**The Effect of Escalation of Commitment and Project Risk**

**in Resources Allocation Decision**

**Astrid Febriana Loru Ngara Ledewara**

Universitas Kristen Satya Wacana

**Intiyas Utami**

Universitas Kristen Satya Wacana S

**Abstract**

*The purpose of this research is to test the influence of escalation commitment level and project risk level on individuals decision-making in resources allocation setting. The researcher proposed that individuals decision will be different between in a low level and a high level of escalation commitment (EOC) with in a low level and a high level of project risk. Moreover, the interaction of the existence of a low level of EOC and a low level of project risk will allocate less production cost to direct labor cost. A controlled laboratory experiment (using a sample of 102 undergraduate economics and business students acting as a manager in a production department) will be used to test the hypotheses. This experiment employs 2x2 mixed factorial design, with escalation of commitment and project risk as a between-subjects factor.*

***Keywords:*** *Decision making, Escalation of commitment, Project risk*

**Abstrak**

*Tujuan dari penelitian ini adalah untuk menguji pengaruh dari tingkatan eskalasi komitmen dan tingkatan risiko proyek terhadap pengambilan keputusan individu dalam keadaan mengalokasikan sumber daya. Peneliti mengusulkan bahwa keputusan individu akan berbeda antara tingkat eskalasi komitmen rendah dan tingkat eskalasi komitmen tinggi dengan tingkat risiko proyek rendah dan tingkat risiko proyek tinggi. Selain itu, interaksi dari keberadaan tingkat eskalasi komitmen rendah dan tingkat proyek risiko rendah akan mengurangi alokasi kos produksi terhadap kos tenaga kerja langsung. Ekperimen laboratorium terkontrol (menggunakan 102 mahasiswa ekonomika dan bisnis yang berperan sebagai manajer produksi) akan digunakan untuk menguji hipotesis. Ekperimen ini menggunakan 2x2 desain faktorial campuran, dengan eskalasi komitmen dan risiko proyek sebagai faktor antar-subjek.*

***Kata kunci:*** *Pengambilan keputusan, Eskalasi komitmen, Risiko proyek*

Introduction

The allocating resources decisions are important because of their impacts on a firm’s value (Merchant, 1997). There is a consideration that all of the individuals’ decisions have a bounded rationality. Bounded rationality models (Simon, 1995), however, argued that decision makers be subject to various decision biases. Moreover the extensive empirical evidence show that individuals and group choices, more often than not, violate rationality assumptions. There are three common constraints that influence human psychological limitation which are the set alternatives open to choice, the relationships that determine the pay-off such kind goal attainment, and the preference-orderings among pay-offs. The body of literature has participated in developing the research of escalation of commitment (EOC), part of the decision that explains the irrationality of individuals decision-making.

Individuals as decision makers often have to make an important and difficult decision under escalation situations in which loss has resulted from prior decision (Wong, 2005). EOC reflects an irrationality tendency of overinvesting resources (money, time, energy) in a failing course of action because decision makers fail to ignore the past costs as irrelevant in judging the future prospects for a particular decision (Curseu et al., 2016). The literature on mental accounting (Soman, 2011), explained EOC, the easier the budget of a particular resource is, the more likely decision makers will overcommit to a failing course of action. In 2005, Wong explained escalation dilemma that is divided in several choice with losses and an uncertain choice with extreme consequences. Brockner (1992) identifies escalation as the tendency for decision makers to persist with failing courses of action. Another study explained that escalation effects are instances in which decision makers continue to commit resource to a losing course of action, solely because prior resource allocations have been made (Tan & Yates, 2002).

Moreover, this study will also be focusing on the effect of project risk on individuals decision-making in allocating resources. The previous study shows that individuals perception of a risk (level of certainty and or ambiguity) affect the decision of selection (Nahartyo & Utami, 2014). The level of project risk is the main important factor, determining on how many resources are allocated. To explain escalation and project risk more completely, researcher invoke prospect theory perspective at the individuals level. In prospect theory, particularly people underweight outcomes that are merely probable in comparison with outcomes that are obtained with certainty (Kahneman & Tversky, 1979).

There have been some studies examined EOC and project risk. The activities that relate to project risk is also considered affect on EOC. Yet, project risk researches have not considered EOC as part of them. Regarding management accounting, this research compares the decision-making made by individuals who have a low level of EOC and others with high level of EOC. Hence, there is a research question relating to EOC in decision-making: Whether the decision-making made by individuals who have a low level of EOC be different from others who have a high level of EOC?Besides EOC, project risk also plays a major role in this research. Project risk has considerable effect in individuals decision-making too. The previous study shows that the research needs a further study, especially in using extreme options in comparing project risks (Nahartyo & Utami, 2014). The objective of the research is to continue the previous research that compares individuals decision-making in a low project risk and a high project risk. Thus, the next research question: Whether the individuals decision depend on low and high project risks?

Thus, it is important to better understand the effect of EOC and project risk to the individuals decision. First, the purpose of this study is to fill the gap by examining EOC how EOC relates to project risk. The second purpose of this study is to extend the previous study in relation to the altering rationality in decision-making including EOC and project risk. Therefore, the main aim of this paper is to test the effect of EOC and project risk to resource allocation decision. This research is expected to contribute to the management accounting literature. First, the impact of EOC in directing personal perception on the resource allocation decisions. Second, it is expected to give suggestion how to encourage employees in dealing with projects that can decrease the current financial benefit, yet have the potential organizational benefits in the future.

This research used a laboratory experimental design work on experiment module. The subjects consisted of a group of students who have taken a cost accounting class and act as production manager of the production department of an international company. This research also designed the subjects to have an opportunity to get incentives based on the choice of the resource allocations decision (cost accounting). The higher the direct labor cost chosen, the higher incentive the participants will get. The incentives offered, change the decision to acquire part of a larger resource. First, the participants were divided into two groups of project risk conditions (low and high). Then, they were asked to allocate the production cost in raw material cost and direct labor cost, while overhead cost is fixed. The decision was given in a low EOC condition. The next stage, the participants were asked to make the same decision with the high EOC condition. This experiment employed 2x2 factorial design between-subjects factor.

The rest of this paper will be divided into four sections. I first introduce and review literature on prospect theory, decision-making, and how EOC and project risk effect decision makers or decision-making. From those theories, there will be three hypotheses derived that are next described. Second, as previously mentioned I will explain the research methodology in conducting this experimental researh. Third, I discuss the results and finally, I conclude with a general discussion and offer directions for future research.

# Literature Review

In this study the presence of EOC and project risk are altering the allocation decision. These variables are selected for important theoritical basis and are generally used in practice and research (Tan & Yates, 2002; Nahartyo & Utami, 2014). Tan and Yates (2002) show that escalation effects occur among experienced participants even when explicit future costs and benefit provided. In particular, the previous study discusses the potential influence of financial budgets on such escalation effects. Moreover, Nahartyo and Utami (2014) also provide an overview of how project risk will participate and contribute in making allocation decisions. As mentioned previously, this research will also use prospect theory to explain EOC and project risk.

*Prospect Theory*

A set of research journal literature refers to (Kahneman & Tversky, 1979) published in Econometrica, the prestigious academic journal of economics. Kahneman and Tversky (1979) present a critique of expected utility theory as a descriptive model of decision making under risk and develop an alternative model, which they call prospect theory. Prospect theory suggests that managers use a reference point (target) to choose among alternatives (Kahneman & Tversky, 1979). Moreover, in this theory, there are certainty effect and isolation effect. Certainty effect means people underweight outcomes that are merely probable in comparison with outcomes that are obtained with certainty. On another hand, isolation effect means people generally discard components that are shared by all prospects under consideration.

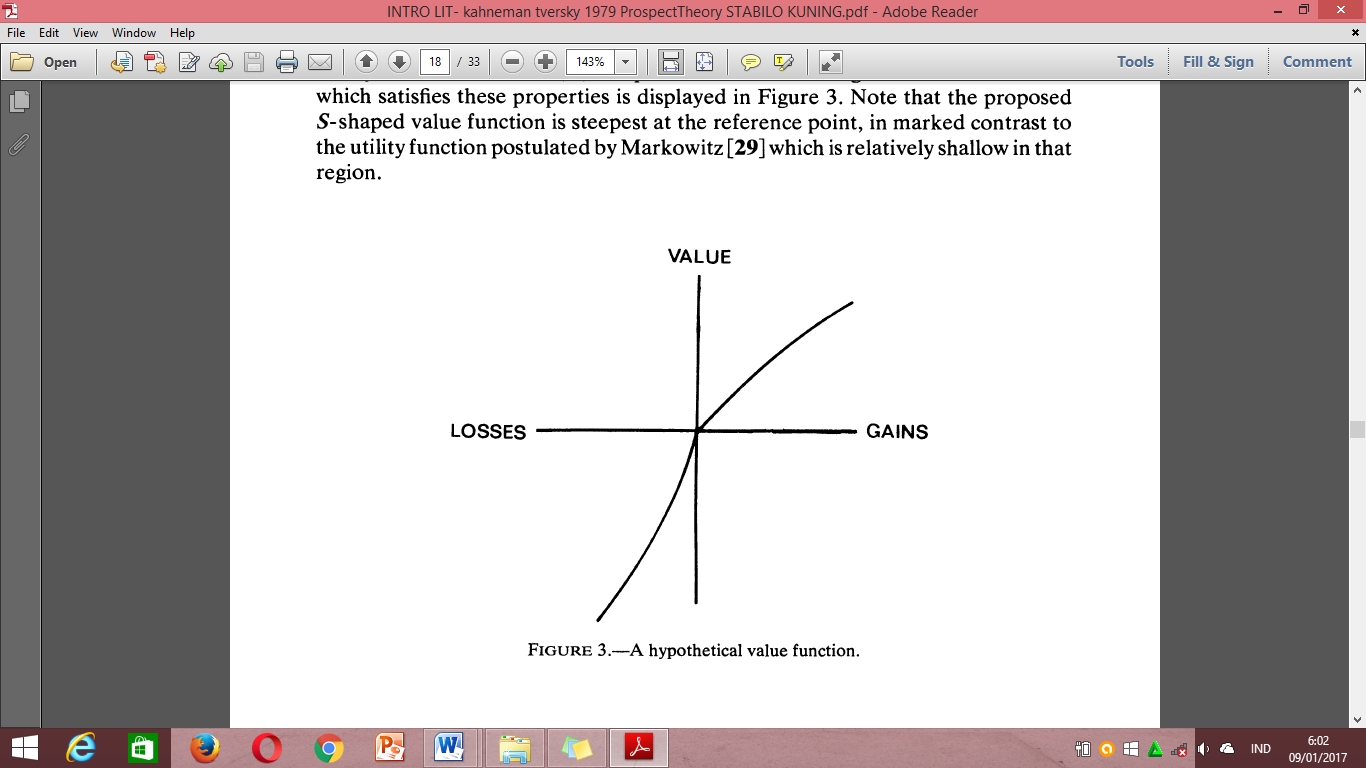


Figure 1: A hypothetical value function

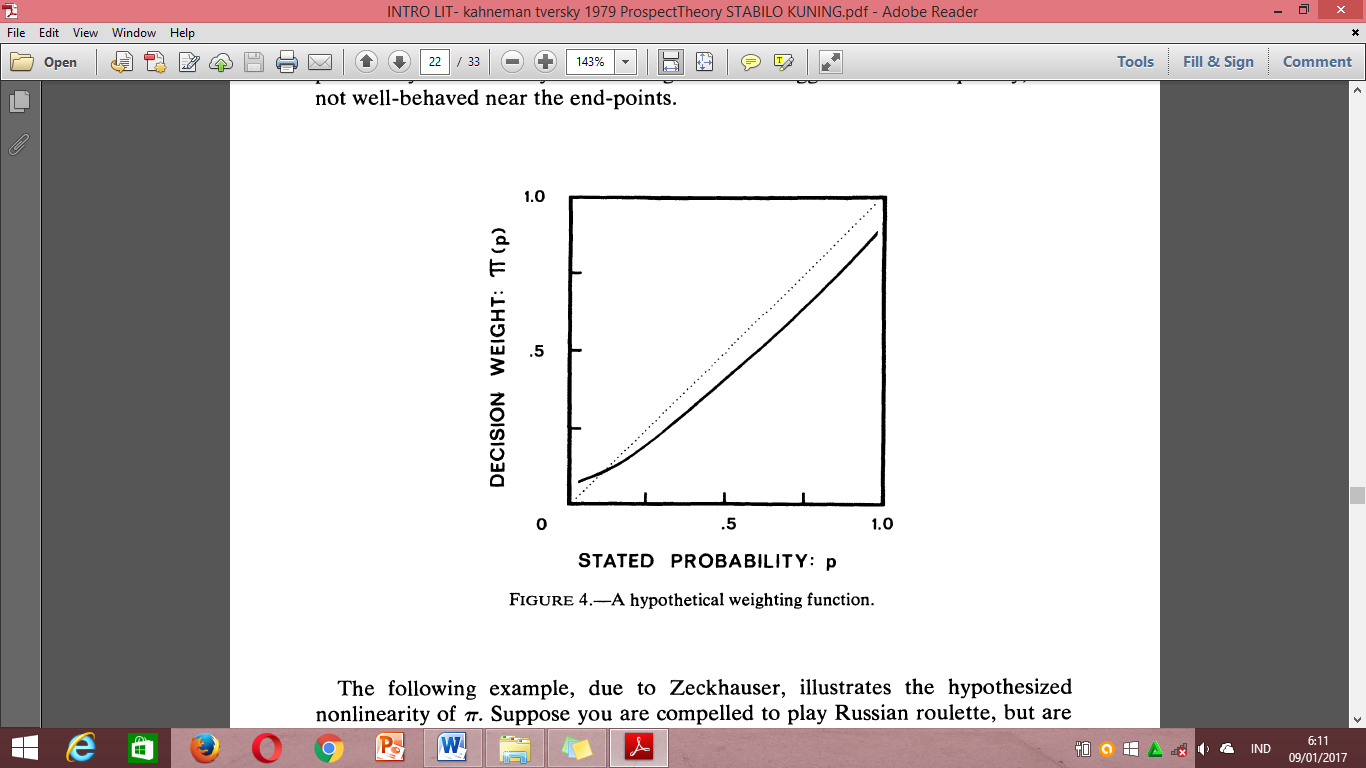


Figure 2: A hypothetical weighting function

In general, outcomes below the target point are evaluated as losses, and outcomes above it are evaluated as gains (C. . Chang, Ho, & Lin, 2002). Individuals have irrational tendency to be less willing to gamble with profits than with losses (Tvede, 1999). In its original form, it is concerned with behavior of decision makers who face a choice between two alternatives. Thus, decision subject to risk are deemed to signify a choice between alternative actions, which are associated with particular probabilities (prospects) or gambles. Regarding to Kahneman & Tversky (1979) the present analysis of preference between risky options has developed two themes. First theme concerns on editing operations that determine how prospects are perceived, and second theme involves the judgmental principles that govern the evaluation of gains and losses and the weighting of uncertain outcomes.

*Resources Allocation Decision-Making*

Chang et al. (2002) review the following four decision maker-related factors (part of factors that affecting managers’ resource allocation judgments): knowledge and academic training, domain-specific experience, and psychological factors (eg cognitive characteristics and risk propensity). Academic instruction has three major effects: it makes individuals aware of decision rules, it reinforces decision rules by providing examples; and it increases the likehood that proper decision rules will be utilized (Tan & Yates, 1995). Chang & Ho, 2004 examine the adequacy of using undergraduate students as surrogates for experienced decision makers in resource allocation context. Undergraduate students and manager with extensive work had performed similarly on the test of their knowledge since at least they had a basic knowledge about sunk cost and opportunity cost.

Psychology factors consist of cognitive characteristics and risk propensity. Managers’ resource allocation may influenced by cognitive styles and cognitive abilities (Kogan, 1973). Cognitive styles are defined as distinctive ways of acquiring, storing, retrieving, and transforming information; they are consistent and rarely change. On the other hand, cognitive abilities relate to knowledge encoding and retrieval, and they are concerned with skill level. According to the previous research, the relationship between resource allocation judgments and decisions is an important part of the resource allocation process. Psychological limit of the organism (particularly with respect to computational and predictive ability), actual human rationality-striving can at best be an extremely crude and simplified approximation to the kind of global rationality that is implied (Simon, 1995).

*Escalation of Commitment and Its Effects*

According to Ruchala (1999) escalation involves the continuance of a failing course of action, sometimes described as “throwing good money after bad.” The issue of whether individuals escalate because of shifts in risk attitude. The sunk cost effect is manifested in a greater tendency to continue an endeavor once in investment in money, effort, or time has been made (Arkes and Blummer 1985). Since the prior investment has been made, it is motivating the present decision to continue. Sunk costs are unrecoverable, so that they are perceived as reductions, or losses, relative to the individuals’ reference point (Ruchala, 1999). Thus, the potential for recouping loss overshadows the costs of additional investments if the investment subsequently fails. This perception results in an increased willingness to take risks in an effort to recover loss.

In escalation situation, costs have been incurred in the pursuit of an objective that is unlikely to be achieved, regardless of future endeavors (Whyte, 1993). Thus, the difficulty in deciding whether to invest additional resources in a losing course of action in many cases, leads to a process of escalating commitment. The escalation literature has emphasised that choosing to persist is a relatively risky option that could lead to an uncertain outcome of eventual gains or more losses (Brockner, 1992). In this study, when individuals are dealing with a low level of EOC conditions, there is a tendency to allocate the production cost more to the material cost. Otherwise, when individuals are dealing with a high level of EOC condition, they tend to allocate production cost more to the direct labor cost. It happens because when individuals as decision makers fail to ignore the past cost or loss, try to recover in a short term. By allocating more in direct labor cost, individuals will get more incentives. Therefore, it is hypothesized that:

**H1:** Subjects under a high level of EOC conditions will allocate more production cost to direct labor cost.

*Project Risk and Its Effects*

All projects have risks (Dinu, 2016). Projects might be at a high risk to complete as per schedule within budget and to meet the expected quality, if a probable risk of the project is not identified earlier. There is a controversy in understanding the concept of ambiguity and uncertainty. Ambiguity is not the same as uncertainty (Geersbro & Ritter, 2010). Uncertainty is caused by lack of information and quality of information which is a source of ambiguity. Ho, Keller, and Kelytka (2002) argue that the ambiguity is placed as an adjunct of the probability distribution layer to two of the peaks possibility of uncertainty in a risky decision. Moreover, they examined how managers make investment choices when they face probabilistic ambiguity in decisions under the risk. They found that when managers are faced with imprecise probabilities, their perceptions of the risks involved influence their choice of either an ambiguous option (e.g., with a chance of success that falls within a wide percentage range) or unambiguous option (e.g., with a more precisely estimable chance of success). More specifically, managers tend to choose the least ambiguous option, especially when they perceive a big difference between two options. Not far from previous research, this research defined the project risk as accumulation of uncertainty and ambiguity in the effect of specific process, for example resource allocation project (Nahartyo & Utami, 2014).

Chang et al. (2002) suggest related-projects (uncertainty), decision-making characteristics (knowledge and experience) and environmental managerial (eg information asymmetry affect resource allocation decisions). Making allocation decisions to be different between the project faced, subjectivity managers influenced by the uncertainty of future. The relationship between uncertainty and individuals subjectivity in preparing decisions become critical in determining the characteristics and effectiveness of resource (Nahartyo & Utami, 2014). Individuals would prefer a probability than the range of probability. So, it can be concluded that individuals which are more ambiguous and face a higher project risk will be more concerned with self-interest in determining the choice. Since there is a self-interest, individuals tend to allocate production cost more to direct labor cost because individual could get more incentives from that. Therefore, the following hypotheses is developed:

**H2:** Subjects under a high level of project risk will allocate more production cost to direct labor cost.

*The Interaction Effect of Escalation of Commitment and Project Risk*

Wong (2005)states the present study suggests that a complete theoretical model EOC should include risk as one of its major components. Moreover, previous studies have paid insufficient attention to the role of risk in escalation and simply acknowledge one single risk-related variable, problem framing, as one of the psychological determinants of escalation (Brockner 1992; Staw 1997; Whyte 1993). As many as number of personal values that will be accepted through individuals effort, they are motivated to receive their incentive. Incentive generally is accepted by people in the form of salaries, bonuses, promotion and recognition for his achievement. In this study predicts that the high level of uncertainty/low level of ambiguity (a low level of risk project) will trigger individuals to pursue projects that lower the benefits received today but positively beneficial in the future.

As mentioned previously, the implementation of EOC and project risk which is related to the prospect theory in the resources allocation decision, conclude that when individuals in a higher level of EOC tend to allocate production cost to direct labor cost rather than material cost. As well as EOC, a higher level of project risk, individuals tend to allocate production cost to direct labor rather than material cost. That means individuals might be value as assigned to gains and losses rather than to final assets; also probabilities are replaced by decision weights. In short, indivuals are motivated to gain more incentives to recover their prior decision that make them in loss condition. Therefore, it is hypothesized that:

**H3:** The existence of a low level of EOC and a low level of project risk will allocate less production cost to direct labor cost.

Research Method

This study used laboratory experiments. High internal validity is obtained from the experimental method to be superior in testing the causal relationship between the dependent variable which is altering rationality in decision-making and independent variables which are EOC and project risk. Experiment module was executed after a thorough examination of the first (pilot test). The module was developed from research experiments conducted by Nahartyo and Utami (2014) by modifying the project risks and adds EOC.

*Design*

The experiment employed 2x2 factorial design between-subject. The first factor is a high level and a low level of project risk. The second factor is high level and low level of EOC. They were randomly assigned to two of four treatment conditions. I obtain the four conditions by crossing two EOC conditions with two project risk conditions.

*Participant*

The minimum requirement of each cell is 15 participants, in this research there are four cells, it means that minimum 60 participants are needed. This research took 112 undergraduate students of economics and business faculty who have already taken cost accounting course as participants. It means that the participants are taking the management accounting course or other subjects that required cost accounting basic. They took the lottery to categorize them into four groups. The implementation of experiments is conducted by experiment-assistants who accompany participants to undertake the experiment module. Therefore, the experiment-assistants play an important role in explaining the role and duties of participants in the simulation of the cost accounting. In addition, the assistant experimenter has an important portion to isolate the participants to be serious and focused while doing the experiment module.

|  |  |  |  |
| --- | --- | --- | --- |
|  | | EOC Conditions | |
| Low | High |
| Project Risk | Low | Cell 1 | Cell 2 |
| High | Cell 3 | Cell 4 |

Figure 3: Experimental Design

Information:

Cell 1: Low level of project risk with low level of EOC conditions

Cell 2: Low level of project risk with high level of EOC conditions

Cell 3: High level of project risk with low level of EOC conditions

Cell 4: High level of project risk with high level of EOC conditions

*Experimental Procedure*

This study assumes that the individuals are working in a production department which is international furniture company. Their duty to allocate production cost in three elements, namely materials, direct labor and overhead. Individuals know that they will get the benefit by maintaining direct labor cost on the maximum amount. Moreover, individuals also know that the material cost reduction will impact on the lower quality of the product. Overhead cost is designed as fixed cost. The decision of how indviduals allocate higher direct labor cost indicate decisions above selfish interest.

The procedures comprise of eight steps as follow:

1. Participants are seated randomly and start to work on experiment module. The subjects receive 1 of 4 modules that have been prepared. The first subjects will receive modules on decision-making by the low level of project risk and a low level of EOC, the second subjects will receive a module containing about decision-making with a low level of project risk and a high level of EOC, the third subjects will be given a decision-making module that contains the high level of project risk and low level of EOC conditions, and the last subjects will receive a module containing a high level decision making of project risk and low level of EOC conditions. Subjects are informed that the subjects role is being a production manager at a company and the subjects are asked to answer a few questions from the module prepared by the examiner.
2. Participants are asked to fill in their identities containing their age, gender, grade point average (GPA), and semester. They are asked to fill out ten basic questions in the field of cost accounting and experimental research and should ensure that the subject is affected by the manipulation and not to test the ability of different accounting.
3. Cost accounting simulation starts with the presentation of a manufacturing company's profile by showing the image of the production process, the exhibition that is followed by the company and sample of products. The purpose of using the image is to internalize the participants in understanding the roles and duties. Some questions are then given to participants to obtain assurance that participants understand the roles and tasks assigned.
4. Then, the experiment module serves incentives earned by participants. The incentives will be in the form of dollars and are given by seeing the accuracy in answering questions in understanding the roles and tasks, the understanding of cost accounting, and the given manipulation (manipulation checks). Incentives in the form of “dollar” are also given based on the value of direct labor costs determined. The aim of giving incentives in the form of "dollar" is to test the self-interest of participants. If participants have a high self-interest, they will tend to ignore the long-term interests of the company to make decisions that benefit themselves in the short term.
5. The next phase, the participants receive information tasks to be done by the head of the company that orders to determine production cost component order from a foreign buyer. Participants are asked to allocate $ 2.400 to the three components, namely production costs, material costs, direct labor costs, and overhead cost. Overhead cost is already set at $ 500, while material cost and direct labor cost can be selected from the range of $ 100- $ 1,000. The higher the value material costs, the better the quality of the material. The higher the value of direct labor costs selected, the higher incentive participants obtained. In the final stage of this manipulation, participants received a question of checking manipulation.
6. Next, the director explains that to win the competition with other suppliers, the determination of foreign buyers production costs order is set not more than $ 2,000. In the first group, participants are informed that the project failure rate is 20% (low risk) and the other group is informed that the project failure rate is 60-80% (high risk). Furthermore, the participants are asked to reallocate material cost, direct labor rooming with a choice of values ​​between $ 100-1000, while the value of fixed overhead cost $ 500. The purpose of giving this manipulation is to investigate the process of changing the decision-making that force participants to choose to reduce material cost or direct labor cost. If they prefer reducing the material cost where at a previous stage already determined material costs at a higher level, then the participants are likely to have their own high interest. However, if participants tend to reduce the direct labor cost and maintaining high material, it can be interpreted that the participants give more emphasis on quality and long-term interests of the company than self-interest received in the form of incentives.
7. The next stage is similar to the previous procedure, except there is an information that the project has already started and there is some information related to the total cost incurred to date. Participants in high level of EOC condition know that they got losses but still continuing the project although they get loss. As a decision maker, the production manager should think whether takes the sustainability of the project and the importance of maintaining the quality of order fit the firm’s mission. It is expected that participants who initially have more high self-interest would change their opinions.
8. The stage after the manipulation is the manipulation checks and obtaining information on the number of dollars they receive at the draw.

*Analysis Technique*

The first and second hypothesis tests are using the Test Independent t-test, the third hypothesis test is using the Test of Two-Way ANOVA (Analysis of Variance). The first and second hypothesis is testing the main effect, while the third hypothesis is testing the effect of the interaction. The hypothesis is supported if the significance value less than 0.05. Analysis of the data was based on literature review and test results.

Results and Discussion

## *Manipulation Checks*

The experiment was conducted on May 15-16, 2017 in Accounting Management and Ethical Professional class, Economics and Business Faculty, Satya Wacana Christian University. The subjects consisted of 112 students from Economics and Business Faculty, Satya Wacana Christian University. From those 112 students, the experiment was conducted with manipulation checks and requirement checks. Requirement checks as the participant were conducted to ensure that the participants understood the tasks and role in cost accounting simulation and basic. The understanding of the tasks and role checking consisted of five questions, scoring 20 points each. The minimum scores of this checking were 60 points. As shown in table 1, from 112 students as participants, all of them were scored above 60 points in understanding of the tasks and role checking.

The second checking was aiamed at knowing the participants’ basic understanding of cost accounting. It consisted of five questions, scoring 20 points each and the minimum scores of this checking were 60 points. There were 10 out of 112 students who were scored below 60 points. Consequently, their data were not processed

Table 1: Manipulation Checks

|  |  |  |  |
| --- | --- | --- | --- |
| Number | Description | Number of Qualified Participants | Number of Unqualified Participants |
| 1 | Qualified participants | 112 |  |
| 2 | Tasks and role understanding checks (5 questions) |  | - |
| 3 | Cost accounting basic checks (5 questions) |  | 10 |
| 4 | Tasks and role understanding checks (3 questions) |  | - |
| Total | | 102 partcipants |  |

Source: Primary Data

Table 2 shows the demography characteristics of participants including gender, GPA, age, and semester. Participants consisted of 40 males and 62 females with GPA average 3.00-3.50. The age of majority is 21-23 years old and most of the participants are from 6th semester.

Table 2: Demography Characteristics of Participants

|  |  |  |  |
| --- | --- | --- | --- |
| Demography Characterictis |  | Number of Participants | % |
| Gender | Male | 40 | 39.2 |
|  | Female | 62 | 60.8 |
| GPA | <2.5 | 8 | 7.8 |
|  | 2,5 – 2,99 | 21 | 20.6 |
|  | 3,00 – 3,5 | 51 | 50.0 |
|  | > 3,5 | 22 | 21.6 |
| Age | 18-20 years old | 45 | 44.1 |
|  | 21-23 years old | 57 | 55.9 |
| Semester | 4th semester | 10 | 9.8 |
|  | 6th semester | 80 | 78.4 |
|  | 8th semester | 12 | 11.8 |

Source: SPSS Output Version 22

As shown in table 2, subjects had diverse demography characteristics. In an experiment, randomization is effective, if it does not affect the dependent variable which is altering rationality in decision-making. Statistic test was conducted, in order to prove that randomization is effective. Randomization testing was done by One Way ANOVA to see whether randomization has an effect or not on decision-making.

## *Testing the Hypotheses*

### One Way ANOVA Testing

Table 3 shows the statistic result of randomization test by using One Way ANOVA.

Table 3: Randomization Testing

**ANOVA**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | | *Sum of Squares* | | df | *Mean Square* | F | | Sig. |
| GENDER | *Between Groups* | |  | 9260,595 | | 1 | 9260,595 | 0,338 | | 0,562 |
|  |  |  |  |  |  | |  |
| *Within Groups* | | | 2735935,484 | | 100 | 27359,355 |  | |  |
| *Total* | | | 2745196,078 | |  |  |  |  | |
| GPA | *Between Groups* |  | | 118940,349 | | 3 | 39646,783 | 1,479 | | 0,225 |
|  | |  |  |  |  |  | |  |
| *Within Groups* | | | 2626255,730 | | 98 | 26798,528 |  | |  |
| *Total* | | | 2745196,078 | | 101 |  |  | |  |
| AGE | *Between Groups* |  | | 13897,833 | | 1 | 13897,833 | 0,509 | | 0,477 |
|  | |  |  |  |  |  | |  |
| *Within Groups* | | | 2731298,246 | | 100 | 27312,982 |  | |  |
| *Total* | | | 2745196,078 | |  |  |  | |  |
| SEMESTER | *Between Groups* |  | | 65529,412 | | 2 | 32764,706 | 1,210 | | 0,302 |
|  | |  |  |  |  |  | |  |
| *Within Groups* | | | 2679666,667 | | 99 |  |  | |  |
| *Total* | | | 2745196,078 | |  |  |  | |  |

Source: SPSS Output Version 22

Based on table 3, the demographic characteristics which are gender, GPA, age, and semester did not affect the decision-making (significant data above 0,05). It can be concluded that the decision-making taken by participants caused by manipulation which they accepted.

### Independent T-test Testing

Table 4 shows the statistic result of the first and second hyphotesis test by using Independent T-test.

Table 4 : The Results of Hypothesis 1 and 2 Testing

**Independent Samples Test**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  |  | Average  (Decision-making) | F | Sig | Sig  *(2 tailed)* |
| Hypothesis 1 | Low level of EOC | 439,62 | 1,176 | 0,281 | 0,000 |
|  | High level of EOC | 551,02 |  |  |
| Hypothesis 2 | Low level of project risk | 456,86 | 2,472 | 0,119 | 0,026 |
|  | High level of project risk | 529,41 |  |  |  |

Sumber: SPSS Output Version 22

Based on table 4, the first hypothesis has significant value 0,000 and the second hypothesis has significant value 0,026. Both hypothesis 1 and 2 have the significant value less than 0,05. Thus, it can be said that both hypotheses were accepted. The level of EOC for hypothesis 1 and the level of project risk for hypothesis 2 affected the decision-making.

### Two Way ANOVA Testing

Table 5 shows the statistic result of the third hyphotesis test by using Two Way ANOVA.

Table 5 : The Results of Hypothesis 3

|  |  |  |
| --- | --- | --- |
| Between-Subjects Factors | Value Label | N |
| EOC\_LEVEL | LOW | 53 |
|  | HIGH | 49 |
| PR\_LEVEL | LOW | 51 |
|  | HIGH | 51 |
|  |  |  |

### Test of Between-Subjects Effects

Dependent Variable: Decision-Making

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Source | Type III Sum of Squares | df | Mean Square | F | Sig. |
| Corrected Model | 507341,092a | 3 | 169113,697 | 7,406 | 0,000 |
| Intercept | 24434193,93 | 1 | 24434193,93 | 1070,021 | 0,000 |
| EOC\_LEVEL | 277001,843 | 1 | 277001,843 | 12,130 | 0,001 |
| PR\_LEVEL | 105426,201 | 1 | 105426,201 | 4,671 | 0,034 |
| EOC\_LEVEL\*PR\_LEVEL | 93596,848 | 1 | 93596,848 | 4,099 | 0,046 |
| Error | 2237854,987 | 98 | 22835,255 |  |  |
| Total | 27550000,00 | 102 |  |  |  |
| Corrected Total | 2745196,078 | 101 |  |  |  |

1. R Squared = 0,185 (Adjusted R Squared = 0,160)

Based on table 5, the result shows that the third hypothesis has a significant value 0,046 which is less than 0,05. There were differences between participant decision in a low level of escalation commitment and low level of project risk with a high level of escalation commitment and high level of project risk. Thus, it can be said that the third hypothesis was accepted and affected the decision-making.

**Discussion**

## *Escalation of Commitment and Its Effects*

The first hypothesis predicted that subjects under a high level of EOC conditions will allocate more production cost to direct labor cost. This hypothesis was examined by using independent sample t-test. It is used for determining whether two samples which are not related have a different average. Independent sample t-test examined the direct labor cost in a low level of escalation commitment and high level of escalation commitment towards participants (N=102). The result shows that there was significant difference in direct labor cost in a low level of escalation commitment and high level of escalation commitment (p=0,000). This means that with a high level of escalation commitment, participants tend to be selfish in allocating more production cost to direct labor cost (551 in a high level of EOC and 440 in a low level of EOC). Therefore, the first hypothesis was accepted.

Moreover, this research consistent with the previous research about escalation commitment. Ruchala (1999) mentioned that a manager who has made a poor initial project decision can hide the error by continuing the failing course of action. It is supported by this experiment. When individuals had already known that they were fail in a previous investment, they persist to continue the project even if they know that they loss in previous investment. Individuals also escalate their investment because of the time completion that meet the closer a project is to being completed. This is consistent with the previous research which is conducted by Chang et al. (2002). They mentioned that the closer a project is to being completed, the more likely it is managers will continue the project. Thus, the project continuation which is taken by individuals is depend on based the level of escalation commitment whether they are in a low level of escalation commitment (there is no a pressure to continue the project from the firm) or high level escalation commitment (there is a pressure to continue the project from the firm). Furthermore, when they were in an almost the end of the project, they will tend to escalate their investment to recover in a short term (Ruchala, 1999)

## *Project Risk and Its Effects*

The second hypothesis predicted that the subjects under a high level of project risk will allocate more production cost to direct labor cost than subject under low level of project risk. It was also examined by using independent sample t-test. The result shows that probabilistic risk value is 0,026 (p<0,05). The higher level of project risk is, the more tendency to allocate production cost to direct labor cost. Therefore, the second hypothesis was accepted.

This study is consistent with the previous study, showing that individual perception of a risk affects the decision of selection (Nahartyo and Utami 2014). When participants in a high risk (60-80% project failure) they tend to allocate more in direct labor than in a low risk, averaged 529 (high level of project risk) and 457 (low level of project risk).

In addition, this consistency supports Ho, Keller, and Kelytka (2002), mentioning individuals as production managers tend to choose the least ambigous option (more precisely estimable chance of success). When individuals in a low risk with the probability, they wiil allocate production cost more to material cost rather than when individuals in a high risk with the range of probability. Individuals which are more ambigous and face a higher project risk wiil be more concerned with self-interst in determining the choice.

## *The Interaction Effect of Escalation of Commitment and Project Risk*

The third hypothesis stated that the existence of a low level of escalation commitment and low level of project risk will allocate less production cost to direct labor cost. It was examined by using two-way ANOVA. This examination was used to know the direct effects and moderate effects of escalation commitment and project risk to direct labor cost. The result shows that there were differences between participants’ decision in a low level of escalation commitment combine with low level of project risk and high level of escalation commitment combine with high level of project risk. The significant value is 0,046 less than 0,05.

The interaction effect between escalation commitment and project risk comes to support individuals’ decision-making in allocating resources. For situations in which escalation commitment is high and project risk is high, individuals will overcommit and take a greater incentive by allocating production cost more in direct labor cost. Moreover, individuals will try to recover their losses in the past. The higher project risk that occur in the past will lead them to take more incentive and to continue the previous investement. This results consistent with the prospect theory (Kahneman & Tversky, 1979). which were individuals will be risk seeking such as they will prefer to allocate additional resources in the hope of turning the situation around, rather than to accept the sure loss if they were stop allocating resources at that point.

Escalation of commitment and project are relating each other in this decision-making. It is consistent with the previous research conducted by Wong (2005), mentioning esclation commitment should include risk as one of its major components. It means that in the process of allocating resources, individuals affected by escalation situations and the project failure risk that happened.

**Conclusion**

This study has successfully provided empirical evidence that the level of escalation commitment and the level of project risk can change participants' opinions in resources allocation decision-making. The higher level of escalation commitment and the higher level of project risk is, the higher personal interest the participant will have, by prioritizing the cost of production at the direct labor cost. Therefore, the three hypotheses are supported by this experimental results.

## *Research Limitations and Future Research Agenda*

This research has limitation that is the experiments were held in two different classes at different time. The experiments were done twice because when it was only conducted in a Management Accounting class, the number of subjects were inadequate. Moreover, the participants did their modules at the end of the class. However, this limitation can be minimized by giving the limited time and some short pauses for each page of the experimental module. This research can be developed by adding the number of participants and giving more pressures in their modules with an extreme conditions.

## *Research Implications*

Theoritical Implications

This research gave the theoritical implication which is allocating resource decision affected by escalation commitment and perception on the project risk, received by the individual. Especially, this research contributes to develop behavioral research in individual decision making. The results of the research supported the previous researches conducted by Ruchala (1999); Chang et al. (2002); Ho, Keller, and Kelytka (2002); Nahartyo & Utami (2014); Wong (2005) that in a high level of escalation of commitment and project risk participants will allocate more in direct labor cost.

Practical Implications

This research contributes in management accounting literature by providing the empirical evidence through the experiment. Moreover, this research also contributes to the firm, about the impact of EOC in directing personal perception. Another contribution is to give suggestion how to encourage employees in dealing with projects that can decrease the current financial benefit, yet have the potential organizational benefits in the future.

# References

Brockner, J. (1992). The Escalation of Commitment to a Failing Course of Action: Toward Theoretical Progress. *The Academy of Management Review*, *17*(1), 39–61.

Chang, C. ., Ho, J. L. Y., & Lin, P. (2002). Managers’ resource allocation: Review and implications for future research. Journal of Accounting Literature., *21*, 1–37.

Chang, J. C., & Ho, J. L. Y. (2004). Judgment and Decision Making in Project Continuation : A Study of Students as Surrogates for Experienced Managers, *40*(1).

Dinu, A. . (2016). Project risk management – Reasons why projects fail. *Quality-Access to Success Journal.*, *17*.

Geersbro, J., & Ritter, T. (2010). External performance barriers in business networks : uncertainty , ambiguity , and conflict. https://doi.org/10.1108/08858621011027786

Kahneman, D., & Tversky, A. (1979). Prospect theory: An analysis of decision under risk. JSTOR. Econometrica., *47*(2), 263–292.

Kogan, N. (1973). *Creativity and cognitive styles: A life-span perspective. In Life-Span Developmental Psychology: Personality and Socialization* (P. B. Balt). New York: NY: Academic Press.

Merchant, K. (1997). *Accounting perfomance measures and the myopia problem (Chapter 12). In Modern Management Control Systems – Text and Cases*. Upper Saddle River, NJ: Prentice Hall.

Nahartyo, E., & Utami, I. (2014). Altering Rationality : The Impact of Group Support Systems and Style of Leadership, *12*(2).

Ruchala, L. V. (1999). The influence of budget goal attaintment on risk attitudes and escalation. *Behavioral Research in Accounting*, *11*.

Simon. (1995). A Behavioral Model of Rational Choice, *69*(1), 99–118.

Soman, D. (2011). The Mental Accounting of Sunk Time Costs : Why Time is not Like Money, *185*, 169–186.

Staw, B. M. (1997). *The escalation of commitment: An update and appraisal. In Organizational Decision Making,* (Z. Shapira). New York: NY: Cambridge University Press.

Tan, H., & Yates, J. F. (1995). Sunk Cost Effects : The Influences of Instruction and Future Return Estimates, *63*(3), 311–319.

Tan, H., & Yates, J. F. (2002). Financial Budgets and Escalation Effects, *87*(2), 300–322. https://doi.org/10.1006/obhd.2001.2967

Tvede, L. (1999). *The psychology of finance.* (First edit). Chichester: Wiley.

Whyte, G. (1993). Escalating Commitment in Individual and Group Decision Making : A Prospect Theory Approach, *455*, 430–455.

Wong. (2005). The role of risk in making decisions under escalation situations. *Applied Psychology: An International Review.*, *54*(4), 584–607.

# Attachments

# Attachment 1: Research Instruments

**SELAMAT DATANG**

**DI SIMULASI AKUNTANSI KOS**

**Terima kasih atas kesediaannya menjadi partisipan.**

Anda diminta **berperan sebagai**

**MANAJER PRODUKSI** PT Extravaganza Furniture yang bertugas

**menentukan alokasi kos produksi.**

**Anda diminta menjawab beberapa pertanyaan terkait dengan kasus yang disajikan.**

**Jawaban yang Anda berikan akan dirahasiakan sesuai etika penelitian.**

**SELAMAT MENGIKUTI SIMULASI AKUNTANSI KOS**

|  |
| --- |
| Isilah identitas Anda dengan lengkap |
| 1. Jenis Kelamin : Laki-laki Perempuan 2. Usia : 3. Semester : 4. IPK :   < 2.50  2.50 – 2.99  3.00 – 3.50   |  | | --- | | **> 3.5** | |
| PETUNJUK UMUM   1. Partisipan diminta memberikan jawaban pada kolom yang disediakan di setiap lembar pertanyaan. 2. Jawablah berdasarkan informasi yang ada dan bukan berdasarkan pretensi atau spekulasi. 3. Tidak diperkenankan untuk melihat lembar berikutnya sampai diizinkan oleh tutor. 4. Tidak diperkenankan bekerjasama dengan partisipan lain selama penelitian berlangsung. 5. Partisipan tidak diperkenankan mengganti jawaban yang sudah dituangkan sebelumnya. 6. Tidak ada jawaban yang benar atau salah dalam kasus ini. Jawaban yang Anda berikan akan dirahasiakan dan tidak ada kaitannya dengan kinerja Anda. |

**Profil Perusahaan**

****

****

****

**Jl. Extravaganza No. 1 Semarang**

[**www.extravaganzafurniture.com**](http://www.extravaganzafurniture.com)**, Telp/fax. (024)270296**

**PT Extravaganza Furniture merupakan salah satu perusahaan yang memproduksi mebel lokal dengan jangkauan ekspor ke beberapa negara Eropa, Amerika maupun Australia.**

|  |
| --- |
| **Anda diperkenankan untuk membalik ke halaman berikutnya.** |

**Profil Perusahaan**

****

***BAGIAN PRODUKSI***

****

****

***PAMERAN DALAM NEGERI DAN LUAR NEGERI***

**PT Extravaganza Furniture berdiri pada tahun 1996 dan sudah mengikuti berbagai pameran bereputasi internasional.**

|  |
| --- |
| **Mohon tidak membuka lembar berikutnya sebelum ada instruksi.** |

|  |  |
| --- | --- |
|  | **Uji Prestasi 1** |

**Jawablah dengan tepat dengan memberikan tanda silang!**

1. Anda saat ini berperan sebagai…..
   1. Manajer personalia
   2. Manajer produksi
   3. Manajer pemasaaran
2. Perusahaan Anda bergerak di bidang …..
   * + - 1. Furniture
         2. Garment
         3. Logistik
3. Tugas Anda dalam akuntansi kos ini adalah ….

Menentukan jumlah gaji yang diterima karyawan

Melakukan pembelian mebel

Menetukan besaran alokasi kos produksi

1. PT Extravaganza Furniture berdiri pada tahun ….

1995

1996

1998

1. Perusahaan Anda berlokasi di kota ….
   1. Semarang
   2. Salatiga
   3. Solo

|  |
| --- |
| **Mohon tidak membalik halaman berikutnya sampai Anda menjawab pertanyaan halaman ini dan dipersilahkan untuk melanjutkan ke halaman berikutnya.** |

|  |  |
| --- | --- |
|  | **Uji Prestasi 2** |

**Jawablah dengan tepat dengan memberikan tanda silang!**

1. Dalam perusahaan manufaktur, kos operasi total terdiri dari berikut ini, kecuali...

a. Biaya komersial

b. Biaya asuransi

c. Kos produksi

1. Kos produksi terdiri dari 3 komponen dalam proses produksi yaitu:
2. Kos material, kos variabel, kos tetap
3. Kos overhead, kos tenaga kerja langsung, kos tenaga kerja tidak langsung
4. Kos tenaga kerja langsung, kos bahan baku, kos overhead
5. Yang tergolong sebagai kos utama adalah...
6. Kos overhead dan kos tenaga kerja langsung
7. Kos tenaga kerja langsung dan kos material
8. Kos material dan kos overhead
9. Berikut merupakan dasar yang digunakan dalam penentuan dasar pembebanan dalam overhead pabrik, kecuali...
   1. Satuan produksi
   2. Kapasitas normal
   3. Jam mesin
10. PT Z mengestimasi overhead pabrik tahun 2016 adalah Rp 5.000.000. Estimasi produksi selama tahun 2016 adalah 100.000 unit. Pada bulan Oktober 2016 PT Z memproduksi 8.000 unit, maka overhead pabrik yang dibebankan pada bulan Oktober 2017 adalah...
    1. Rp 300.000
    2. Rp 400.000
    3. Rp 500.000

|  |
| --- |
| **Mohon tidak membalik halaman berikutnya sampai Anda menjawab pertanyaan halaman ini dan dipersilahkan untuk melanjutkan ke halaman berikutnya.** |

|  |  |
| --- | --- |
|  | **Profil anda** |



Anda adalah **seorang manajer produksi PT Exravaganza Furniture** yang diberikan tanggung jawab dalam **menentukan kos produksi.**

Perusahaan yang Anda tempati sekarang adalah salah satu perusahaan yang sedang berkembang dan reputasi Anda sebagai manajer saat ini sedang meningkat karena Anda mampu menghasilkan beberapa proyek yang cukup menguntungkan.

Oleh karena itu, hal ini menarik minat investor untuk **melakukan investasi** dalam PT Extravaganza Furniture.

**Direktur** telah memberikan persetujuan kepada **Anda untuk menjalankan pesanan (No. 101)** dalam pembuatan produk seri X **dengan standar internasional.**

|  |
| --- |
| **Mohon tidak membuka lembar berikutnya sebelum ada instruksi.** |

**Informasi Peran dan Tugas Partisipan**



**Tugas Anda**

1. **Menerima informasi dari direktur**
2. **Menentukan alokasi kos produksi**

**C:\Program Files (x86)\Microsoft Office\MEDIA\CAGCAT10\j0222015.wmf**

**insentif anda**

* **Insentif (BONUS) Anda ditentukan berdasarkan prestasi dalam menjawab pertanyaan dan NILAI KOS TENAGA KERJA LANGSUNG yang anda tetapkan untuk Kos Produksi**
* **Semakin tinggi nilai kos tenaga kerja langsung,**

**Semakin tinggi insentif yang akan Anda terima**

|  |
| --- |
| **Mohon tidak membuka lembar berikutnya sebelum ada instruksi.** |

|  |  |
| --- | --- |
|  | **INFORMASI 1** |

****

Pada kesempatan kali ini perusahaan diberi kepercayaan untuk memproduksi sebuah kursi sofa khusus yang akan di ekspor ke negara Amerika,

d*engan total estimasi penyelesaian pengerjaan selama* ***12 bulan*** *(1 tahun).*

**Kos produksi pesanan No.101** yang diperlukan untuk memproduksi satu unit kursi sofa tersebut adalah

**$2,400.**

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

|  |
| --- |
| **PERTANYAAN 1**  Tentukan besarnya alokasi **KOS PRODUKSI** **$2,400** ke dalam KOS MATERIAL, **KOS TENAGA KERJA LANGSUNG**,dengan catatan Kos Overhead sifatnya tetapyaitu $500. |

|  |
| --- |
| **Mohon tidak membuka lembar berikutnya sebelum ada instruksi.** |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Semakin tinggi angka yang Anda alokasikan di MATERIAL,***  ***KUALITAS akan semakin baik***  ***Semakin tinggi angka yang Anda alokasikan di KOS TENAGA KERJA LANGSUNG,***  ***INSENTIF Anda akan semakin besar***  **KOS OVERHEAD $ 500,**  **TOTAL TKL ADALAH... *(pilih salah satu)***  (Silahkan memberi tanda **“√”** pada **SALAH SATU** kolom kosong yang telah disediakan dan tidak diperkenankan untuk mengganti jawaban Anda)  **KOS TKL danINSENTIF YANG AKAN ANDA TERIMA**   |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | **$ 100** | **$ 200** | **$ 300** | **$ 400** | **$ 500** | **$ 600** | **$ 700** | **$ 800** | **$ 900** | **$ 1,000** | |  |  |  |  |  |  |  |  |  |  | |

|  |
| --- |
| **Mohon tidak membalik halaman berikutnya sampai Anda menjawab pertanyaan halaman ini dan dipersilahkan untuk melanjutkan ke halaman berikutnya.** |

|  |  |
| --- | --- |
|  | **INFORMASI 2** |

MEMO

Dari : Direktur Utama

Kepada : Manajer Produksi

Terimakasih untuk keputusan yang sudah Anda ambil. Untuk memenangkan persaingan pemasok lain, berdasarkan rapat direktur, penentuan **kos produksi pesanan no.101** ditetapkan tidak lebih dari **$2,000.**

Oleh sebab itu Saya minta Anda untuk mengalokasikan kembali kos produksi pesanan dari $2,400 menjadi **tidak lebih dari $2,000.** Kos material, **kos tenaga kerja langsung** dengan pilihan antara $100-$1,000, sementara nilai kos overhead tetap $500.

Regards

**Alexander**

Direktur

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

|  |
| --- |
| **PERTANYAAN 2**  Tentukan besarnya alokasi **KOS PRODUKSI** **$2,000** ke dalam KOS MATERIAL, **KOS TENAGA KERJA LANGSUNG**,dengan catatan Kos Overhead sifatnya tetap yaitu $500. |

|  |
| --- |
| **Mohon tidak membuka lembar berikutnya sebelum ada instruksi.** |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Semakin tinggi angka yang Anda alokasikan di MATERIAL,***  ***KUALITAS akan semakin baik***  ***Semakin tinggi angka yang Anda alokasikan di KOS TENAGA KERJA LANGSUNG,***  ***INSENTIF Anda akan semakin besar***  **KOS OVERHEAD $ 500,**  **TOTAL TKL ADALAH... *(pilih salah satu)***  (Silahkan memberi tanda **“√”** pada **SALAH SATU** kolom kosong yang telah disediakan dan tidak diperkenankan untuk mengganti jawaban Anda)  **KOS TKL danINSENTIF YANG AKAN ANDA TERIMA**   |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | **$ 100** | **$ 200** | **$ 300** | **$ 400** | **$ 500** | **$ 600** | **$ 700** | **$ 800** | **$ 900** | **$ 1,000** | |  |  |  |  |  |  |  |  |  |  | |

|  |
| --- |
| **Mohon tidak membalik halaman berikutnya sampai Anda menjawab pertanyaan halaman ini dan dipersilahkan untuk melanjutkan ke halaman berikutnya.** |

***Modul A: Low Level of Escalation of Commitment and Low Level of Project Risk***

|  |  |
| --- | --- |
|  | **INFORMASI 3** |

MEMO

Dari : Direktur Utama

Kepada : Manajer Produksi

Perlu diketahuibahwa **perusahaan telah mengalami kerugian senilai 20% atas proyek yang sudah berjalan selama 10 bulan** (total estimasi penyelesaian pengerjaan: 12 bulan).

Oleh sebab itu Saya minta Anda untuk **berpikir kembali** dalam mengalokasikan kos material, **kos tenaga kerja langsung,** sementara nilai kos overhead tetap $500 dengan total kos produksi tidak melebihi **$2,000.**

Selanjutnya, Saya tetap percayakan proyek ini sepenuhnya kepada Anda.

Regards

Alexander

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

|  |
| --- |
| **PERTANYAAN 3**  **Proyek yang sudah berjalan mengalami** **KERUGIAN senilai 20%**, tentukan besarnya alokasi **KOS PRODUKSI** **$2,000** ke dalam KOS MATERIAL, **KOS TENAGA KERJA LANGSUNG**,dengan catatan Kos Overhead sifatnya tetapyaitu $500. |

|  |
| --- |
| **Mohon tidak membuka lembar berikutnya sebelum ada instruksi.** |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Semakin tinggi angka yang Anda alokasikan di MATERIAL,***  ***KUALITAS akan semakin baik***  ***Semakin tinggi angka yang Anda alokasikan di KOS TENAGA KERJA LANGSUNG,***  ***INSENTIF Anda akan semakin besar***  **KOS OVERHEAD $ 500,**  **TOTAL TKL ADALAH... *(pilih salah satu)***  (Silahkan memberi tanda **“√”** pada **SALAH SATU** kolom kosong yang telah disediakan dan tidak diperkenankan untuk mengganti jawaban Anda)  **KOS TKL danINSENTIF YANG AKAN ANDA TERIMA**  **KERUGIAN SAAT INI 20%**   |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | **$ 100** | **$ 200** | **$ 300** | **$ 400** | **$ 500** | **$ 600** | **$ 700** | **$ 800** | **$ 900** | **$ 1,000** | |  |  |  |  |  |  |  |  |  |  | |

|  |
| --- |
| **Mohon tidak membalik halaman berikutnya sampai Anda menjawab pertanyaan halaman ini dan dipersilahkan untuk melanjutkan ke halaman berikutnya.** |

***Modul B: High Level of Escalation of Commitment and Low Level of Project Risk***

|  |  |
| --- | --- |
|  | **INFORMASI 3** |

MEMO

Dari : Direktur Utama

Kepada : Manajer Produksi

Perlu diketahuibahwa **perusahaan telah mengalami kerugian senilai 20% atas proyek yang sudah berjalan** **selama 10 bulan** (total estimasi penyelesaian pengerjaan: 12 bulan)**.** Akan tetapi, apapun kondisi yang terjadi **perusahaan menekankan bahwa proyek ini tetap harus dilanjutkan.**

Oleh sebab itu Saya minta Anda untuk **berpikir kembali** dalam mengalokasikan kos material, **kos tenaga kerja langsung,** sementara nilai kos overhead tetap $500 dengan total kos produksi tidak melebihi **$2,000.**

Selanjutnya, Saya tetap percayakan proyek ini sepenuhnya kepada Anda.

Regards

Alexander

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

|  |
| --- |
| **PERTANYAAN 3**  **Proyek yang sudah berjalan mengalami** **KERUGIAN senilai 20%** dan **perusahaan menekankan bahwa proyek ini tetap harus dilanjutkan,** tentukan besarnya alokasi **KOS PRODUKSI** **$2,000** ke dalam KOS MATERIAL, **KOS TENAGA KERJA LANGSUNG**,dengan catatan Kos Overhead sifatnya tetapyaitu $500. |

|  |
| --- |
| **Mohon tidak membuka lembar berikutnya sebelum ada instruksi.** |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Semakin tinggi angka yang Anda alokasikan di MATERIAL,***  ***KUALITAS akan semakin baik***  ***Semakin tinggi angka yang Anda alokasikan di KOS TENAGA KERJA LANGSUNG,***  ***INSENTIF Anda akan semakin besar***  **KOS OVERHEAD $ 500,**  **TOTAL TKL ADALAH... *(pilih salah satu)***  (Silahkan memberi tanda **“√”** pada **SALAH SATU** kolom kosong yang telah disediakan dan tidak diperkenankan untuk mengganti jawaban Anda)  **KOS TKL danINSENTIF YANG AKAN ANDA TERIMA**  **KERUGIAN SAAT INI 20%**   |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | **$ 100** | **$ 200** | **$ 300** | **$ 400** | **$ 500** | **$ 600** | **$ 700** | **$ 800** | **$ 900** | **$ 1,000** | |  |  |  |  |  |  |  |  |  |  | |

|  |
| --- |
| **Mohon tidak membalik halaman berikutnya sampai Anda menjawab pertanyaan halaman ini dan dipersilahkan untuk melanjutkan ke halaman berikutnya.** |

***Modul C: Low Level of Escalation of Commitment and High Level of Project Risk***

|  |  |
| --- | --- |
|  | **INFORMASI 3** |

MEMO

Dari : Direktur Utama

Kepada : Manajer Produksi

Perlu diketahuibahwa **perusahaan telah mengalami kerugian yang cukup besar senilai 60-80% atas proyek yang sudah berjalan** **selama 10 bulan** (total estimasi penyelesaian pengerjaan: 12 bulan)**.**

Oleh sebab itu Saya minta Anda untuk **berpikir kembali** dalam mengalokasikan kos material, **kos tenaga kerja langsung,** sementara nilai kos overhead tetap $500 dengan total kos produksi tidak melebihi **$2,000.**

Selanjutnya, Saya tetap percayakan proyek ini sepenuhnya kepada Anda.

Regards

Alexander

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

|  |
| --- |
| **PERTANYAAN 3**  **Proyek yang sudah berjalan mengalami** **KERUGIAN yang cukup besar senilai 60-80%**, tentukan besarnya alokasi **KOS PRODUKSI** **$2,000** ke dalam KOS MATERIAL, **KOS TENAGA KERJA LANGSUNG**,dengan catatan Kos Overhead sifatnya tetapyaitu $500. |

|  |
| --- |
| **Mohon tidak membuka lembar berikutnya sebelum ada instruksi.** |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Semakin tinggi angka yang Anda alokasikan di MATERIAL,***  ***KUALITAS akan semakin baik***  ***Semakin tinggi angka yang Anda alokasikan di KOS TENAGA KERJA LANGSUNG,***  ***INSENTIF Anda akan semakin besar***  **KOS OVERHEAD $ 500,**  **TOTAL TKL ADALAH... *(pilih salah satu)***  (Silahkan memberi tanda **“√”** pada **SALAH SATU** kolom kosong yang telah disediakan dan tidak diperkenankan untuk mengganti jawaban Anda)  **KOS TKL danINSENTIF YANG AKAN ANDA TERIMA**  **KERUGIAN SAAT INI 60-80%**   |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | **$ 100** | **$ 200** | **$ 300** | **$ 400** | **$ 500** | **$ 600** | **$ 700** | **$ 800** | **$ 900** | **$ 1,000** | |  |  |  |  |  |  |  |  |  |  | |

|  |
| --- |
| **Mohon tidak membalik halaman berikutnya sampai Anda menjawab pertanyaan halaman ini dan dipersilahkan untuk melanjutkan ke halaman berikutnya.** |

***Modul D: High Level of Escalation of Commitment and Low Level of Project Risk***

|  |  |
| --- | --- |
|  | **INFORMASI 3** |

MEMO

Dari : Direktur Utama

Kepada : Manajer Produksi

Perlu diketahuibahwa **perusahaan telah mengalami kerugian yang cukup besar senilai 60-80% atas proyek yang sudah berjalan** **selama 10 bulan** (total estimasi penyelesaian pengerjaan: 12 bulan)**.** Akan tetapi, apapun kondisi yang terjadi **perusahaan menekankan bahwa proyek ini tetap harus dilanjutkan.**

Oleh sebab itu Saya minta Anda untuk **berpikir kembali** dalam mengalokasikan kos material, **kos tenaga kerja langsung,** sementara nilai kos overhead tetap $500 dengan total kos produksi tidak melebihi **$2,000.**

Selanjutnya, Saya tetap percayakan proyek ini sepenuhnya kepada Anda.

Regards

Alexander

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

|  |
| --- |
| **PERTANYAAN 3**  **Proyek yang sudah berjalan mengalami** **KERUGIAN yang cukup besar senilai 60-80%** dan **perusahaan menekankan bahwa proyek ini tetap harus dilanjutkan,** tentukan besarnya alokasi **KOS PRODUKSI** **$2,000** ke dalam KOS MATERIAL, **KOS TENAGA KERJA LANGSUNG**,dengan catatan Kos Overhead sifatnya tetapyaitu $500. |

|  |
| --- |
| **Mohon tidak membuka lembar berikutnya sebelum ada instruksi.** |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Semakin tinggi angka yang Anda alokasikan di MATERIAL,***  ***KUALITAS akan semakin baik***  ***Semakin tinggi angka yang Anda alokasikan di KOS TENAGA KERJA LANGSUNG,***  ***INSENTIF Anda akan semakin besar***  **KOS OVERHEAD $ 500,**  **TOTAL TKL ADALAH... *(pilih salah satu)***  (Silahkan memberi tanda **“√”** pada **SALAH SATU** kolom kosong yang telah disediakan dan tidak diperkenankan untuk mengganti jawaban Anda)  **KOS TKL danINSENTIF YANG AKAN ANDA TERIMA**  **KERUGIAN SAAT INI 60-80%**   |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | **$ 100** | **$ 200** | **$ 300** | **$ 400** | **$ 500** | **$ 600** | **$ 700** | **$ 800** | **$ 900** | **$ 1,000** | |  |  |  |  |  |  |  |  |  |  | |

|  |
| --- |
| **Mohon tidak membalik halaman berikutnya sampai Anda menjawab pertanyaan halaman ini dan dipersilahkan untuk melanjutkan ke halaman berikutnya.** |

|  |  |
| --- | --- |
|  | **Uji Prestasi 3** |

**Jawablah pertanyaan di bawah ini dengan jawaban yang menurut Anda paling tepat dengan memberikan tanda silang.**

1. Dalam menentukan komponen kos produksi, Bp. Alexander berpendapat bahwa…
   * + - 1. Kualitas material terbaik penting
         2. Kos tenaga kerja langsung penting
2. Dalam menentukan komponen kos produksi, Anda berpendapat bahwa...

Kualitas material terbaik penting

Kos tenaga kerja langsung penting

1. Berdasarkan memo dari Bp. Alexander selaku direktur Anda dan kondisi pribadi Anda, maka Anda memutuskan untuk...
2. Menghentikan proyek
3. Melanjutkan proyek

**SELESAI**

**Terima kasih atas partisipasinya.**

# Attachment 2: Data Research

**Anova Test**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **LEOCLPR** | | | | | | | | | | |  |  |  |  |  |  |  |  |  |  |  |
| **NO** | **GENDER** | **USIA** | **SEMESTER** | **IPK** | **TOTAL UP** | **INFO 3** | **LOW EOC** | **LOW PR** | **HENTI/ LANJUT** |
| 1 | L | 20 | 6 | B | 8 | 600 | 1 | 1 | HENTI |
| 2 | L | 21 | 6 | B | 8 | 800 | 1 | 1 | LANJUT |
| 3 | P | 20 | 6 | A | 8 | 400 | 1 | 1 | LANJUT |
| 4 | P | 20 | 6 | A | 8 | 300 | 1 | 1 | LANJUT |
| 5 | P | 21 | 6 | B | 9 | 300 | 1 | 1 | LANJUT |
| 6 | P | 21 | 6 | B | 9 | 300 | 1 | 1 | LANJUT |
| 7 | P | 21 | 6 | C | 7 | 200 | 1 | 1 | LANJUT |
| 8 | P | 20 | 6 | B | 9 | 200 | 1 | 1 | LANJUT |
| 9 | P | 21 | 8 | B | 7 | 800 | 1 | 1 | LANJUT |
| 10 | P | 22 | 8 | B | 7 | 400 | 1 | 1 | LANJUT |
| 11 | L | 21 | 8 | C | 7 | 800 | 1 | 1 | LANJUT |
| 12 | P | 21 | 6 | C | 9 | 400 | 1 | 1 | LANJUT |
| 13 | L | 20 | 8 | A | 6 | 500 | 1 | 1 | HENTI |
| 14 | **L** | **21** | **6** | **C** | 7 | **200** | 1 | 1 | **HENTI** |
| 15 | L | 20 | 6 | C | 8 | 100 | 1 | 1 | LANJUT |
| 16 | L | 21 | 6 | C | 7 | 200 | 1 | 1 | LANJUT |
| 17 | P | 21 | 6 | B | 8 | 700 | 1 | 1 | LANJUT |
| 18 | P | 20 | 6 | C | 9 | 200 | 1 | 1 | LANJUT |
| 19 | P | 20 | 6 | D | 7 | 600 | 1 | 1 | LANJUT |
| 20 | P | 21 | 6 | C | 8 | 600 | 1 | 1 | LANJUT |
| 21 | P | 20 | 6 | C | 7 | 400 | 1 | 1 | LANJUT |
| 22 | P | 21 | 6 | D | 10 | 600 | 1 | 1 | LANJUT |
| 23 | P | 21 | 6 | C | 8 | 500 | 1 | 1 | LANJUT |
| 24 | P | 21 | 6 | C | 9 | 600 | 1 | 1 | LANJUT |
| 25 | P | 20 | 6 | D | 9 | 400 | 1 | 1 | LANJUT |
| 26 | L | 21 | 8 | C | 9 | 400 | 1 | 1 | LANJUT |
| 27 | P | 21 | 6 | C | 8 | 200 | 1 | 1 | LANJUT |
| 28 | P | 20 | 6 | C | 6 | 500 | 1 | 1 | LANJUT |
| 29 | P | 20 | 6 | C | 9 | 500 | 1 | 1 | HENTI |
| **HEOCLPR** | | | | | | | | | |
| **NO** | **GENDER** | **USIA** | **SEMESTER** | **IPK** | **TOTAL UP** | **INFO 3** | **HIGH EOC** | **LOW PR** | **HENTI/ LANJUT** |
| 1 | L | 20 | 6 | C | 10 | 100 | 2 | 1 | LANJUT |
| 2 | P | 22 | 8 | B | 7 | 400 | 2 | 1 | LANJUT |
| 3 | L | 20 | 6 | C | 7 | 600 | 2 | 1 | LANJUT |
| 4 | P | 20 | 6 | B | 7 | 600 | 2 | 1 | LANJUT |
| 5 | P | 22 | 8 | C | 7 | 600 | 2 | 1 | LANJUT |
| 6 | P | 21 | 6 | B | 9 | 400 | 2 | 1 | LANJUT |
| 7 | P | 23 | 8 | B | 8 | 600 | 2 | 1 | LANJUT |
| 8 | P | 19 | 4 | C | 9 | 400 | 2 | 1 | LANJUT |
| 9 | **L** | **20** | **6** | **C** | 9 | **500** | 2 | 1 | **LANJUT** |
| 10 | P | 21 | 6 | D | 9 | 500 | 2 | 1 | LANJUT |
| 11 | P | 20 | 6 | C | 9 | 400 | 2 | 1 | LANJUT |
| 12 | P | 21 | 6 | C | 7 | 500 | 2 | 1 | LANJUT |
| 13 | L | 21 | 6 | D | 10 | 500 | 2 | 1 | LANJUT |
| 14 | P | 21 | 6 | C | 9 | 300 | 2 | 1 | LANJUT |
| 15 | P | 21 | 6 | C | 6 | 600 | 2 | 1 | LANJUT |
| 16 | P | 20 | 6 | C | 6 | 600 | 2 | 1 | LANJUT |
| 17 | P | 20 | 6 | C | 10 | 600 | 2 | 1 | LANJUT |
| 18 | L | 20 | 6 | C | 8 | 500 | 2 | 1 | LANJUT |
| 19 | P | 21 | 6 | D | 7 | 600 | 2 | 1 | LANJUT |
| 20 | L | 21 | 6 | D | 9 | 500 | 2 | 1 | LANJUT |
| 21 | L | 22 | 6 | D | 8 | 600 | 2 | 1 | LANJUT |
| 22 | L | 21 | 6 | C | 7 | 200 | 2 | 1 | LANJUT |
| **LEOCHPR** | | | | | | | | | |
| **NO** | **GENDER** | **USIA** | **SEMESTER** | **IPK** | **TOTAL UP** | **INFO 3** | **LOW EOC** | **HIGH PR** | **HENTI/ LANJUT** |
| **1** | **P** | **19** | **4** | **D** | **9** | **400** | **1** | **2** | **LANJUT** |
| **2** | P | 20 | 4 | C | 8 | 600 | 1 | 2 | LANJUT |
| **3** | P | 19 | 4 | C | 6 | 500 | 1 | 2 | LANJUT |
| **4** | L | 20 | 6 | A | 8 | 600 | 1 | 2 | LANJUT |
| **5** | L | 22 | 8 | A | 6 | 300 | 1 | 2 | LANJUT |
| **6** | P | 21 | 8 | C | 7 | 400 | 1 | 2 | LANJUT |
| **7** | P | 19 | 4 | D | 8 | 400 | 1 | 2 | LANJUT |
| **8** | P | 21 | 6 | C | 9 | 500 | 1 | 2 | LANJUT |
| **9** | L | 20 | 6 | B | 9 | 300 | 1 | 2 | HENTI |
| **10** | P | 23 | 8 | A | 8 | 400 | 1 | 2 | HENTI |
| **11** | **P** | **20** | **6** | **D** | 10 | **600** | 1 | 2 | **LANJUT** |
| **12** | P | 21 | 6 | C | 10 | 400 | 1 | 2 | HENTI |
| **13** | P | 20 | 6 | C | 7 | 500 | 1 | 2 | HENTI |
| **14** | L | 20 | 6 | C | 8 | 500 | 1 | 2 | LANJUT |
| **15** | P | 21 | 6 | D | 6 | 600 | 1 | 2 | LANJUT |
| **16** | L | 21 | 6 | D | 10 | 300 | 1 | 2 | LANJUT |
| **17** | P | 21 | 6 | D | 9 | 500 | 1 | 2 | HENTI |
| **18** | P | 20 | 6 | C | 8 | 400 | 1 | 2 | HENTI |
| **19** | P | 21 | 6 | B | 9 | 400 | 1 | 2 | LANJUT |
| **20** | P | 20 | 6 | D | 8 | 400 | 1 | 2 | LANJUT |
| **21** | L | 20 | 6 | C | 9 | 400 | 1 | 2 | HENTI |
| **22** | L | 21 | 6 | C | 8 | 600 | 1 | 2 | LANJUT |
| **23** | P | 21 | 6 | C | 9 | 400 | 1 | 2 | LANJUT |
| **24** | L | 18 | 4 | D | 10 | **300** | 1 | 2 | LANJUT |
| **HEOCHPR** | | | | | | | | | |
| **NO** | **GENDER** | **USIA** | **SEMESTER** | **IPK** | **TOTAL UP** | **INFO 3** | **HIGH EOC** | **HIGH PR** | **HENTI/ LANJUT** |
| 1 | P | 19 | 4 | A | 8 | 700 | 2 | 2 | LANJUT |
| 2 | P | 21 | 6 | C | 10 | 400 | 2 | 2 | LANJUT |
| 3 | L | 20 | 4 | B | 6 | 500 | 2 | 2 | LANJUT |
| 4 | L | 20 | 4 | B | 9 | 800 | 2 | 2 | LANJUT |
| 5 | L | 20 | 6 | A | 7 | 700 | 2 | 2 | LANJUT |
| 6 | L | 21 | 4 | B | 9 | 900 | 2 | 2 | LANJUT |
| 7 | L | 22 | 6 | C | 6 | 700 | 2 | 2 | HENTI |
| 8 | L | 21 | 6 | C | 9 | 500 | 2 | 2 | LANJUT |
| 9 | **L** | **20** | **6** | **D** | 9 | **600** | 2 | 2 | **LANJUT** |
| 10 | L | 21 | 6 | B | 8 | 700 | 2 | 2 | LANJUT |
| 11 | L | 21 | 6 | C | 8 | 500 | 2 | 2 | LANJUT |
| 12 | L | 22 | 6 | C | 8 | 500 | 2 | 2 | LANJUT |
| 13 | L | 20 | 6 | D | 9 | 600 | 2 | 2 | LANJUT |
| 14 | P | 21 | 6 | C | 9 | 600 | 2 | 2 | HENTI |
| 15 | L | 21 | 6 | D | 9 | 500 | 2 | 2 | LANJUT |
| 16 | L | 20 | 6 | C | 9 | 500 | 2 | 2 | LANJUT |
| 17 | P | 20 | 6 | C | 8 | 700 | 2 | 2 | LANJUT |
| 18 | P | 21 | 6 | D | 8 | 600 | 2 | 2 | LANJUT |
| 19 | P | 20 | 6 | D | 8 | 500 | 2 | 2 | LANJUT |
| 20 | P | 21 | 6 | C | 8 | 500 | 2 | 2 | LANJUT |
| 21 | P | 20 | 6 | C | 9 | 500 | 2 | 2 | LANJUT |
| 22 | L | 23 | 6 | B | 9 | 400 | 2 | 2 | LANJUT |
| 23 | L | 22 | 8 | B | 9 | 800 | 2 | 2 | LANJUT |
| 24 | P | 20 | 6 | D | 10 | 700 | 2 | 2 | HENTI |
| 25 | P | 21 | 6 | C | 8 | 800 | 2 | 2 | LANJUT |
| 26 | L | 21 | 6 | C | 10 | 600 | 2 | 2 | LANJUT |
| 27 | P | 21 | 6 | B | 9 | 600 | 2 | 2 | LANJUT |

**VALUE:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Gender:  L = 1  P = 2 | Usia:  18-20 = 1  21-23 = 2 | IPK:  A (<2.50) = 1  B (2.50-2.99) = 2  C (3.00-3.50) = 3  D (>3.50) = 4 | SEMESTER:  4 = 1  6 = 2  8 = 3 | UJI PRESTASI:  <80 = 1  >=80 = 2 |

**Hypothesis Test 1**

|  |  |  |  |
| --- | --- | --- | --- |
| **Undergraduate Students** | **Type** | | **Resources Allocation Decision**  **(Direct Labor Cost)** |
|
| 1 | 1 | LOW EOC | 600 |
| 2 | 1 | LOW EOC | 800 |
| 3 | 1 | LOW EOC | 400 |
| 4 | 1 | LOW EOC | 300 |
| 5 | 1 | LOW EOC | 300 |
| 6 | 1 | LOW EOC | 300 |
| 7 | 1 | LOW EOC | 200 |
| 8 | 1 | LOW EOC | 200 |
| 9 | 1 | LOW EOC | 800 |
| 10 | 1 | LOW EOC | 400 |
| 11 | 1 | LOW EOC | 800 |
| 12 | 1 | LOW EOC | 400 |
| 13 | 1 | LOW EOC | 500 |
| 14 | 1 | LOW EOC | 200 |
| 15 | 1 | LOW EOC | 100 |
| 16 | 1 | LOW EOC | 200 |
| 17 | 1 | LOW EOC | 700 |
| 18 | 1 | LOW EOC | 200 |
| 19 | 1 | LOW EOC | 600 |
| 20 | 1 | LOW EOC | 600 |
| 21 | 1 | LOW EOC | 400 |
| 22 | 1 | LOW EOC | 600 |
| 23 | 1 | LOW EOC | 500 |
| 24 | 1 | LOW EOC | 600 |
| 25 | 1 | LOW EOC | 400 |
| 26 | 1 | LOW EOC | 400 |
| 27 | 1 | LOW EOC | 200 |
| 28 | 1 | LOW EOC | 500 |
| 29 | 1 | LOW EOC | 500 |
| 30 | 1 | LOW EOC | 400 |
| 31 | 1 | LOW EOC | 600 |
| 32 | 1 | LOW EOC | 500 |
| 33 | 1 | LOW EOC | 600 |
| 34 | 1 | LOW EOC | 300 |
| 35 | 1 | LOW EOC | 400 |
| 36 | 1 | LOW EOC | 400 |
| 37 | 1 | LOW EOC | 500 |
| 38 | 1 | LOW EOC | 300 |
| 39 | 1 | LOW EOC | 400 |
| 40 | 1 | LOW EOC | 600 |
| 41 | 1 | LOW EOC | 400 |
| 42 | 1 | LOW EOC | 500 |
| 43 | 1 | LOW EOC | 500 |
| 44 | 1 | LOW EOC | 600 |
| 45 | 1 | LOW EOC | 300 |
| 46 | 1 | LOW EOC | 500 |
| 47 | 1 | LOW EOC | 300 |
| 48 | 1 | LOW EOC | 400 |
| 49 | 1 | LOW EOC | 400 |
| 50 | 1 | LOW EOC | 400 |
| 51 | 1 | LOW EOC | 600 |
| 52 | 1 | LOW EOC | 400 |
| 53 | 1 | LOW EOC | 300 |
| 54 | 2 | HIGH EOC | 600 |
| 55 | 2 | HIGH EOC | 100 |
| 56 | 2 | HIGH EOC | 400 |
| 57 | 2 | HIGH EOC | 600 |
| 58 | 2 | HIGH EOC | 600 |
| 59 | 2 | HIGH EOC | 600 |
| 60 | 2 | HIGH EOC | 400 |
| 61 | 2 | HIGH EOC | 600 |
| 62 | 2 | HIGH EOC | 400 |
| 63 | 2 | HIGH EOC | 500 |
| 64 | 2 | HIGH EOC | 500 |
| 65 | 2 | HIGH EOC | 400 |
| 66 | 2 | HIGH EOC | 500 |
| 67 | 2 | HIGH EOC | 500 |
| 68 | 2 | HIGH EOC | 300 |
| 69 | 2 | HIGH EOC | 600 |
| 70 | 2 | HIGH EOC | 600 |
| 71 | 2 | HIGH EOC | 600 |
| 72 | 2 | HIGH EOC | 500 |
| 73 | 2 | HIGH EOC | 600 |
| 74 | 2 | HIGH EOC | 500 |
| 75 | 2 | HIGH EOC | 200 |
| 76 | 2 | HIGH EOC | 700 |
| 77 | 2 | HIGH EOC | 400 |
| 78 | 2 | HIGH EOC | 500 |
| 79 | 2 | HIGH EOC | 800 |
| 80 | 2 | HIGH EOC | 700 |
| 81 | 2 | HIGH EOC | 900 |
| 82 | 2 | HIGH EOC | 700 |
| 83 | 2 | HIGH EOC | 500 |
| 84 | 2 | HIGH EOC | 600 |
| 85 | 2 | HIGH EOC | 700 |
| 86 | 2 | HIGH EOC | 500 |
| 87 | 2 | HIGH EOC | 500 |
| 88 | 2 | HIGH EOC | 600 |
| 89 | 2 | HIGH EOC | 600 |
| 90 | 2 | HIGH EOC | 500 |
| 91 | 2 | HIGH EOC | 500 |
| 92 | 2 | HIGH EOC | 700 |
| 93 | 2 | HIGH EOC | 600 |
| 94 | 2 | HIGH EOC | 500 |
| 95 | 2 | HIGH EOC | 500 |
| 96 | 2 | HIGH EOC | 500 |
| 97 | 2 | HIGH EOC | 400 |
| 98 | 2 | HIGH EOC | 800 |
| 99 | 2 | HIGH EOC | 700 |
| 100 | 2 | HIGH EOC | 800 |
| 101 | 2 | HIGH EOC | 600 |
| 102 | 2 | HIGH EOC | 600 |

**Hypothesis Test 2**

|  |  |  |  |
| --- | --- | --- | --- |
| **Undergraduate Students** | **Type** | | **Resources Allocation Decision**  **(Direct Labor Cost)** |
|
| 1 | 1 | LOW PR | 600 |
| 2 | 1 | LOW PR | 800 |
| 3 | 1 | LOW PR | 400 |
| 4 | 1 | LOW PR | 300 |
| 5 | 1 | LOW PR | 300 |
| 6 | 1 | LOW PR | 300 |
| 7 | 1 | LOW PR | 200 |
| 8 | 1 | LOW PR | 200 |
| 9 | 1 | LOW PR | 800 |
| 10 | 1 | LOW PR | 400 |
| 11 | 1 | LOW PR | 800 |
| 12 | 1 | LOW PR | 400 |
| 13 | 1 | LOW PR | 500 |
| 14 | 1 | LOW PR | 200 |
| 15 | 1 | LOW PR | 100 |
| 16 | 1 | LOW PR | 200 |
| 17 | 1 | LOW PR | 700 |
| 18 | 1 | LOW PR | 200 |
| 19 | 1 | LOW PR | 600 |
| 20 | 1 | LOW PR | 600 |
| 21 | 1 | LOW PR | 400 |
| 22 | 1 | LOW PR | 600 |
| 23 | 1 | LOW PR | 500 |
| 24 | 1 | LOW PR | 600 |
| 25 | 1 | LOW PR | 400 |
| 26 | 1 | LOW PR | 400 |
| 27 | 1 | LOW PR | 200 |
| 28 | 1 | LOW PR | 500 |
| 29 | 1 | LOW PR | 500 |
| 30 | 1 | LOW PR | 600 |
| 31 | 1 | LOW PR | 100 |
| 32 | 1 | LOW PR | 400 |
| 33 | 1 | LOW PR | 600 |
| 34 | 1 | LOW PR | 600 |
| 35 | 1 | LOW PR | 600 |
| 36 | 1 | LOW PR | 400 |
| 37 | 1 | LOW PR | 600 |
| 38 | 1 | LOW PR | 400 |
| 39 | 1 | LOW PR | 500 |
| 40 | 1 | LOW PR | 500 |
| 41 | 1 | LOW PR | 400 |
| 42 | 1 | LOW PR | 500 |
| 43 | 1 | LOW PR | 500 |
| 44 | 1 | LOW PR | 300 |
| 45 | 1 | LOW PR | 600 |
| 46 | 1 | LOW PR | 600 |
| 47 | 1 | LOW PR | 600 |
| 48 | 1 | LOW PR | 500 |
| 49 | 1 | LOW PR | 600 |
| 50 | 1 | LOW PR | 500 |
| 51 | 1 | LOW PR | 200 |
| 52 | 2 | HIGH PR | 400 |
| 53 | 2 | HIGH PR | 600 |
| 54 | 2 | HIGH PR | 500 |
| 55 | 2 | HIGH PR | 600 |
| 56 | 2 | HIGH PR | 300 |
| 57 | 2 | HIGH PR | 400 |
| 58 | 2 | HIGH PR | 400 |
| 59 | 2 | HIGH PR | 500 |
| 60 | 2 | HIGH PR | 300 |
| 61 | 2 | HIGH PR | 400 |
| 62 | 2 | HIGH PR | 600 |
| 63 | 2 | HIGH PR | 400 |
| 64 | 2 | HIGH PR | 500 |
| 65 | 2 | HIGH PR | 500 |
| 66 | 2 | HIGH PR | 600 |
| 67 | 2 | HIGH PR | 300 |
| 68 | 2 | HIGH PR | 500 |
| 69 | 2 | HIGH PR | 300 |
| 70 | 2 | HIGH PR | 400 |
| 71 | 2 | HIGH PR | 400 |
| 72 | 2 | HIGH PR | 400 |
| 73 | 2 | HIGH PR | 600 |
| 74 | 2 | HIGH PR | 400 |
| 75 | 2 | HIGH PR | 300 |
| 76 | 2 | HIGH PR | 700 |
| 77 | 2 | HIGH PR | 400 |
| 78 | 2 | HIGH PR | 500 |
| 79 | 2 | HIGH PR | 800 |
| 80 | 2 | HIGH PR | 700 |
| 81 | 2 | HIGH PR | 900 |
| 82 | 2 | HIGH PR | 700 |
| 83 | 2 | HIGH PR | 500 |
| 84 | 2 | HIGH PR | 600 |
| 85 | 2 | HIGH PR | 700 |
| 86 | 2 | HIGH PR | 500 |
| 87 | 2 | HIGH PR | 500 |
| 88 | 2 | HIGH PR | 600 |
| 89 | 2 | HIGH PR | 600 |
| 90 | 2 | HIGH PR | 500 |
| 91 | 2 | HIGH PR | 500 |
| 92 | 2 | HIGH PR | 700 |
| 93 | 2 | HIGH PR | 600 |
| 94 | 2 | HIGH PR | 500 |
| 95 | 2 | HIGH PR | 500 |
| 96 | 2 | HIGH PR | 500 |
| 97 | 2 | HIGH PR | 400 |
| 98 | 2 | HIGH PR | 800 |
| 99 | 2 | HIGH PR | 700 |
| 100 | 2 | HIGH PR | 800 |
| 101 | 2 | HIGH PR | 600 |
| 102 | 2 | HIGH PR | 600 |

**Hypothesis Test 3**

|  |  |  |  |
| --- | --- | --- | --- |
| **NO** | **Resources Allocation Decision**  **(Direct Labor Cost)** | **LEVEL EOC** | **LEVEL PR** |
| 1 | 600 | 1 | 1 |
| 2 | 800 | 1 | 1 |
| 3 | 400 | 1 | 1 |
| 4 | 300 | 1 | 1 |
| 5 | 300 | 1 | 1 |
| 6 | 300 | 1 | 1 |
| 7 | 200 | 1 | 1 |
| 8 | 200 | 1 | 1 |
| 9 | 800 | 1 | 1 |
| 10 | 400 | 1 | 1 |
| 11 | 800 | 1 | 1 |
| 12 | 400 | 1 | 1 |
| 13 | 500 | 1 | 1 |
| 14 | 200 | 1 | 1 |
| 15 | 100 | 1 | 1 |
| 16 | 200 | 1 | 1 |
| 17 | 700 | 1 | 1 |
| 18 | 200 | 1 | 1 |
| 19 | 600 | 1 | 1 |
| 20 | 600 | 1 | 1 |
| 21 | 400 | 1 | 1 |
| 22 | 600 | 1 | 1 |
| 23 | 500 | 1 | 1 |
| 24 | 600 | 1 | 1 |
| 25 | 400 | 1 | 1 |
| 26 | 400 | 1 | 1 |
| 27 | 200 | 1 | 1 |
| 28 | 500 | 1 | 1 |
| 29 | 500 | 1 | 1 |
| 30 | 100 | 2 | 1 |
| 31 | 400 | 2 | 1 |
| 32 | 600 | 2 | 1 |
| 33 | 600 | 2 | 1 |
| 34 | 600 | 2 | 1 |
| 35 | 400 | 2 | 1 |
| 36 | 600 | 2 | 1 |
| 37 | 400 | 2 | 1 |
| 38 | 500 | 2 | 1 |
| 39 | 500 | 2 | 1 |
| 40 | 400 | 2 | 1 |
| 41 | 500 | 2 | 1 |
| 42 | 500 | 2 | 1 |
| 43 | 300 | 2 | 1 |
| 44 | 600 | 2 | 1 |
| 45 | 600 | 2 | 1 |
| 46 | 600 | 2 | 1 |
| 47 | 500 | 2 | 1 |
| 48 | 600 | 2 | 1 |
| 49 | 500 | 2 | 1 |
| 50 | 600 | 2 | 1 |
| 51 | 200 | 2 | 1 |
| 52 | 400 | 1 | 2 |
| 53 | 600 | 1 | 2 |
| 54 | 500 | 1 | 2 |
| 55 | 600 | 1 | 2 |
| 56 | 300 | 1 | 2 |
| 57 | 400 | 1 | 2 |
| 58 | 400 | 1 | 2 |
| 59 | 500 | 1 | 2 |
| 60 | 300 | 1 | 2 |
| 61 | 400 | 1 | 2 |
| 62 | 600 | 1 | 2 |
| 63 | 400 | 1 | 2 |
| 64 | 500 | 1 | 2 |
| 65 | 500 | 1 | 2 |
| 66 | 600 | 1 | 2 |
| 67 | 300 | 1 | 2 |
| 68 | 500 | 1 | 2 |
| 69 | 400 | 1 | 2 |
| 70 | 400 | 1 | 2 |
| 71 | 400 | 1 | 2 |
| 72 | 400 | 1 | 2 |
| 73 | 600 | 1 | 2 |
| 74 | 400 | 1 | 2 |
| 75 | 300 | 1 | 2 |
| 76 | 700 | 2 | 2 |
| 77 | 400 | 2 | 2 |
| 78 | 500 | 2 | 2 |
| 79 | 800 | 2 | 2 |
| 80 | 700 | 2 | 2 |
| 81 | 900 | 2 | 2 |
| 82 | 700 | 2 | 2 |
| 83 | 500 | 2 | 2 |
| 84 | 600 | 2 | 2 |
| 85 | 700 | 2 | 2 |
| 86 | 500 | 2 | 2 |
| 87 | 500 | 2 | 2 |
| 88 | 600 | 2 | 2 |
| 89 | 600 | 2 | 2 |
| 90 | 500 | 2 | 2 |
| 91 | 500 | 2 | 2 |
| 92 | 700 | 2 | 2 |
| 93 | 600 | 2 | 2 |
| 94 | 500 | 2 | 2 |
| 95 | 500 | 2 | 2 |
| 96 | 500 | 2 | 2 |
| 97 | 400 | 2 | 2 |
| 98 | 800 | 2 | 2 |
| 99 | 700 | 2 | 2 |
| 100 | 800 | 2 | 2 |
| 101 | 600 | 2 | 2 |
| 102 | 600 | 2 | 2 |