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THE ROLE OF COMPENSATION IN PROJECT'S MANAGER EVALUATION OF TERMINATING AN UNPROFITABLE PROJECT

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ABSTRAK

Teori agensi mengindikasikan bahwa manajer proyek yang mempunyai informasi privat dan insentif untuk melakukan shirking akan melakukan tindakan yang disfungsional berupa meneruskan proyek yang diketahui tidak menguntungkan. Isu ini harus diteliti secara luas dengan setting/skenario dan sampel yang berbeda. Tujuan penelitian ini adalah untuk menguji perilaku shirking dari manajer proyek ketika mereka harus menghentikan proyek yang tidak menguntungkan. Tujuan berikutnya adalah untuk menguji peran konpensasi untuk mencegah perilaku shirking.

Penelitian ini menggunakan metoda eksperimental dengan memanipulasi dua kondisi yaitu informasi privat dan insentif untuk melakukan shirking. Partisipan dalam eksperimen ini adalah 138 mahasiswa kelas eksekutif program Magister Manajemen Universitas Gadjah Mada. Hasil penelitian tidak mendukung perilaku yang diprediksi oleh Harrell dan Harrison (1994). Manajer yang mempunyai informasi privat dan insentif untuk shirking menghentikan proyek yang tidak menguntungkan (walaupun terdapat kecenderungan namun tidak signifikan secara statistis).

Bertentangan dengan harapan, penelitian ini juga menemukan bahwa kompensasi (bonus dan pinalti) meningkatkan kecenderungan manajer untuk melanjutkan tindakan yang disfungsional ini. Selanjutnya, penelitian ini menunjukkan bahwa mahasiswa wanita, usia muda, kurang berpengalaman, mempunyai latar belakang pendidikan bisnis pada level strata satu, dan belum menikah mempunyai kecenderungan untuk melanjutkan proyek yang tidak menguntungkan. Hasil yang demikian mungkin disebabkan oleh faktor risiko yang mempengaruhi perilaku mereka.

Penelitian selanjutnya harus dilakukan untuk memeriksa ketidakkonsistenan dalam isu ini dengan mempertimbangkan beberapa kelemahan. Penggunaan sampel yang berupa manajer akan memberikan hasil yang lebih kuat daripada menggunakan proksi mahasiswa eksekutif magister manajemen. Penggunaan skenario lain (terutama skema konpensasi yang berbeda) untuk menguji isu ini juga diperlukan. Penelitian selanjutnya juga perlu mempertimbangkan faktor preferensi terhadap risiko dan locus of control. Seseorang yang mempunyai locus pegawasan internal akan cenderung untuk melanjutkan proyek yang tidak menguntungkan karena ia merasa mampu untuk mengubah keadaan.

***Kata kunci**: Masalah agensi, asimetri informasi, insentif untuk shirking, penghentian proyek yang tidak menguntungkan*

INTRODUCTION

This study is concerned with human behavior in decision-making. Rational decision-making assumes that managers maximize the profitability of the firm when they have to make decisions in their work. Managers will invest resources in the projects which provide profits to the firm and then periodically evaluate the performance of those projects. Projects that are predicted to be profitable should be continued but projects that are predicted to be unprofitable should be terminated to avoid further losses to the firm.

However, previous evidence shows a contradiction of human behavior in their rational decision-making. These studies document that managers often continue projects which are predicted to be unprofitable . This behavior is not in the best interest of the firm. From a psychological point of view, the need for internal justification is one explanation of this irrational decision-making. Most of the earlier studies utilize this psychological argument.

Some of the recent studies establish a new ground for this irrational behavior. Agency theory is used to explain why the managers as an agent continue an unprofitable project. Those studies confirm that the irrational behavior may be rational from the agency theory if several conditions exist.

The purposes of this study are: (1) to examine whether the interaction of incentives to shirk and privately held information causes the manager to make the decision to continue unprofitable projects and (2) to confirm that appropriate compensation will reduce the degree of escalation. The difference between this study and Harrell and Harrison's study (1994) are: (1) this study incorporates uncertainty factor in the decision choice setting while Harrell and Harrison (1994) use deterministic numbers, (2) this study uses a different manipulation setting for incentives to shirk, and (3) this study examines whether incentives provided through compensation alter the termination decision.

Prior Literature

Staw (1981) shows that the tendency to escalate commitment to the projects as a result of an attempt at self-justification, internal or external justification, or preservation of an image of consistency. The need to rationalize a decision replaces an economic explanation. Feeling responsible for the setback is one cause of the escalation.

Leatherwood and Conlon (1987) discloses that the behavioral manifestations of commitment to a course of action following a setback depend not only on the extent to which a decision maker feels responsible for the setback, but also on the extent to which another party can be held responsible for it.

However, Leatherwood and Conlon (1988) confirmed that escalation as a result of responsibility is more likely to be observed in unstructured decisions, such as allocations of R&D, product development decisions, or unusual capital acquisition. Based on their results, they suggest that the effects of behavioral commitment on resource decisions may be limited to situations of limited information.

Kanodia, Bushman, and Dickhaut (1989) present an alternative explanation for the irrational behavior based on economic rationality. They demonstrate that escalation behavior can be explained as part of a larger phenomenon of hiding private information on human capital. The main ingredients of their explanation come from: (1) information on the desirability of switching is private to the decision maker; (2) this information is also related to the unobservable talents of the decision makers; (3) these talents are inferred by others in society from the observation of the decision maker's actions; and (4) these

[1] See Staw (1981) and Leatherwood and Conlon (1987; 1988).

inferences impact the future opportunities of the decision maker.

Harrison and Harrell (1993, 1994) use elements of agency theory[2] in experimental decision making simulation. The two elements used are privately held information and incentives to shirk. Agency theory predicts how availability of information and incentives influence managers' decisions. In the principal-agent relationship model, agents will act in their own self-interest which creates a conflict between agents and principals. Both of their studies provide experimental evidence that when both incentives to shirk and privately held information exist, managers are more likely to continue projects which logically should be discontinued.

Hypotheses Development

An agency relationship exists when principals hire agents in order to delegate responsibilities to them. In agency models, individuals are assumed to be motivated solely by self-interest. An agency problem arises when cooperative behavior, which maximizes the group's welfare, is not consistent with each individual agent's self interest [Baiman, (1990)]. This theory may explain why managers often make decisions to continue unprofitable projects.

One of the major assumptions in agency theory is the information asymmetry assumption [Baiman (1990)]. The agent is assumed to have private information which is costly for the principal to obtain. Consequently, the greater the information asymmetry, the more likely the agent makes decisions not in the best interest of the principal because it is unlikely the principal can detect the shirking[3] without substantial efforts and expenses.

In short-term agency relationships, the information asymmetry between principal and agent is likely to be greater [Eisendardt (1989)]. Thus, this condition provides more incentive to shirk. Accordingly, a long-term contract is expected to reduce or eliminate agent's incentives to shirk.

Incentive to shirk and privately held information will interact and provide a stronger effect on the agent's shirking effort. It is hypothesized that the effect of the interaction of the two conditions will have greater impact on the manager's decision to continue an unprofitable project than only one of the conditions will have.

From the development above, the first hypothesis is as follows:

H_1: Project managers who experience both (1) an incentive to shirk and (2) possess privately held information will exhibit a greater tendency to continue an unprofitable project than will those who experience only one or neither of these conditions.

Lewellen et al. (1987) examines whether executive pay packages can be explained as attempts to reduce agency costs resulting from management having a shorter decision horizon than owners. They show that components of the executive pay packages are found to vary in the predicted manner, thus supporting the argument that these compensation plans are designed to overcome agency problems. It is hypothesized that proper compensation plans will lower the impact on manager's decision to continue an unprofitable project.

Therefore, the second hypothesis is as follows:

[2] Baiman (1982, 1990) and Eisenhardt (1989) provide intensive analyses about agency theory that are used as foundations in Harrell and Harrison's studies (1993, 1994) and in this study.

[3] *Shirking* is when an agent fails to take actions which are in the best interest for the principals or deliberately withholding efforts

H_2: Compensation (reward and punishment) is effective in reducing the escalation effort.

The first hypothesis predicts that an interaction of the incentive to shirk and information asymmetry causes project managers who experience both conditions to make decisions which are not in the best interest of the firm. Those who experience only one of the conditions or experience neither of these conditions are expected to make the same evaluation decisions regarding the termination of the unprofitable project.

The second hypothesis predicts that introducing an appropriate compensation scheme reduces the tendency to make decisions in the self-interest of the managers which are not in the best interest of the firm.

METHOD

Participant

This experiment uses 220 individuals from graduate students of Gadjah Mada University. From the 220 individuals, only 166 responses are used because 54 responses are invalid. These 54 responses are identified through the question that is set to filter the validity of responses. These participants are chosen because they have more work experience compared to regular MM and undergraduate students. The participants' work experience will facilitate them in the decision-making simulation. The participants should possess the work experience for the experiment. They are assigned to four different groups randomly. Each group has a different combination treatment of control variables of incentives to shirk and privately held information. From the demographic information, there are 28 fresh graduate students. Since experience is one critical factor in making decision in this experiment, these 28 fresh-graduate (inexperience) students should be excluded from the sample. Therefore, after taking out the inexperience students, 138 responses are finally used to make the conclusion.

Decision Setting

In this study, the participants are projected into the role of a project manager in charge of developing a new product. The project manager and his/her team are responsible to the R&D division manager. The project was originally sponsored by the project manager in the beginning of the first year of the project and was expected to be completed in two years.[4]

The company (manufacturing division and sales division) will be able to produce and sell the product after the project is completed. The product is independent of the firm's other products. Its success of failure will have no impact on the sale of the company's other products. The new product was predicted to give the company positive net cash flows over a very short product life cycle (one year). With probability of success predicted to be 75%,[5] the expected net cash flows from the new product was Rp155 million. The total cost allocated to the project was Rp100million from which Rp20 million was allocated in the first year.

At the end of the first year, new information about the probability of success arrived. The new information revised the distribution of probability of success into 25%. Then, the expected net cash flows will be Rp65 million. Since the project's expected net cash flows are less than the cost of the project for the second year,[6] the rational decision is to terminate the project.

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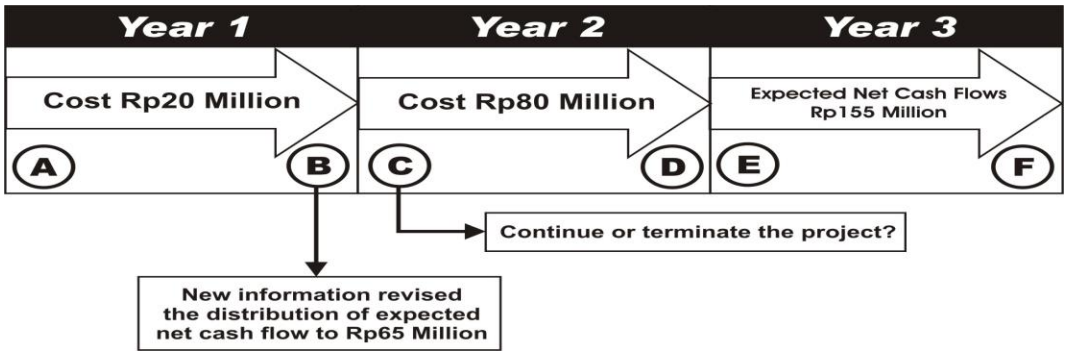
[4] The new product process comprises the set or activities that move the product from idea to launch [see Dwyer and Mellor (1991)]. This process can take from several months to several years. To simplify the setting, the project takes two years.

[5] The 75% probability of success is too high and unrealistic; however, this high probability is needed for the purpose of contrasting with the revised probability later.

[6] The Rp20 million first year expenses were sunk cost and were not relevant for the decision making purpose.

Figure 1



Event A: The project manager initiates the project at the beginning of year 1.

Event B: New information about the revised distribution of the probability arrives at the end of year 1.

Event C: Project manager has to make a decision to continue or to terminate the project after new information arrives.

Event D: If the manager continues the project at the beginning of year 1, the project will be completed at the end of year 2.

Event E: Other divisions will start producing and selling the product after the project is completed.

Event F: Other divisions will stop producing and selling the product at the end of year 3.

The participants are asked to evaluate the project at the end of the first year using a 4-point response scale. Harrell and Harrison (1993, 1994) use a 10-point response scale. The use of a 4-point scale is to force the participants to make a more focused decision between termination and continuation rather than the participants make an arbitrary decision between the two extreme ends. The 4-point response scale is labeled *definitely continue*, *probably continue*, *probably terminate*, and *definitely terminate*.

The participants are also asked whether their response would be different if reward and punishment are related to the success of the project, such that the project manager will get a reward if the project turns out to be profitable and will get a punishment if the project turns out to be unprofitable. The project is said to be profitable if the new product can actually contribute positive net cash flows exceeding the cost of the project. The participants are asked to revise their response after the compensation is introduced.

To provide valid response, the participants are asked validation check question. The validation check question asks how much the company loss would be if the project is terminated at the end of the first year.

RESEARCH DESIGN

This experimental study uses a 2x2 experimental design. Table 1 shows the research design used in this experiment. The two variables manipulated are: (1) incentives to shirk, and (2) privately held information.

Table 1 . (2 x 2 experimental design)

		Privately held information	
		No	Yes
Incentives to shirk	No	Group One	Group Two
	Yes	Group Three	Group Four

The participants are randomly assigned to one of the four groups. Four types of questionnaires are assigned to participants in four groups (type A for group One, type B for group Two, type C for group Three, and type D for group Four). Participants in group One and group Three are given information that the new information about the revised probability of success is known to the project manager and his/her team and to other parties as well (including the R&D manager). This information is expected to eliminate the information asymmetry.

Participants in group Two and Four are informed that the new information about the revised probability of the success is only known to the project manager and his/her team. This information is expected to create an information asymmetry between the project manager and the R&D manager (and the company).

The participants in group One and Two are told that the project manager is hired on a long-term contract and the result of the project will not affect the contract. This information is expected to eliminate the incentive to shirk. The participants in group Three and Four are told that the project manager is hired just for this project and the company will or will not rehire the manager and being associated with a project termination will hurt the manager's reputation in the labor market. This information is expected to create an incentive to shirk.

In this experiment, the decisions of the participants in Group One, Group Two, Group Three, and Group Four are compared. The Group Four participants are expected to exhibit a greater tendency to continue the project than will the other three groups. The decision made by the participants of Group One, Group Two, and Group Three are not expected to differ significantly. Analysis of variance is used to examine this issue.

The participants are also asked to provide background information about age, work experience, sex, undergraduate background, and marital status. This information is used to provide additional information about factors that could increase the tendency to shirk.

Data

Out of the 138 responses, 36 (26%) are from type A questionnaire (Group One), 39 (28%) responses are from type B questionnaire (Group Two), 31 (23%) responses are from type C questionnaire (Group Three), and 32 (23%) responses are from type D questionnaire (Group Four). Overall, 47 % of the respondents are less than 30 years old, 41% of the respondents are between 30 to 40 years old, and only 12% of the respondents are above 40 years old.

Regarding the experiences, 46% have just started working (less than 5 years), 25% have worked from 5 to 10 years, and 29% have worked longer than 10 years. Seventy-seven percents (77%) of the respondents are males. Forty-nine percents (49%) of the respondents have background in the undergraduate in business (management, accounting, or economics). Fifty percents (50%) of the respondents are married. The complete data are shown in table 2.

Before compensation is introduced (see table 3), in Group One, 10 (28%) of the respondents are willing to definitely terminate the project, while 14 (39%) of respondents choose probably terminate, 10 (28%) of respondents choose probably continue, and only 2 (7%) choose to definitely continue.

In Group Two, 10 (26%) of the respondents are willing to definitely terminate the project, while 15 (38%) of respondents choose probably terminate, 9 (23%) of respondents choose probably continue, and only 5 (13%) choose to definitely continue.

Table 2. Data of Respondents

Ages	Group One	Group Two	Group Three	Group Four	Total
< 30 years	17	19	17	11	64
30-40 years	14	18	10	15	57
40-50 years	5	2	4	6	17
Total	36	39	31	32	138

Experience	Group One	Group Two	Group Three	Group Four	Total
< 5 years	16	18	18	11	63
5-10 years	10	12	5	8	35
> 10 years	10	9	8	13	40
Total	36	39	31	32	138

Sex	Group One	Group Two	Group Three	Group Four	Total
Male	26	31	23	27	107
Female	10	8	8	5	31
Total	36	39	31	32	138

Background	Group One	Group Two	Group Three	Group Four	Total
Business	19	21	15	13	68
Others	17	18	16	19	70
Total	36	39	31	32	138

Marital Status	Group One	Group Two	Group Three	Group Four	Total
Married	18	17	14	20	69
Single	18	22	17	12	69
Total	36	39	31	32	138

Table 3. Data of Decisions (without compensation)

Decision	Group One	Group Two	Group Three	Group Four	Total
Definitely Terminate	10	10	10	8	38
Probably Terminate	14	15	10	9	48
Probably Continue	10	9	6	1	35
Definitely Continue	2	5	5	5	17
Total	36	39	31	32	138

In Group Three, 10 (32%) of the respondents are willing to definitely terminate the project, while 10 (32%) of respondents choose probably terminate, 6 (19%) of respondents choose probably continue, and only 5 (17%) choose to definitely continue.

In Group Four, 8 (25%) of the respondents are willing to definitely terminate the project, while 9 (28%) of respondents choose probably terminate, 31 (22%) of respondents choose probably continue, and only 5 (16%) choose to definitely continue.

When compensation is induced (see table 4), the responses in each type are as follows. In Group One, 11 (30%) of the respondents are willing to definitely terminate the project, while 6 (17%) of respondents choose probably terminate, 15 (42%) of respondents choose probably continue, and only 4 (11%) choose to definitely continue.

In Group Two, 11 (28%) of the respondents are willing to definitely terminate the project, while 10 (26%) of respondents choose probably terminate, 10 (26%) of respondents choose probably continue, and 8 (20%) choose to definitely continue.

In Group Three, 4 (13%) of the respondents are willing to definitely terminate the project, while 9 (29%) of respondents choose probably terminate, 12 (39%) of respondents choose probably continue, and only 6 (19%) choose to definitely continue.

In Group Two, 11 (28%) of the respondents are willing to definitely terminate the project, while 10 (26%) of respondents choose probably terminate, 10 (26%) of respondents choose probably continue, and 8 (20%) choose to definitely continue.

In Group Three, 4 (13%) of the respondents are willing to definitely terminate the project, while 9 (29%) of respondents choose probably terminate, 12 (39%) of respondents choose probably continue, and only 6 (19%) choose to definitely continue.

In Group Four, 6 (19%) of the respondents are willing to definitely terminate the project, while 9 (28%) of respondents choose probably terminate, 10 (31%) of respondents choose probably continue, and only 7 (22%) choose to definitely continue.

Table 4. Data of Decisions (with compensation)

Decision	Group One	Group Two	Group Three	Group Four	Total
Definitely Terminate	11	11	4	6	32
Probably Terminate	6	10	9	9	34
Probably Continue	15	10	12	10	47
Definitely Continue	4	8	6	7	25
Total	36	39	31	32	138

Analysis and Results

The first hypothesis states that managers who experience both information asymmetry and incentives to shirk will exhibit a greater tendency to continue an unprofitable project compared to other managers who experience only one or neither of these conditions. To provide the insight of the results, table 5 shows the mean and standard deviation of decision (before compensation is induced).

Table 5. Mean and Standard Deviation (in parenthesis) of Decision without Compensation

		Privately held information	
		No	*Yes*
Incentives to shirk	*No*	Group One 2.11 (.89)	Group Two 2.23 (.99)
	Yes	Group Three 2.19 (1.08)	Group Four 2.39 (1.04)

Notes: *p-value of differences among groups is >.05 (insignificant)*

From table 5, it is shown that mean of decision in group D (mean of 2.39) are the highest (showing a higher tendency to continue the project) among the four groups. As expected, Group A shows the lowest mean (2.11) indicating that a low tendency to continue the project. The mean of Group B and C are between the mean of Group A and Group D. To test the hypothesis, the ANOVA is used in this study. The statistics test shows that even though Group four shows higher tendency of continuing the project, it is not statistically significant. To provide more in-depth analysis, multiple regressions is used to test the effects of information asymmetry, incentives to shirk, ages, and sex on the continuing/terminating decision. The result of the regression model is shown in table 6.

The interaction between information asymmetry and incentives to shirk is not statistically significant. Therefore, the result cannot reject the first null hypothesis. However, the ages become one factor that influences the decision to terminate the unprofitable project.

Table 7 shows the comparisons of decisions classified by ages.

Table 6. Effects of information asymmetry, incentives to shirk, ages, and sex on the decision.

	Coefficient	*Standard Error*	*t value*	*Sig.*
Intercept	2.60	.290	8.96	.000
Ages	-.25	.125	-2.00	.047
Sex	-.01	.204	-.49	.627
Information Asymmetry	.10	.229	.44	.659
Incentive to Shirk	.06	.242	.26	.795
Interaction of Information Asymmetry and Incentive to Shirk	.16	.340	.46	.647

Table 7.

Comparisons of Decisions by Ages

AGE		without compensation	with compensation
< 30 years old	Mean	2.34	2.61
	N	64	64
	Std. Deviation	.93	1.03
30-40 years old	Mean	2.23	2.42
	N	57	57
	Std. Deviation	1.02	1.02
>40 years old	Mean	1.76	2.12
	N	17	17
	Std. Deviation	1.03	1.11
Total	Mean	2.22	2.47
	N	138	138
	Std. Deviation	.99	1.04

The results show that older participants tend to terminate the unprofitable project while the younger participants tend to continue the project. When the differences in the mean among the three group are tested using the ANOVA, it is significant at the 5% (consistent with the result in table 7).

Hypothesis 2 states that compensation is effective in reducing the escalation effort. It is expected that when compensation is induced, the participants tend to alter their decisions so that their tendency to continue the unprofitable project is low. Table 8 shows that the mean of decision overall increases after the compensation is induced. The increase indicates that participants have bigger motivation to continue the unprofitable project which is in contrast with the theory. Therefore, the result cannot reject the second null hypothesis. The explanations of these results are as follows. When the compensation is introduced, participants are not willing to give it up without trying harder to prove that they are capable to reverse the situation. Therefore, more participants are willing to continue the project even though they know that it is not profitable. The paired-sample t test shows that the differences in decisions between without and with compensation are statistically significant at 0.001 levels.

Table 8. Mean and Standard Deviation (in parenthesis) of Decision with Compensation

		Privately held information	
		No	*Yes*
Incentives to shirk	*No*	2.33 (1.04)	2.38 (1.11)
	Yes	2.65 (.95)	2.56 (1.05)

Notes: *p-value of differences among groups is >.05 (insignificant)*

This study also compares the decisions using work experiences, sex, undergraduate background, and marital status. The results show that, consistent with ages, managers who have more experience show lower tendency to continue the unprofitable projects (see table 9). Also, female has a greater tendency to continue the unprofitable project (see table 10). Students with business undergraduate background shows higher tendency to shirk (see table 11). Finally, un-married persons show higher tendency to continue unprofitable projects (see table 12).

Table 9

Comparisons of Decisions by Work Experiences

WORK		without compensation	with compensation
0 - 5 years	Mean	2.33	2.60
	N	63	63
	Std. Deviation	.95	1.06
5 - 10 years	Mean	2.23	2.40
	N	35	35
	Std. Deviation	1.06	1.01
> 10 years	Mean	2.05	2.33
	N	40	40
	Std. Deviation	.99	1.05
Total	Mean	2.22	2.47
	N	138	138
	Std. Deviation	.99	1.04

Table 10

Comparisons of Decisions by Sex

SEX		without compensation	with compensation
Female	Mean	2.32	2.52
	N	31	31
	Std. Deviation	.65	.81
Male	Mean	2.20	2.46
	N	107	107
	Std. Deviation	1.07	1.10
Total	Mean	2.22	2.47
	N	138	138
	Std. Deviation	.99	1.04

Table 11

Comparisons of Decisions by Undergraduate Background

Fields		without compensation	with compensation
Non-Business	Mean	2.17	2.46
	N	70	70
	Std. Deviation	1.04	1.10
Business	Mean	2.28	2.49
	N	68	68
	Std. Deviation	.94	.98
Total	Mean	2.22	2.47
	N	138	138
	Std. Deviation	.99	1.04

Table 12

Comparisons of Decisions by Marital Status

Marital Status		without compensation	with compensation
Un-married	Mean	2.33	2.62
	N	69	69
	Std. Deviation	.89	1.00
Married	Mean	2.12	2.32
	N	69	69
	Std. Deviation	1.08	1.06
Total	Mean	2.22	2.47
	N	138	138
	Std. Deviation	.99	1.04

Summary and Conclusion

The agency theory suggests that project managers who have private information and incentives to shirk will take a dysfunctional action such as continuing an unprofitable project. Harrell and Harrison (1994) have examined this issue using one experimental setting. They found that projects managers who experienced both private information and incentives to shirk exhibited a greater tendency to continue the unprofitable project than did the managers who experienced only incentives to shirk or private information or neither.

This issue should be examined widely in different setting/scenario and in different samples. This study attempts to examine the issue. Whether the results will be the same or different in different setting and different groups of samples are still an empirical issue. This study uses 138 students from the Magister Management of Gadjah Mada University students at Jakarta. These students are all working or have worked before they come to school. These criteria are important because the experiment requires students have experiences in making decisions.

The results of the study do not fully support the Harrell and Harrison's conclusion. It is found that project managers who experienced both private information and incentives to shirk exhibits a greater tendency to continue the unprofitable project, but it is not statistically significant. This result should be taken with cautious. First, the samples used are not real project managers but students who are currently working or have worked before. The implications of using this sample result in the second and third disadvantages. Secondly, the participants may ignore the manipulated variables. The distributions of the decision are almost identical in all four groups. Thirdly, the setting is so simple that participants may have to use their own assumptions and interpretations.

The results of the study also find that, contrary to the expectation, compensation (reward and penalty) increases the participants' tendency to continue the unprofitable projects. Several suggestions (Baiman, 1982; Harrell and Harrison, 1994) provide a logical explanation that the shirking behavior will be less when compensation is considered. When the compensation is introduced, all managers increase their tendency to continue the project. They may have thought that if they stop the projects they do not get anything. Maybe, the compensation should include rewards if they terminate unprofitable projects.

Additionally, the study also find that female, younger persons, relatively less experience persons, participants having business undergraduate background, and un-married persons have higher tendency to continue the unprofitable projects. These findings may support the idea that risk is a major factor that influences the behavior of people.

Future research should be taken to examine the inconsistency of these results with prior studies. The more powerful setting should be developed in order to gain a better result. Also, using real project managers is an advantage. Future research should also measure risk preference of the participants and incorporate risk in the analysis. The interaction of private information, incentive to shirk, and riskier persons will have a strong effect on decision to continuing the unprofitable project. Another variable to be considered is locus of control. People having internal locus of control may tend to continue the unprofitable projects since they think that they are capable to alter the conditions.

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SAMPLE OF THE QUESTIONNAIRE

Continue or Terminate?

Put yourself in the role of a project manager in charge of developing a new product. You are responsible to the R&D division manager. As a project manager, you are in charge of developing a new product. The project was originally sponsored by you in the beginning of the first year of the project and was expected to be completed in two years. The expected costs of the project for the first year and the second year respectively were Rp20 million and Rp80 million.

If the project is successful, the company will be able to produce and sell the product. The product is independent of the firm's other products. Its success or failure will have no impact on the sale of the company's other products. Upon the completion of the project, the product will be manufactured and sold in the third year. The product's life cycle is only 1 year. The estimated net cash flow for the product in the third year is Rp155 million based on the following calculations:

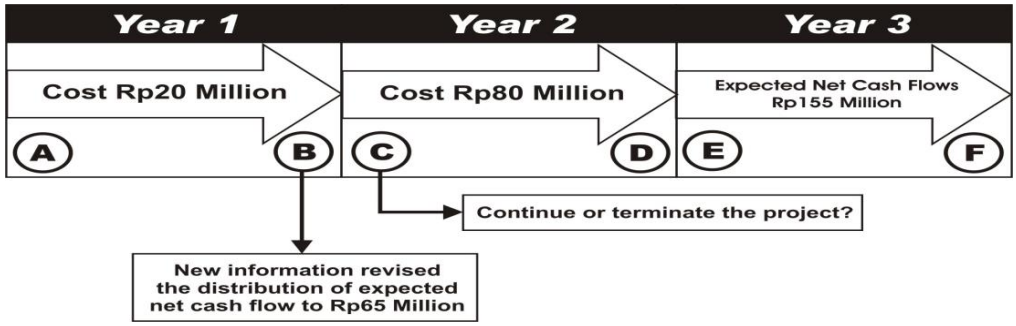
	Probability	**Profit**	**Estimated cash flow (probability x profit)**
Success	70%	Rp200 million	70% x Rp200 million = Rp140 million
Failure	30%	Rp50 million	30% x Rp50 million = Rp15 million
Estimated cash flow at the beginning of project			Rp155 million

At the end of the first year, new information related to the successfulness of the product is discovered. Based on the new information, the distribution of probability of success is revised as calculated below:

	Probability	**Profit**	**Estimated cash flow (probability x profit)**
Success	10%	Rp200 million	10% x Rp200 million = Rp20 million
Failure	90%	Rp50 million	90% x Rp50 million = Rp45 million
Estimated cash flow at the beginning of project			Rp65 million

It is highly probable that your superior (R&D Manager) does not possess this new information.

The whole condition is illustrated as follows:



Description:

A: The project is commenced at the beginning of year 1

B: New information regarding the product's probability of success are discovered at the end of year 1

C: <u>You are required to make the decision to continue or terminate the project</u>

D: If you decide to continue, the project will be completed at the end of year 2

E: The Company will manufacture and sell the product upon the completion of the project (beginning of year 3)

F: The company will stop producing and selling the product at the end of year 3

What you also need to know in relation with your decision is that that you are being hired only for this project. <u>The outcome of this project will affect your reputation in obtaining future contracts</u>.

Questions: (please circle your chosen answer)

1. According to the information above, if the project is terminated at the end of year 1, how much **loss** has been suffered by the firm?
   A. Rp0 D. Rp100 million
   B. Rp20 million E. Rp35 million
   C. Rp80 million F. Profit Rp65 million
2. Your decision regarding the project:
   A. Definitely terminate B. Probably terminate C. Probably continue D. Definitely continue
3. If your compensation is highly dependant on the outcome of the project (if profitable you will receive a bonus and if unprofitable you will receive a penalty), what will your decision be?
   A. Definitely terminate B. Probably terminate C. Probably continue D. Definitely continue

Personal information:

1. Age: A. <30 years old B. 30-40 years old C. >40 years old
2. How long have you been working?
   A. Not working C. <10 years
   B. <5 years D. >10 years
3. Sex: A. Male B. Female
4. Your position within the company: _____
5. Field of study for S1 degree: _____
6. Marital status: A. Single B. Married

Thank you for your participation