

# ENHANCING AUDITORS' JUDGMENT THROUGH MOTIVATIONAL FACTORS

By

Takiah Mohd Iskandar<sup>\*</sup>  
Email: [takiah@ukm.my](mailto:takiah@ukm.my)

Ria Nelly Sari<sup>\*\*</sup>  
. Email: [ria\\_n\\_sari@yahoo.com](mailto:ria_n_sari@yahoo.com)

Zuraidah Mohd-Sanusi<sup>\*\*\*</sup>  
Email: [zuraidahms@salam.uitm.edu.my](mailto:zuraidahms@salam.uitm.edu.my)

Rita Anugerah<sup>\*\*\*\*</sup>

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\* Dr Takiah Mohd Iskandar is a Professor in Accounting at the School of Accounting, Faculty of Economics and Business, Universiti Kebangsaan Malaysia.

\*\* Dr Ria Nelly Sari is a lecturer at the Universitas Riau Indonesia.

\*\*\* Dr Zuraidah Mohd Sanusi is an Associate Professor in the Faculty of Accountancy, Universiti Teknologi MARA, Malaysia.

\*\*\*\* Dr Rita Anugerah is a lecturer at the Universitas Riau Indonesia

# ENHANCING AUDIT JUDGMENT PERFORMANCE THROUGH MOTIVATIONAL FACTORS

## Abstract

This study examines the mediating effect of effort on the relationship between feedback and self-efficacy respectively with audit judgment performance. Using an experimental research design with feedback as between-subject variable, subjects are randomly assigned to two groups of feedback. Each subject is required to perform internal control tasks. Based on partial least square (PLS) analysis, results indicate that both variables, i.e., feedback and self-efficacy are positively related to audit judgment performance through the process of high level of effort. In other words, subjects who received feedback and with high level of self-efficacy would have high levels of effort, which in turn increase audit judgment performance. This study provides further evidence on the importance of motivational factors and personality traits to influence auditors in making judgment.

**Keywords:** Audit judgment performance, feedback, self-efficacy, effort.

## I. INTRODUCTION

Independent auditors make professional judgments during their audit work (Gibbins 1984). In making the judgments, auditors encounter diverse nature of audit tasks of varying level of complexity. In these different circumstances auditors need to consider various kinds of information and their appropriateness for different audit procedures (Asare and McDaniel, 1996). Auditors' ability to cope with the different situations and to make good judgments is the result of their own effort to improve performance which may be influenced by certain motivational factors (Bonner, 1994). Motivational factors are perceived as performance incentives comprising two dimensions, internal motivation and external motivation. Internal motivation is shaped from within an individual whereas external motivation is imposed on an individual by external parties and situations. Self-

efficacy represents an internal motivation where one believes of his/her capability to organize and execute required courses of action to achieve expected level of performance (Bandura 1997). Feedback is one form of non-monetary reward which is regarded as an external motivation. Feedback represents information regarding the level of performance and/or the manner and efficiency of the execution of performance processes (Stajkovic and Luthans 2001). It is argued that auditors are motivated to improve their audit judgment both internally through their belief on their capability and externally through feedback on their performance (Ashton 1990; Leung and Trotman 2005).

However effects of both self-efficacy and feedback on auditors' judgment performance have not been fully investigated. Previous studies examine separately effects of these variables on audit judgment performance. The studies find significant results where feedback is demonstrated to have contributed generally to the improvement of performance (Earley et al. 1990; Stajkovic and Luthans 2001; Leung and Trotman 2005). At the same time, self-efficacy is able motivate an individual to produce successful outcomes (Bandura 1986, 1997). Studies on effects of self-efficacy on audit judgment performance and decision making is lacking although the research issue has been well established in other disciplines such as management, psychology, education and sports. It is argued that effects of both variables on audit judgment performance must be examined simultaneously. As Bonner and Sprinkle (2002) propose, the change in the effort resulting from internal and external motivations may provide a possible explanation of the process underlying the audit judgment performance.

Mohd-Sanusi and Iskandar (2007) have investigated the effect of two performance incentives (i.e., feedback and reward) on audit judgment performance. The study finds that performance incentive variables improve audit judgment performance not in a direct manner but through heightening effort of the auditors. In the study, effort is treated as a mediating variable which mediates the effect of performance incentive on audit judgment performance within the context of different level of task complexity. The study finds significant mediating effects of effort on the relationship between performance incentives and audit judgment performance particularly in a less complex task environment (Mohd-Sanusi and Iskandar 2007). However, the study did not address the effect of self efficacy being the internal performance incentive which is expected to motivate auditors to improve their audit judgment performance.

As argued above effects of both motivational factors need to be examined simultaneously in order to provide an insightful understanding on how auditors' effort is improved through internal and external incentives which in turn enhance audit judgment performance. This study attempts to address the question of how motivational factors, both internal and external, enhance audit judgment performance through effort of auditors. The study contributes to the literature on audit judgment in three ways. Firstly, this study examines the work of Mohd-Sanusi and Iskandar (2007) by examining the effect of self-efficacy, an internal motivational factor, which has not been previously addressed in relation to audit judgment. Secondly, this study attempts to demonstrate empirically how effort, being a cognitive variable, may be induced by feedback and self-efficacy to improve audit judgment performance. This is an extension to the audit

judgment model proposed by Bonner and Sprinkle (2002) which includes only financial incentive. Feedback as an external non-financial incentive and self efficacy as an internal incentive are expected to motivate auditors to increase their effort to improve their audit judgment performance. It is expected that the study is able to explain some inconsistencies of previous studies on audit judgment performance. Thirdly, this study uses a partial least square (PLS) as an approach to analyze the proposed relationships between experimental variables simultaneously. This technique has not been applied in other studies in this area. Hence, this study examines concurrently both internal (i.e., self efficacy) and external motivational factors (i.e., feedback) to explain the effect on audit judgment performance. Identifying relevant performance incentives both internal such as self-efficacy and external such as feedback may assist management or audit firms to differentiate individuals who can manage audit tasks effectively and efficiently.

## **II. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT**

### **Audit Judgment Performance**

There has been a significant amount of work contributing to the literature of audit judgments and decision making for the last 30 years. Audit judgment is the major focus of research in auditing due to its perceived potential for improving the professional practice (Trotman 1998). Audit judgments play an important role in the formation of audit opinions. In performing audit judgments, auditors need to consider a number of issues relating to the current performance of the clients and their future strategic plans which include assessing the probability of certain outcomes and evaluating choices of action (Shome 1998). With respect to internal control, for example, auditors would be

making judgments on the efficiency and effectiveness of the control and decisions on the significance of internal controls impact on the company financial reporting. The audit judgment is also applicable to other aspects of auditing such as determining the type of audit procedures to be performed and relevant auditing standards to be applied, establishing the scope of work, selecting the appropriate audit methodology, identifying the type and amount of audit evidence to accumulate, and the choice of audit tests and procedures (Shome 1998).

Bonner (1999) argues evidence that auditors' judgments and decision making is influenced by auditors' cognitive processing. Previous studies give a strong emphasis on the importance of individual characteristics such as memory, knowledge, experience, and gender on audit judgment performance (e.g. Bonner and Lewis 1990; Ramsay 1994; Tan and Libby 1997). In addition, past studies identify some motivational factors including financial incentives (Ashton 1990; Awasthi and Pratt 1990; Libby and Lipe 1992), non-financial incentives (Kennedy 1993; Peecher 1996; Chang et al. 1997; Tan et al. 2002; Ashton 1990; Leung and Trotman 2005) that influence audit judgment performance. The studies provide supports that financial and non-financial incentives improve audit judgment performance.

### **Feedback**

Feedback represents a non-financial motivational factor. It refers to information regarding the level of performance, the manner performance processes have been executed, and/or the efficiency of the performance (Stajkovic and Luthans 2001). A

positive feedback given by the superior to the subordinates would stimulate audit judgment performance. Feedback given to an auditor for the job done may cause the auditor to be more watchful and conservative. They will be more responsible and put in more effort in performing the job. As argued by Turner (2001), auditors are more comprehensive and conservative in search strategy. Research in accounting demonstrates that feedback is a critical success factor in audit judgment performance.

Several studies on audit judgments have examined the effect of feedback (e.g., Leung and Trotman 2005; Chang et al. 1997) and justification (Peecher 1996) on audit judgment performance. These studies support the notion that auditors with high motivation would exert their effort which in turn would increase audit judgment performance. High motivation would lead to continuing improvements in the performance of such individuals. Hence, this current study investigates the influence of feedback which is a form of non-financial incentive that motivates auditors externally in enhancing audit judgment performance. It is expected that good feedback increases audit judgment performance. This leads to the following hypothesis.

**H1:** Feedback is positively related to audit judgment performance.

### **Self-efficacy**

Self-efficacy refers to the belief that a person has the capacity to organize and execute the course of action required to produce a desired outcome (Bandura 1997). Bandura (1997) has also argued that an individual is able to exercise control over his or her own thoughts,

feelings, and actions. The ability to control is heavily influenced by an individual's view of himself or herself. Individuals who perceive themselves as highly efficacious will activate sufficient effort, and if well executed, will produce successful outcomes (Bandura 1986, 1997). Self-efficacy is a personality trait that has received a great deal of attention in organizational research.

The effects of self-efficacy on work-related performance are well documented. The study on self-efficacy originates from the social cognitive theory (Bandura 1986 and 1997; Stajkovic and Luthans 1998). Based on the social cognitive theory, self-efficacy operates as a central factor in a self-regulatory mechanism governing human motivation and action (Bandura 1986). Past studies have demonstrated that self-efficacy would improve performance in a wide range of work settings including education, training, sports, and management. Bandura (1997) summarizes numerous studies that reported significant relationships between self-efficacy and work-related performance such as job search, sales, research productivity, learning and task-related achievement, career choice and others. Using a meta-analysis on 114 empirical studies, Stajkovic and Luthans (1998) have also provided evidence of a strong positive correlation between self-efficacy and work-related performance. The study finds that self-efficacy contributes about 28 percent increase in the improvement of work-related performance.

Self-efficacy is expected to influence the initiating behavior of individuals, the amount of effort to be applied to attain an outcome, and the level of persistence applied to the task in the face of difficulties and setbacks (Bandura 1997). Individuals who perceive themselves

as highly efficacious tend to activate sufficient effort which, when well executed, produces successful outcomes (Stajkovic and Luthans 1998). Hence, the following hypothesis is developed.

**H2:** Self-efficacy is positively related to audit judgment performance.

### **Effort**

The amount of cognitive effort spent on a task can be increased either through effort duration (e.g. working longer time) or effort intensity (e.g. working harder), or through both effort duration and effort intensity (Cloyd 1997). In order for performance incentives to improve audit judgment performance, the audit task assigned to an individual judge must provide some mechanisms through which effort affects performance (Libby and Lipe 1992; Bonner and Sprinkle 2002). Prior empirical studies in accounting demonstrate that performance incentives cause individuals to increase the amount of effort they devote to the audit task (Mohd-Sanusi and Iskandar 2007). Chang et al. (1997) examine justification of influence of non-financial performance incentives on effort. They find that justification increased effort duration. Thus, when subjects are given incentives to complete the task performance, they are expected to increase the amount of effort they devote to the task. The following hypotheses are proposed:

**H3a:** Effort mediates the relationship between feedback incentive and audit judgment performance

**H3b:** Effort mediates the relationship between self-efficacy and audit judgment performance

As shown in Figure 1, the direct effect of feedback and self-efficacy on audit judgment performance is mediated by effort. Both feedback and self-efficacy induce high effort which in turn affects audit judgment performance.

Insert Figure I here

### **III. RESEARCH METHODOLOGY**

This study employs a quasi experimental method. This study adopts a between-subjects factorial design with two levels of feedback variable, feedback and non-feedback. Self-efficacy and effort continuous variables on a self rating scale.

#### **Subjects**

Subjects were final year students of a large public university in Pekanbaru, Riau Province, Indonesia. A total of 80 students of an advanced audit course participated in the experiment. The experiment was conducted during the lecture time. Six students had incomplete data due to failure to follow through the experiment according to the specified procedure or non-response to the given task. These cases are excluded from the data analysis. The final sample consisted of 74 students of which 17 are male and 57 are female. The average age of participants is 22 years old. Subjects are randomly assigned to no-feedback group and feedback group.

#### **Tasks**

This study adopts internal control evaluation tasks developed by Bonner and Lewis (1990). The same experimental task materials are used by Tan and Kao (1999), Tan et al. (2002), and Mohd-Sanusi and Iskandar (2007). This study uses internal control tasks for the experiment due to several reasons. First, an internal control evaluation judgment involves various types of audit task hence, an integration of information from a number of separate audit areas is necessary. Second, the evaluation of internal control is an important component of the audit process. Auditors are required to evaluate internal controls the result of which becomes the basis of determining audit procedures.

### **Measurements**

*Feedback:* Feedback is varied in two levels, represented by two groups of subjects, no-feedback group and feedback group. Subjects of the no-feedback group are not required to write down their names on the feedback request form. On the other hand, subjects of the feedback group are required to write down their names on the feedback request form. The feedback group members are told that their responses would be graded and they will be informed by their respective audit lecturers of marks. Students are made to understand that the marks would be part of their ongoing assessment for the final grade of audit course.

*Self Efficacy:* Self efficacy is measured using the Chen et al. (2001) instrument comprising eight items which measure the general level of self efficacy. Subjects are required to give their responses for each item on a 7-point Likert scale ranging from “strongly disagree” (1) to “strongly agree” (7). A high score in the item indicated the high

level of self efficacy. An example of the item is *'I will be able to achieve most of the goals that I have set for my self.'*

*Effort:* Effort is measured using a five items instrument. The questions were adapted from Awang-Hashim et al. (2002) and Johnson and Saccuzzo (1995). Subjects are required to rate their perception on their own effort such as how much effort they give in completing the tasks and their perception on facing the complex and difficult task. Their responses were assessed by using a 7-point Likert scale ranging from “strongly disagree” (1) to “strongly agree” (7). High/low scores represent high/low effort has been put in to complete the tasks.

#### *Audit Judgment Performance.*

Audit judgment performance is measured based on the subjects' responses on the internal control evaluation tasks discussed above. The score is calculated based on the percentage of correct responses given by subjects over the total predetermined answers to the audit tasks. The pre-determined answers of the tasks have been developed after a series of discussions with senior faculty members and auditors.

#### *Manipulation Check*

A manipulation check is performed to see whether the feedback incentive is given to subjects successfully. Subjects are requested to rate three questions on whether they are motivated by the feedback they are promised to get. Answers on the motivation of the

feedback are rated on a 7-point Likert scale ranging from “strongly disagree” (1) to “strongly agree” (7).

### **Procedure**

Each subject received a booklet of research instrument comprising cases on internal control evaluation tasks, instructions on using the cases, questions on what to respond to the cases, a debriefing questionnaire containing background information, and manipulation check questions. The experiment was conducted during the audit class and was closely monitored by the researcher. Subjects were told that they were participating in an audit task experiment. All subjects received similar materials. They were advised not to collaborate with their classmates. Subjects were allowed to refer to their audit textbook if necessary. Performance incentives manipulation was presented to subjects just before they started to read the experimental audit tasks.

## **RESULT ANALYSIS**

### **Manipulation Check**

The manipulation check is tested based on a t-test to compare the mean value of motivation from the no-feedback group and the feedback group. The objective is to see whether the manipulation check on feedback has been done successfully. Results show that feedback subjects were more motivated (means=7.427 and 5.283, respectively,  $p=0.00$ ). Results provide evidence that manipulation on feedback has been done successfully.

### **Partial Least Square Method**

The technique of PLS is used to test the hypotheses. The technique is used because the study has a small sample size and is an exploratory in nature (Wold 1985). Furthermore, PLS has an advantage of overcoming some theoretical and estimation problems that may arise from the use of a more well known structural equation modeling approach that involve the use of covariance structure analysis such as AMOS or LISREL (Hulland 1999). The PLS technique comprises a structural model which is able to identify the relationships between constructs. It provides a measurement model that specifies the relations between the manifested items and the constructs that they represent. PLS enables an overall assessment of the validity of constructs within the total model (Hulland 1999).

The application of PLS model is done in two steps. Firstly, the reliability and validity of the measurement model is assessed. Secondly, the structural model itself is assessed. The sequence is used to ensure that the measurement of construct is reliable and valid before any attempt is made to draw conclusions about the nature of relationships among constructs (Hulland 1999). The following sections describe the procedures used to assess the measurement model and the structural model. This is subsequently followed by evaluation of the measurement and structural model of the present study.

The objective of PLS is to maximize the explained variance rather than fit so as prediction oriented measures, such as  $R^2$ , are used to evaluate PLS models (Chin 1998).  $R^2$  for each endogenous variable, i.e., effort and audit judgment performance, is shown in

Table 3. PLS produces standardized  $\beta_s$  for each path coefficient, which is interpreted in the same way as in OLS regression. Since PLS makes no distributional assumptions, bootstrapping is used to evaluate the statistical significance of each path coefficient (Chin 1998).

### **The Measurement Model**

Statistics from the PLS measurement models are used to examine the convergent validity of the model by examining the factor loading. All items load on their respective constructs. The factor loading from the final PLS measurement model is reported in Table 1. Factors loading of all items of the model are greater than 0.5 and are significant at  $p < 0.05$  (two tail;  $t > 1.96$ ). However, one item from effort scale, item 4 (“I have made referenced to some materials although it is not required.”) has a low factor loading, which is below 0.5. A low item loading adds very little to the explanatory power of the model and potentially biases the estimate of parameters linking the constructs (Chin 1998; Hulland 1999). As such, item effort 4 is removed from the scale and is not included for further analysis. The result demonstrates an acceptable convergent validity.

Insert Table I here

The reliability of each variable is assessed based on t-composite reliability as used by Fornell and Larcker (1981). As shown in column 2 Table 2, the composite reliability for each variable is above 0.70, which demonstrates that each variable has an acceptable reliability (Nunnally 1978). The discriminant validity of the measurement model is assessed based on the square root of average variance extracted (AVE) as compared to

the correlations among the latent variables (Chin 1998). This provides a test on the extent to which a construct shares more variance with its measure than it shares with other constructs. Table 2 shows that the square roots of the AVEs (diagonal) are all greater than the respective correlations between constructs.

Insert Table II here

Results of the test discussed above demonstrate adequate discriminant validity. Overall, results from the PLS measurement model indicate that each construct exhibits satisfactory reliability and validity.

### **Tests of Hypotheses**

The study sought to examine that self-efficacy would be associated significantly with audit judgment performance. In addition, this study also considers that feedback (as an incentive factor) relates significantly to audit judgment performance. The influence of effort to mediate the relationships between self-efficacy and feedback on audit judgment are also hypothesized in this study. The PLS structural models of these relationships are shown in Table 3.

Insert Table III here

Table 3 shows that feedback is significantly associated with audit judgment performance ( $\beta=0.192$ ,  $t=1.666$ ,  $p<0.10$ ). Hence, H1 is supported. In addition, the table shows that feedback is significantly associated with effort ( $\beta=0.298$ ,  $t=2.441$ ,  $p<0.01$ ). The table also

shows positive relationship between effort and audit judgment performance ( $\beta=0.350$ ,  $t=4.034$ ,  $p<0.1$ ). Thus, the significant relationships between feedback and effort and between effort and audit judgment performance indicate that feedback does have direct effect on audit judgment performance, and it influences effort which in turn affects audit judgment performance. Results provide evidence of the mediating influence of effort on the effect of feedback on audit judgment performance. The result provides full support to H3a.

Table 3 also shows that there is a significant direct relationship between self-efficacy and audit judgment performance ( $\beta=0.282$ ,  $t=1.810$ ,  $p<0.10$ ). Thus, H2 is supported. The table shows that self efficacy is significantly associated with effort ( $\beta=0.497$ ,  $t=5.175$ ,  $p<0.01$ ) and effort has significant positive relationship with audit judgment performance ( $\beta=0.350$ ,  $t=4.034$ ,  $p<0.1$ ). This indicates that self efficacy does not have significant direct effect on audit judgment performance, but it has significant effect on audit judgment performance which is fully mediated by effort. Hence, H3b is fully supported. Results are summarized in Figure 2.

Insert Figure II here

Specifically, the results show that both self efficacy (an internal motivation) and feedback (an external motivation) relate positively to audit judgment performance through effort.

## CONCLUSION

This study assesses the mediating effect of effort to explain the mechanisms of feedback incentive and self-efficacy to improve audit judgment performance. Using PLS analysis, the study finds that both feedback and self-efficacy respectively are significantly related to audit judgment in a direct way. In addition, feedback provides a significant external incentive that motivates auditors to increase effort to achieve better audit judgment performance. At the same time the study finds that self-efficacy of an individual provides a significant internal motivation to individual auditors to exert their effort in order to attain better audit judgment performance. Specifically, results indicate that subjects who received feedback on their performance would have high level of effort which in turn increase audit judgment performance. Similarly, high levels of self-efficacy lead to high effort which in turn high levels of audit judgment performance. The results are consistent with the framework of effort as a mediating variable discussed by Bonner and Sprinkle (2002). Past studies such Libby and Lipe (1992) and Chang et al. (1997) also provide evidence that the presence of incentive and the existence of high level of self-efficacy motivate individuals to increase their levels of effort, hence better performance.

This study is subject to several limitations. First, this study examines the effect of only two forms of motivational factors. The results may not generalize to other forms of motivational factors such as financial incentives and accountability or multi-dimensional effect of feedback such as outcome, process, task properties, and cognitive (Leung and Trotman 2005). Second, this study uses only one task in a single-period setting. Future

research could be extended using multiple tasks and could also be repeated in multiperiod settings as well.

The results of this study suggest that motivational factors are important which provide positive results in explaining auditors' performance variability. This study has extended the concepts of motivational factors and personality traits from the area of psychology to address some issues of audit judgments in coping with complex audit tasks. One of the crucial areas that is still lacking in audit judgment and decision making studies is the examination of mediating variables to explain the established relationships such as ability, knowledge and experience on audit judgment performance (see Bonner and Sprinkle 2002). Future research in audit judgments needs to address mediating effects of the factors. Also, future research may examine how auditors' motivational factors and personality traits could interact with other situational variables to affect auditors' judgments and decision making.

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Figure I: Relationships between Motivational Factors, Effort and Audit Judgment Performance

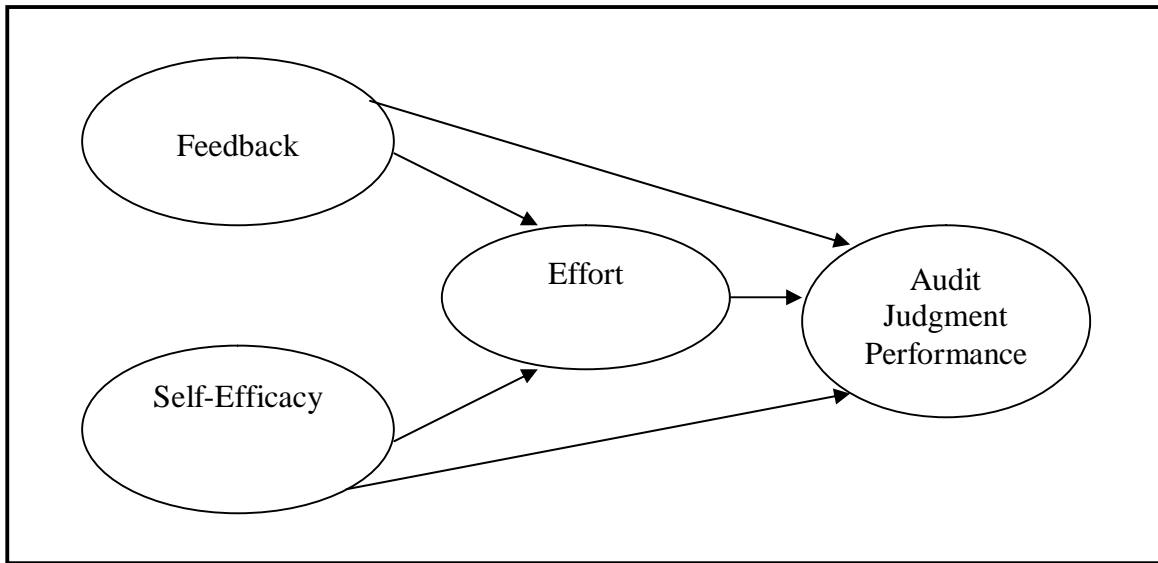


Table I: Results for Outer Loadings

		<b>Original sample estimate</b>	<b>Mean of sub samples</b>	<b>Standard deviation</b>	<b>T statistic</b>
<b>Self- efficacy:</b>					
Item 1	I will be able to achieve most of the goals that I have set for myself.	0.709	0.701	0.122	5.808
Item 2	When facing difficult tasks, I am certain that I will accomplish them.	0.707	0.711	0.103	6.878
Item 3	In general, I think that I can obtain outcomes that are important to me.	0.655	0.584	0.271	2.414
Item 4	I believe I can succeed at most any endeavor to which I set my mind.	0.617	0.539	0.277	2.230
Item 5	I will be able to successfully overcome many challenges.	0.724	0.617	0.258	2.807
Item 6	I am confident that I can perform effectively on many different tasks.	0.703	0.611	0.267	2.631
Item 7	Compared to other people, I can do most tasks very well.	0.557	0.528	0.180	3.086
Item 8	Even when things are tough, I can perform quite well.	0.648	0.612	0.193	3.352
<b>Feedback:</b>		1.000	1.000	0.000	
<b>Effort:</b>					
Item 1	I have tried my best to complete the task.	0.781	0.768	0.096	8.101
Item 2	I think I could have done better had I used more effort.	0.681	0.677	0.165	4.137
Item 3	I could have expended more effort had the task been more difficult.	0.795	0.797	0.083	9.603
Item 5	I have spent more time than I need to in completing the task.	0.521	0.480	0.185	2.821

Table II: Composite Reliability and Average Variance Extracted (AVE) Statistics, and Correlation from PLS Model

Variable	Composite reliability	AVE	Correlation			
			Self efficacy	Effort	Feedback	Audit judgment performance
Self efficacy	0.864	0.445	0.667	-	-	-
Effort	0.792	0.494	0.510	0.703	-	-
Feedback	1.000	1.000	0.039	0.316	1.000	-
Audit judgment performance	1.000	1.000	0.147	0.359	0.201	1.000

Note: Diagonal elements are the square root of the AVE statistics. Off diagonal elements are the correlations between the latent variables calculated in PLS

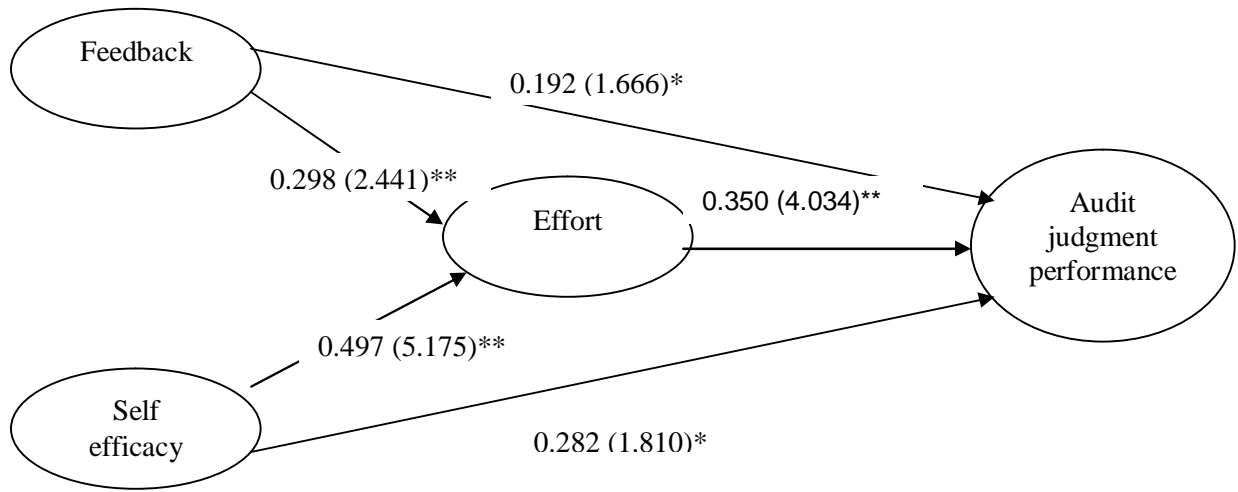
Table III: Path Coefficients, t Statistics and R<sup>2</sup>

Hypothesized relationship	Expected sign	Path coefficient	R <sup>2</sup>
Feedback is related to audit judgment performance (H1)	+	0.192 (1.666)*	NA
Self efficacy is related to audit judgment performance (H2)	+	0.282 (1.810)*	NA
Self efficacy is positively related to effort.	+	0.497 (5.175)**	NA
Feedback is positively related to effort	+	0.298 (2.441)**	NA
Effort is positively related to audit judgment performance	+	0.350 (4.034)**	NA
<b>Effort</b>	<b>NA</b>	<b>NA</b>	<b>0.342</b>
<b>Audit judgment performance</b>	<b>NA</b>	<b>NA</b>	<b>0.22</b>

N=74, Number in parentheses indicate t-value (two tailed tests)

\*\*p<0.01; \* p<0.1

**Figure II: The Mediation of Effort in Audit Judgment Performance Model**



\*\* p<0.01 (two tailed test)

\* p<0.10 (two tailed test)