# Check_enhancing architect

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ENHANCING ARCHITECTS’ QUALITY OF WORK IN BUILDING PROJECT DELIVERY PROCESS

ABSTRACT
Obtaining rewards believed to be a motivator for the employees to work harder and deliver better quality in their work. Deliver a high quality of work is one of the ways to ensure architects will remain competitive and survive in the construction industry. Thus, this study aims to analyze the impact of rewards for project efforts on architect’s quality of work in building project delivery process. The assessment of architect’s quality of work was carried out using the self-evaluation through a questionnaire survey of registered architects in Indonesia. There were 222 completed and usable questionnaires received and used for data analysis. Data analysis in this study includes factor analysis, reliability analysis, and regression analysis. The results revealed that rewards for project efforts could determine 12.9% of architects' quality of work in building project delivery process. The results of the study can be used as a valuable feedback for the architects, clients and people on the top management of consultant firms to identify the extent of architects' work quality in the building project delivery process. This study also provides useful feedback for the employers of consultant firms as well as the clients to enhance the quality of work of their key design contributor by providing the appropriate rewards to achieve higher performance in the building project delivery process.

Keywords: architect, performance, project delivery process, quality, rewards

INTRODUCTION
In the construction industry, quality has been known as one of the indicators to a successful project. Quality provides as the basis for service delivery processes, and it is the responsibility of every participant that involve in the
process to achieve the intended quality goals (Jackson, 2004), including architect as the key contributor in design project delivery process. Quality in construction industry relates to fulfilling all the requirements needed and gaining the satisfaction of all participants involved in the project especially the clients' satisfaction (Soetanto et al., 2001). Construction firms manage their quality through their people in several practices to achieve competitive advantage (Kamal et al., 2016), because people are very important assets for the firms (Yusof et al., 2016).

Unfortunately, quality management application in architectural profession is likely unknown, and architects tend to have poor quality management in their work (Munting & Cruywagen, 2008). However, to be successful in the industry, it is crucial for architects to achieve the desired quality that can satisfy their clients.

Design quality has been recognized to have a connection with a various aspect of performance (Cardellino et al. 2009; Fynes & Burca, 2005). Architects' work is commonly assessed based on design, and therefore, their design quality or the outcome will ascertain the project performance achieving success or experiencing failure. Thus, several studies (Aisha et al. 2013; Manzoni, 2011; Meng & Gallagher, 2012) have been devoted to identifying on how to enhance the project outcomes to survive and gain a competitive advantage in the industry. However, the impact of rewards itself has not been adequately studied to influence the architect's quality of work in building project delivery process. To fill this gap, this paper attempts to measure the extent of architect's quality of work as well as to analyze the impact of rewards on the architect's quality of work in building project delivery process in Indonesia. This study hopes to identify the role of rewards as a determinant to architect's quality of work and provides valuable feedback on how well architects' work quality in project delivery process. For construction firms, the results of this study are expected to be used as a conceptual reference for formulating policies to increase the architects' quality of work as their key employees.

ARCHITECT'S QUALITY OF WORK
It has been recognized that building that is provided for the community should be designed to the highest quality (Cardellino et al., 2009). In the construction industry, quality refers to the totality of features required in services or products to satisfy the needs which help to convince users and clients (Chan & Chan, 2004). As for the architect, quality of work defines as the eligibility of purposes, meeting all of the requirements for a project such as the client's needs, aesthetic, function, and conformance with applicable regulations on the building (Oyedele & Tham, 2007). Based on Munting and Cruywagen (2006) findings, architects tend to have a poor understanding on quality management theory. Thus, it reflects on how they manage quality in their work which is largely lacking in their professions. Similarly, Nawi et al. (2009) argued that improper quality of a project is often aggravated by the weaknesses of a design that produced by the architect in the design stage. Design quality has been recognized to have a connection with a various aspect of performance (Cardellino et al., 2009). There are several items that measure the quality of the architect’s work such as aesthetics and quality of design (Schummer et al., 2009), high-quality specification (Songer et al., 1996), no rework or deficiency in design (Ping et al., 2011), quality management strategies, assist in the production of quality manuals, design conformance to codes and standard, and assist in production of construction inspection and testing program (Oyedele & Tham, 2005).

The design that the architect produces should have no rework and deficiencies. There are several reasons for reworking such as the client's needs may evolve, the contractor wants to substitute the materials, and or the architect finds a mistake in the design and comes up with a better solution (Segal, 2006). Rework sometimes unavoidable, and it may happen because of changes made late on the site and because of design errors. According to Ahzahar et al. (2011), design error is one of the factors that contribute to defects and the building failure. Therefore, the architect should give proper attention to all of requirements and details in the process of producing the building design to minimize and eliminate errors and also
to prevent reworking and deficiencies in the project. The architects should also maintain the aesthetics and quality of design produced since architects' work commonly is judged by the look of their design (Segal, 2006). Therefore, the first good impression provides by an architect to the public through the look of their design probably is one of the ways that may lead an architect to be hired by other clients. Through the buildings that they designed, the architects express their visions and aesthetic values (Schummer et al., 2009). The design quality affects the quality performance and is defined as the extent to which quality is designed into the product (Fynes & Burca, 2005). Volker et al. (2008) state that the quality of design is achieving its' best when it meets the functionality, built quality, and impact. According to Ping et al. (2011), it is important to achieve a good quality of design in any construction project. Therefore, the architects' true excellence in work can be assessed by the way they produce their design to achieve the best design quality by not forgetting about the aesthetic values that should be implemented in their design.

REWARDS FOR PROJECT EFFORTS

Milne (2007) defines rewards as the intentional use of the payment system as an important integrating mechanism through the efforts of individuals that are addressed towards the achievement of organizational objectives. There are two types of rewards; the financial rewards (tangible rewards) and the non-financial rewards (intangible rewards). Dzuranin and Stuart (2012) in their study differentiate rewards based on the intangibility and divide rewards as tangible rewards and intangible rewards. Nevertheless, whether it is tangible or intangible rewards, both of them have been known to have a strong motivational effect on individuals. The following items measure rewards for project efforts:

3.1 High Salary

It is common that people are generally seeking for high salaried work. The amount of salary a firm offers to their workers is often to be the reason for the workers to stay or move to another firm which provides better salary or payment. Based on Maslow's hierarchy of human needs,
salary is one of the basic needs that should be fulfilled and considered as the psychological needs for a human to survive (Kreitner, 2003). Previous researchers have proposed salary as one of the important work motivation factors among others (Marisa & Yusof, 2014; Ritchie & Martin, 1999; Yang, 2011). Therefore, sufficient salary is necessary to motivate individual to work harder and put more effort to his or her work.

3.2 Bonus (Extra Payment)

According to Milne (2007), a bonus can encourage a high level of performance. To motivate the employees with an above average need for money probably is a simple thing in principle. Unfortunately, most of the companies or firms probably may not afford to offer high monetary incentives to motivate the broad base of employees (Katzenbach, 2003). Bonus can be defined as a form of economic motivation through incentives that are given to stimulate performance (Darrington & Howell, 2011). It is suggested that it is better to give an extra payment or bonus to the employees for their work with outstanding results and their abilities to accomplish challenging tasks (Milne, 2007). Therefore, providing a bonus or extra payment is one of the tangible rewards that is expected to motivate individuals to work even harder in performing their tasks to attain the project objectives.

3.3 Perks

Perks and other incentives are another forms of tangible rewards that can be used to attract individuals to work harder and put more efforts into their work. In the construction industry, incentives have been acknowledged to affect the project success and performance (Rose & Manley, 2011; Darrington & Howell, 2011; Meng & Gallagher, 2012). Perks and other incentives that may be given for the employees can be in the form such as health insurance, fitness centre membership, childcare, unpaid or paid sabbaticals, opportunity to work from home, etc. (Human Resource Management International Digest, 2008). Therefore, providing perks and other incentives for the individuals in the construction industry are another
effective motivational attributes that can be used by the employers to achieve better outcomes from their employees.

3.4 Old Day Security (Pension)

According to Danzer and Dolton (2012), a pension is one part of the total remuneration or compensation package for the employees and defined as a combination of retirement-related payments from various sources such as general and income-related state pension, and employment pension. Pension can be considered as a reward, and an appreciation provides to retired employees for their working days and loyalty to the firms where they have worked.

3.5 Project Contribution Lead to Employees’ Retention and Firm’s Survival

Every firm needs to retain their key employees to be able to survive in the industry filled with competition and constant changes. The key employees in the design and architectural firms among any others are the architects. It requires retention policies and strategies with consideration of the employees’ real expectations to retain the talented staff (Yang et al., 2012). The way to manage employees toward the employees’ retention is not an easy task for the management (Kennedy & Daim, 2011; Longo & Mura, 2011). The contributions were given by employees, whether it is small or big needs to be appreciated. Thus, retaining the employees for their contributions and efforts is another form of appreciation from the employers to their employees other than monetary that can motivate them to work as well as giving the chance for the firm’s survival.

3.6 Recognition

People need to exist. All workers need to be recognized for their good work and contributions (Johnson, 2005). According to Milne (2007), recognition is a non-monetary reward as an appreciation that is given to selected individuals because of their high level of accomplishment. Individuals that are highly educated and have steady jobs perceive non-monetary rewards such as recognition as a far greater motive than monetary rewards (Markova & Ford, 2011). Subordinates seek recognition from the people in higher management level. Therefore, architects as leaders
in design team strive to gain recognition from people in top management level that their contributions are important and vital to organization success (Peck, 1993).

3.7 Praise

Praise is defined as an act that attributes to others for the skills and other characteristics that is valued positively by an individual that gives feedback (Hyland & Hyland, 2001). Praise is important especially to motivate individuals in learning to improve to generate better performances (Zental & Morris, 2010; Mumm & Mutlu, 2011). According to Lam et al. (2008), if the recipient believes that there is a positive relationship between effort and ability, the praise that is given based on efforts can be motivational. It is a motivator to give praise and acknowledgement to individuals for achieving goals (Lazenby, 2008). Therefore, it is important to consider giving praise according to the individuals' needs, in appropriate situations to make effective praise resulted in motivational effects to the individuals.

3.8 Feeling Valued

Feeling valued is defined as a positive affective response that focuses on the confirmation of the individual’s possession of the qualities on which desirability or worth depends (White & Davey, 2003). It is the feeling of usefulness or worth to someone (Chippendale, 2013). Spreitzer et al. (2005) argue that the individuals' thriving at work describes the individuals who have the feeling of valued and are being energised because of what they do in their work is valued by others. This implies that individuals with the feelings of valued have positive affective responses, and they are the ones who thrive at work because of what they do are valued by others. Therefore, they are more motivated in their work and more energetic, which can improve work performance.

METHOD AND ANALYSIS

This study employed the quantitative approach using questionnaire survey to collect data and meet the study objectives. Architects registered with the Indonesian Institute of Architect (IAI) were chosen as the respondents for this study. A total of 400 questionnaires were distributed, a total of 231 were returned but 91
of them were unusable. Therefore, there were 222 completed questionnaires that were analyzed with the aid of Statistical Package of Social Science (SPSS) software, version 20.0. Frequency and descriptive statistics are used for data analysis and data presentation. The questionnaire is divided into four sections. The first section gathers information on the respondent’s background. The second section, which consists of seven questions, identifies the level of architect’s quality of work using Likert’s scale adopted from previous research of Oyedele and Tham (2005) in ascending order starting from 1 (poor) to 5 (excellent). The third section consists of eight questions which identify rewards for project efforts using Likert’s scale in ascending order starting from 1 (strongly disagree) to 5 (strongly agree). The last section solicits respondents’ comments on architect’s quality of work and rewards motivation.

To achieve the goodness of measures, validity and reliability test should be carried out for all items in the instrument. Sekaran (2006) suggested that the validity of the instrument can be established through factor analysis. Therefore, the instrument should be tested through factor analysis. Based on Sarwono (2012), the value of KMO measure of sampling adequacy should be between 0.5 – 1 so that the variable can be predicted and analyzed. In factor analysis, Bartlett’s test of sphericity should be significant, where p < 0.05, to ensure the applicability of the factor analysis to the data (Pallant, 2011). Table 1 presents the results of factor analysis for the dependent variable (quality of work).

There were 7 (seven) items under the quality of work, and factor analysis was performed on seven items used to operationalize quality of work. All items were submitted to principal component analysis with varimax rotation. First Kaiser-Meyer-Olkin measure of sampling adequacy was checked, the value was 0.710. Then Bartlett’s Test of Sphericity was checked, it was significant with a value of 0.000. The result in Table 1 showed that the data achieved the requirements value of Kaiser-Meyer-Olkin Measure of Sampling Adequacy of minimum 0.50.
and Bartlett’s Test of Sphericity value that should be less than 0.05 (Hair et al., 2010; Pallant, 2011), allowing the factor analysis to proceed. Based on the rotated component matrix, all items were greater than the minimum loading value of 0.5 (Hair et al., 2010). Two components with eigenvalues greater than 1 explaining 42.850% and 22.313% of the variance were extracted, this can be seen in Table 1. Two components derived from the quality of work were named design quality planning and design quality assurance, the interpretation of the names given to the components are made based on the reflection of the items related within a component (Hair et al., 2010; Pallant, 2011).

Similar tests applied for the independent variable in this study (rewards for project efforts). There were 8 (eight) items under rewards for project efforts, and factor analysis was performed on all items. All items were submitted to principal component analysis with varimax rotation. First KMO measure of sampling adequacy was checked, the value was 0.713. The Bartlett's Test of Sphericity was significant with a value of 0.000 which allows the factor analysis to proceed.

Based on the rotated component matrix, there was one item that loaded less than 0.5 to the component; it was project efforts can lead to employees' retention and firm survival. Therefore, this item was dropped. Then, the factor analysis was rerun. The value of KMO measure of sampling adequacy was .701. The Bartlett's Test of Sphericity was significant with a value of 0.000, allowing factor analysis to proceed.

Based upon the eigenvalue, there were two components with eigenvalues greater than 1 explaining 45.703% and 19.177% of the variance respectively as can be seen in Table 2. Two components derived from rewards for project efforts were named tangible rewards and intangible rewards. The names for two generated components under rewards for project efforts follow Dzuranin and Stuart’s (2012) study.

After factor analysis, a reliability analysis was
performed on the rest of the items. The internal consistency of the questionnaire is tested by calculating the Cronbach's Alpha coefficient. According to Sekaran (2006), internal consistency indicates the homogeneity of items that form the construct. Cronbach alpha coefficient which is less than 0.6 is not good, 0.6–0.7 is acceptable, above 0.7 is good, and 0.8 is preferable, based on Sekaran (2006). Quality of work has Cronbach's Alpha coefficient with a value of 0.766 ($\alpha = 0.766$) and rewards for project efforts has Cronbach's Alpha value of 0.797 ($\alpha = 0.797$), which means that all items (questions) in the questionnaire are good and reliable in measuring architect quality of work. The coefficient also indicates an acceptable measure of the questionnaire's reliability (Jarkas, 2013).

4.1 The Extent of Architect's Quality of Work

The first objective of the study is to assess the extent of architects' quality of work in building project delivery process. Table 3 presents the extent of the architects' quality of work.

Based on Table 3 the score with the highest frequency (145) and the percentage (65.3%) belongs to good performance. Another 61 with the percentage of 27.5% have satisfactory performance, and 16 of them (7.2%) have excellent performance. Based on the total mean scores value for overall performance of 4.13 indicates that the architects in Indonesia have a good quality of work performance.

4.2 Rewards as A Determinant of Architect's Quality of Work

Regression analysis was used to obtain the second objective in this study. According to Gujarati (2006) in Sarwono (2012), regression analysis defines as a study of the relationship between one variable which is called the explained variable (dependent variable) with one or more explanatory variables (independent variables). Therefore, it
is important to perform the regression analysis to analyze the influence and to look at the predictive power of the independent variable (rewards) to the dependent variable (architect's quality of work). Table 4 shows the result of regression analysis.

The coefficient of determination ($R^2$) is used to determine the percentage of the dependent variable that can be predicted with independent variable (Sarwono, 2012). Thus, based on Table 4 of the model summary, 12.9% of the architect's quality of work (dependent variable) can be predicted with rewards for project efforts. The Durbin-Watson has a value of 1.888 which indicates that there is no autocorrelation in the regression model developed. The autocorrelation exists when the Durbin-Watson value is less than one and or bigger than three (Sarwono, 2012).

RESULTS AND DISCUSSION

From 222 respondents that participated in the survey, 187 (84.2%) were male, and 35 (15.8%) were female. Most of the respondents were at the age of 26-40 years old (66.2%), most of them had working experience in the industry for 5-10 years (40.5%), then 11-15 years (29.7%), less than 5 years (16.7%), 16-20 years (11.7%), and three of them (1.4%) had experience of more than 20 years in the industry. The majority of the respondents had 2 or 3 projects in a year (63%). They had finished less than 20 projects (48.6%), 20-40 projects (36%), 41-60 projects (10.8%), 81-100 projects (2.7%), 61-80 projects (1.4%), and 0.5% had finished 150 projects. Most of the respondents worked in private firms (96.8%), and most of the firms had been established for 11-15 years (50%).

The results of this study showed that architects in Indonesia mostly perceive themselves as having a good quality of work in building project delivery process. This finding does not conform to the observation that the architects produce unsuccessful buildings that have many errors (Katarina, 2013). Moreover, the findings do not correspond with the notion that architects are underperforming people as suggested by Oyedele and Tham (2007). The differences in the study area could be a
contributing factor because the study of Oyedele and Tham (2007) was conducted in Nigeria, which is typified by a problematic construction industry in which cost overruns, delays, and materials price fluctuation often occur (Aibinu & Jagboro, 2002). By contrast, the current study was conducted in Indonesia where these issues are seldom encountered. The major problems that challenge construction professionals in Indonesia have been defined by several researchers to include environmental related problems (Katarina, 2013; Tanuwidjaya & Leonardo, 2012). The results also indicate that rewards determine 12.9% of the architects' quality of work performance in building project delivery process in Indonesia. The result verifies the findings in previous studies that rewards influence the individual's work outcome (Manzoni, 2010; Markova & Ford, 2011). Similarly, Milne (2007) also found that giving rewards positively affects the employees' performance. The finding also supports the study of Aisha et al. (2013) that rewards such as incentives directly influence three performance criteria in their study, namely, time management, work quality, and level of attendance.

CONCLUSION

In terms of theoretical contribution, the results of the study do not correspond to previous studies' findings (Katarina, 2013; Oyedele & Tham, 2007; Tanuwidjaya & Leonardo, 2012). On the contrary, this study finds that architects mostly (65.3%) have a good quality of work in building project delivery process. This study demonstrates that rewards are positively and significantly related to architect's quality of work in building project delivery process which in previous studies the impact of rewards has not been studied to influence architect's quality of work. The results of this study showed that 12.9% of architects' quality of work could be determined with rewards, consistent with the previous results (Aisha et al. 2013; Manzoni, 2011; Meng & Gallagher, 2012) that rewards influence individual's work performance. In practice, the results of this study provide valuable feedback for the clients and employers in the industry that architects in Indonesia generally have a good quality of work in
project delivery process. This study has succeeded in revealing that rewards are a determinant to architects' quality of work, implying that the work quality of registered architects in project delivery process in Indonesia can be enhanced drastically by providing rewards that suit to their preferences.

Though this study has achieved its objectives, there are several limitations exist in the study. First, this study relies upon the architects' own perspectives since this study tries to analyze the predictive power of rewards to architect's quality of work. Even so, for future research to achieve a more thorough quality assessment, it should comprise of both clients' perspectives and architects' perspectives as well as other professionals that work together in the project delivery process with architects. The result of the study confirms that rewards do play a major role in determining architects' quality of work in building project delivery process. There are other factors (87.1%) that weighted more to determine the architects' quality of work; implying that rewards such as high salary, money (bonus), recognition, and praise are not the only things that matter for architects. Therefore, future study should identify other new variables that may act as the predictors for architect's work quality that can be identified through interviews before conducting a quantitative study to achieve a higher explanatory power of regression equation for predicting architect's quality of work in building project delivery process.
Passive voice

Overused word: major

Repetitive word: problems

Possibly confused word

Repetitive word: study

In terms of → Regarding
Incorrect spacing

generally

upon → on

own

Possible Americanism

Passive voice

the higher or a higher