ANALISIS 6 (1&2), 89-122 (1999)

EVALUATION OF INTERNAL CONTROL: ARE THE JUDGEMENTS OF EXTERNAL AND INTERNAL AUDITORS SIMILAR?

HASNAH HJ. HARON, YUSERRIE ZAINUDDIN & ISHAK ISMAIL

ABSTRACT

Evaluation of the internal control system is a critical area in which the duties of internal and external auditors overlap. Internal auditors design and maintain internal controls which are evaluated, and often relied upon by external auditors. Both groups of professionals should be interested in any systematic differences, which may exist between their judgement practices.

Specifically, this study examines whether internal auditors as a group, make similar judgements as external auditors. The study was conducted by means of a questionnaire which includes a brief description of the internal control environment of a hypothetical company. A pre-answered internal control questionnaire for a payroll internal control system was included.

Each auditor receives six similar cases to test for judgement consensus and two repeat cases to test for judgement consistency. Both the repeat cases are unique for each auditor. One of them follows the 1/4 replicate of 2^8 design and the other is a repeat of the case. The case, which follows the experimental design, is used to determine the judgement model of each group of external and internal auditors.

The final judgement model was able to explain 39.8% of the judgements of external auditors and 37.4% of judgements of the internal auditors. The overall conclusion was that judgements of both external and internal auditors were quite similar to each other in their ratings of the internal control strength of a given system.

ABSTRAK

Penilaian sistem kawalan dalaman merupakan satu isu penting kerana terdapat pertindihan tugas antara juruaudit dalaman dan luaran. Tugas utama juruaudit dalaman ialah merekabentuk satu sistem kawalan dalaman yang kukuh dan memastikan sistem itu berfungsi dengan baik. Tugas juruaudit luar pula ialah menilai sistem kawalan dalaman tersebut dan kadangkala bergantung kepadanya. Kedua-dua kumpulan profesional ini hendaklah mengambil berat tentang sebarang bentuk perbezaan sistematik yang mungkin wujud di antara pertimbangan atau keputusan yang akan mereka keluarkan.

Secara khususnya, kajian ini meninjau samada juruaudit dalaman di dalam satu kumpulan, membuat pertimbangan yang sama sepertimana juruaudit luaran di dalam satu kumpulan. Kajian ini dijalankan dengan menggunakan soal selidik yang juga merangkumi penerangan ringkas persekitaran kawalan dalaman sebuah syarikat yang diandaikan ("hypothetical company"). Sistem kawalan dalaman gaji telah dijadikan asas penilaian sistem kawalan dalaman dan sistem tersebut dipersembahkan dalam bentuk soal-selidik kawalan dalaman.

Setiap juruaudit menerima enam kes yang sama untuk menguji keseragaman pertimbangan ("judgement consensus") dan dua kes yang sama untuk menguji ketekalan pertimbangan ("judgement consistency"). Kedua-dua kes adalah unik bagi setiap juruaudit. Satu daripadanya mengikut reka bentuk eksperimen 1/4 replika 2^8 ("1/4 replicate of 2^8 design") dan kes yang satu lagi adalah kes ulangan kepada kes tersebut. Kes yang mengikuti reka bentuk eksperimen itu digunakan untuk menentukan model pertimbangan bagi setiap kumpulan juruaudit luaran dan dalaman.

Pertimbangan model terakhir berupaya menerangkan 39.8% pertimbangan juruaudit luaran dan 37.4% pertimbangan juruaudit dalaman. Dapatkan kajian pada keseluruhannya menunjukkan bahawa didalam penilaian kekuatan sesuatu sistem kawalan dalaman yang disediakan, pertimbangan kedua-dua juruaudit dalaman dan luaran adalah agak sama diantara satu sama lain.

INTRODUCTION

An early example of public interest in internal controls was in the United States of America, with the findings of the Watergate Special Prosecutors and the Securities and Exchange Commission (SEC) that over 300 major US corporations made illegal domestic political contributions or bribes to foreign government officials through falsification of records and improper accounting. As a result, in 1977, the US Congress passed the Foreign Corrupt Practices Act (FCPTA), which required that public companies establish and maintain effective internal control systems. This forced companies to comply by examining and documenting internal control, and by having to provide external auditors with the documentation necessary for audit purposes.

Since then, internal control evaluation has grown in importance (Cohen Commission, 1978; Treadway Commission, 1987) and the latest development in this area is that the internal auditors should be given the task of reporting on the quality of internal control whilst the external auditors should be given the task of evaluating the report (by internal auditors on the quality of internal control). The external auditors are also encouraged to suggest ways to overcome the weaknesses in the internal control system by means of a management letter (Committee of Sponsoring Organisation, US, 1992 and Cadbury's Code of Best Practice, 1992, UK).

IMPORTANCE OF INTERNAL AUDIT FUNCTION

With the requirements placed on management to issue the internal control report and the external auditors to assess the internal control report prepared by management (the basis for which will often be prepared by the internal auditors), there is increased reliance placed on internal auditors.

However it should be noted that it is not a requirement of the auditing standards to have the external auditors evaluate the internal control system,

if they seek "non-reliance" (not to rely on the internal controls system of the clientor). This is stated in SAS 300 (UK, 1995) and is implied in Malaysia's AI 400. However, usually the auditors would be required to have a general feeling regarding the quality of internal control system in order to plan their audit work and also to be able to produce a management letter at the end of the audit. Furthermore, with the recommendations by the Cadbury Report in the UK and the Treadway Commission Report in the US that management/directors have to produce a report on the effectiveness of the internal control system and the auditors are required to assess the management/directors report on the effectiveness of the internal control system, it would be useful for the auditors to evaluate the internal control system even if they chose not to rely on the internal control system.

According to APB (1995)

> Since 1990, in both Canada and the United States, generally accepted auditing standards have been revised to require auditors to have some understanding of internal control systems on all audits. It is no longer acceptable for auditors in those countries to study and evaluate only those internal controls on which they expect to be able to rely (which in essence is the present situation in the United Kingdom) (APB 1995,4-5).

PREVIOUS STUDIES

Most of the studies pertaining to reliance of external auditors on internal auditors have been conducted in the US. None has been conducted in the UK. Thus it would be interesting to note whether there is a similarity of judgements between external and internal auditors in the UK. If the judgements of both types of auditors are not significantly different, then there could be increased cooperation between them and this could benefit all parties concerned in terms of quality of work that could be achieved in less time and at less cost.

This study can also help to identify factors that the auditor perceived as important in determining the quality of internal control system which would be useful in the context of implementing Cadbury's requirement on internal control reporting.

Previous studies (Waggoner & Ricketts,1989; Chang & Mann, 1991) examining the characteristics or attitudes of external and internal auditors have shown much similarity between the two. Both exhibited relatively high managerial ability and self-esteem and were shown to be competent in the performance of an internal control test (or detecting errors in the internal control system).

Previous studies examining internal control evaluation by external and internal auditors have all been conducted in the United States. These studies (Bailey,1981; Landry 1989; Moore, 1993) have repeatedly shown that external auditors were less strict in their evaluation compared to internal auditors.

OBJECTIVES OF THIS STUDY

There are two objectives of the study; one is concerned with a descriptive judgement model utilised by external and internal auditors in the evaluation of internal control and the second objective is to determine both groups of auditors' "judgement consistency" and "judgement consensus".

The judgement model would determine whether external and internal auditors evaluate internal control quality based on the same internal control procedures. If the internal control report is going to be prepared by the management as part of the annual report and the external auditors is only given the task of evaluating or assessing the report, it would be important that the evaluations of the internal and external auditors do not differ. The information obtained from an examination of the judgement formation processes should be useful in resolving a problem discussed by Brown:

> ... several auditors might judge the effectiveness of a given system of internal control quite differently....This condition develops primarily from the use of different methods of appraisal, but can also arise because auditors place different emphasis on the relative importance of various factors of internal control (Brown,1962).

Consideration is also given to the three variables of experience, education and position level in the organisation in determining the descriptive model. The overall model of the study is presented in Appendix A.

Previous studies (Ashton, 1974; Bailey, 1981; Hamilton & Wright, 1982; Choo and Trotman, 1989; Chang and Mann, 1991) in internal control evaluation have included only educational level and experience level as variables that have a direct effect on the judgement of auditors. Experience and educational level have been shown to be important elements in auditing as they help to sharpen the judgement of the auditors in making professional judgements (Mautz & Sharaf, 1985).

As for position level, it was found that there are differences in the decisions made across the various positions (from junior to partner) because of the different weights that each level of management carries in the decision process. Thus, the present study has included position level as well. The second objective of the research was to examine "judgement consistency" and "judgement consensus" in the area of internal control evaluation.

The reporting standard under Generally Accepted Auditing Standards (GAAS) states that before an unqualified audit report is issued, the auditor should ascertain that the financial statements are prepared according to generally accepted accounting principles (GAAP), that the accounting methods are used in a consistent manner and that appropriate disclosures have been made.

It is assumed that given the same kind of internal control system and the same set of financial statements, different auditors using their proper

procedures of evaluation would come out with the same type of opinion or that they would be able to reach a "consensus" regarding the quality of financial statements.

"Consensus" is usually used as a surrogate for correct judgement (Joyce, 1976; Ashton, 1985).

> If different auditors could not reach the same "degree of qualification" (cannot reach a consensus) on the same type of internal control system or if the same auditor could not reach the same "degree of qualification" at two separate times on the same type of internal control system (is not consistent), the results would be that financial statement users would make poor resource allocations equal (Ashton,1974).

Assuming also that during the next year, the internal control system has not changed and thus the financial statements are not much affected, it would be expected that the same auditor using their proper procedures of evaluation, would come out with the same type of opinion. In other words, the auditor would be "consistent" in his opinion.The presentation of consistently prepared opinions by independent auditors should be of concern to the public accounting profession.

METHODOLOGY

Prior to distributing the primary questionnaire, the names of volunteers from the auditing firms (representing external auditors) and organisations (representing internal auditors) were gathered. The volunteers were asked to fill in a form to gather particulars regarding their educational, position and experience level. The number of auditors from both groups who were willing to participate in the study were noted in order to group them according to the three personal variables (educational, position and experience level).

The respondents consist of volunteers from audit firms and organisations for three main reasons.

First, to gather evidence of the personal profiles (educational, position and experience level) of the respondents prior to sending them the questionnaires. The personal profiles of the respondents were needed to group the respondents accordingly, for example, a professionally qualified partner in an audit firm with more than six years will be matched with a professionally qualified head of an internal audit department with more than six years experience. This is because the personal profile of the auditors will act as "control variables" as previous studies have shown that these variables will affect the judgement of auditors (Ashton, 1974; Bailey, 1981; Choo & Trotman, 1989).

The assumptions and definitions made in order to make this process possible was to:

i) assume that all EAs in each position level will behave in the same manner.

ii) assume that all IAs in each position level will behave in the same manner.

iii) assume that the position levels of EAs and IAs are the same and comprise four levels:

External Auditors (EAs) in an audit firm	**Internal Auditors (IAs) in an organisation**
a) Partner	Head of dept./Deputy head of dept.
b) Manager	Audit Manager
c) Senior Auditor	Senior Internal
d) Junior Auditor	Internal Auditor

iv) assume that internal auditors belonging to a position level of the internal audit organisation will act in the same way as the external

auditors belonging to the same position level in the external audit firm.

v) assume that auditors having professional accounting/auditing qualifications would behave in the same way.

vi) assume that the auditors having the same length of auditing experience would behave in the same manner.

The length of auditing experience was classified into three levels, inexperienced (auditors having less than three years of auditing experience); moderately experienced (auditors having more than three years but less than six years of auditing experience) and very experienced (auditors having more than six years of auditing experience). The interval period of three years was thought to be appropriate because it takes an average of three years before an auditor can pass his professional qualification (whether overseas or locally) and this is confirmed by accountants interviewed and also consistent with prior research. Usually, a junior auditor will be promoted to a senior position when the junior auditor has passed his professional qualification. The study was very dependent on the number of matched pair of internal and external auditors since its main objective was to determine the judgement model of external and internal auditors with the three personal variables acting as "control variables". The external and internal auditors were matched using the SPSS (Statistical package for the Social Sciences).

Secondly, the number of internal and external auditors who can be matched accordingly, will be used as a basis to decide on the experimental design. Since only 64 external and internal auditors were able to be matched successfully, a 1/4 replicate of 2^8 design was used. If there had been 128 matched pairs of auditors, a 1/2 replicate to 2^8 design could have been used.

Thirdly, seeking for volunteers prior to sending out the actual questionnaire was necessary because the questionnaire takes about an hour to complete and having volunteers would help to ensure that the questionnaires would be duly completed.

The auditors were arranged in ascending order based on the auditor number that they were assigned to. Next, the 64 auditors[1] from each group were assigned the set number by means of a random number table (Lyman, 1977). For example, after selecting the auditors in the appropriate group to be chosen i.e. auditor number 10213, 10125 and 11401 (external auditors) and 22503,22314 and 21718 (internal auditors) they were then arranged in ascending order as follows:

External auditor	Internal auditor
10125	21718
10213	22314
11401	22503

After that, they were assigned the set number randomly by means of a random number table. For example,

External number	Internal number	Set number
10125	21718	4
10213	22314	64
11401	22503	19

Since the study uses an experimental design, the matched pair of auditors should be 64. If, in any case there were respondents who were unable to return the questionnaire for any reason (for example, they were on secondment or were very busy) it was decided that the same questionnaire set number could be sent to another auditor having the same personal profile as auditors belonging to the same group were assumed to behave in similar

manner. This assumption had to be made in order to get the matched pairs to be as near to 64 as possible in order to be able to draw some reasonable conclusions from the data. This could be seen as a limitation of the study although it is the first one that has tried to control the personal variables using a matched pair design.

EXPERIMENTAL TASK

In order to prevent the experimental task from becoming too complex, it deals with only one internal control subsystem - that is, pertaining to payroll. The auditors were asked to evaluate the internal control system based on eight internal control procedures (ICPs) (Refer Appendix B).

Each case consists of eight internal control procedures (ICPS). Checkmarks were placed in the ICQ to indicate whether a certain ICP is present or absent. They act as indicators of the strength of the internal control system. The ICPs selected in this experiment tried to include all the five components (control environment, risk assessment, control activities, information and communication and monitoring) as stated in COSO (Internal control- Integrated Framework, US) and UK Final Guidance.

The internal control procedures include "accounting and administrative controls" which were based on the auditing literature (Coopers & Lybrand 1989, auditing guideline 3.204 "Internal Controls"(ICAEW,1980) and COSO's report (1992) and also try to accommodate the elements discussed in COSO (1992). Questions 7 and 8 represent "control environment", but question 7 specifically relates to "monitoring"; question 8 represents "information and communication"; questions 1,2,3,4,5 and 6 represents "control activities".

If an attempt to match COSO's definition with the definition given earlier regarding internal controls is made, "control activities" can be said to

comprise both accounting and administrative controls. The other four components represent administrative controls.

DESIGN OF THE ICQ (CASES)

Eight ICQs with varying combinations of the eight internal control procedures were given to each internal and external auditor to evaluate.

The eight cases were designed as appeared in Table 1.
Case 1 and Case 7 were repeat cases given to the auditors in order to test for "judgement consistency". A pair of auditors (one EA and one IA) receives a particular set of Case 1 and Case 7 and there were 64 sets of cases to be given to 64 pairs of auditor. Each set follows the design of Kempthorne's 1/4 replicate of 2^8 design.

If the results show no significant difference between the ratings of Case 1 and Case 7, a judgement model for each group of auditor will be able to be constructed by means of ANOVA with covariates. The model will be based on Case 1 since it is the case which follows the configuration of Kempthorne's, whereas Case 7 is its exact replicate but the ICPs are arranged in a different order.

Table 1
Number of ICPS Present in the Eight Cases

Cases	Number of ICPs Present
Case 1	using Kempthorne's 1/4 replicate of 2^8 design.
Case 2	ICP5 and ICP6 present
Case 3	ICP5, ICP6 and ICP7 present
Case 4	ALL ICPS PRESENT
Case 5	ICP5, ICP6, ICP7 and ICP8 present
Case 6	ICP4, ICP5, ICP6, ICP7 and ICP8 present
Case 7	REPEAT CASE OF CASE 1 (BUT PRESENTED IN A DIFFERENT ORDER)
Case 8	ICP3, ICP4, ICP5, ICP6, ICP7 and ICP8 present

Cases 2 to 6 and Case 8 are SIMILAR cases given to all auditors to test for "judgement consensus". The configuration of cases were carefully chosen so that they are not the same as those found in Kempthorne's (1952) so as to avoid duplication.

ANALYSIS OF RESULTS

A parametric test was carried out on the testing of hypotheses. One of the assumptions of a parametric test is that the population is normally distributed. Using the SPSS (Statistical package for the social sciences version 4) "normal probability plots" were done and showed that the population was normally distributed.

A paired t-test was done to test "judgement consensus" and "judgement consistency". Consensus level was calculated by correlating the responses for all pairs of auditors. Consensus level was calculated based on the ratings for the six similar cases. Consistency level was calculated by correlating the two repeat cases for all pairs of auditors. A Spearmen and pearson correlation was done to see whether the variables were significantly related.

The judgement model of each group of internal and external auditors was based on Kempthorne's design of 1/4 replicate of 2^8 design. The dependent variable was the responses on a visual analog scale given by the auditors using the ICQ approach and the independent variables were the 8 ICPs and the three covariates (educational, experience and position level). Analysis of variance with covariates and using the regression approach was used in the analysis. This was because many of the previous research studies have found conflicting results for the effect of educational level, position of auditors in the firm and experience level of auditors on the judgement of auditors (Landry,1989; Ashton, 1974; Ashton & Kramer, 1979; Hamilton & Wright, 1982). Thus, it is seen as a necessity to control all these variables (covariates) before looking at the effect of the cues (being the internal control procedures) on the judgement of auditors.

A 1/4 replicate of 2^8 design is used on the assumption that all interactions involving three or more factors are zero and thus would not be determined.

All main effects and two factor interactions are assumed to be important and are measurable. For further discussion, please see Kempthorne (1952,pg. 401-403).

The effect of various variables or the "main effect" indicates the degree of influence each variable has upon the final judgment. In the case of the internal control evaluation, it would be the effect of the eight ICPs and the three covariates (experience, educational and position level) on the final judgment of auditors.

"Interactions" means the importance of each independent variable depended upon the answer to the other independent variable. In the case of the internal control evaluation, it would be the effect of a combination of two or more of the independent variables (eight ICPs and the three covariates) on the dependent variable, i.e., the final rating of the auditors.

"Backward elimination" was used where the terms (or independent variables) that were not significant were eliminated one by one based on the least significant term in order to determine the final model. The final model would then consist of only terms that are significant to the rating of the case (see Tables 4 and 5). Basic advantages of ANCOVA over ANOVA is that it generally has greater power and greater reduction in bias caused by differences between groups that exist before experimental treatments are administered.

According to Mead, (1988)

> "...the main purpose in introducing the covariates is to improve the precision of estimation of treatment parameters".

MEASUREMENT OF VARIABLES

In this study, judgement consensus is defined as the *agreement amongst auditors* on the evaluation of a particular case i.e., Would the auditors pass

the same judgement regarding the internal control quality of a case given a case of the same nature to evaluate? As mentioned earlier, it is measured by doing a paired t-test based on the similar cases, that is, Cases 2 to 6 and Case 8.

Judgement consistency is defined as the *agreement of an auditor with himself* on the evaluation of a particular case i.e., Would an auditor pass the same judgement regarding the internal control quality of a case given two cases of the same nature to evaluate? It is measured by doing a paired t-test on Case 1 and Case 7.

The other three variables included in the study are experience, professional qualification and position level in the firm/organisation. Professional qualification is defined as auditors who have *completed and passed* at least one of United Kingdom's accounting or internal auditing professional examinations which consist of, CACA, CIMA, CIA, CA, MIIA and CIPFA. Professional qualification excludes auditors who have passed any other examinations such as AAT, CISA, QICA, ACIB, ACII and others whose syllabuses are not considered to be as thorough or in depth as those considered as "professional examinations".

As has been explained before, experience level is divided into three categories; experienced, moderately experienced and inexperienced. Very experienced auditors are those who have a length of auditing experience of above six years; moderately experienced auditors are those who have a length of auditing experience of between three to six years, whilst inexperienced auditors are those who have a length of auditing experience of between zero to three years. There are four position levels for external and internal auditors. The four position levels of external auditors are partner, manager, senior and junior whilst for internal auditors they are the head and deputy head of the department, audit manager, senior internal auditors and internal auditors.

Position level of both types auditors were matched according to the hierarchy level in the organisation, i.e., manager (External Auditors) will be matched with audit manager (internal auditor) and so on. Many internal auditors possess the same professional qualifications as external auditors, such as CACA, CIMA and CIPFA. However, when the Institute of Internal Auditors (IIA) offered the first professional qualification in the United Kingdom and Eire in 1981, the majority of internal auditors also had this additional qualification. People passing the examinations are awarded the "Member of the Institute of Internal Auditors" (MIIA) and the right to add the letters after their names.

PROFILE OF RESPONDENTS

The mean age of EAs is 35 and IAs is 31 and mean length of experience is nine years and eight years for EAs and IAs respectively.There is an approximately equal distribution of juniors, seniors, managers and partners who took part in the study (24%, 31%, 20% and 25% respectively). The auditors were mostly experienced with 52% considered as very experienced, 34% as moderately experienced and 14% as least experienced. Only three EAs have prior internal audit experience and their percentage of length of audit experience as an IA ranges from 5% to 80%. As for EAs, 21 IAs have prior external audit experience and their percentage of length of audit experience as an EA ranges from 17% to 95%.

Regarding educational background, there were 52 pairs of auditors who were professionally qualified (having CACA, CIMA, CA, CIPFA and MIIA) leaving 12 pairs not professionally qualified. It can be seen that the majority of EAs were "CAs" (Chartered Accountants) and none of them had "CIMA" qualification. IAs, however, were mostly MIIAs although they also have the same qualification as EAs. It can be said that EAs and IAs who participated in this study had quite similar backgrounds.

FINDINGS

(a) Judgement "consensus"

Overall, the test showed no significant difference between the ratings of EAs and IAs (Table 2) although it can be seen from the table that EAs tend to give higher ratings (more leniency) to all the cases. In other words there may be a tendency for EAs to place a higher degree of reliance upon particular controls than would IAs, but it was not found to be statistically significant.

It can also be seen from the Table 2 that the greater the number of ICPs present, the higher the mean rating for the cases for both EAs and IAs. Thus, IAs and EAs could very well have based their ratings on the "quantity" of the ICPs present. However, out of 128 auditors (64 EAs and 64 IAs) who were asked to explain the factors they considered when rating the cases, only one auditor said that the "quantity" of the ICPS present had influenced his/ her ratings.

Previous research on internal control evaluation to date (Ashton, 1974; Hamilton & Wright, 1982; Bailey,1981 and others) has measured consensus by correlating the ratings of each auditor on cases presented to them with the ratings of each other auditor.

In this study, each external auditor's ratings to the six cases were correlated with every other external auditor's ratings to all the cases using the Pearson correlation coefficient. A mean level of consensus was then calculated for each external auditor. This procedure was repeated for all internal auditors. A t-test pair was then performed to see if the mean consensus between the two groups of auditors is significant. The result showed that there was no significant difference between the mean consensus of internal and external auditors.

It also showed that the mean consensus of EAs (.8241) is much higher than that of IAs (.8053) which seems to indicate that EAs agree better with each other than IAs.

Table 2
Consensus in Ratings of the Six Similar Cases by IAs and EAs

CASE	FINDINGS								
Case 2- ICP5 and ICP6 present	EAs(excn2)			IAs(incn2)					
	n	mean	sd	n	mean	sd	t val	sig	
	64	.7163	.539	64	.8609	.629	-1.49	.141	
Case3- ICP5, ICP6 and ICP7 present	EAs(excn3)			IAs(incn3)					
	n	mean	sd	n	mean	sd	t val	sig	
	64	1.7025	.948	64	1.6725	.951	.19	.853	
Case 4- All ICPs present	EAs(excn4)			IAs(incn4)					
	n	mean	sd	n	mean	sd	t val	sig	
	64	4.7047	.679	64	4.7222	.749	-.14	.891	
Case 5- ICP5,ICP6, ICP7 and ICP8 present	EAs(excn5)			IAs(incn5)					
	n	mean	sd	n	mean	sd	t val	sig	
	64	2.3903	1.113	64	2.2427	.971	.83	.411	
Case 6- ICP4,ICP5, ICP6,ICP7 and ICP8 present	EAs(excn6)			IAs(incn6)					
	n	mean	sd	n	mean	sd	t val	sig	
	64	2.6577	1.011	64	2.5627	1.059	.49	.624	
Case 8- ICP3,ICP4, ICP5,ICP6, ICP7 and ICP8 present	EAs(excn8)			IAs(incn8)					
	n	mean	sd	n	mean	sd	t val	sig	
	64	2.9094	.967	64	2.7851	.74	.63	.465	

Table 3 summarizes the frequency distribution of the different consensus levels for external and internal auditors based on the case ratings. The higher the consensus level, the more agreement the auditors have with each other.

It can be seen from Table 3 that the spread of consensus level is tighter for external auditors than internal auditors with all auditors having a consensus level of between .61 to .90. The internal auditors lowest consensus level is .21 with only one auditor in this category and the rest of the auditors falling in the range of between .51-.90.

Compared to previous research, the range of consensus was much tighter with less dispersion. Landry (1989) reported a range of consensus of .30 to .60 for external auditors and .25 to .60 for internal auditors. Ashton (1974) reported a range of consensus of .06 to .93 for external auditors whereas Joyce (1976) showed an even greater range of -.687 to .937 for external auditors.

One reason why EAs are seen to be more lenient than IAs could be because of IAs' preoccupation with the compliance on the controls. Thus, they were more cautious with giving a higher rating to the cases.

Table 3
Comparison of Consensus Level of IAs and EAs Based on the Cases Ratings

Consensus level	External Auditors		Internal Auditors	
	Number	%	Number	%
0.91 - 1.00				
0.81 - 0.90	47	73	43	67
0.71 - 0.80	10	16	17	27
0.61 - 0.70	7	11	2	3
0.51 - 0.60			1	1.5
0.41 - 0.50				
0.31 - 0.40				
0.21 - 0.30			1	1.5
0.11 - 0.20				
0.0 - 0.10				
Total	64	100	64	100

Another reason could be that IAs realizing the potential for independence concerns, may over-compensate in such assessments. Correspondingly, IAs may also recognize their lack of competence in internal control evaluation area and select the more conservative response.

Examples of answers given by respondents when asked to explain the factors that they considered before rating the cases were,

> "I ranked the controls in order of importance and then assessed how these fitted into my 'extremely weak versus extremely strong' framework, taking into account the 'yes and no' answers given."
>
> "I assigned rough weights to the factors".
>
> "I matched the ICPs' ability to detect errors, such as avoiding ghost employees..."
>
> "Controls were prioritized on a risk basis and weaknesses in some controls carried a greater weighting than others."
>
> "I took into account risk of material error, risk of fraud, segregation of key tasks and supervisory controls."

Other factors that the auditors took into account in their ratings of the cases were that the controls were: a) able to prevent fraud and error; b) ability of the controls to achieve control objectives; c) whether there were any compensating controls that could offset the controls which to their mind were not effective; d) the importance of the controls and e) whether there was any separation of duties controls.

(b) Judgment "consistency"

No significant difference was found with regard to the ratings given to repeat cases between EAs and IAs. Thus they were consistent in their ratings. There was also a strong correlation between the ratings of the two cases with EAs (.7746) showing a higher consistency level than IAs (.7328) as observed by the correlation coefficient.

(c) Judgment models

The covariates were not significant when they were examined together with the eight internal control procedures (ICPs) for both groups of auditors. The non-significance of the three variables was further supported when they were examined "individually" or at the univariate level. The final model for EAs was able to explain 39.8% of EAs' variation in the rating of the case as compared to 37.4% for IAs.

Bailey (1981) has shown the predictive model for IAs as 33% and EAs as 41%. Thus both this study and the previous one and were unable to determine the 'real factors' that might have caused the variation in the ratings.

As for the ICPs, only five ICPs (as explained in the following paragraph) out of the eight ICPs were found to be significant or seemed to influence the ratings of the internal control case for both groups of auditors although in different priority of importance. Please refer to Tables 4 and 5 for the judgment model and the priority of importance of the five ICPs.

The five ICPs consist of namck, tcrd, tkpg, pyrse and mgtre. "Tkpg" and"Pyrse" represented the two separation of duties procedures, and consistent with previous studies (Ashton, 1974; Hamilton and Wright, 1982 and others), they were found to be important in influencing the auditors' judgement in evaluating the payroll internal control system. The judgement model of EAs showed "namck and tcrd" to be most influential compared with the other three procedures. As for the IAs, the judgment model showed "namck and pyrse" as important.

A comparison was made between the weights given by the auditors themselves when they were asked to rank the importance of the ICPs (subjective weights)[2] and the weights obtained from the judgment model (judgement weights) based on the level of significance of the ICPs in the model with all terms (initial model).

As can be seen from Table 6, although EAs and IAs placed some importance on "Forpr" (as seen from the "subjective weights" column), this was not

found to be the case when their judgement models were determined. "Adesc" and "Dutro" are rated least important by both groups of auditors in the subjective ratings consistent with the judgement model's rating.

Table 6 also shows that IAs placed greatest importance on the two separation of duties controls ("Pyrse" and "Tkpg"), whereas EAs placed greatest importance on "Forpr". In summary, both groups of auditors placed most importance on COSO's "monitoring, control environment information and

Table 4
Final Judgement Model of IAs

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig. of F
Main Effects	32.609	5	6.522	8.541	.000
TCRD	4.569	1	4.569	5.984	.017
TKPG	5.153	1	5.153	6.749	.012
NAMCK	12.567	1	12.567	16.459	.000
PYRSE	5.325	1	5.325	6.974	.011
MGTRE	4.995	1	4.995	6.542	.013
Explained	32.609	5	6.522	8.541	.000
Residul	44.285	58	.764		
Total	76.894	63	1.221		

Table 5
Final Judgement Model of EAs

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig. of F
Main Effects	42.898	5	8.580	9.345	.000
TCRD	9.068	1	9.068	9.877	.003
TKPG	7.446	1	7.446	8.111	.006
NAMCK	13.423	1	13.423	14.621	.000
PYRSE	5.528	1	5.528	6.022	.017
MGTRE	7.432	1	7.432	8.096	.006
Explained	42.898	5	8.580	9.345	.000
Residul	53.247	58	.918		
Total	96.145	63	1.526		

Table 6
Comparison of Judgement Model and Subjective Weightings of EAs and IAs

Internal control Procedures (ICPs)	EAs		IAs	
	Subjective weights	Judgement model	Subjective weights	Judgement mode
Tcrds	5	3	6	5
Tkpg	3	5	2	4
Adesc	7	8	7	8
Dutro	8	7	8	7
Namck	6	1	5	1
Pyrse	4	4	1	3
Mgtre	2	2	3	2
Forpr	1	6	4	6

communication" controls and less importance on the "control activities " procedures, namely "adesc" and "dutro".

The reason as to why their subjective ratings differ from their judgement models' ratings (with respect to only one ICP "Forpr") could be because being auditors' themselves, they would most likely place an importance on adherence to procedures. Thus, consciously, they would have given more weight to this factor. However, when the ratings were analysed statistically with the three variables controlled (experience, educational and position level), the subjective weight was not significant. Both groups of auditors seemed to be consistent in their ratings of the other ICPs.

(d) Effect of the variables

None of the variables (experience, educational and experience levels) seem to be significant in determining the "judgement consensus", "judgement consistency" and "judgement model of auditors".

As this study is the first study who has controlled the three variables education level, position level and experience level that were claimed to be the factors causing the differences in the ratings, it has been empirically shown here that these 3 variables have no effect on the ratings of the cases.

A list of EAs and IAs who have participated in the study are presented in Table 7.

RESEARCH FINDINGS AND IMPLICATIONS

Contrary to US findings, this study indicates that EAs in UK shows no significant difference in their ratings of similar cases or in their consensus level. A possible explanation could be the relatively similar educational backgrounds and types of professional qualifications possessed by the auditors in the UK This must be the subject of further research. Certainly, impressionistic "evidence" suggests that the MBA qualification is rather more of a standardised qualification for business in the US, whereas the professional accounting qualification to a large extent is the equivalent qualification in the UK. A higher proportion of qualified CPAs in the US are more likely to work in professional accounting practices than their UK-accounting-qualified equivalent. A higher proportion of IAs in the UK are likely to be professionally qualified accountants than in the US where a higher proportion are likely to be MBA graduates.

Furthermore, IAs who participated in the study are likely to have behaved more like EAs because 21 IAs had prior external audit experience and their

Table 7
List of EAs and IAs that have Participated in the Study

EAs ACCOUNTING FIRMS	IAs ORGANISATIONS
1. Story Hayward	1. Comet plc
2. Clark Whitehill	2. Arjo Wiggins Appleton
3. Coopers & Lybrand	3. HM Treasury
4. Hays Allan	4. Girobank plc
5. Price Waterhouse	5. Leeds Permanent Building Society
6. Sam Rogoff	6. Legal and General Assurance Society Ltd
7. Neville Russell	7. Intervention Board
8. Grant Thornton	8. Burmah Castrol House
9. Kidsons Impey	9. Post Office
10. Moore Stephens	10. North West Water Group
11. Robson Rhodes	11. Woolwich Building Society
12. Saffery Champness	12. Aire Valley Internal Audit Consortium
13. Hacker Young	13. Wrekin District Council
14. Casson Beckman	14. Lord Chancellor's Department
15. Touche Ross	15. Cattle's Holdings plc
16. Arthur Andersen	16. Reckitt & Colman
	17. Cooperative Bank
	18. Chemical Banking Corporation
	19. Portman Building Society
	20. British Waterways
	21. British American Tobacco Co.
	22. Devonport Management Ltd
	23. Courage
	24. Commission for the New Towns

length of audit experience as EAs ranged from 17% to 95% of their total length of working experience in auditing.

As for EAs, only three EAs had prior internal audit experience and their percentage of length of audit experience as IAs ranged from 5% to 80% of their total length of working experience in auditing.

The results also showed no significant difference in judgement consistency and a strong correlation between the ratings of the two cases between EAs and IAs. Thus it can be said that the professional judgements of EAs and IAs (as measured by "consensus" and "consistency" in evaluation of internal control are quite similar.

The study has also empirically shown that the experience, position and educational level have no effect on the auditors' rating of the case as some previous researches had claimed.

As for the internal control procedures, EAs and IAs think that physical controls of assets (adesc) and rotation of duties (dutro) are not important controls. They placed great importance however on : management reports to indicate reliability of payroll data (mgtre); whether there are any formal procedures to change payroll data (forpr); separation of duties controls, namely, whether tasks of timekeeping and payment are separated (tkpg) and tasks of payroll preparation and payment separated from payroll bank account reconciliation (pyrse); whether the names on the payroll are checked against the employee file (namck); and whether source documents are checked for accuracy of payroll data (tcrd).

SUGGESTIONS FOR FUTURE RESEARCH

In future, it would be better if all the five components of internal control as mentioned by COSO and Cadbury's Code of Best Practice could be included

in the questionnaire. This would require more internal control procedures to be included in each case. The researcher suggests that if this suggestion is taken up, there should be an effort to gather EAs and IAs first who would be willing to participate in the research. This step is very important as poor response rate, would lead to non-random selection and a less representative sample. At least three months should be spent on getting individual auditors to participate.

Another approach is to use a single organisation which actually has external and internal auditors. The internal control procedures could be included in the questionnaire and the auditors could then be required to assess the cases and make an evaluation of the internal control system. The differences between their judgements could then be examined and the internal control procedures that are most influential on their judgements could then be determined. After a study of this nature has been done, it could be compared with another similar organisation (in terms of size of the organisation and the size of the audit firm, for example) and any discrepancy between the judgements of any two pairs of auditors in the first organisation could then be compared with the judgements of the two pairs of auditors in the second organisation. The five components of internal control, i.e control environment, control activities, assessment of risk, information and communication and monitoring could then be assessed to see if any difference in these components could have caused the discrepancy.

ICPI (terd)	Are time cards and other source documents checked before processing by the payroll department for casts and calsulations?
ICP2(tkpg)	Are the taska of both timekeeping and payment of employees adequately separated from the task of payroll preparation?
ICP3(adesc)	Is there adequate physical secutiry over personal files which contain information relevant to the audit?
ICP4(dutro)	Are the duties of those preparing the payroll rotated?

ICP5(namck)	Are the names on the payroll checked periodically against the active employee file of the personnel department?
ICP6(pyrse)	Are the tasks of both payroll preparation and payment of employees adequately separated from the task of payroll bank account reconciliation?
ICP7(mgtre)	Are management reports used to monitor the reliability of payroll data through comparisons with budgets and following up of variance reports?
ICP8(forpr)	Are formal procedures established for changing names, payrates and deductions?

[2]Subjective weights are the ranks that the auditors placed on the relative importance of the eight ICPs.

REFERENCES

American Institute of Certified Public Accountants (1995). Exposure draft. Proposed Statement on Auditing Standards and Statement on Standards for Attestation Engagements: Amendments to Statements on Auditing Standards and Statements on Standards for Attestation Engagements to incorporate the "Internal Control-Integrated Framework" report, Feb. New York: AICPA.

Anderson, N. H. (1961). Scales and statistics: Parametric and nonparametric. *Psychological Bulletin*, 58 (4), 305-316.

Arens & Loebbecke (1991). *Auditing: An Integrated Approach* (5th edn.). Englewood Cliffs, N.J: Prentice-Hall International.

Ashton, A. H. (1985). Does consensus imply accuracy in accounting studies of decision making?. *The Accounting Review*, LX (2) April, 173-186.

Ashton, R.H. (1973). *Judgement formation in the evaluation of internal control: An application of the Brunswick Lens Model.* Unpublished doctoral dissertation, University of Minnesota.

Ashton, R.H. (1974). An experimental study of internal control judgements. *Journal of Accounting Research*, 12 (Spring), 143-157.

Ashton, R.H & Kramer (1979). Comment: Some observations on auditors' evaluations of internal accounting controls. *Journal of Accounting, Auditing, and Finance,* (Fall), 56- 66.

Auditing Practices Board (APB) (1993). Statement of Auditing Standards (SAS) No. 600, Auditors' Reports on Financial Statements (May). *In Members Handbook 1994, II : Accounting, Auditing and Reporting, 1994.* London: ICAEW.

Auditing Practices Board (APB) (1995). Statement on auditing standards (SAS) No. 300, accounting and internal control systems and Audit Risk Assessments, (Mar). In *Statements of Auditing Standards,* 1995. London: CCAB Ltd.

Auditing Practices Committee (APC) (1980). Auditing Guidelines 3.101, The auditor's operational standard (April). In *Members Handbook 1994: II, Accounting, Auditing and Reporting,* 1994. London: ICAEW.

Auditing Practices Committee (APC). (1990). Auditing Guideline 3.308, Guidance for internal auditors (Jun). In *Members Handbook 1994:* II, *Accounting, Auditing and Reporting,* 1994 . London: ICAEW.

Auditing Standards Board (ASB) (1988). *Statement on Auditing Standards (SAS) (60), Communication of Internal Control Structure Related Matters Noted in an Audit.* New York : AICPA.

Bailey, C.D. (1981). Evaluation of internal accounting controls: A laboratory study of the expert judgements of certified internal auditors and independent certified public accountants. Unpublished doctoral dissertation, Georgia State University. *Dissertation Abstracts International,* 42, 2733A. University Microfilms (81) -24301.

Brown, G. R. (1962). Objective internal control evaluation. *The Journal of Accountancy,* CXII (Nov), 50-56.

Brown, P. R. (1983). Independent auditor judgement in the evaluation of internal audit functions. *Journal of Accounting Research,* 21 (2) (Autumn), 444-455.

Brunswik, E. (1952). *The Conceptual Framework of Psychology.* Chicago, IL: University of Chicago Press.

Chambers, A. D., Selim, G.M. & Vinten, G. (1990). *Internal Auditing,* (2nd edn.). Great Britain: Pitman Publishing.

Chambers, A.D. (1994a). *The meaning of internal control* (May). Paper presented at a conference of City University, London.

Chambers, A.D. (1994b). *How control is achieved.* Unpublished paper, University of Hull.

Chang, S. Y. & Mann, G. J. (1991). Internal and external auditors: Are they different?. *Internal Auditing* (Winter), 17-23.

Chapman, L.J.(1967). Illusory correlation in observational report. *Journal of Verbal Learning and Verbal Behavior*, 6, 151-155.

Choo, F. & Trotman, K. E. (1989). The relationship between knowledge structures and judgements for experienced and inexperienced auditors. *The Accounting Review*, 66 (3) July, 464-485.

Church, B. K. & Schneider, A. (1992). Internal auditor involvement in internal control system design: Is objectivity impaired?. *Journal of Applied Business Research*, 8, (4) (Fall), 15-24.

Cochran,W.G & Cox, G. M. (1968). *Experimental Designs* (2nd edn.). New York: John Wiley and Sons, Inc.

Committee on the Financial Aspects of Corporate Governance (CFACG) (1992). *Report of the Committee on the Financial Aspects of Corporate Governance (The Cadbury Report)* (Dec). London: Gee.

Committee of Sponsoring Organisations of the Treadway Commission (COSO) (1987). *Report of the National Commision on Fraudulent Reporting (The Treadway Commission Report).* New York: AICPA.

Committee of Sponsoring Organisations of the Treadway Commission (COSO) (1992a). *Internal Control-Integrated Framework, Executive Summary*, 1 (Sept). New York: AICPA.

Committee of Sponsoring Organisations of the Treadway Commission (COSO) (1992b). *Internal Control-Integrated Framework, Framework*, 2 (Sept). New York: AICPA.

Committee of Sponsoring Organisations of the Treadway Commission (COSO) (1992c). *Internal Control-Integrated Framework, Reporting to External Parties*, 3 (Sept). New York: AICPA.

Committee of Sponsoring Organisations of the Treadway Commission (COSO) (1992d). Internal control - integrated framework. *Evaluation Tools*, 4 (Sept). New York: AICPA.

Coopers & Lybrand (1989). *Student's Manual of Auding* (3rd edn.). Great Britain: T.J. Press (Padstow) Ltd.

David G. B. & Loebbecke, J. K. (1975). Internal control evaluation: How the computer can help. *Journal of Accountancy*, 140 (August), 60-70.

Hamilton, R.E. & Wright, W. F. (1982). Internal control judgements and effects of experience: replications and extensions. *Journal of Accounting Research*, 20(2) Part II, (Autumn), 756-765

Institute of Chartered Accountants of England & Wales (ICAEW). (1993). *Internal Control and Financial Reporting (Rutteman's report)*, (Oct.). London : ICAEW.

Institute of Chartered Accountant in England & Wales (ICAEW). (1994a). *Internal Control and Financial Reporting (Final Guidance)*, (August). London: ICAEW.

Institute of Chartered Accountants in England & Wales (ICAEW). (1994b). *Internal Control and Financial Reporting :Revised Exposure Draft*, (August). London: ICAEW.

Institute of Chartered Accountants of Scotland (ICAS). (1993). *Auditing into the Twenty-First Century*. Edinburgh: ICAS.

Joyce, E.J. (1976). Expert judgment in audit program planning in studies on human information processing. *Journal of Accounting Research* (Supplement), 14, 29-60.

Kempthorne, O. (1952). *The Design and Analysis of Experiments*. New York: John Wiley and Sons, Inc.

Kintzele, M. R., Kintzele, P. L. & Kwiatkowski, V. E. (1993). Reporting on Internal Control in Annual Reports. *Internal Auditing*, (Winter), 3-15.

Landry, R. M. Jr. (1989). An empirical investigation of EDP audit judgements and consensus between external and internal audit experts. Unpublished doctoral dissertation, University of Arkansas. *Dissertation Abstracts International*, 49, 1869A, University Microfilms (88)-18289.

Libby, R. & Lewis, B.L. (1982). Human information processing in accounting: the state of the art. *Accounting, Organisations and Society*, (3), 231-285.

Lyman, O. (1977). *An Introduction to Statistical Methods and Data Analysis.* California: Duxbury Press.

Mautz, R. K. & Sharaf, H.A. (1985). *The Philosophy of Auditing,* (Monograph (6)). Florida: American Accounting Association.

Mead, R. (1988). *The Design of Experiments: Statistical Principles for Practical Application.* Cambridge: Cambridge University Press, 250-251.

Mock, T.J, Turner, J.L & Willingham, J.S. (1983). An improved method of documenting and evaluating a system of internal accounting controls. *Auditing: A Journal of Practice and Theory,* (Spring), 91-99.

Mohammad Abdolmohammadi & Wright, A. (1987). An examination of the effects of experience and task complexity on audit judgments. *The Accounting Review,* LX11 (1) Jan, 1-13.

Moizer, P., Turley, S. & Walker, D. (1986). Reliance on other Auditors: A U.K. study. *Accounting and Business Research,* (Autumn), 343-352.

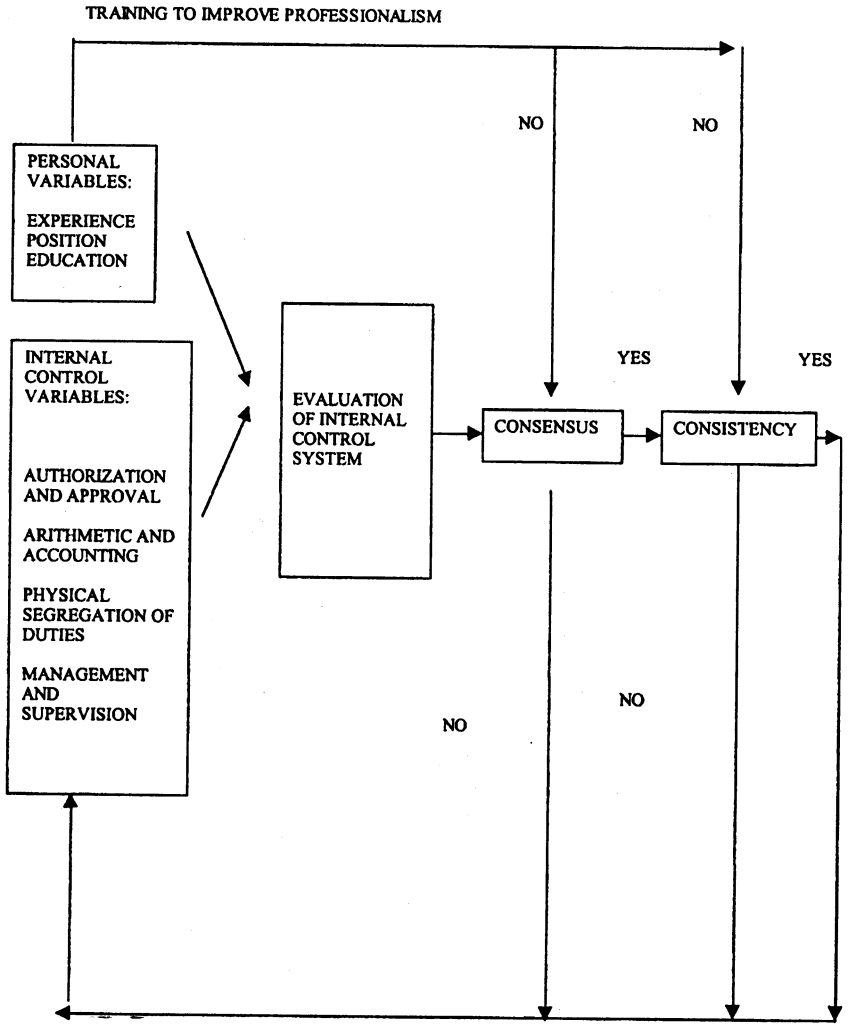
Moore, P. G. (1993). External auditor reliance on internal auditors: an examination of the similarity of auditor judgements. Unpublished doctoral dissertation, University of Georgia. *Dissertation Abstracts International,* 54, 999A. University Microfilms (93) -20707.

Waggoner, J.B. & Ricketts, D.E. (1989). External auditors vs. internal auditors in an internal control test. *Internal Auditing,* (Spring), 57-65.

Ward, D.D & Robertson, J.C. (1980). Reliance on internal auditors. *Journal of Accountancy,* Oct, 62-73.

APPENDIX A

Internal and External Auditor's Model of Internal Control Evaluation

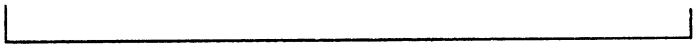


1. RELIANCE ON INTERNAL AUDITOR'S REPORT BY EXTERNAL AUDITORS
2. RELIANCE ON EXTERNAL AUDITOR'S REPORT BY INTERNAL AUDITORS AND BOARD OF DIRECTORS

APPENDIX B
Internal Control Questionnaire

	Internal Control Procedures	Yes	No
1.	Are time cards and other source documents checked before processing by the payroll department for casts and calculations? (tcrd)		✓
2.	Are the tasks of both timekeeping and payment of employees adequately separated from the task of payroll preparation? (tkpg)	✓	
3.	Is there adequate physical security over personal files which contain information relevant to the audit?(adesc)	✓	
4.	Are the duties of theose preparing the payroll rotated?(dutro)		✓
5.	Are the names on the payroll checked periodically against the active employee file of the personnel department?(namck)	✓	
6.	Are the tasks of both payroll preparation and payment of employees adequately separated from the task of payroll bank account reconciliation?(pyrse)		✓
7.	Are management reports used to monitor the reliability of payroll data through comparisons with budgets and following up of variance reports?(mgtre)		✓
8.	Are formal procedures established for changing names, pay rates and deductions?(forpr)	✓	

Based on the internal control procedures described in the introduction passage AND the above internal control questionnaire, please mark a cross ("X") on this scale representing your strength of belief regarding the quality of the internal control system.



extremely weak extremely strong