

The effect of information and types of responsibility on managers' project evaluation judgments

1. Introduction

Numerous studies (e.g. Kanodia, Bushman and Dickhaut 1989; Harrison and Harrell 1993; Harrell and Harrison 1994; Rutledge and Harrell 1994; Harrison et al. 1999; Ruchala 1999; Chong and Syaifuddin 2007) investigate why managers escalate their commitment to projects which are likely to be unprofitable in the future. Many factors have been found to influence managers' escalation behaviours. These factors include a desire to avoid wastefulness (Arkes and Blumer 1985), need to demonstrate consistency (Staw 1981), private information and potential for personal gain (Harrison and Harrell 1993; Harrell and Harrison 1994), national culture (Harrison, Chow, Wu and Harrell 1999), social influence pressures (Chong and Syaifuddin 2007), and personal responsibility (Staw, 1976; Staw and Fox, 1977; Rutledge and Harrell, 1994; Schulz and Cheng, 2002). The majority of these studies, however, have focused primary on *individual* decision making. A frequent critique of individual-based decision is that the findings of the impact of individual decision making processes on managers' escalating behaviour may not be applicable in today's business environment that is increasingly dominated by team or group-based decision. Since there has been an increasing use of teams or groups in organization, it is therefore important if the finding of prior studies that were conducted at the individual level would still hold in group situations.

Prior studies suggest that personal responsibility is an important antecedent to escalation of commitment (Staw 1976; Staw and Fox 1977; Rutledge and Harrell 1994; Schulz and Cheng 2002). It was found that managers with high personal responsibility for an investment project are

more likely to continue a failing project than managers with low personal. This is consistent with the self-justification theory which posits that managers are more likely to commit additional resources to failing projects so that they can self-justify their initial investment decisions (Staw and Fox 1977; Staw and Ross 1987). These studies have focused primary on sole responsibility. That is, the person who makes the investment decision is responsible for the entire outcome.

Numerous studies (Bazerman, Guiliano and Appelman 1984; Whyte 1991; Whyte 1993; Rutledge 1995; Ruchala, Hill and Dalton 1996; Citera, Isaacs and Berrill-Ross 1999) have attempted to find out whether there is a difference in managers' escalation behaviour in the group context where the responsibility of the project's outcome is shared among the group members (i.e. joint responsibility). The results of these studies are mixed. Some research suggests that managers who share the responsibility with other members tend to have a higher tendency to continue a failing project than ones who are solely responsible for the entire outcome (e.g., Whyte 1993; Ruchala, Hill and Dalton 1996), while other studies found that managers who jointly share the responsibility with other members do not exhibit a higher tendency to continue a failing project (e.g., Leatherwood and Conlon 1987; Whyte 1991).¹

The inconsistent results of these prior studies were possibly due to the different theories (i.e., self-justification theory or prospect theory) used to explain the escalation of commitment. Brockner

¹ Whyte (1993), who relied on prospect theory, found that groups tend to escalate commitment toward a chosen course of action to an even greater degree than individuals due to group polarization. *Group polarization* occurs when the group's decision exacerbates the initial decisions of individual members, resulting in an evaluation that is more extreme than the average of individual decisions. Ruchala et al. (1996) argued that the diffusion of responsibility makes it more difficult for the firm to assess the blame for a failed decision. Managers with joint responsibility for the project will experience less difficulty to escape blame for escalation than the managers with sole responsibility, and hence a higher tendency to escalate will be seen in groups. On the other hand, Leatherwood and Conlon (1987) and Whyte (1991) argued the self-justification theory may be of diminished relevance in the group contexts. They found that members in groups diffuse the responsibility and are likely to feel less responsible for decision outcomes. If they feel less responsible, they may be less likely to demonstrate escalating behaviors in reaction to negative information than individual.

(1992) suggested that no one particular theory to-date provides a complete explanation to escalation of commitment. While self-justification theory offers only a partial explanation of escalating commitment, and prospect theory cannot completely replace the self-justification theory, our study attempts to provide a more complete explanation of the effect of sole and joint responsibility on escalation of commitment by using agency theory as an alternative theory.

This paper is organized as follows. In the next section, the theoretical framework underlying the study is developed. Subsequent sections address the research method, results, discussions and conclusions, findings of the study and limitations and suggestions for future research.

2. Hypotheses Development

2.1 The effect of information availability

Agency theory has been widely adopted in many experimental studies to explain managers' irrational escalation behaviour in recent years (Kanodia, Bushman and Dickhaut 1989; Harrison and Harrell 1993; Harrell and Harrison 1994; Harrison et al. 1999; Rutledge and Karim 1999; Booth and Schulz 2004; Chong and Syaifuddin 2007). In many instances, an agent (e.g. project managers) is delegated by his/her principal (e.g. firm's senior executives or senior managers) to make decisions on certain tasks (e.g. make investment on a project). Agency theory assumes that the agent is motivated solely by his/her self-interest. The agent's interest, however, may not be in line with the principal's interest (e.g. profit maximisation) when there is a conflict between the agent's and the principal's interest (Jensen and Meckling 1976; Eisenhardt 1989; Kanodia, Bushman and Dickhaut 1989). That is, the agent may maximise his/her own economic interests rather than the principal's interest. This conflict is considered an incentive to shirk (e.g. potential

for personal gain) and it motivates the agent to make decisions that are not in the best interest of the firm (Jensen and Meckling 1976; Eisenhardt 1989; Kanodia, Bushman and Dickhaut 1989).

The agency theory also posits that the agents would only exploit this incentive to shirk when they also possess relevant information that is not available to their principals (i.e. information asymmetry). The theory suggests that, if the information about their activities is publicly available (i.e. information symmetry), the agent would not exercise their incentive to shirk and he/she will act in the principal's interest because the principal will be able to detect any irrational activities in such situation. The agent also understands that exercising his/her incentive to shirk would only result in further negative consequences to his/her career. Alternatively, if the information about the agent activities is only privately available to the agent him/herself, the agent will tend to act in his/her own economic interest and disregard the interest of the firm because he/she knows that the firm will have insufficient information to detect this kind of irrational activities. When both an incentive to shirk and information asymmetry conditions exist (i.e. when the agent is motivated to misrepresent private information in order to implement a decision that conflicts with the overall interests of the firm), an adverse selection problem is said to arise (Eisenhardt 1989).

A decision that is not in the best interest of firm would be considered irrational from the firm's perspective. However, this decision would be considered highly rational from the agent's perspective when the adverse selection problem is present since any potential damage on the agent's future reputation can be avoided by acting opportunistically (Kanodia et al. 1989). In Kanodia et al.'s (1989) study, they examined the problem of adverse selection in a project evaluation context. They argued that private information contain a reputation value (e.g. higher expected wages) and managers will exploit the advantage of this information asymmetry by escalating their commitment to a failing project in order to maximise their reputation value. Later studies by Harrison and Harrell (1993) and Harrell and Harrison (1994) found further evidence to

support Kanodia et al's (1989) theory that managers tend to continue a failing project when the information about the failing project is only privately available to them even though such decision is not in the firm's interest. The reason behind this is that the managers can avoid or suspend any realisation of detriment to their future career without being detected by others. On the contrary, the managers tend to discontinue a failing project if the information about the failing project is publicly available. Since others have known that the project is unprofitable, it will be a wise decision for the project manager to discontinue the project so that further damage to their reputation or career can be prevented.

In summary, prior studies suggest that the information availability is an important determinant of project managers' escalation tendency. Thus, it is hypothesised that project managers are more likely to commit to a failing course of action under private information condition rather than under public information condition.

H1: project manager will exhibit a greater tendency to continue a failing project under conditions of private information rather than public information.

2.2 *The effect of sole and joint responsibility*

Personal responsibility has been suggested to be one of the important variables of managers' escalating behaviours (Staw 1976; Staw and Fox 1977; Arkes and Blumer 1985; Rutledge and Harrell 1994; O'Connor 1997; Schulz and Cheng 2002). The underlying theory of these studies is that managers who initiated a project are assumed to bear a higher level of responsibility than those who did not, and the self-justification theory posits that managers often discount negative feedback information, escalating their commitment to a failing project, in order to self-justify their initial investment decisions (Staw and Fox 1977; Staw and Ross 1987) and to justify their decisions to others and avoid blame by others (Staw and Fox 1977; Staw and Ross 1987).

The majority of the studies on the escalation of commitment were focused on individual-level (i.e. investigate individual manager's escalating behaviour). Very limited research was done to investigate if there is a difference on escalating behaviour between individuals and groups. To date, only a few of research (Bazerman, Guiliano and Appelman 1984; Whyte 1993; Rutledge 1995; Ruchala, Hill and Dalton 1996; Citera, Isaacs and Berrill-Ross 1999) has attempted to examine group decisions. However, the results of these studies were mixed.

Relying on self-justification theory, it is predicted the ability to diffuse responsibility leads to lower tendency of escalation of commitment because members in groups tend to feel less personal responsibility for the decision than if they had made the decision alone (Leatherwood and Conlon, 1987; Whyte, 1991). Furthermore, while self-justification theory posits that managers tend to overly commit to a failing course of action so as to justify their previous mistake and protect their self-esteem, this need for self-justification may be diminished in the group situation. A plausible explanation for this is that since a group decision may allow blame for the poor decisions to be shared, group members are expected to experience not as much of need to be correct or accurate in decision making as individuals do. This is because individuals do not have the choice to blame others for any poor decisions, they are expected to experience a higher pressure to justify their actions to prove themselves and others that they are indeed competent and rational (Staw 1980).

However, differ from Leatherwood and Conlon (1987) and Whyte (1991), Ruchala, Hill and Dalton (1996) examined the sole and joint responsibility effect on escalation of commitment in the commercial lending context and they provided an alternative interpretation of the diffusion of responsibility. They proposed that the share responsibility mitigates the ability to assess blame for a failed decision and people with sole responsibility therefore have more difficulty to escape

blame for escalation. If a loan officer with diffused responsibility escalates, there is less of a self-serving appearance associated with escalation than with a loan officer having sole responsibility. Sole responsibility for initiating the loan relationship increases the likelihood of blame if the officer is caught escalating and therefore decreases escalation. They concluded that the loan officers with diffused responsibility for their actions (i.e. joint responsibility) would exhibit a higher escalation tendency than the loan officers with sole responsibility.

When the project future viability is framed to be unprofitable, managers are left with the choices of either discontinuing the project or injecting further investment in the project and hope it will turn around. In this situation, prospect theory suggests that managers tend to become more risk seeking and demonstrate a higher escalation tendency. Apart from the evidence found for the diffusion of responsibility effect, Whyte (1993) also proposed that, under prospect theory, group members are more likely to escalate their commitment to an unprofitable project than individuals possibly due to group polarisation. Evidence has been found that team decisions tend to be more extreme than the average of individual decisions (Liden et al., 1999; Tindale, 1993; Whyte, 1993; Zaleska and Kogan, 1971). Besides, the pressure for uniformity (Janis, 1972; Kameda and Sugimori, 1993; Turner and Horvitz, 2001), a desire to maintain unity and to preserve a positive image of the group, protecting its identity (Turner and Horvitz, 2001), to avoid “losing face” and to sustain group harmony (Kameda and Sugimori, 1993) have also been proposed to be the forces within the team that may act oppositely to the effects of diffused responsibility suggested by Whyte (1991).

In summary, despite the mixed evidence found for the effect of sole and joint responsibility in escalation of commitment literature, majority of the research suggests that managers who have joint responsibility for their decision tend to demonstrate a greater degree of escalation behaviour than those with sole responsibility. More specifically, although Leatherwood and Conlon (1987)

and Whyte (1991) suggested that managers with sole responsibility for a project are more likely to escalate than managers with joint responsibility due to the ability to diffuse the blame to other group members, the study by Ruchala, Hill and Dalton (1996) argued that the ability to diffuse the blame would actually induce a higher level of escalating behaviour in group situations than in individual situations. In addition, it has been suggested that many other factors within the team that could increase the likelihood of escalation in groups. These factors include conformity pressure (Chong and Syaifuddin, 2007; Turner and Horvitz, 2001; Kameda and Sugimori, 1993; Janis, 1972), to avoid “losing face” and to sustain group harmony (Kameda and Sugimori, 1993), and collusion among team members (Zhang, 2008).

Therefore, it is hypothesised that project managers who share the responsibility for the project’s outcome with other group members are more likely to commit to a failing course of action than those who are solely responsible.

H2: Managers with joint responsibility for a project’s outcome are more likely to escalate their commitment to a failing project than the managers with sole responsibility.

2.3 The interaction of information asymmetry and type of personal responsibility

While agency theory posits that managers (i.e. the agents) are self-interested and they will act in their own interest rather than the firm’s interest if a conflict between the two interests exist. Prior research also found that managers who have the information about their project/activities that is only available to the managers themselves (i.e. information asymmetry) tend to exhibit a greater degree of escalation behaviour than those in the situation where the information is publicly available. This study is going to extend the escalation of commitment in individual under the agency theory perspective into the group level analysis.

Figure 1 below presents the two-way interaction of information availability and types of personal responsibility. Agency theory posits that managers (the agents) would not act opportunistically (i.e. managers will make decisions that are seen as rational from the firm's perspective) when the information about their activities is publicly available even though there is an incentive for them to shirk. This is because any irrational decision made can be easily detected from other people (e.g. senior executives) and it will increase further damages to their reputation and future career if they get caught. Accordingly, managers are expected to discontinue a failing project under the condition of public information regardless of the type of the responsibility (i.e. sole or joint) they hold, and the results of Cell 1 and Cell 2 are predicted to be similar and both subjects in these two cells will not escalate their commitment to a failing project.

[Insert Figure 1 Here]

On the other hand, when the manager's interest and the firm's interest are in conflict and the manager is confronted with some private information about his/her activities, agency theory presumes that the manager will act in his/her own economic interest rather than in the firm's interest. This is because, under agency theory, the agents are motivated by their self-interest and they perceive this action as rational from their point of view since they can maximise their own economic interest without being caught by the others for their poor decision. Previous research (Kanodia, Bushman and Dickhaut 1989; Harrison and Harrell 1993; Harrell and Harrison 1994) further suggested that managers tend to escalate their commitment only when they hold some private information about the failing project. Hence, it is expected that both the mean scores of Cells 3 and 4 (i.e. under private information condition) will be significantly lower than the mean scores of Cells 1 and 2 (i.e. under public information condition) and will express an escalating behaviour.

As discussed in Hypothesis 2 above, managers who jointly share the responsibility for the project with other members in group are more likely to express the escalation behaviour than individuals with sole responsibility possibly because of the ability to diffuse responsibility and blame, group polarisation, and other forces such as conformity pressure, to avoid “losing face”, to sustain group harmony, and collusion among team members within the team. Therefore, when everything is being equal, the mean scores of Cells 2 and 4 (i.e. under joint responsibility condition) are expected to be lower than the mean scores of Cell 1 and 3 (i.e. under sole responsibility condition) respectively. That is, a higher likelihood of escalation of commitment is expected under the joint responsibility treatment. However, when the effect of information availability is taken into consideration, this study expects that this effect of sole and joint responsibility will only hold under the condition of private information. In other words, this study expects that the mean score of Cell 4 (joint responsibility) will be lower than the mean score of Cell 3 (sole responsibility) there will be not much difference between the mean scores of Cell 1 and Cell 2 as they are under the public information condition which the managers tend not to escalate.

H3: Managers with joint responsibility for a project’s outcome are more likely to escalate their commitment to failing project than the managers with sole responsibility only under the condition of private information.

3. Research Method

3.1 Participants

The participants consist of 57 undergraduate students who enrolled in management accounting course at the University of Western Australia. In the management accounting course, these students were taught about the concepts and issues relating to capital budgeting and various

evaluation techniques.² The age of participants ranges from 17 to 33 (mean = 19.42 years old). The sample consists of 26 males and 31 females. Ashton and Krames (1980) suggested that undergraduate students are justifiable surrogate for managers.

3.2 Case Study

The decision scenario administered in the case study is adopted and modified from Harrell and Harrison (1994). All participants assume the role of a junior project manager at the 'XYZ Company'. They are asked to make a decision related to continuity or discontinuity of a project which they have initiated and currently managed. The project, namely Project X, has a seven-year lifetime and it is at the end of the fourth year where the project manager is asked to make a decision. Information about historical and expected future performance of the Project X is provided. For instance, the expected project's net cash inflow originally is \$270,000 each year. During the past four years, the actual net down cash inflow was \$320,000 above the expected net cash inflow. However, the most recent projections indicate that project X's expected net cash inflow would drop sharply to be only \$50,000 each year for the remaining three-year lifetime. The net present value (NPV) for this remaining three year expected net cash inflow would be \$144327 while if this project is terminated, its current salvage value in the remaining three years in the project is terminated, its current salvage value in the remaining three years in the projects lifetime would be \$177,500. Therefore, the best decision from the firm's perspective would be to terminate Project X since its NPV is below its current salvage value.

In addition, apart from Project X's historical and future performance data, participants are also provided with information about the XYZ's policy of delegation of responsibility that they need

² Ashton and Kramar (1980) and Clinton (1999) noted that students are justifiable surrogates for managers. Prior studies (e.g. Harrell and Harrison, 1994; Schulz and Cheng, 2002) suggested that students who have just studied the normative decision making (e.g. capital budgeting analysis) are considered as having sufficient background knowledge for project evaluation decision task described in this study.

to consider in their decision-making processes. The policy suggests the extent (e.g. solely and jointly) that project managers are held responsible for the success or failure of Project X.

3.3 Treatment

Participants are randomly assignment to one of the four treatments (see Figure 1). These are generated by crossing two levels of information (public and private) and type of personal responsibility (sole and joint). Participants assume the role of junior project managers with a growing reputation as a talented project manager. This has resulted in a competing firm, The Fortune Cookies Company or The Lucky Biscuit Company, to initiate recruitment discussion for a better position with a substantially higher salary. If the unprofitability of a project is known public, then it would damage the individual's reputation, job security and marketability. This may cause the competing firm to stop the recruitment discussion.

Participants in the public information condition are told that the information about Project X's unprofitable future performance is already known to others in the firm and industry including the 'XYZ Company'. Participants in the private information condition are told that information about the project unprofitable future economic viability is known only to them as project manager and would not be known to others including the 'XYZ Company' until the project's completing in the next three years.

Participants in the sole responsibility condition are told that they are held solely responsible for the Project X and they will be praised for the success and blamed for the failure of Project X. Participants in the joint responsibility condition are told that they are working with another participant as a team and they are both held jointly responsible for the success or failure of Project X. The team will be praised for the success and blamed for the failure of Project X. Participants who were assigned to the sole responsibility condition were asked to make a managerial decision

regarding the project's continuity based on the scenario available in the case study individually. Participants who were assigned to the joint responsibility condition were asked to discuss the scenario available in the case study with a team member and make a consented decision regarding the project's continuity together.

The participants are asked to respond to two manipulation checks questions. First, they are asked whether the project's performance evaluation information is known only to them as project manager or widely known to others in their firm or industry. Second, they are asked whether they are held solely or jointly responsible for the Project X. Before leaving the experiment session, all participants provided their demographic information and were compensated with A\$15 Australian dollar for their participation in the experiment.

3.4 Dependent Variable

The dependent variable used in the case study is the participants' preference for continuing or discontinuing an unprofitable project. The decision to continue or discontinue the project is indicated on a 10-point Likert scale numbered from 1 to 10. The scale is divided at its mid-point (5.5) and labeled so that a choice of 1-5 indicated a continuance decision and a choice of 6-10 indicated a discontinuance decision. The end points are anchored for 'definitely' continue or discontinue. Thus, the larger the numerical response indicated by a subject the greater the tendency to terminate the project (with scores of 5 or less against the normatively correct decision and scores of 6 or more in accord with the normatively correct decision).

3.5 Independent Variables

The two independent variables are information availability (public information/private information) and types of responsibility (sole/joint). The information availability manipulation mirror that used by Harrell and Harrison (1994), Rutledge and Karim (1999) and Booth and

Schulz (2004). In the public information condition the project manager is cast as a junior projects manager with a growing reputation for completing profitable projects. The manager has recently received an informal job offer with another company for a promotion and substantial salary increase, but this offer would be withdrawn if the manager had a failed project. In addition, it is stated that information about the project's unprofitable future performance is widely known to others in the firm and industry, indicating that the manager had no information asymmetry advantage. Thus, there is no opportunity to act against the interest of the firm. The private information condition manipulated both the incentive and opportunity to act in the manager's self-interest. It is stated that the poor performance of the project is known only to the project manager and would not become known by others until the projects completion in 3 years time. The other independent variable responsibility is manipulated by the way discussed earlier. The subjects are either: (1) solely responsible for the project's outcome (sole responsibility condition), or (2) sharing their responsibility for the project's outcome with other group members (jointly responsibility condition).

4. Results

Hypothesis 1 (H1) predicted that project managers under condition of private information will exhibit higher degrees of escalation of commitment than those under the condition of public information. Results from Table 1, Panel A present that mean scores of the participants' responses across information availability treatment. A lower mean value represents a greater tendency to continue the project. Specifically, a response of less than 5.5 indicates a decision to continue the project. As shown in Table 1, Panel A, subjects in the private information group (4.10) expressed a higher degree of escalation of commitment than subjects in the public information group (7.89). The result of the One-Way Analysis of Variance (ANOVA) test in

Table 1, Panel B shows that the mean responses between subjects in public and private information conditions are statistically significant ($F_{1,53} = 34.934, p < 0.001$). Therefore, H1 is supported. This finding is consistent to those of prior studies by Harrison and Harrell (1994), Harrell and Harrison (1993), Rutledge and Karim (1999), Booth and Schulz (2004) and Chong and Syarifuddin (2007). This result suggests that information asymmetry is an important variable to the escalation of commitment.

[Insert Table 1 Here]

Hypothesis 2 (H2) predicted that project managers with sole responsibility for the investment project will demonstrate a higher degree of escalation of commitment than managers with joint responsibility. The results presented in Table 2, Panel A show that the mean response given by the subjects who jointly share the responsibility for the investment project with other group members (5.32) is lower than the mean response given by the subjects bear the responsibility for the investment on their own (6.59). A One-Way ANOVA test (Table 2, Panel B) shows that the mean scores difference between these two groups is statistically significance ($F_{1, 53} = 4.097, p = 0.048$). Therefore, H2 is supported. This result reveals that project managers with sole responsibility for the investment project demonstrated a higher degree of escalation of commitment than managers with joint responsibility. Furthermore, this result indicates that the managers who jointly share the responsibility with other members are more likely to continue an unprofitable project than those who are solely responsible for the entire outcome.

[Insert Table 2 Here]

Hypothesis 3 (H3) predicted that project managers with joint responsibility for investment project

would express a higher tendency to escalate their commitment to a failing project than the managers with sole responsibility under the condition of private information. The ANOVA test in Table 3, Panel B indicates that the model as a whole is statistically significant ($F_{1, 53} = 2.868, p = 0.048, R \text{ Square} = 0.438$). In Table 3, Panel A, the results show that the mean of Cell 4 (2.86) which the subjects are in private information and joint responsibility treatment is lower than the mean of Cell 3 (5.27) which the subjects are in private information but sole responsibility treatment. Furthermore, the mean of Cells 1 (8.00) and 2 (7.79) are very close. A multiple comparison of mean responses testing (Post Hoc) within each Cell using Benferroni t -tests (Table 3, Panel C) was conducted and the results show that the mean difference between Cell 3 and Cell 4 is statistically significant at one tailed test ($p = 0.032$) and also the mean difference between Cell 1 and Cell 2 is insignificant ($p = 1.000$). These findings show that joint responsibility for the decision made has a significant effect on managers' escalation behaviour *only* when the information asymmetry condition exists. Therefore, H3 is supported.

[Insert Table 3 Here]

5. Discussions and Conclusions

The use of team or group is increasingly important in recent times. Since the majority of prior research on escalation of commitment was primarily focused on individual decision making, it is therefore important to know if the decision made by a group (where responsibility for the project can be shared among the group members) would be different from the decision made by an individual (where the manager is solely responsible for the project). Leatherwood and Conlon (1987) and Whyte (1991) proposed that the ability to diffuse the responsibility among the group

members would alleviate the need to self-justify their actions³ and thus managers who share the responsibility for the investment project with other members will express a lesser degree of escalation than managers with joint responsibility would.

On the other hand, Ruchala, Hill and Dalton (1996) argued that the diffusion of responsibility would limit the ability to assess blame for a failed project and the increased chances of escaping blame in groups would induce a higher escalation tendency among the group members. Whyte (1993) also supported the view that managers who jointly share the responsibility with other members will exhibit greater escalation tendency than managers with sole responsibility under prospect theory perspective. They suggested that team decisions tend to be more extreme than the average of individual decisions. In addition, other studies also argued that there are other forces within the team such as the pressure for uniformity (Janis, 1972; Kameda and Sugimori, 1993; Turner and Horvitz, 2001), a desire to maintain unity and to preserve a positive image of the group, protecting its identity (Turner and Horvitz, 2001), to avoid “losing face” and to sustain group harmony (Kameda and Sugimori, 1993) may act oppositely to the diffusion of responsibility effect suggested by Leatherwood and Conlon (1987) and Whyte (1991).

This study examines the impacts on sole and joint responsibility on managers’ project evaluation decision under the agency theory perspective. It re-examines the effect of information availability and proposes information asymmetry as an important factor that induces managers’ escalation behaviour. The present study then further extends the escalation of commitment in individual under the agency theory perspective into a group level analysis. It proposes that members in groups (i.e. joint responsibility) would demonstrate a higher tendency of escalating behaviour when making investment decision than the individuals (i.e. sole responsibility) would. Further, it

³ Self-justification theory posits that managers tend to overly commit to a failing course of action so as to justify their previous mistake and protect their self-esteem.

also hypothesises that the degree of this escalating behaviour in groups will be exacerbated under the condition of private information.

5.1 Findings of the study

5.1.1 The effect of Information Availability

The results of this study found that information availability has a significant effect on managers' escalation behaviour. Consistent with the findings in previous studies (e.g. Kanodia et al. 1989; Harrison and Harrell 1993; Harrell and Harrison 1994; Rutledge and Karim 1999; Booth and Schulz 2004), the results indicate that a statistically significant difference between the mean responses of managers with private information and those with public information. That is, consistent with agency theory, when an incentive to shirk exists, project managers tend to continue a project which is projected to become unprofitable under the condition of private information. This finding is consistent with theoretical expectation in Hypothesis 1.

5.1.2 The effect of Sole and Joint responsibility

It was predicted in the Hypothesis 2 that project managers who jointly share the responsibility for the investment project with other group members would exhibit a higher escalation of commitment tendency than those with sole responsibility. The results show that there is a statistically significant difference between the mean responses between managers with sole responsibility and managers with joint responsibility. The lower mean score resulted in the joint responsibility group indicates that members in the group where they share the responsibility for the investment project with other members have a greater degree of escalation than the individuals who bears all the responsibility. Thus, hypothesis 2 is supported.

5.1.3 The interaction of Sole and Joint Responsibility and Information Availability

Consistent with the theoretical prediction in Hypothesis 3, the results show that managers' escalation behaviour tendency is the highest under private information and joint responsibility treatment (refer to Table 3). There is a marginally significant difference between the managers with sole responsibility and a manager with joint responsibility when the information about the failing project is privately available. This gives further support to the findings in prior studies (e.g. Whyte 1993; Ruchala, Hill and Dalton 1996) that managers with joint responsibility for the investment project are more likely to escalate their commitment to a failing project than managers with sole responsibility.

It is also interesting to note that all the managers are unlikely to express an escalation of commitment if the information about the failing project is publicly available. Nonetheless, when that information is privately available to the project managers, both managers with sole responsibility and managers with joint responsibility were induced to escalate their commitment to a failing project (both mean responses are below 5.5). This finding suggests that the effect of sole and joint responsibility on managers' project evaluation judgments is primarily driven by the information asymmetry factor.

6. Limitations and suggestions for future research

This study's findings and implication must be considered within the context of its strengths and limitations. The research instrument was based on an existing instrument developed by Harrell and Harrison (1994), which provided further validity to this study. However, caution should be used in generalising the results of such experiments to other groups and other situations⁴. The

⁴ Swieringa and Weick (1982) argue that the generalisability of studies which examines predictions based on a theory should be determined by the generalisability of the theory. Those who accept this rationale may

usual caveats to controlled experiments apply to this study. This study examines the effect of information availability and the effect of sole and joint responsibility on managers' project evaluation decisions, a specialised decision making task was employed to gather the data⁵. Although the decision case appears to contain all the information needed for the required decision, it was, of course, simplified abstractions of the real-world situations they represented. The feeling of responsibility for a decision or a project would likely be stronger in real business situations than in the case materials. The group size of this study was limited to two members. This might have an impact on the final group decision as the degree of the effects such as conformity pressure, social influence pressure, and information availability level may vary according to the size of the group. Future research can examine the effect of sole and joint responsibility on managers' project evaluation decision in a larger group size.

Agency model has been criticised for its simplicity and narrowness (e.g. Noreen 1988; Indjejikian 1999). Future research should address more complex relationships involving multi-tasks, multi-principals and multi-agents. Further research can also examine cross border issues on escalation of commitment. Cross cultural research which examines the effect of social influence pressures on project managers who have different national culture may add further insight into this present study. Hofstede's (1980, 1984) national culture differences theory suggested that some countries have different power distance and individualism/collectivism concepts in their social life, perhaps project managers who are living in high power distance and low individualism society are more prominent to social influence. A logical extension would replicate the study using new cases in

argue the results of this study are generalisable to those circumstances where agency theory predicts the effects of an incentive to shirk and information asymmetry on managers' decisions. Many, however, may prefer a more conservative viewpoint.

⁵ The responses which the participants provided in completing the decision making experiment were based upon hypothetical circumstances and hence may be considered by some to be behavioural intentions, rather than "actual" decisions. Should this viewpoint be taken, it is important to note that significant body of evidence indicates that behavioural intentions provide an excellent indication of individuals' actual decisions or behaviour in similar circumstances.

countries with similar cultural profiles to those in this study.

Escalation of commitment literature has been primarily conducted under the private sector situation. While the ultimate goal of the organisations in the private sector is to profit maximisation, the goal of the organisations in the public sector or not-for-profit sector is often to provide high quality of services to the people in need. It would be interesting for the future research to examine if there is a difference in managers' escalating behaviour between the organisations in private sector and organisations in public sector.

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Figure 1 Two-way interaction of information availability and personal responsibility

Information Availability	Type of Personal Responsibility	
	Sole	Joint
Public information	Cell 1	Cell 2
Private information	Cell 3	Cell 4

Table 1: Results of Hypothesis H1

Panel A: Mean preference responses across information availability (including cell size and standard deviation)

Information Availability		Total
Public	Private	
7.89 n = 28 (1.595)	4.10 n = 29 (3.222)	5.96 n = 57 (3.173)

Panel B: ANOVA Results

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	208.949	1	208.949	34.934	0.001
Within Groups	317.005	53	5.981		
Total	2592.000	57			

Table 2: Results of Hypothesis H2

Panel A: Mean preference responses across different type of responsibilities (including cell size and standard deviation)

Type of Personal Responsibility		Total
Sole	Joint	
6.59 n = 29 (2.797)	5.32 n = 28 (3.454)	5.96 n = 57 (3.173)

Panel B: ANOVA Results

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	24.504	1	24.504	4.097	0.048
Within Groups	317.005	53	5.981		
Total	2592.000	57			

Table 3: Results of Hypothesis H3

Panel A: Descriptive Statistics of the two-way interaction of information availability and types of personal responsibility

Information Availability	Types of Personal Responsibility		Total
	Sole	Joint	
Public	8.00 (1.797) n = 14 Cell 1	7.79 (1.424) n = 14 Cell 2	7.89 (1.595) n = 28
Private	5.27 (2.963) n = 15 Cell 3	2.86 (3.110) n = 14 Cell 4	4.10 (3.173) n = 29
Total	6.59 (2.797) n = 29	5.32 (3.454) n = 28	5.96 (3.173) n = 57

Panel B: ANOVA Results

	Sum of Squares	df	Mean Square	F	Sig. (1-tailed)
Information	208.949	1	208.949	34.934	0.001
Responsibility	24.504	1	24.504	4.097	0.024
Information *	17.153	1	17.153	2.868	0.048
Responsibility					
Error	317.005	53	5.981		
Total	2592.000	57			

R Square = .438 (Adjusted R Square = .406)

Panel C: Multiple Comparisons (Benforroni *t*-Statistics)

Cell	Mean Difference	Std. Error	Sig. (1-tailed)
Cell 1 and 2	0.214	0.924	1.000
Cell 1 and 3	2.733*	0.909	0.012
Cell 1 and 4	5.143*	0.924	0.001
Cell 2 and 3	2.519*	0.909	0.023
Cell 2 and 4	4.929*	0.924	0.001
Cell 3 and 4	2.410	0.909	0.032

* The mean difference is significant at the 0.05 level.