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WHERE DO WE DRAW THE LINE?

TOLERANCE OF ESCALATING COMMITMENT TO TROUBLED PROJECTS

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Abstract

Escalation of commitment can commonly be characterized by a series of decisions to persist with a project despite minor yet repeated departures from prior expectations. Hampered by low cost visibility and vague progress metrics, software development project teams often tolerate seemingly minor slippages from project plans as inevitable consequences of embarking on large and complex ventures. In this study we investigate whether project support, escalation and failure are determined primarily through the limits of a decision-maker’s tolerance (termed here ‘Zones of Tolerance’, or ZOTs) for variations from expected outcomes. ZOTs are the extant boundary conditions within which variations from expectations are recognized but carry no significant utility or disutility to the decision-maker, hence are not adequately corrected. We demonstrate empirically how allowing these seemingly innocuous variations can create the historically antecedent conditions typical of escalation of commitment episodes if they are allowed to cascade and compound over time. Paradoxically, we find that comparatively low budget overruns (which tend to be tolerated) lead greater total resource commitments than high budget overruns (which tend to be corrected). In addition, we find that investment alternatives have no significant effect on the decision to escalate commitment to troubled projects, contrary to prior studies.

Keywords: Alternatives, Entrapment, Escalation of Commitment, Project Management, Project Failure, Tolerance, Zone of Tolerance.

Introduction – Escalation of Commitment and Its Antecedent Conditions

For the most part, decisions to invest time, money or effort in a course of action are initiated through real value propositions that are seen to be both realizable and significant. If it becomes evident over time, however, that a course of action is failing, the rational decision-maker is compelled to make the often agonising decision to abandon it. These decisions are difficult for two reasons. The first is that in real-world situations it is often difficult to ascertain the criteria for success and failure against which a course of action should be judged. Secondly, significant amounts of resources and reputation may be lost to the decision-maker if a decision to abandon the action is made, particularly if the decision was public, freely given and irrevocable (Ross and Staw 1986). Often, the reluctance to make such a difficult decision leads people to persevere with
courses of action that are demonstrably likely to fail, often spending (and subsequently losing) more than expected in the process.

Information systems research literature abounds in case studies and surveys which detail the endemic and unresolved problem of the failure to develop IS projects within their requisite time and cost budgets (Abdel-Hamid 1988; Keil 1995; Keil et al. 1995; Keil and Flatto. 1999; Keil and Robey 2001; Jones and Sauer 1995; Smith et al. 2001; Zhang et al. 2003). Such projects are practical examples of the phenomenon known as escalation of commitment, defined as the tendency of decision-makers to persist with failing courses of action (Brockner 1992). Within a project management context, commitments to projects are manifest through continuous investments and support throughout the course of their development and implementation. Maintaining the commitment of senior management and the project organization is a necessary component of project success (Sauer 1993; Schmidt et al. 2001; Yetton et al. 1999; Yetton et al. 2000; Sharma and Yetton 2003). However, strong commitment to a project’s development may become aberrant if investments of time, money or effort are doggedly extended for projects that exhibit signs of inevitable failure. ‘Escalation’ occurs when commitment to a project is maintained even though it has begun to exceed time, budget or quality constraints, or fails to become adopted by its intended users. Keil et al. (2000, p. 633) defines escalation of commitment as occurring “when troubled projects are continued instead of being abandoned or redirected.” The preponderance of escalation literature has drawn on Festinger’s (1957) Cognitive Dissonance theory, Kahneman and Tversky’s (1979) Prospect Theory and Alchian and Demsetz’s (1972) Agency Theory as the descriptive theoretical bases for why decision-makers would cognitively and counter-factually prefer to direct projects towards their inevitable failure than to rationally terminate them before more resources are lost to it.

Why Do We Tolerate Project Setbacks?

Why do we tolerate setbacks and where does the limit of our tolerance lie? Consider the following dilemma:

You are sitting in a restaurant waiting to meet a blind date. You realize that he is running ten minutes late. Is it reasonable to castigate him for tardiness if she turns up now, or would you accept there is a margin of tolerance for his arrival time? Unsure of whether he will turn up at all, but knowing that he is arriving by your city’s notoriously unpredictable train system, how long would you wait before your tolerance runs out and you decide to go home?

To complicate matters, would you be likely to wait as long if you knew there was a gathering of your friends nearby that you could attend should you choose to abandon the date? In other words, would the availability of an alternative to your date lead you to have less tolerance for his tardiness?

The preceding scenario illustrates the basic premises of this study. Firstly, we can see that small variations from expectations would not necessarily lead to large manifestations of dissatisfaction with the status quo course of action. We often tolerate small variations from our expectations and consider these variations as an inevitable consequence of an ambiguous decision context with imprecise estimations of investment requirements. Furthermore, if after waiting for half an hour your blind date shows up and is highly appreciative of your patience, then your persistence would be considered rational, indeed rewarded. If your date fails to appear, your support must inevitably be withdrawn at some point. Thus, the rewards and penalties of persistence can often only be known post-hoc. The second part of the scenario exemplifies how the existence of alternatives to challenged courses of action can often complicate the decision-making process, and may reduce our tolerance for variations from our preferred outcomes.

The basic premise of this research is that project support, escalation and failure are determined primarily through a decision-makers reaction to degrees of tolerance (ostensibly termed here as ‘Zones of Tolerance’, or ZOT’s) to variances from expectations that are a product of conditions within the decision context. Within a Zone of Tolerance, variations from expectations are considered comparatively small and (importantly) acceptable. A ZOT is the margin to which outcomes are allowed to deviate from expectations without a change in support for the course of action. We therefore posit a Zone of Tolerance (ZOT) as the extant set of boundary conditions within which variations from expectations are recognized but carry no significant utility or disutility to the decision-maker. This is at odds with Prospect Theory, which asserts that small variations from a reference point are the largest carriers of marginal utility and disutility (Kahneman and Tversky 1979).

Demarcating the limit or boundary conditions of reasonable tolerance for project setbacks is often exceedingly difficult and contingent upon the extant ambiguity in the project environment and the relative tolerances for setbacks among the project’s stakeholders. Abdel-Hamid (1988) suggests that IS projects are hampered by poor estimation of progress due to the inherent intangibility of the product under development and unreliability in information used to forecast time and cost budgets. In software development there are often “no visible milestones to measure progress and quality like a physical product” (Abdel-Hamid et al. 1993, p. 604). It is very difficult to manage software development, he argues, since it is difficult to measure development costs, schedules and project development rates (Abdel-Hamid et al. 1993; Sengupta and Abdel-Hamid 1996).
Zones of Tolerance and its Reasonable Limits: Hypotheses

Prior escalation studies have examined escalation by giving decision-makers the binary decision to either allocate the entire remaining budget to complete the project or to abandon the project immediately. However, negative information does not always lead to considerations of project abandonment and project teams may attempt to resolve problems that arise during development so that it may stay viable. Therefore, in order to ascertain the veracity of ambiguous cues, project managers may decide to continue investment in projects with a view to addressing some of the sources of potential project failure. Similarly, project managers may adopt a ‘wait and see’ approach by delaying the decision in order to better understand the likelihood of success or failure of the project. This approach to addressing ambiguity in information systems development environments effectively involves paying a premium for ambiguity reduction by tolerating variances and delaying project abandonment until such time as the ambiguities surrounding the likelihood of success are better understood. Ironically, tentatively continuing an investment to reduce ambiguity is seen as compounding the likelihood of failure by causing the very escalating commitment it seeks to avoid. Making continuous small investments in the hope of a large eventual pay-off has been termed by Brockner (1992) as ‘entrapment’. He exemplifies entrapment in a situation where one has waited 30 minutes for a bus and is considering catching a taxi. By waiting a little longer, one can hope to ‘salvage’ wasted time by continuing to wait for the bus to arrive, or one can catch the taxi at the expense of time lost and a costly taxi fare. The longer one waits for the bus, the more demanding the sacrifice in time becomes for the decision-maker. Ambiguous decision contexts may operate in the same way.

Interpreting the evidence reported in IS case study literature on escalation, it appears evident that small deviations from objectives (such as time and cost budgets) are tolerated rather than redressed, particularly during the early setbacks of a troubled project. In this case, small negative variances from expectations are insufficiently conclusive indicators of future trouble, and decision-makers would not act to protect or reinstate their asset positions or to challenge their cognitive perceptions of the correctness of their decisions. This tolerance may create the typically antecedent conditions by which decision-makers may become prone to larger variances down the track. Case study literature into the escalation phenomenon (Drummond 1994; Drummond 1995; Drummond 1999; Keil 1995; Montealegre and Keil 2000; Ross and Staw 1986; Ross and Staw 1993) suggests that the greatest contributors to departures from expectations arise both gradually and internally through issues with resource planning, estimation and controls rather than the profound exogenous shocks:

“[T]he typical escalation episode can be seen as beginning with the bright promise of future outcomes through a given course of action. The course of action gradually but progressively becomes a losing proposition [...] as countervailing forces tend to build up over time, making it more difficult to withdraw than would be expected only if economic results were considered.” (Staw and Ross 1993, p. 203, emphasis added)

Most negative information cues arising during project development do not typically lead to immediate considerations of project abandonment. Realistically, project escalation usually eventuates through a context-rich and historically-laden process. In the main, setbacks to projects result in project teams attempting to resolve problems that arise during development so that the project may stay viable. Therefore, in order to ascertain the veracity of ambiguous cues, project managers may decide to tolerate minor setbacks and continue investment in projects with a view to addressing some of the sources of potential project failure. Ironically, tentatively continuing an investment to reduce ambiguity actually compounds the likelihood of failure by causing the very escalating commitment it seeks to avoid.

In an organizational context, escalation can be cast as arising from a series of decisions to persist with projects despite cascading and compounding setbacks during its development. These small but repeated departures from expectations are tolerated by project teams as an inevitable consequence of embarking on large and complex ventures in ambiguous environments. If variations in expectations are within the decision-maker’s tolerance limits, support is likely to continue. As these small variations compound over time, an escalation dilemma arises if tolerance for these variations in expectations erodes to such an extent that the decision-maker’s support for the course of action writ large begins to deteriorate. Because of the innocuous nature of these small variances, it is often only in hindsight, once tolerance limits are breached, that the actions leading to the escalation of commitment situation are realised and belatedly corrected. Unlike Prospect Theory, we conjecture that most expectations carry some degree of inherent tolerance, suggesting a direct effect of budget variance on project support.

**H1:** Decision-makers are likely to demonstrate tolerance of small budget variances and intolerance of large budget variances when allocating resources to troubled projects.

Lawrence and O’Connor (2005) made distinctions between tolerance in ‘kind’ and ‘unkind’ ZOTs. A ‘kind’ context is one in which a zone of tolerance is accommodated in the decision context and ‘unkind’ where it is not. It is intuitively plausible that ZOTs may be produced by either the decision context or from an innate tolerance on behalf of the decision-maker. In the former case, contextual factors such as ambiguity, resource limitations and stakeholder expectations, all impact on the general satisfaction or dissatisfaction with a project’s performance, hence support. In the latter case, Ho et al. (2002) find that there are inherent differences among individual decision-makers in the quality and amount of risks and ambiguities they are willing to tolerate. Since this research is, in the main, a ‘proof of concept’ exploration, it does not seek to conclusively classify all the
antecedent contributors to a ZOT. This would make any exploratory investigation into this phenomenon unnecessarily contentious. Rather, its approach is to set up decision contexts in which various ZOTs are manifest in order to gauge its effects on behavior. As a result, these hypotheses are targeting an investigation of the behavioral effects of context rather than context itself.

**H2:** ZOTs are a significant determinant of escalation tendency when allocating resources to troubled projects.

**H3:** There is an interaction effect between ZOTs and budget variance when allocating resources to troubled projects.

This study makes the conceptual distinction and association between tolerance and project support. As stated above, tolerance for variation is distinguished from management support in that ZOTs refer to the extant boundary conditions within which variations from expectations would be supported without correction by stakeholders in a project. Project support is unchallenged within a ZOT and challenged outside of it. When outcomes consistently or significantly fall outside of a ZOT, the support of the project writ large may be challenged, leading to possible de-escalation or abandonment. Sauer (1993) conjectures that the withdrawal of management support is the definitive sign of project failure, stating that failure “finally and irreversibly occurs when the level of dissatisfaction with a system is such that there is no longer enough support to sustain it”. Strong management support for troubled projects is both intuitively and empirically supported as a key determinant of escalation, however, it is important not to neglect that support itself is a double-edged sword. Case study research by Keil (1995) suggests that, in some circumstances, escalation is due to the project manager’s tenacious attempts to salvage the project from failure. In a survey of project managers in three countries, Keil et al. (1998) found that the most significant risk during project development was the potential for lack of top management commitment to the project. In a prima facie contradictory finding, a study conducted by Yetton et al. (2000) finds that management support is also significantly correlated with project success. That is to say, strong management support is necessary for any IS project to be successful, both to maintain interest in the project at an organizational level and to encourage usage of the systems implemented. Employing surveys, Yetton et al. (1999) find empirically that “[s]enior management support, as measured by resource commitment, clarity of objectives and communication of objectives, increases the likelihood that the project is completed and not redefined or abandoned.”

**The Effect of ZOTs on the Evaluation of Alternatives: Hypotheses**

As a secondary hypothesis, this study examines the effect of the availability of alternatives on both the decision to escalate a current project and as a factor in the growth or diminution of ZOTs. Referring to the blind date scenario presented earlier, it would appear that the presence of a salient alternative to the chosen course of action could complicate the decision dilemma. If one did not have an alternative social engagement to attend, one is more likely to continue waiting for the blind date. Keil et al. (1995) as well as Schaubroeck and Davis (1994) found that the availability of alternatives had a moderating effect on escalation tendencies. This suggests that there is an interaction effect between a ZOT and the existence of alternatives which results in the diminution of tolerance towards the troubled project. If there are alternate uses for the unspent resources or if those resources would not be lost if an abandonment decision was made, then decision-makers would be less likely to continue their investment in the course of action and, in effect, narrow their ZOTs to the current course of action. We hypothesise that decision-makers are more likely to take alternatives under conditions where ‘unkind’ ZOTs exist and less likely to take alternatives under conditions where ‘kind’ ZOTs exist in the environment or decision task.

**H4:** There is a significant effect of the availability investment alternatives on the decision to persist with troubled projects.

**H5:** There is an interaction effect between ZOTs and the availability of alternatives on the decision to persist with troubled projects.

**Research Method**

**Experimental design**

A 3 (Zone of Tolerance) X 3 (Variance) within-subjects and an additional X 2 (Availability of Alternatives) between-subjects factorial design was employed to test both the independent and interaction effects between the Zone of Tolerance, Variance and Alternatives. In all, each subject made decisions on nine projects in all three ‘Zone of Tolerance’ and ‘Variance’ conditions, in either the ‘Alternatives Available’ or ‘No Alternatives Available’ treatment groups. This research design is a considerable departure from prior escalation studies in that it tests within-subject behavior over a variety of escalation
situations and over a range of magnitudes of variance from budget. Most prior studies have not been able to test investment behavior under numerous conditions within similar decision contexts due to their between-subjects, single-decision designs.

**The decision task – Experimental apparatus**

The study placed the decision-makers in a scenario in which they were a consultant Project Activity Manager for three companies all within the Information Technology industry. Their role was to conduct end of period reporting to each of the three companies’ Senior Management Steering Committee for three software project developments under their purview within each company (a total of nine decisions in all). The decision-maker had to make investment recommendations for each project with a caveat that they had to justify their decisions which were ultimately approved by the Senior Management Steering Committee and that their professional reputation was staked on the quality of their decisions.

Three Zone of Tolerance (ZOT) conditions (None, Low and High) were manipulated by providing subjects with three companies for which they were to assume the role of consultant Project Activity Manager. The ‘No ZOT’ condition was operationalized as a decision-context of a cost-focused consumer electronics company whose projects contained little to no ambiguity in the development process and whose senior management steering committee extended very little tolerance for budget overruns. The ‘Low ZOT’ decision-context was cast as a company operating in a quality-focused, tailored software market space in which quality and client satisfaction were considered important to the senior management, allowing for a moderate (but unspecified) amount of budget slippage. The ‘High ZOT’ company was cast as operating in a Research and Development-focused market space where inherent uncertainties and ambiguities of new, high-risk technology developments meant that the budgets that was provided to the project manager were imprecise and subject to a significant amount of revision. ZOTs for each company were manipulated in two corresponding ways. Firstly, prior to making project recommendations, subjects were presented with a one page brief for each company that included the Senior Management’s strategic objectives for all IT project developments within that company. Secondly, on the same page they were presented with an industry analysis detailing some opportunities and risks within that industry. Within each company, the subjects were asked to make budget recommendations for three projects (a total of nine decisions in all). These three projects displayed the three budget Variance conditions (None, Low, High) and were manipulated through the amount of budget slippage the project was experiencing to date. This was expressed through the absolute and percentage difference between original budget vs. and a revised request for funding from the project team (the ‘Team Request’) for the coming period in which a recommendation was to be made. The three orders of magnitude of variance were expressed as randomly distributed between the following ranges: No Variance (0%); Low Variance (between 5% and 10% over budget); and High Variance (Between 20% and 25% over budget). The study also employed a between-subjects design to test the significance of Availability of Alternatives in EOC decisions. Two treatment groups received information about a project portfolio in which they either had access to (between-subjects Group I), or were denied access to (Group II) the remaining resources available if they abandoned any projects.

**Analysis Methodology**

The 3 (ZOT) X 3 (Variance) X 2 (Alternatives) factorial design was tested using a univariate ANOVA employing a Type III Sum of Squares with a Bonferroni correction. Twelve randomized decision sequences were created to negate ordering effects and these decision sequences were randomly assigned to subjects. Each project was presented sequentially in a predefined order and subjects could not compare recommendations against those for which they had not made a recommendation. The dependent variable was calculated by dividing the subjects’ recommendation for spending in the next period by the Team Request for that period (the ‘Recommendation / Request’, or ‘R/R Ratio’). The rationale for using the ratio was to wash out the effects of varying project sizes (which precluded absolute value comparisons of recommendations) and to aid comparability between recommendations within and across subjects and projects. For instance, if a subject allocated the amount requested by the project team the R/R Ratio would be 1.0 since the Recommendation is equal to the Team Request. If the subject allocated the original budget amount (i.e. less than the Team Request), the mean R/R Ratio would be 0.930 for the Low Variance condition (a mean requested budget variance of 7.5%) and 0.816 for the High Variance condition (a mean requested budget variance of 22.5%). If the subject chose to abandon the project, the R/R Ratio would be 0. This ratio is an indication of the selected course of action by the subject and serves as a quantitative comparison of how those allocations varied between manipulations. Behavior could also then be generalized: decisions could indicate full escalation of the project (by allocating the team’s entire requested overrun), partially escalation (allocating amounts in excess of the budget but less than the full request), allocation of the original budget, de-escalation (less than the original budget) or abandonment.
Results and Discussion

Sample and manipulation checks

A total of fifty-four subjects recruited from postgraduate students enrolled in a Business Information Systems course at the University of Sydney participated in the experiment. Subjects voluntarily participated in the task and were reimbursed for their time. Reimbursement was not tied with their performance of the decision task.

Order effects (the order in which the nine projects were presented) were not significant in the study (F(8,427) = 0.70, p>.68). Furthermore, project size (p>.30) and level of completion (p>.11) were not found to have significant effects on the recommendations using a linear regression against the R/R Ratio. A post-test questionnaire confirmed that the overwhelming majority of subjects were content with their recommendations even on review and that they considered the reactions of Senior Management in their decisions (in other words, the ZOT manipulation was considered salient to the decision).

Budget variance

A highly significant main effect was found for the Variance construct (F(2,409) = 92.013, p=.000). The size and direction of this effect confirms the hypothesis that the magnitude of variance is significantly correlated with the tendency to fully or partially escalate projects with low variance, and to deescalate projects or abandon projects with high variance (H1 supported, see Figure 1). In other words, subjects displayed a tendency to allocate more than the original budget when small budget overruns were requested by the project team (between 5% and 10%). Conversely, subjects tended to deescalate or abandon projects when high budget overruns (between 20% and 25%) except where the Zone of Tolerance was high, and this can be seen in Figure 2. As was expected, there was no tendency to either escalate or deescalate in the Variance control group (No Variance condition). Note that there were no abandonments in the No and Low Variance condition and no ‘full’ escalations in the High Variance condition and therefore do not appear in Figure 2.

Figure 1: R/R Ratio Estimated Marginal Means for All Variance Conditions

Figure 2 highlights an interesting anomaly due to inconsistencies of behavior displayed within and outside ZOT’s. Specifically, large variances are corrected to a greater extent than small variances even if both are presented to the decision-maker. This illustrates a special case of Brockner and Rubin’s (1985) concept of entrapment where, paradoxically, low variances (which tend to be tolerated) may lead to greater total resource commitments than high variances (which tend to trigger de-escalation or abandonment decisions).
As we anticipated, a significant main effect was found for Zone of Tolerance (F(2, 409) = 11.375, p = .000) (Figure 3). This confirms our hypothesis that a Zone of Tolerance exhibited in the decision context has a significant effect on the tendency to escalate (H2 supported, see Figure 3). In addition, a significant (albeit smaller overall) ZOT X Variance interaction effect was also displayed (F(4,409) = 2.479, p = .012) and was significant at the .05 level, thus confirming the hypotheses relating to the ZOT and Variance constructs (H3 Supported). It is no surprise that ZOT seems to have an interaction effect during budget allocation decisions when taken into consideration against the variance from expectations. These findings suggest that the distinctions made between the focus of each ZOT (No ZOT as a cost-focused market space, Low ZOT as a quality-focused market space, and High ZOT as a Research and Development-focused market space) were generally accepted by subjects. These results demonstrate that decision-makers, to an extent, adjust their own support of variances in expectations to suit the tolerance inherent in the decision environment.

These findings suggest the presence of ZOT’s provides sufficient incentive for a decision-maker to allow small budget overruns to go uncorrected. These small, seemingly innocuous variations from project plans are historically create the typical antecedent conditions of further escalation of commitment through a process of entrapment. Repeated and compounding variations set the groundwork context and conditions for such biases as the completion effect and the sunk cost effect.

The presence or absence of Alternatives was not found to be significant, either as a main effect (F(1,409) = 2.695, p = .101), nor did it display any significant interaction effects with the other factors in the study (H4 and H5 not supported). Perhaps the operationalization of the construct was not salient enough, or another interpretation is that alternatives were only considered after the decision to abandon was made, and this may be evidenced by the highly significant effect of variance in the overall model. Either way, these results run contrary to prior studies that have found alternatives as a significant contributor to escalation decisions.
Conclusion

Decision-makers often respond to this ambiguity by tolerating a certain amount of variations from their original intentions. This study is an attempt to create a nexus between some of the conflicting literature debating whether tolerance of escalation is inherently rational or irrational. Escalation is a historically laden and context-dependent phenomenon where real world ambiguity is often acknowledged by decision-makers as an unavoidable aspect of project management. Information systems escalation literature has typically focused on causes due to project management failures during development. Time and cost overruns of IS development projects are attributed to mismanagement during the development cycle, obstruction by stakeholders and the inability to accept uncompensated losses by abandoning failing projects (Abdel-Hamid 1988; Keil 1995; Keil et al. 1995; Newman and Sabherwal 1996). The findings of previous IS escalation studies have relied largely on the retrospective rationality of project managers, who are often seeking to assign blame or to justify their persistence with failed initiatives. What is often ignored, however, are the ambiguities and the tolerance surrounding the smaller, seemingly innocuous setbacks early in the project’s development.

Understanding the components of decision-maker tolerance within an organizational context can be complicated and amorphous. In a subsequent study, we will examine the effect of shifting project conditions over time on the amount of variances accepted by project managers. Tolerance is affected by many behavioral and organizational sources. For instance, changes of management, shifting user preferences or changes in resource availability all may have direct effects on how much tolerance is extended towards a project with deteriorating performance and likelihood of success. Further studies should seek to examine the antecedents and constituents of tolerance and its effects within various decision contexts.

This study investigated the behavior of decision-makers in escalation of commitment decisions under Zones of Tolerance and Alternatives conditions. Most escalation situations occur gradually over time through small but cascading and compounding variations from expectations. We found that Zones of Tolerance and Variance are statistically significant contributors to the continuation of courses of action. As expected, we found that small variances from expectations (5%-10%) are likely to be tolerated rather than corrected and that large variances from expectations (20%-25%) are more likely to lead to de-escalation or abandonment decisions. This finding is at odds with Prospect Theory’s assertion that small variances from expectations are the largest carriers of marginal utility or disutility. Contrary to prior studies (and our expectations) we could find no significant effect of Alternatives on either the continue/abandon decision or as an interaction effect with either Zones of Tolerance or Variance. This study is a preliminary investigation to determine how the presence and function of ZOT’s affect resource allocation decisions. As such, questions relating to how ZOT’s are determined, how they change over time and how they are negotiated through the decision-making process are yet to be explored. Nevertheless, decision-makers’ sensitivity to ZOTs are intuitively and empirically valid phenomena and have been shown to be a key contributor to resource allocation decisions in general and escalation of commitment decisions in particular.

References


