This is the published version:


**Available from Deakin Research Online:**

[http://hdl.handle.net/10536/DRO/DU:30055575](http://hdl.handle.net/10536/DRO/DU:30055575)

Reproduced with the kind permission of the copyright owner.

**Copyright:** 1995, Edith Cowan University.
AN EMPIRICAL INVESTIGATION INTO THE IMPORTANCE TO AN INTERNAL CONTROL STRUCTURE OF HUMAN RESOURCE PRACTICES AND POLICIES IN THE PREVENTION AND DETECTION OF FRAUD

Peter Carey and Carolyn Stringer

Recent literature on internal control (CoCo 1994; COSO 1994; Hooks, Kaplan & Schultz, 1994) has recommended much greater emphasis on the internal control environment. One component of the internal control environment on which has been suggested that increased emphasis be placed is human resource policies and practices. The aim of this study is to determine the current priority given to such policies and practices. It is proposed that, in today's environment, companies would rate a representative number of human resource practices and policies as important to the internal control structure. Any increased emphasis can be determined by contrasting the results with those from a 1988 survey by Collier, Dixon and Marston (1990, 1991), and the low priority traditionally accorded human resource practices and policies in the literature. Results from a survey of 42 financial managers confirmed the increased emphasis given to human resource practices and policies. This research focuses on one purpose of internal control, the prevention and detection of fraud, because previous research that had considered the importance of human resource practices and policies did so in the fraud context. The finding is consistent with the professional control literature that has identified deficiencies in human resource practices and policies as contributing factors in actual fraud cases. The result therefore provides an empirical justification to refine and extend the reference to human resource practices and policies in the Auditing Standards and in related reference material.

Recent professional literature on internal control (Criteria of Control Committee [CoCo], 1994; Committee of Sponsoring Organisations of the Treadway Commission [COSO], 1994) has recommended much greater emphasis on the internal control environment. One component of the internal control environment on which has been suggested that increased emphasis be placed is human resource policies and practices. The aim of this study is to determine the current priority given to such policies and practices. It is proposed that, in today's environment, companies would rate a representative number of human resource practices and policies as important to the internal control structure. Any increased emphasis can be determined by contrasting the results with those from a 1988 survey by Collier, Dixon and Marston (1990, 1991), and the low priority traditionally accorded human resource practices and policies in the literature. Results from a survey of 42 financial managers confirmed the increased emphasis given to human resource practices and policies. This research focuses on one purpose of internal control, the prevention and detection of fraud, because previous research that had considered the importance of human resource practices and policies did so in the fraud context. The finding is consistent with the professional control literature that has identified deficiencies in human resource practices and policies as contributing factors in actual fraud cases. The result therefore provides an empirical justification to refine and extend the reference to human resource practices and policies in the Auditing Standards and in related reference material.

Peter Carey is Lecturer and Carolyn Stringer is Assistant Lecturer, Syme Department of Accounting at Monash University, Australia.

Internal control is broadly defined as a process effected by an entity's board of directors, management and other personnel, designed to provide reasonable assurance regarding the achievement of objectives in the following categories:

- Effectiveness and efficiency of operations
- Reliability of financial reporting
- Compliance with applicable laws and regulations

(COSO, 1992)
An Empirical Investigation into the Importance to an Internal Control Structure of Human Resource Practices and Policies in the Prevention and Detection of Fraud

has sought to establish a consensus of view on the nature and purpose of internal control. Traditionally, the control literature had given primary attention to control activities (Parker, 1986). However after a recent review of internal control, Hooks, Kaplan and Schultz (1994) observed that the professional guidance now places much greater emphasis on the internal control environment.

This changing view of control appears to be a response to the radical change in the shape and nature of the modern organisation. For example, CoCo (1994) suggests that the greater priority accorded informal controls (such as shared vision and values) is a pragmatic response to organisational change. Reduced layers of management, empowerment, broader job responsibilities and business process re-engineering have diminished the potential to incorporate traditional control activities such as segregation of function, independent checks and batch controls. The internal control environment is therefore a logical focus to strengthen overall control.

The internal control environment sets the tone of an organisation, influencing the control consciousness of its people. The culture and values that support good control are the foundation for all other components of control (COSO, 1994). Control is therefore effected by the many organisational influences on people's motivation and behaviour. An organisation's human resource policies and practices, a component of the internal control environment, will directly influence an organisation's people.

Human resource policies and practices are a formal means of building control through people and include training, recruitment, performance evaluation, promotion, compensation, and termination. Human resource policies and practices have long been recognised as an important component of the internal control environment. However, they are now emphasised in the professional literature due to their increased significance to effective control (see CoCo, 1994, p.8).

Despite the emerging focus of environmental control factors, there is limited research into the perceived importance of human resource policies and practices to internal control. The only related research (Collier et al., 1990, 1991) reported that survey respondents (i.e. financial managers and internal auditors) did not rate human resource practices (i.e., personnel selection and management education) as important to an internal control structure in the defence of fraud. One explanation of the results from Collier et al. (1990, 1991) is that the research instrument was administered in 1988, prior to the trend represented in CoCo (1994) and COSO (1994).

The aim of the current research is to investigate and highlight the importance of human resource practices and policies to an internal control structure. This research extends prior research on whether human resource practices and policies are viewed as important given the greater emphasis in the professional literature. This research focuses on one purpose of

---

Collier et al. (1990, 1992) did find that a range of computer input, processing and output controls were rated as important to an internal control structure in preventing and detecting fraud.
internal control, the prevention and detection of fraud. This focus on fraud is appropriate as the only previous research (i.e., Collier et al., 1990 & 1991) that had considered the importance of human resource practices and policies to an internal control structure, did so in the context of the prevention and detection of fraud.

It is noteworthy that the current literature on fraud has thrown out findings consistent with the professional control literature. Reviewing the underlying causes of actual fraud cases, a number of investigators (Audit Commission, 1990, 1994; Goldstein, 1992; Grundy et al., 1993; Jeffords et al., 1992) reported that inadequate human resource practices (e.g., education and training, recruitment and selection, monitoring and supervision of employees) contributed to the failure of the internal control structure to prevent and detect frauds. These findings confirmed prior research by Albrecht and Romney (1986) that fraud signals were rooted in the internal control environment.

It is suggested that because of the greater emphasis on the internal control environment, the findings of the 1988 survey by Collier et al. (1990, 1991) are no longer relevant. Therefore, the research proposition is that companies today will rate as important human resource practices and policies in preventing and detecting fraud.

The paper is structured as follows. The first section defines human resource practices and policies and discusses their role in the prevention and detection of fraud. The second section deals with the research methods used. Thirdly, there is a summary of results and discussion. Finally, the paper concludes with the implications and limitations of the study, and some suggestions for future research.

I. THE ROLE OF HUMAN RESOURCE PRACTICES AND POLICIES IN THE PREVENTION AND DETECTION OF FRAUD

The following sections cover a representative range of human resource practices and policies drawn from a review of the internal control literature. In addition, the literature was reviewed to establish the significance of each human resource practice and policy item in the prevention and detection of fraud.

Recruitment and Selection

The purpose of recruitment and selection practices is to employ competent and trustworthy employees (British Standards Institution [BSI], 1994; CoCo, 1994; COSO, 1994). There are a range of recruitment and selection techniques available to a company: some examples include detailed background checks (BSI, 1994; Collier et al., 1991; Grundy et al., 1993); using trained interviewers (Chambers & Court, 1991); and a probationary period of employment (Chambers & Court, 1991; Grundy et al., 1993).

3 Internal control is an organisation's key defence against fraud (Cushing & Loebbecke, 1983; Loebbecke, Eining & Willingham, 1989; Matsumura & Tucker, 1992; Tradeway Commission, 1987).
An Empirical Investigation into the Importance to an Internal Control Structure of Human Resource Practices and Policies in the Prevention and Detection of Fraud

Despite the emphasis on recruitment and selection practices in the professional literature, a number of authors, (e.g., Grundy et al., 1993; Kamay & Adams, 1990) alleged that many organisations infrequently carry out detailed background checks of potential employees. Indeed, research findings of Vaughan and McLean (1989, p. 30) suggest that the management selection practices in Australia are “conducted without much objectivity, technical sophistication, or scientific rigour, and hence must be judged highly susceptible to error”. This finding is therefore consistent with Collier et al. (1990, 1991) who reported that finance directors and internal auditors attached little importance to personnel selection procedures as a defence against fraud.

Education and Training

Education and training cover a broad range of areas. From ensuring employees are adequately skilled to carry out their work (CoCo, 1994; COSO, 1994), updating skills due to the increasing sophistication of information technology and changing control environment (Audit Commission, 1990; COSO, 1994); and educating employees as to the purpose and importance of control activities (National Commission on Fraudulent Financial Reporting [Treadway Commission], 1987).

The Audit Commission (1987, 1990) reported that inadequate levels of training contributed to actual frauds. In addition, a number of authors (e.g., Audit Commission, 1990; Albrecht et al., 1984) reported that fraud occurred where existing control procedures were not adhered to. Presumably, education and training would influence employees’ attitudes to the importance of implementing control procedures. Despite these findings, Collier et al. (1990, 1991) reported that management education was rated by survey respondents in the range of moderate to low importance in preventing fraud.

Part of the education and training process is ensuring employees are aware that a large fraud can threaten the survival of an organisation (Treadway Commission, 1987). However, research suggests that few companies train employees to protect business data (i.e., Audit Commission, 1990). Fraud awareness training will encourage employees to implement existing control procedures and will include consideration of security procedures and the appropriate course of action when fraud is suspected (BSI, 1994; Collier et al., 1991; Deakin University, 1994).

There is however some resistance to the view that education and training is important in fraud prevention and detection. For example, Dixon et al. (1992) reported the concern that education in this area might highlight to employees the opportunity for fraud. It appears that support for this view is limited.

Monitoring and Supervision

Monitoring, which includes supervision of employees, is a process that assesses the quality of the systems performance over time and allows people to learn what improvements are required (CoCo, 1994; COSO, 1994). Analysis of the causes of actual fraud cases identified the following deficiencies: ineffective monitoring systems (Audit Commission, 1994);
inadequate supervision (Albrecht et al., 1984; Goldstein, 1992; Jeffords et al., 1992; KPMG Peat Marwick, 1993; Victorian Auditor-General, 1993); a lack of monitoring of employee personal circumstances (Albrecht et al., 1984); and insufficient monitoring of compliance with company policies and procedures (Grundy et al., 1993; Jeffords et al., 1992).

Job Descriptions

Similar to education and training, clear and concise job descriptions ensure employees are aware of their duties and the boundaries of their responsibilities (COSO, 1994; Grundy et al., 1993; Treadway Commission, 1987). Job descriptions and responsibilities should be clearly defined to promote adherence to control activities (BSI, 1994; Watney & Tumey, 1990), and job descriptions should be continually reviewed and updated (Grundy et al., 1993). As a measure in fraud prevention, the BSI (1994) recommended that security responsibilities form part of all employees job descriptions.

Performance Appraisal

People's behaviour is influenced by how they believe themselves to be measured and rewarded. Performance appraisal procedures might be explicit, as in formal appraisal measurement, or implicit, as in the measures deemed to have been applied in awarding promotions (CoCo, 1994). Further, CoCo (1994) recommends that performance appraisal procedures should be designed to ensure that employees have confidence that their positive performance will be equitably rewarded and that individuals will not be blamed for problems attributable to the organisation's systems. Remedial procedures which address weaknesses in performance are an important component of performance appraisal (CoCo, 1994; COSO, 1994).

As a defence against fraud, regular performance appraisal will facilitate communication and might alert the company to a disillusioned employee; as well as providing a forum to motivate and reward employees (Dixon et al., 1992; Grundy et al., 1993). Moreover, Parker (1986, p. 131) cited Lawler (1983) who concluded "that self-control was more likely to be exercised where employees received feedback on their performance, where they accepted moderately difficult goals and when they participated in control system design".

It is noteworthy that COSO (1994) suggests that a deficiency with performance-related bonuses is that they over-emphasise short term results, and so might provide incentives to commit fraud.

Remuneration and Rewards

Rewards are an important means of motivation (Mautz & Winjum, 1981). They may include increased responsibilities, greater autonomy, pride in achievement, peer recognition, as well as financial rewards (CoCo, 1994). Organisations must provide adequate remuneration and rewards to motivate and retain their employees (COSO, 1994; Treadway Commission, 1987).

Inadequate reward systems can provide incentive for employees to rationalise fraud (Albrecht et al., 1984), while a poorly designed reward systems might encourage fraudulent manipulation (CoCo, 1994).
Promotion Procedures

Equitable promotion procedures driven by performance will encourage a positive internal control environment by promoting loyalty and motivation (AUP 12, 1993; Treadway Commission, 1987).

Communication and Grievance Procedures

Channels for communication and information including grievance procedures are an important component of an internal control structure (AUP 12, 1993; CoCo, 1994; COSO, 1994; Hooks et al., 1994). Whether justified or not grievances will arise, and if not properly managed can lead to resentment against the organisation. Research findings (e.g., Grundy et al., 1993) suggest that inadequate counselling and grievance procedures have contributed to recent frauds.

Open channels of communications enable employees to air their complaints against the organisation, or to provide channels where suspected fraud can be reported to senior management without fear of reprisal (BSI, 1994; COSO, 1994; Treadway Commission, 1987). Hooks et al. (1994) argue the compelling rationale for communication in deterring fraud is that while fraud involves concealment, communication fosters openness.

Job Rotation

A longstanding control activity in the accounting literature is regular job rotation. Job rotation ensures an employee does not have sole control over specific duties; while random job rotation leaves limited time for fraud perpetrators to cover their tracks (Grundy et al., 1993). Merchant (1987) contends that an additional benefit of job rotation is to encourage a sense of belonging to the organisation, not to particular departments or divisions. In contrast, Lenart (1987) argues against job rotation because it will provide fraud perpetrators with knowledge of the wider system, increasing the risk of fraud. Despite the prominence of job rotation in literature, Collier et al. (1991) reported that only 15% of respondents imposed regular job rotation.

Mandatory Holidays

As well as implementing regular job rotations, mandatory holidays are recommended to ensure that employees do not have sole control of a particular operation (e.g., Gul et al., 1994). As a fraud prevention measure, Grundy et al. (1993) recommend employees take two consecutive weeks holiday, preferably during a month-end or quarter-end. It is noteworthy that the discovery of a major fraud in the Victorian Public Service occurred when employees involved were on holiday (Victorian Auditor-General, 1993). Despite the prominence of mandatory holidays in the literature, Collier et al. (1991) reported that 24% of companies enforced mandatory holidays, which suggests this procedure is not accorded a high priority by organisations.
Dismissal Procedures

The recent trend towards downsizing has again focused attention on appropriate dismissal procedures (CoCo, 1994; COSO, 1994). It is generally accepted that an employee should be required to leave the organisation immediately after dismissal and all relevant company identification reclaimed. Where this procedure is not possible the BSI (1994) and Dixon et al. (1992) recommend that access to sensitive security areas should be restricted while employees work out their notice. Also, it is important that all current employees are advised of the dismissal (Grundy et al., 1993).

Collier et al. (1991) reported that 37% of respondents immediately dismissed employees. This suggests that proper dismissal procedures are often overlooked by management despite being rated as influential in recent fraud cases (Grundy et al., 1993).

Code of Ethics

Formal policies establish standards of behaviour and are therefore central to effective human resource management. A code of ethics can strengthen the corporate ethical climate, thereby promoting an effective internal control structure (CoCo, 1994; COSO, 1994; Mautz & Winjum, 1981; Treadway Commission, 1987). A number of researchers have reported that an inadequate ethical climate (e.g., Cromie, 1993; KPMG Peat Marwick, 1993) has been a contributing factor in recent frauds.

Code of Confidentiality and Trade Secrets

The proliferation of computerised technology has made an organisation’s records and confidential information accessible and therefore vulnerable to an increasing number of employees. A policy on confidentiality and trade secrets is an important component of an internal control structure (BSI, 1994) and ensures from the outset that employees understand their obligations to the organisation (BSI, 1994).

Fraud Policy

A formal fraud policy should describe a course of action should a fraud be suspected or uncovered (Dixon et al., 1992; Thompson, 1992). Despite its emerging popularity in the literature, research by Collier et al. (1991) and Deakin University (1994) found the majority of organisations had no formalised fraud policy.

II. METHODOLOGY

Subjects

Subjects (see Table 1) were randomly selected from the Victorian companies on the Business Review Weekly list of the top 500 private companies. The questionnaire was posted to financial managers (n = 64) of which 42 responded (Response Rate = 66%).
Table 1 Demographic Characteristics of Companies

<table>
<thead>
<tr>
<th>Demographic Characteristic</th>
<th>%</th>
<th>Cum. %</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Employees</td>
<td></td>
<td></td>
<td>(n = 42)</td>
</tr>
<tr>
<td>Less than 100 employees</td>
<td>21.4%</td>
<td>21.4%</td>
<td>(n = 9)</td>
</tr>
<tr>
<td>100 to 250 employees</td>
<td>26.2%</td>
<td>47.6%</td>
<td>(n = 11)</td>
</tr>
<tr>
<td>250 to 500 employees</td>
<td>31.0%</td>
<td>78.6%</td>
<td>(n = 13)</td>
</tr>
<tr>
<td>500 to 1000 employees</td>
<td>9.5%</td>
<td>88.1%</td>
<td>(n = 4)</td>
</tr>
<tr>
<td>Greater than 1000 employees</td>
<td>11.9%</td>
<td>100.0%</td>
<td>(n = 5)</td>
</tr>
<tr>
<td>Annual Turnover</td>
<td></td>
<td></td>
<td>(n = 42)</td>
</tr>
<tr>
<td>Less than $26 million</td>
<td>17.1%</td>
<td>17.1%</td>
<td>(n = 8)</td>
</tr>
<tr>
<td>$25 million to $50 million</td>
<td>26.8%</td>
<td>43.9%</td>
<td>(n = 11)</td>
</tr>
<tr>
<td>$50 million to $100 million</td>
<td>31.7%</td>
<td>75.6%</td>
<td>(n = 13)</td>
</tr>
<tr>
<td>$100 million to $200 million</td>
<td>12.2%</td>
<td>87.8%</td>
<td>(n = 5)</td>
</tr>
<tr>
<td>Greater than $200 million</td>
<td>12.2%</td>
<td>100.0%</td>
<td>(n = 5)</td>
</tr>
</tbody>
</table>

Measures

The human resource practices and policies selected for the questionnaire were derived from a review of the relevant control literature (e.g., Auditing Standards Board, 1994; AUP 12, 1993; CoCo, 1994; COSO, 1994). The questionnaire comprised of two sections - demographics; and a listing of selected internal control activities, practices and policies. The demographic questions included annual turnover and a number of employees as a proxy for firm size (see Table 1). In the second section, respondents were asked to rate the importance of a representative selection of human resource practices and policies (e.g., detailed background checks), and the importance of three control activities (i.e., computer input, processing and output controls), to an internal control structure in preventing and detecting fraud. This selection of control activities, were chosen to facilitate comparison with previous research by Collier et al. (1990, 1991). Respondents used a five point Likert scale ranging from not important to very important. Nunnally (1978) recommended using a graphic scale with numbers to convey the idea of a rating continuum.

Reliability

Pilot testing was carried out at several universities with academic staff experienced in research. Respondent financial managers indicated they had no problems in completing the questionnaire. Furthermore, the homogeneity of the questionnaire and the degree to which all items measure one factor was established using Cronbach’s alpha (Cohen, Montague, Nathanson & Swerdlick, 1988). The high standardised alpha reliability (i.e., $\alpha = .87$) indicates that the instrument was likely to measure a single factor.

Procedure

The financial managers of the selected companies were contacted by telephone to explain the nature of the survey, and to gain their agreement to complete the questionnaire. Subjects were assured their responses were confidential. Fraud is a sensitive topic for most companies and previous surveys on the subject of fraud have reported low response rates (Audit Commission, 1990). The questionnaire, covering letter and self-addressed and stamped
envelopes were mailed to the 64 subjects who either: said yes they would complete the questionnaire in the following two weeks \((n = 49)\); could not be contacted \((n = 8)\); or their secretary said just post it \((n = 7)\). Finally, a reminder letter was sent out two weeks later. In total, 42 questionnaires were returned (response rate = 66%).

**Statistical Procedures**

Data were analysed using the SPSS package for Windows (Norusis, 1993). Parametric testing involved analysis of variance (ANOVA) and independent \(t\) tests. Non-parametric testing included the Kruskal-Wallis One-Way ANOVA and the Wilcoxon Matched-Pairs Signed-Ranks Test. In addition, descriptive statistics included: mean, standard deviation, frequency distributions and percentage distributions.

### III. RESULTS AND DISCUSSION

**Table 2 Human Resource Practices and Policies**

<table>
<thead>
<tr>
<th>Human Resource Practices and Policies</th>
<th>Mean (Standard Deviation)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Immediate removal following termination of service</td>
<td>4.2927 (0.901)</td>
</tr>
<tr>
<td>Initial training</td>
<td>4.100 (1.033)</td>
</tr>
<tr>
<td>Supervision</td>
<td>4.0732 (0.818)</td>
</tr>
<tr>
<td>Restricted access following resignation</td>
<td>4.0000 (0.959)</td>
</tr>
<tr>
<td>Background checks</td>
<td>4.000 (1.086)</td>
</tr>
<tr>
<td>Ongoing training</td>
<td>3.9024 (0.917)</td>
</tr>
<tr>
<td>Adequate remuneration</td>
<td>3.8537 (0.833)</td>
</tr>
<tr>
<td>Fair promotion procedures</td>
<td>3.6750 (0.797)</td>
</tr>
<tr>
<td>Probationary period</td>
<td>3.564 (1.273)</td>
</tr>
<tr>
<td>Clear and concise job descriptions</td>
<td>3.475 (1.132)</td>
</tr>
<tr>
<td>Performance appraisal</td>
<td>3.4615 (1.072)</td>
</tr>
<tr>
<td>Trained interviewers</td>
<td>3.3324 (1.181)</td>
</tr>
<tr>
<td>Code of confidentiality and trade secrets</td>
<td>3.2857 (1.405)</td>
</tr>
<tr>
<td>Mandatory holidays</td>
<td>3.2432 (1.32)</td>
</tr>
<tr>
<td>Code of ethical conduct</td>
<td>3.1111 (1.26)</td>
</tr>
<tr>
<td>Grievance procedures</td>
<td>3.0278 (1.134)</td>
</tr>
<tr>
<td>Job rotation</td>
<td>2.8286 (1.294)</td>
</tr>
<tr>
<td>Formal fraud policy</td>
<td>2.5333 (1.358)</td>
</tr>
</tbody>
</table>

**Note:** *Higher mean scores indicate that these human resource practices are seen as important in preventing and detecting fraud (1 = not important, 5 = very important).*

Respondents rate human resource practices and policies as important to an internal control structure in preventing and detecting fraud (see Table 2). This finding supports the research proposition that human resource practices and policies are important to an internal control structure in the prevention and detection of fraud. This result contrasts with Collier et al.
An Empirical Investigation into the Importance of an Internal Control Structure of Human Resource Practices and Policies in the Prevention and Detection of Fraud

(1990, 1991) who reported that little importance was attached to human resource practices (i.e., personnel selection and management education). The finding is therefore consistent with the professional literature (CoCo, 1994; COSO, 1994; Treadway Commission, 1987) which is recommending greater emphasis on the internal control environment.

It is encouraging that human resource practices and policies are rated as important in light of research findings that inadequate human resource practices and policies were a contributing factor in actual fraud cases. The magnitude (see Walker, 1992) and rapid growth in the fraud problem (see Audit Commission 1987; Deakin University, 1994; KPMG Peat Marwick, 1993) make it a serious risk for most organisations. Greater emphasis on human resource policies and practices is a logical response to the fraud problem and might contribute to stemming the growth in fraud.

A review of the Audit Practice Statement (AUP 12) and popular auditing textbooks (e.g., Gul et al., 1994; Watne & Turney, 1990) suggests that job rotation and mandatory holidays are two prominent human resource practices. It is of interest that respondents rate these two items as of medium to low importance. On the other hand, human resource practices that receive the same or less attention in much of the auditing literature (e.g., dismissal procedures and adequate remuneration) were rated as important by respondents. Results from the present research suggests that the Auditing Standards and related reference material should refine and extend the discussion of human resource practices and policies.

As expected from previous research (Collier et al., 1990, 1991) computer input (mean 4.0732 standard deviation 0.848), processing (mean 4.3171 standard deviation 0.901) and output controls (mean 4.0976 standard deviation 0.944) were rated as important in preventing and detecting fraud. It is noteworthy that respondents rated both control activities (i.e., computer input, processing and output controls) and five human resource practices and policies (i.e., immediate removal following termination of service, initial training, supervision, restricted access following resignation) as equally important in preventing and detecting fraud.

Finally, one way ANOVA revealed non-significant differences between firm size (i.e., annual turnover and number of employees) and the ratings of importance of the eighteen human resource practice and policy items (see Table 2). The result suggests a uniform recognition of the importance of human resource practices and policies to an internal control structure in the prevention and detection of fraud.

---

4 Paired t tests revealed significant differences between job rotation and adequate remuneration (t = -4.98, p = .000; job rotation and immediate removal following dismissal (t = -5.63, p = .000; job rotation and restricted access following dismissal (t = -5.71, p = .000; job rotation and immediate removal following dismissal (t = -5.71, p = .000; mandatory holidays and adequate remuneration (t = -2.44, p = .020; mandatory holidays and immediate removal following dismissal (t = -4.25, p = .000; mandatory holidays and restricted access following dismissal (t = -3.42, p = .002). The Wilcoxon matched-pairs signed-ranks test achieved the same result.

5 Higher mean scores indicate that the control items are important in preventing fraud (1 = not important, 5 = very important).

6 Paired t tests revealed non-significant differences. The Wilcoxon matched-pairs signed-ranks test achieved the same result.

7 The Kruskal-Wallis one-way ANOVA achieved the same result.
IV. CONCLUSION

Survey results confirmed the research proposition that companies rate as important human resource practices and policies to an internal control structure in preventing and detecting fraud. As expected the finding contrasts with previous research by Collier et al. (1990, 1991). While control activities have traditionally received the primary attention in the literature (Parker, 1986), results from the present study are consistent with the current literature (CoCo, 1994; COSO, 1994) that recommends greater emphasis on the internal control environment.

A number of researchers (e.g., Audit Commission, 1990, 1994; Goldstein, 1992; Grundy et al., 1993; Jeffords et al., 1992) investigating actual frauds have reported that inadequate human resource practices and policies contributed to the failure of internal control to prevent and detect the fraud. The present findings are encouraging given the role of inadequate human resource practices and policies in actual fraud cases because they indicate a recognition of the importance of human resource practices and policies.

A review of the Audit Practice Statement (AUP 12, 1993) and popular auditing textbooks (e.g., Gul et al., 1994; Watne & Turney, 1990) suggests that job rotation and mandatory holidays are two prominent human resource practices, while dismissal procedures and adequate remuneration are human resource practices that receive little or no attention. It is noteworthy that in the current research, respondents rate dismissal procedures and adequate remuneration as significantly more important than job rotation and mandatory holidays. This result suggests the Auditing Standards and related reference material should refine and extend their discussion of human resource practices and policies.

This research has important implications for corporate governance. Controlling fraud with an effective internal control structure is critical to the economic well being and credibility of organisations. No internal control structure is infallible. Mautz and White (1979) recognised that neither exclusive reliance on control activities, or on the control environment will provide absolute assurance that fraud will not be committed. However, results from the present research emphasises the emerging role of human resource policies and practice to an internal control structure in preventing and detecting fraud.

Moreover, CoCo (1994) and COSO (1994) recommend companies implement regular risk analysis reviews. It is suggested here that when companies implement regular risk analysis, the relevance of environmental factors such as human resource practices and policies will emerge.

The present findings should be viewed in light of a number of limitations. Firstly, although subjects were randomly selected, due to cost constraints the sample was restricted to private companies, and limited to the state of Victoria, Australia. Secondly, the researchers were unable to check for non-response bias. Due to the sensitive nature of the subject of fraud, all subjects were contacted by telephone with non-respondents electing not to participate. Finally, the comparability of results from the present study with research by Collier et al. (1990, 1991) might be questioned. The research instrument used by Collier et al. (1990,
An Empirical Investigation into the Importance to an Internal Control Structure of Human Resource Practices and Policies in the Prevention and Detection of Fraud

1991) emphasised control activities (e.g. computer input, processing and output controls), whereas the research instrument used in the present study emphasised human resource practices and policies.

Future research might investigate the nature of emerging control systems and strategies adopted by organisations to adapt to the rapid pace of change. The results justify the development of programs designed to educate organisations in strategies to improve internal control.

REFERENCES


An Empirical Investigation into the Importance to an Internal Control Structure of Human Resource Practices and Policies in the Prevention and Detection of Fraud


