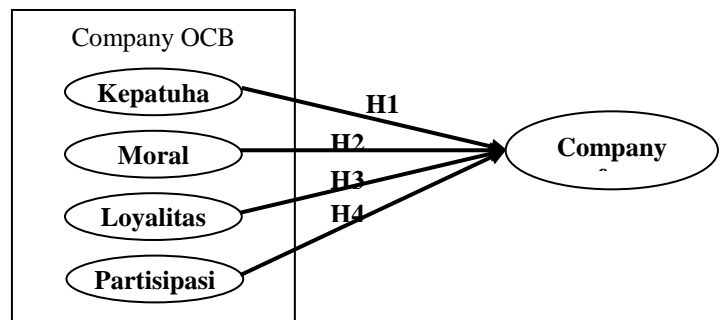


Figure 2. Model Conceptual

Some previous researches still explored the top management commitment in setting up OCB to support implementing ERP; however there is still no study to examine the involvement of top management. This research will stress on the top management competency in creating OCB for the employee to support the process of implementing ERP to a manufacturing company. Without OCB, the top management will focus only

on employee competence, employee interaction, and employee communication. With the establishment of OCB, the management can focus to the continuous communication process among employee within the company.

This research focuses on the key users that are the project team members and competent in the business process of a company. Effectiveness indicators of key users are the competency of the team member, the numbers of team members, and the clear task and responsibility of the team members. The hypotheses of this research are:

- Is the OCB variable of key user obedience affect the performance of manufacturing companies in East Java?
- Is the OCB variable of key user moral affect the performance of manufacturing companies in East Java?
- Is the OCB variable of key user loyalty affect the performance of manufacturing companies in East Java?
- Is the OCB variable of key user participation affect the performance of manufacturing companies in East Java?

### III. RESEARCH METHODOLOGY

This research observes the implementation process of ERP in manufacturing companies in East Java. The Researchers decide the qualified companies by doing in-site observation and direct inspection to the companies. Then the researchers conduct interviews to dig information on how to implement ERP. The object of research is selected by the approval of the companies. Those companies engage in providing answers to the research questions. Those thirty five selected companies have implemented ERP continuously for lengthy period of time. Primary data collection is also done by questionnaires which become the foundation of the ERP implementation process.

The questionnaires are to collect descriptive data, and are designed as closed questions, in which the respondents can choose one answer from some alternative answers. One questionnaire is for one key user in the company, and one company gets only one questionnaire. The questionnaire is distributed by visiting the company, and the researchers wait for the respondents while the respondents are filling the questionnaire. At the same time, the researchers inspect the company to observe employee activities to find out their loyalty and participation.

Key user obedience variable is measured by the several indicators such as the early arrival of employees, on-time working schedule, employee obedience to company rules, employee compliance on working procedure and instruction, office facility usage, efficiency and effectiveness of employee, and working time consumption.

Key user loyalty variable follows the changes and development of company, willingness of employee to work overtime when needed, employee responsibility, employee interaction with other employee concerning new tasks, overburden employee, and employee announcement and information.

Key user participation variable consists of indicators such as employee willingness to help other overloaded employee, employee willingness to help others to overcome job problem, employee participation in giving creative and innovative

advice to others, employee honesty in giving personal opinion, employee willingness to improve skills and knowledge by engaging training conducted by the company, and employee willingness to give other chances to speak up in the meeting.

Key user moral variable consists on indicators as follows employee knowing and realizing that the task is important for the company, employee readiness to work hard for the sake of the company, employee readiness to bare all job risks, employee readiness to sacrifice personal interest for the company, employee confidence in doing the task, and employee dedication.

Company performance variable consists of shorter time consumer to order product, on-time delivery, supplier performance, work flexibility, better resources usage, and information accuracy.

### IV. ANALYSIS AND DISCUSSION

These research variables are constructed from one dimension of OCB, which are divided into 5 variables: key users, key user loyalty, key user moral, key user participation, and company performance. The interview process are conducted using in-dept interview to company's informants to find out the expertise of employees when implementing ERP for the company. Thirty five companies are analyzed their ERP implementation process, conducted by key users and set up by key users and OCB employees, which affects the company's performance.

#### 1. Descriptive analysis

Table 1. Companies Based on Their Location

| Regions of Company  | Quantity | %    |
|---------------------|----------|------|
| Kotamadya Surabaya  | 10       | 29%  |
| Kabupaten Mojokerto | 1        | 3%   |
| Kabupaten Gersik    | 6        | 17%  |
| Kabupaten Sidoarjo  | 9        | 26%  |
| Kabupaten Pasuruan  | 9        | 26%  |
| Total               | 35       | 100% |

Reading table 1, most companies are located in Surabaya, Sidoarjo, and Pasuruan because companies are concentrated in those areas in East Java.

Table 2. Respondents' Characteristics Based on their Positions

| Position in the company       | Quantity | %    |
|-------------------------------|----------|------|
| Director/ National Manager    | 5        | 14%  |
| General Manager/Plant manager | 5        | 14%  |
| Manager                       | 17       | 49%  |
| Assistant Manager             | 4        | 11%  |
| Senior Supervisor             | 1        | 3%   |
| Staff Officer                 | 2        | 6%   |
| Senior Staff                  | 1        | 3%   |
| Total                         | 35       | 100% |

Based on their position in the company, most of the respondents are managers because they are fully responsible for the implementation of ERP and they are also key users.

Table 3. Respondents' Characteristics by Departments

| Department                            | Quantity | % (indicated by outer loading score) |
|---------------------------------------|----------|--------------------------------------|
| General                               | 6        | 17%                                  |
| Production                            | 7        | 20%                                  |
| Planning production inventory control | 3        | 9%                                   |
| Marketing                             | 5        | 14%                                  |
| Accounting                            | 1        | 3%                                   |
| Finance                               | 3        | 9%                                   |
| Material Management (Purchasing)      | 3        | 9%                                   |
| Quality Assurance / Quality Control   | 1        | 3%                                   |
| Industrial Engineering                | 1        | 3%                                   |
| Human resources department            | 2        | 6%                                   |
| Warehouse                             | 3        | 9%                                   |
| Total                                 | 35       | 100%                                 |

Based on table 3, most respondents are from production and general departments.

Table 4. Respondents' Characteristics Based on Tenure

| Tenure               | Quantity | %    |
|----------------------|----------|------|
| Less than 1 year     | 1        | 3%   |
| Between 1 ≤ 3 years  | 4        | 11%  |
| Between 3 ≤ 5 years  | 2        | 6%   |
| Between 5 ≤ 10 years | 14       | 40%  |
| More than 10 years   | 14       | 40%  |
| Total                | 35       | 100% |

Reading the table 4, most respondents have been working for more than 5 years in the same company (80%).

Table 5. Respondents' characteristics based on types of ERP

| Types of ERP          | Quantity | %    |
|-----------------------|----------|------|
| SAP                   | 11       | 31%  |
| ORACLE                | 2        | 6%   |
| JD EDWARDS            | 1        | 3%   |
| PEOPLE SOFT           | 1        | 3%   |
| Create own ERP system | 20       | 57%  |
| Total                 | 35       | 100% |

Based on table 5, most companies are creating their own ERP system (57%) and some companies are using SAP (31%).

## 2. Partial Least Square (PLS) analysis

### 2.1. Convergent Validity

Convergent validity is a correlation between reflexive indicator score and its latent variables. Each indicator is reliable if it has correlation score above 0.5. This correlation score is considered acceptable because it is the beginning of

the measurement scale, and the number of indicator per variable is not abundant. This is reflected on the relationship between indicator and variables which are described on Figure 4. The result of structure model indicates relationship between indicators with each variable which is noted by loading factor.

The result of PLS process shown on Figure 4 depicts that indicator X11, X13, X32, X42, and X56 have loading factor below 0.5, therefore those indicators are removed. After dropping those indicators, Figure 5 depicts a new PLS result, and still X21 is below 0.5. Therefore, a new calculation is done after removing X21. Figure 6 depicts the last PLS process.

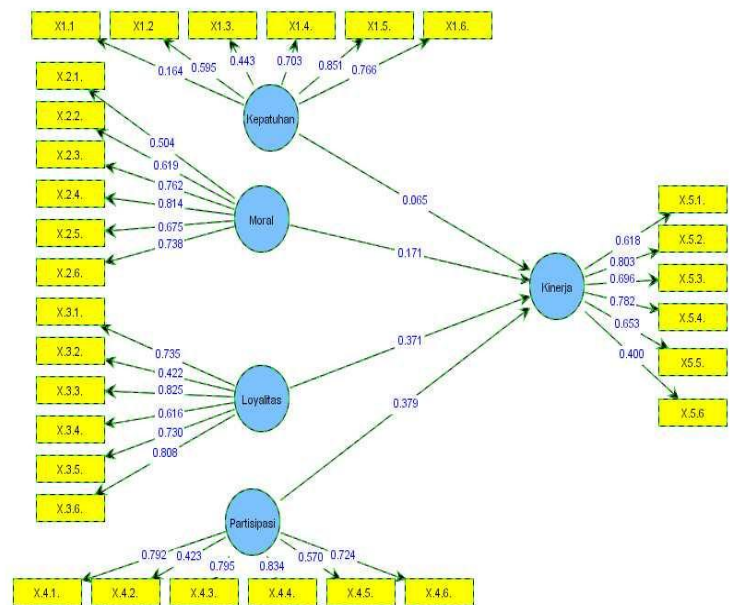


Figure 4. The Result of Structural Model after 1<sup>st</sup> PLS process

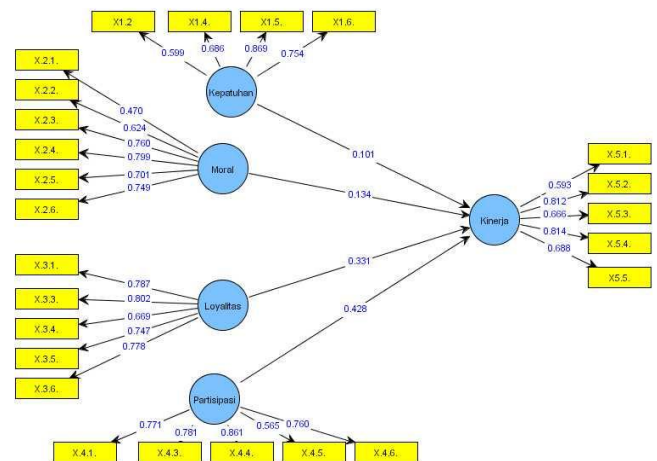


Figure 5. The Result of Structural Model after 2<sup>nd</sup> PLS process

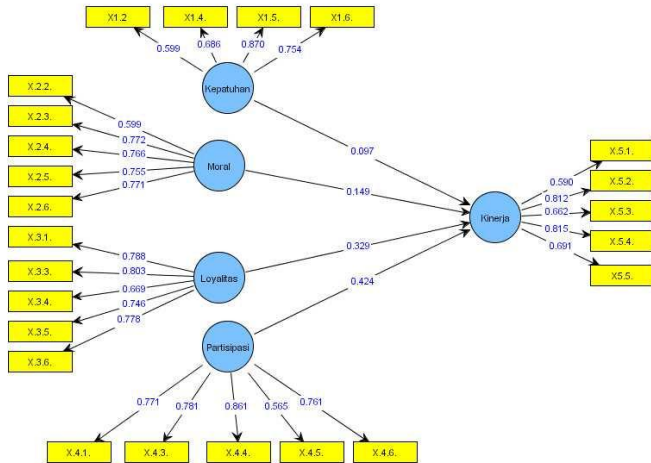


Figure 6. The Result of Structural Model after 3<sup>rd</sup> PLS process

2.2. Composite Reliability

Composite reliability is an indicator block which measure internal consistency from indicator variables. It shows a degree which indicates common latent (unobserved). Level of acceptance for composite reliability is above 0.7. In table 6, all variables are above 0.7, which means all variables are acceptable.

Table 6. The Result for Composite Reliability on Output PLS

| Variable      | Composite Reliability |
|---------------|-----------------------|
| Obedience     | 0.821                 |
| Moral         | 0.854                 |
| Loyalty       | 0.871                 |
| Participation | 0.866                 |
| Performance   | 0.841                 |

Source: PLS result from primary data process (2011)

2.3. Inner Model

Statistical hypothesis for inner model is to examine effect of latent exogen to endogen. Based on table 7 in which gamma on key user obedience is 0.097 and T-statistic is 1.275, less than T table which is 1.96, it means there is no significant effect between obedience and company performance (level of significance 0.05). Looking at gamma on key user moral 0.108 and T-statistic 1.173, less than T table 1.96, it means there is no significant effect between key user moral and company performance (level of significance 0.05). Looking at gamma on key user loyalty 0.329 and T-statistic 2.928, more than T table 1.96, it means there is a significant effect between key user loyalty and company performance (level of significance 0.05). Referring to gamma on key user participation 0.424 and T-statistic 3.749, more than T table 1.96, it means there is a significant effect between key user participation and company performance (level of significance 0.05).

Table 7. The Result for Inner Weight on Output PLS

| Variable                     | original sample estimate | mean of sub samples | Standard deviation | T-Statistic |
|------------------------------|--------------------------|---------------------|--------------------|-------------|
| Obedience -> Performance     | 0.097                    | 0.104               | 0.076              | 1.275       |
| Moral -> Performance         | 0.149                    | 0.108               | 0.127              | 1.173       |
| Loyalty -> Performance       | 0.329                    | 0.390               | 0.112              | 2.928       |
| Participation -> Performance | 0.424                    | 0.413               | 0.113              | 3.749       |

Source: PLS result from primary data process (2010)

Data interpretation from Table 7 into Figure 7:

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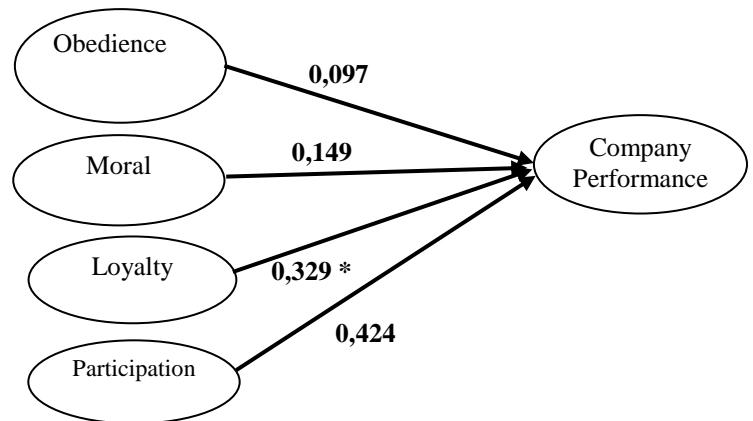


Figure 7. The Result of Inner Model Analysis

V. ANALYSIS AND DISCUSSION

Based on the data analysis and discussion above, the findings in this research can be summarized as:

- The obedience of key users in the company is not strong enough to influence the company’s performance because there are many key users that cannot fulfill their assignments and tasks, and there are still many key users that do not obey to the company’s policies and rules.
- Key users’ moral is not strong enough to influence company’s performance because there are still many key users who are lack of understanding about the impact of their jobs to other departments, and there are many key users who are not aware of their mistakes.
- The loyalty of key users increases company’s performance because most of them are willing to work overtime when the company needs them to implement ERP.
- Company key user participation increases company’s performance because most of them are willing to actively give creative and innovative advices to their co-workers in accomplishing project implementation.

- Performance in East Java companies which are measured by OCB dimension are significantly determined by loyalty and key user participation

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