

While computer-assisted audit techniques (CAATs) have the potential to increase efficiency and effectiveness of audit engagements, research in this area suggests that such techniques are underutilized in public accounting. Indeed, Elliott (2002, 139) states "Present and future users of accounting and auditing services have increasing need for relevant, reliable, and timely information and IT provides the means to meet them". For example, computer-aided audit techniques (CAATs) may automate previously-manual audit tests, resulting in reduced audit hours for the task, and the ability to easily test 100% of the population rather than a sample, greatly increasing the reliability of conclusions based on that test (AICPA, 2001). While the current audit environment intensifies the need for firms to employ techniques that can reduce workload, including those affecting technology implementation decisions, the culture of public accounting may create impediments to the adoption of new technologies by audit teams (Vendrzyk and Bagranoff, 2003). Therefore, it is important to understand the factors affecting an auditor's reluctance to recommend technology implementation that will impact both the business, and the practice, of auditing. In the current study, we examine factors affecting an in-charge auditor's decision to implement new technology on an engagement, including two contextual or firm-level factors (length of the engagement budget period and remote superior influence) and two individual characteristics (risk preference and perceived budget pressure). Technology acceptance has received much attention from information systems (IS) researchers and the technology acceptance models employed in the IS literature provide a starting point for exploring the issue in public accounting. Specifically, the Unified Theory of Acceptance and Use of Technology (UTAUT), developed and tested by Venkatesh et al. (2003) in the MIS field, informs our study of technology acceptance in the auditing field. As most technology acceptance models (TAM) are designed for multi-organizational use, we modify the UTAUT to reflect factors not previously examined in prior studies but that are present and perhaps (but not always) unique to public accounting. For example, although user resistance to new technology is common in all areas of business, the practices and pressures in public accounting, particularly evaluative pressures and the use of budgets for multiple purposes, create the possibility of even greater technology resistance in public accounting than in other business environments. Additionally, individual differences not previously considered in IS research, such as risk preference and reactions to evaluative pressure, may impact technology acceptance in the public accounting environment. The UTAUT model's performance expectancy dimension motivates the consideration of the length of the budget/evaluation period in our search for possible intervention mechanisms. Additionally, based on the model's social influence construct, we consider whether making the attitude of remote superiors (practice office managing partners) known to the auditor will impact their acceptance decision. Finally, in place of the model's typical individual differences (age, gender, etc.), we consider audit experience, risk preference and perceptions of budget pressure because of their potential importance in auditing. To test this modified model of technology acceptance, experienced auditors completed a case study in which they were given the opportunity to employ a new audit technology after the client engagement letter was signed and the budget was approved. Our statistical analyses show that both of the audit environment factors considered in the study have a significant effect on auditors' decisions to use new technology. The longer budget period (a combined three-year budget) and the communication of the attitude of a

remote superior lead to increased likelihood to implement. However, in the absence of these external factors, individual differences play a role in technology implementation. Risk-seeking auditors are more likely to implement than risk-averse auditors. Unexpectedly, however, risk-averse auditors are more likely to implement when they perceive a great deal of budget pressure.

### Section snippets

#### Technology characteristics and culture of public accounting

In audit situations where use of technology is optional, the implementation decision is typically made by joint discussion between the audit manager and the in-charge auditor (Houston, 1999). If this decision is made prior to the planning process and there is flexibility in total audit revenue, the auditor may be able to factor the cost of technology implementation into the budget with the permission of the partner and client. However, in situations where there is little budgetary flexibility

#### Performance expectancy

The performance expectancy variable in the UTAUT predicts a positive relationship between intention to use technology and gains in job performance. Measuring an auditor's performance is a complex process that involves many factors including budget attainment and audit quality (Hunt, 1995). Audit technology has the potential to improve the efficiency and effectiveness of audit tasks in the long run. However, the budgetary impact of new technology can be substantial in the first period such that

#### Participants

In-charge auditors from one Big 4 accounting firm participated in the study. Because in-charge auditors run the audit day-to-day, they are most likely to identify instances where short-term sacrifices could result in long-term gains of efficiency or effectiveness. Indeed, Sweeney and Pierce (2004) state that the greatest conflict between the business of auditing and the profession of auditing is manifested at the audit in-charge level where quality pressure conflicts with time pressure.

#### Effectiveness of manipulations

Two questions were included in the exit questionnaire to assess the effectiveness of the independent variable manipulations. Participants were provided with two responses to each question; each response was representative of one level of the variable. For example, one question stated "The budget period in the audit scenario was...", and the possible answers were 1 year or 3 years.

### Introduction

Today's audit environment is one of increased responsibility and workload for audit teams, including enhanced responsibilities for detecting fraud required by SAS No. 99 and internal control attestation now required under Section 404 of the Sarbanes-Oxley Act. We apply technology acceptance and budgeting theories to test this contention as well as potential organizational strategies for reducing the impediments to technology acceptance in the audit profession. In the absence of such firm interventions, the individual characteristics of the auditor (risk-aversion and perceptions of budgetary pressure) determine implementation decisions. One approach to meeting these increased demands is through the use of audit technologies,<sup>2</sup> which can greatly improve the efficiency (cost) and effectiveness (quality) of an audit (Banker et al., 2002). Results from an experiment with experienced auditors suggest that firms have the ability to influence the implementation of new technology by using longer-term budget and evaluation periods and by communicating the approval of remote superiors regarding the software. Specifically, risk-seeking individuals are more likely to implement technology regardless of budget pressure perception, but for risk-averse individuals the decision to implement is positively related to perceived budget pressure.

### Correct Discussion

Although audit technology may offer opportunities for increased efficiency and effectiveness, there are numerous risks and costs associated with implementing new technology in

an audit engagement. We propose that this condition is due to performance evaluation pressure and the use of budgets for multiple purposes, which result in the misalignment of firm and individual employee goals. These decisions are particularly problematic when the gains from technology use would be strictly internal, where it is unlikely that the audit client would agree to an increased budget to cover the cost of software. Responses not correctly matching the intended level of the independent variable were considered incorrect. While much has been learned about technology implementation in the MIS area, very