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State of the Dotcom-era accounting information systems (AIS) faculty and implications for the artificial intelligence (AI)-era

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Abstract

Research Questions: What was the state of accounting information systems (AIS) faculty in accounting programs of US universities and colleges (hereafter, institutions) at the peak of Dotcom? What can the artificial intelligence (AI)-era accounting education learn from its Dotcom experience?

Motivation: Accounting education environment during the Dotcom-led innovations and the current AI- and Generative AI (GenAI)-led innovations bears similarities in many respects. While AIS faculty teach AIS courses where students learn information systems (IS) concepts including technology, processes and internal controls in greater detail and depth relative to other accounting courses, our literature review suggests a paucity of research on AIS faculty, especially during the Dotcom-era. AIS faculty is an appropriate proxy for the IS and information technology (IT) skills of accounting graduates' market-ready quality. Therefore, we examine AIS faculty's institutional characteristics during the Dotcom-era and consider implications for the AI-era accounting education to minimize capacity gaps, technology gaps, and resource gaps.

Idea: We analyze US accounting programs for AIS faculty's (*i*) individual features and (*ii*) association with institutional features.

Data: We hand-collect data, from 1998-1999 Hasselback Accounting Faculty Directory (HAFD), which is just before the Dotcom's bust and reflects the culmination of a series of actions taken by accounting programs and accounting education during the Dotcom-era. HAFD, our primary data source, provides faculty and program information in sufficient detail and granularity.

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Tools: We use count data econometric models corresponding to Poisson and Negative Binomial (NEGBIN) processes, since our response variable (*i.e.*, AIS faculty) and its proxies suggest that they approximate a Poisson probability distribution.

Findings: We find that doctoral programs supplying AIS faculty are public institutions and mostly in the southern states. AIS faculty are (*i*) less in private institutions; (*ii*) less in professor ranks; (*iii*) proportionately more with a PhD and certified public accountant (CPA) credentials; and (*iv*) similar in gender split, vis-à-vis all accounting faculty. AIS faculty associate positively with total accounting faculty size, accreditation and public institutions, and negatively with the presence of a doctoral program in the department.

Contribution: We contribute to the existing research stream that examines accounting program quality and faculty background which proxy graduate's market-readiness. At the theoretical and usefulness level, we contribute by using accounting education's Dotcom experience to identify specific implications for the AI-era. At the methodological level, we theorize the count-data econometric features of AIS faculty and consider its five proxies, each with a different theoretical significance to associate with its factors.

Significance: We discuss significance of our results by posing questions to stir debate, dialogue and discussion for devising action-based strategies that are sustainable, inclusive and equitable.

Keywords: Accounting Information Systems (AIS) faculty, Artificial Intelligence (AI), Dotcom, Accounting education, Poisson, Negative Binomial (NEGBIN), Hasselback accounting faculty directory.

JEL codes: M41

1. Introduction

The accounting education environment during the Dotcom-led innovations and the current artificial intelligence (AI)- and Generative AI (GenAI)-led innovations bears similarities in many respects, e.g., trust deficit in higher education, shrinking accounting doctoral programs, aging of accounting faculty, dwindling CPAs supply-chain, rising influence of AI-technologies and preference for skills/competencies over degrees (Accenture, 2023; Center for Audit Quality (CAQ), 2023; Dawkins & Dugan, 2023; McChesney & Bichsel, 2020; World Economic Forum, 2020; Jones, 2018; Brown, 2018; Association of Chartered Certified Accountants (ACCA), 2016; Fogarty & Holder, 2012). During the Dotcom period, Accounting Education Change Commission (AECC), accounting education's constituents and authors noted several anomalies that questioned accounting education's continued relevance. Accounting education and its marketplace still suffer from similar, if not the same, anomalies. Therefore, the implications of accounting education's Dotcom experience, for the AI-era accounting education, are worth considering. This issue is significant to minimize capacity gaps, technology gaps, and resource gaps, experienced by the Dotcom-era accounting education.

The speed of innovation creates imperatives for accounting education to adapt accordingly. Generative Pre-trained Transformers (GPT) have garnered widespread visibility and influence within a short span since Chat Generative Pre-Trained Transformer's (ChatGPT) first launch on November 30, 2022 (McMurtrie, 2023; Torres, 2023). During the current rapid pace of AI-led innovations, insights from Dotcom-led innovations may help accounting education maintain its relevance and sustain capacity building.

Gaps in accounting graduates' information systems (IS), information technology (IT), and process skills were one of the concerns during the Dotcom-era (AECC, 1990; AAA, 1986). Generally, in an accounting curriculum, accounting information systems (AIS) faculty teach AIS courses where students learn systems concepts including IS, IT, business processes and internal controls in greater detail, depth and focus than in other accounting courses. Thus, AIS faculty seems an appropriate proxy to assess the market-readiness, including with respect to systems skills, of accounting graduates. Therefore, we examine the state of AIS faculty in accounting programs of US universities and colleges (hereafter, institutions) at the peak of Dotcom. The peak represents the accumulation of accounting program-based initiatives during the Dotcom. Our interest is to understand those initiatives using only the AIS faculty data at the Dotcom peak.

We use the word institutions to refer to universities and colleges; all three words are used interchangeably. We may add that AIS is a course within the accounting curriculum. All accounting courses, including the AIS course, are taught by accounting faculty who are employed in the accounting department. To distinguish from other accounting faculty, we use the phrase 'AIS faculty' only for those who indicate 'systems' as one of their areas of teaching and research and are listed as such in the Hasselback Accounting Faculty Directory (hereafter, HAFD). Therefore, we use systems faculty and AIS faculty interchangeably.

Our motivation is to assess accounting education's response to skill needs for once-a-century transformative technologies-based business event necessitated by year-2000 (Y2K), enterprise resource planning (ERP) projects, and the Internet. The Dotcom innovation sustained and evolved into a new normal in the 21stcentury. The AI and GenAI are currently influencing business processes similar to the Dotcom wave (Vellante, 2024; Katte, 2023; Sjödin *et al.*, 2021). Therefore, the findings of our research should have implications for accounting education during current and future innovations in transformative technologies affecting business processes.

Using the 1998-1999 Accounting Faculty Directory (Hasselback, 1998), we hand-collect data of US accounting programs to examine AIS faculty's (*i*) individual features, and (*ii*) association with institutional features. We address following questions: (*i*) number of accounting faculty with systems interests; (*ii*) institutions (*i.e.*, institution of affiliation) with largest number of AIS faculty; (*iii*) AIS faculty demographics; (*iv*) doctoral degree programs (*i.e.*, institution of academic origin) supplying AIS faculty; and (*v*) association of institutional features with AIS faculty.

We find that AIS faculty (*i*) are less in private institutions, and (*ii*) associate positively with total accounting faculty size, accreditation status and public institutions, and negatively with doctoral degree offerings. Vis-à-vis all accounting faculty, AIS faculty are (*i*) less in professor ranks; (*ii*) proportionately more with a PhD and certified public accountant (CPA) credentials; and (*iii*) similar in gender split, with males outnumbering females. Doctoral programs supplying AIS faculty are public institutions and mostly in southern states.

Our study provides a snapshot of AIS faculty at an important period and can serve as a baseline for longitudinal comparisons. Our model, validated by empirical data, has a normative appeal by identifying factors associated with AIS faculty. Significant individual effects revealed in the model should interest accounting education's constituents, including employers, administrators, accounting programs, faculty, doctoral aspirants and students. We present results from data analyzed at the peak of Dotcom for guidance and discuss their significance by posing questions to stir debate, dialogue and discussion for devising action-based strategies that are sustainable, inclusive and equitable. Admittedly, our results represent data from a historical period symbolizing significant, important, and once-in-a-century event. Yet, these results have value and prescriptive appeal for current AI and Gen-AI led innovations impacting accounting education and business processes.

1.1 Rationale for the 1998-1999 stock analysis and its significance for the AI-era

Dotcom started during early 1990s. The hindsight reveals Dotcom's peak before the bubble burst in March 2000. During Dotcom, everything and anything Web or the Internet was touted as the next big thing, and chased after by the stock market. Migration from the academia to industry or consulting was common. Accounting programs were not insulated from these effects. Dotcom-induced trends combined with accounting education's own self-critique, including teaching and training not keeping pace with changes in the industry and marketplace, added pressures on accounting programs to make strategic choices and adjustments in their processes, pedagogy and curriculum. Responding to pressures, accounting education considered several changes at institutions' level, including with respect to AIS faculty.

The 1998-1999 accounting faculty directory which is just before the Dotcom's bust, reflects the culmination of a series of actions taken by accounting programs and accounting education during the Dotcom-era. Understanding the state of AIS faculty at the peak of Dotcom can provide useful learning for similar events in the future.

One such event is the current AI-era which is still in its infancy. AI's infancy provides a useful opportunity for accounting education to leverage its Dotcom experience for introducing changes before AI reaches its peak and maturity. As a proactive strategy, this opportunity is particularly significant since both eras share similarities that we discuss in the next section.

The rest of the paper proceeds as follows: Section 2 discusses relevant background literature leading to our motivation. Section 3 discusses factors of AIS faculty and the empirical model. Section 4 describes research design, variables, and methodological details including theoretical, econometrics and statistical issues. Section 5 presents primary findings from thematic analyses. Section 6 presents and discusses regressions results. Section 7 closes the paper with implications, contributions, limitations and possible extensions.

2. Background and motivation

2.1 Faculty profile and program quality literature

Most research concerning accounting faculty focuses on productivity and publication issues. Limited research exists on the background of accounting faculty or profiles of accounting program quality as proxies for accounting graduates' market-readiness.

One of the goals of an accounting program is to prepare market-ready graduates to meet the needs of the industry and the profession. The market-ready quality (*i*) signals a program's competitive advantage, (*ii*) enhances students' internship and job opportunities, (*iii*) facilitates students' career advancement, and (*iv*) is used by accounting programs to appeal to their stakeholders, including prospective students, employers, and accreditation agencies. The market-ready quality is indicated by several factors including curriculum content, course options, accounting program profile, institutional profile, and faculty profile (Nagle *et al.*, 2018; Bline *et al.*, 2016; Boone *et al.*, 2006).

Madsen (2015) used two proxies of quality viz., Higher Education Research Institute's data of college freshmen to measure student quality and incomes data to measure returns to education. The author noted that during 1970s to 2000s (*i*) accounting students underperformed non-accounting majors for both quality proxies, and (*ii*) accounting education quality did not significantly change.

Prior studies examining faculty profile are varied in their focus and findings. Newell *et al.* (1996)'s analyses of demographic, behavioral, and attitudinal survey data found that faculty with doctoral degrees from 1970, 1980 and 1990 experienced academic environment changes in their careers. Gibson and Schroeder (1998) compared faculty profiles of 1983 and 1995 HAFDs, and reported a decline in full-time faculty and differences in academic preparations. Kamath *et al.* (2009) used 2004-2005 HAFD to examine characteristics of accounting faculty. One of their findings was a shortfall of 3.6 times in the number of new doctorates compared with retiring faculty, thereby, confirming supply-demand concerns of the American Accounting Association (AAA). Bline *et al.* (2016) found positive association between accounting faculty characteristics (*viz.*, teaching specialization, CPA certification and research productivity) and students' CPA exam performance.

Collins *et al.* (2000)'s analyses of gender data from 1991 to 1997 HAFDs showed that female graduates from middle-tier (top-tier) doctoral programs are less likely (equally likely) as male graduates to secure a faculty position at doctoral granting institutions. Analyses of gender data from 1979 to 1990 HAFDs found that (*i*) about 40% of accounting programs had no female faculty, and (*ii*) the success rate for female faculty joining small and medium sized programs was better than joining large programs (Carolfi & Pillsbury, 1996).

In the market-ready debate, our foregoing review of the literature suggests a paucity of research on AIS faculty during the Dotcom-era. Therefore, we extend the literature on accounting faculty profile to focus only on AIS faculty and their institutional characteristics that are relatively less examined. AIS faculty teach AIS courses where students are taught systems concepts including technology, business processes and internal controls. Relative to other accounting courses, AIS courses cover these concepts in relatively greater detail and depth. Therefore, we premise that AIS faculty is an appropriate proxy for the IS and IT skills of accounting graduates' market-ready quality.

2.2 Responding to Dotcom

During Dotcom boom, the promise of new, innovative, transformative technologies as a panacea for all problems propelled IS and IT skills' demand which seemed only to go up. Compensation levels for such skills also charted an increasing trajectory that was widely believed to remain optimistic and ever rising. Consequently, student enrolment in IS, IT, and AIS courses and programs rose in close parallel to industry trends.

The lagged response from institutions included (*i*) offering multiple sections of systems courses, (*ii*) offering more than one systems course; (*iii*) creating a new major or minor in systems or AIS at undergraduate or graduate levels, and (*iv*) allocating resources—classrooms, laboratories, computers, library facilities—for rising enrolment.

However, to meet the demand surge, institutions took most decisions swiftly, in the heat of the moment, mostly without (*i*) a rigorous due process, (*ii*) considering the precariousness of the bubble, and (*iii*) a thorough analysis of steps being taken. While institutions' eagerness to quickly ride and capitalize on the boom-wave was partly the reason, their administrative processes were largely insufficient, ineffective and inefficient (Weber, 2004).

Consequently, the sudden bust of Dotcom boom witnessed a domino-effect that was swift, abrupt and widespread: (*i*) most Dotcom companies that were prized and coveted few days ago, stopped operations, significantly downsized, became insolvent and eventually closed down; (*ii*) capacity created during the boom period suddenly became excess and a liability in companies' balance sheets, (*iii*) investments dried up; (*iv*) job losses, including for IS and IT skills, were immediate and widespread; (*v*) demand for IS/IT skills/professionals nose-dived; (*vi*) student enrolment followed the industry downward trend; (*vii*) systems courses and new majors or minors fell out of favor from students; (*viii*) few or no enrolment meant closing multiple sections, closing newly created degree programs due to low or negative ROI, (*ix*) institutions were staring at vacant student seats, (*x*) IS and management information systems (MIS) programs shrank; and (*xi*) demand for IS faculty declined. The Dotcom bust was felt as if the system-wide brakes were suddenly applied that brought the boom to a screeching halt. The business model built on mere promise and euphoria but without profits was untenable. The effect was widespread and catastrophic because of the mistaken self-believed immunity from market forces.

In a discourse on the history of accounting education, Chu and Man (2012) provide an inventory of steps taken by and recommended for accounting education to address changes sought in the wake of skill gaps and fallout of the Dotcom bust. According to Weber (2004), the future will likely entail changes, including technology-led, that are frequent and more rapid. Therefore, universities should train students with skills that transcend changes so that they can retool, learn and adapt quickly in the wake of those changes.

2.3 Dotcom's effect on skills and expectation gap

The technology-based innovations since early 80s had at least three concurrent, mutually reinforcing, simultaneous and complementary streams: ERP, Y2K, and the Internet. These three streams fuelled unprecedented growth of Electronic Commerce (E-commerce) and investments in Internet-based companies during the Dotcom-era.

A common effect of these streams was to change and streamline organizations' systems. Therefore, organizations required skills to (*i*) create, code, install, integrate, and embed business rules, and (*ii*) maintain, control, and manage systems. This led to a sudden, increased demand for graduates with systems and technology competencies, and training in AIS, MIS, information science, and computer science (CS). The surge in demand for such graduates from organizations resulted in rising enrollments in these academic programs.

In parallel, faculty was also declining in academic programs due to higher industry compensation owing to shortage of skilled staff. CS departments in smaller institutions were losing faculty to industry and larger institutions (Fox, 2000). The cross migrations were stifling capacity. Institutions were forced to limit student enrollments (Goff, 2000). The labor arbitrage meant (*i*) loss of existing faculty, and (*ii*) drying supply of doctorates with doctoral aspirants preferring industry and consulting jobs due to doctoral degrees' long gestation period and inherent attrition rate (Freeman *et al.*, 2000; Weiner, 2000; Pogrow, 1981). Among the new hires, IS faculty were "*clearly in greatest demand*" and had the highest doctoral vacancy rate of all business disciplines (The Association to Advance Collegiate Schools of Business International, 2002, p. 9). Shortage of faculty with IS, IT or AIS expertise led to their steadily rising compensation. Multiple offers for new doctoral graduates were not uncommon. Doctoral programs with IS, IT, or AIS concentration rose in demand from new PhD aspirants.

The demand-supply induced salary differentials for graduates existed even between college majors. Starting salaries for undergraduates in CS and information science exceeded those for accounting graduates (Wall Street Journal, 2001, B12). Master of accountancy graduates lagged behind MIS graduates in terms of starting salaries (Doran, 2001). The cumulative impact was an adverse supply of undergraduate and graduate students that further imbalanced the salary matrix.

Moreover, the market-ready debate got a fillip during the Dotcom-wave which brought it to the forefront. Rapid innovations in technologies with effect on business processes during the Dotcom-era and a slow response from accounting education created an expectation gap between acquired and required skills, knowledge and competencies (Jackling & De Lange, 2009). Accounting education's lagged response was also seen at the genesis of its relevance debate (Albrecht & Sacks, 2000; AECC, 1990; AAA, 1986). Maintaining the market-ready quality becomes challenging when aging of accounting faculty and trends in their shortage with more decline at non-doctoral institutions, are confronted with a rise in enrollment due to Sarbanes Oxley Act 2002 (SOX)-induced demands for accounting graduates (Kamath *et al.*, 2009). Therefore, research that addresses the expectation gap is important to help (*i*) students to select a curricular path to become market-ready; (*ii*) the advising process on curriculum choices for students; (*iii*) faculty recruitment, training, development and promotion efforts; (*iv*) accreditation agencies to develop benchmarks and advise accounting programs; (*v*) employers to adjust their recruiting strategies; and (*vi*) design and develop program improvement strategies.

2.4 Accounting education's own introspection

Alongside Dotcom, beginning 1980s, accounting education was self-introspecting amidst declining enrollment and growing trust deficit in its value addition with its content that remained static and being steadily replaced by IT (Albrecht & Sack, 2000; AAA, 1986). Employers cited the relative ease and the economics of training IS and Computer Information Systems (CIS) majors in accounting than vice-versa. Many public accounting firms identified themselves as all-encompassing professional service firms *versus* only accounting firms.

In an effort to stem negative trends, a common recommendation was to systematically infuse IT and IS content across the accounting curriculum (International Federation of Accountants (IFAC), 1998; American Institute of Certified Public Accountants (AICPA), 1996; AECC, 1990). AECC concerns influenced discussions and debates in accounting programs. The sudden surge in skill-needs of Dotcom organizations added to the curriculum and pedagogical policy deliberations in accounting programs (Ravenscroft & Williams, 2004).

In the wake of simultaneous corporate scandals that were neither isolated nor independent of the Dotcom bust, accounting education was asked to teach accounting and business concepts "*more as received wisdom or dogma than as problematic issues*" (Ravenscroft & Williams, 2004, p 7). This approach aimed to instill critical thinking in students. SEC Chairman Arthur Levitt (1998, as cited in Turner, 2006) sought a cultural change, from accounting education and businesses, for a collective response to repeated corporate failures in history which is marred by short-term memory of individuals.

2.5 An opportunity for accounting education

To address foregoing concerns, accounting programs responded by infusing systems expertise in the form of at least a formal AIS course taught by an AIS faculty. Over half of North American business schools had separate IS departments and "*accounting courses have the greatest level of Information Systems infusion. This comes as no surprise, since accounting applications were some of the earliest computer applications*..." (Simon & Wang, 1999, p. 10).

The AIS courses designed and taught by AIS faculty tried to meet systems and technology skills expected by employers. AIS faculty usually participate in conversations about technology in accounting curriculum. Some accounting programs included more than one AIS course in their accounting curriculum (Rittenberg, 1998). Few institutions also started separate undergraduate programs in AIS (Dillon & Kruck, 2004). Accounting educations' re-organization efforts included (*i*) academic programs combining IS and accounting faculty to form departments of accounting & information systems, and (*ii*) Beta Alpha Psi, an international honor society for accounting and finance students, opening membership eligibility to IS majors in 1999 (AICPA, 1999). Deficient accounting programs considered competing alternatives including sourcing systems expertise and courses from IS and MIS departments. Efforts were made to integrate systems and IT concepts across the accounting curriculum.

However, re-organization efforts were not uniform. Accounting programs nationwide had disparities in the breadth and depth of response to meet the needs of the industry and the profession. Technological skills in accountants were "*by no means uniformly spread throughout the profession*" (Elliott, 2000, p. 84). Changes effected by accounting programs were not pervasive and significant enough to make a difference (Albrecht & Sack, 2000).

All told, the Dotcom-era created an opportunity for accounting programs to invest in AIS faculty to teach AIS courses with a goal to instill systems and technological skills in accounting graduates. Accounting education responded by taking several remedial steps.

2.6 AIS' continued relevance notwithstanding the dotcom bubble burst

With passing of the Y2K deadline and following the burst of Dotcom bubble in March 2000, the labor market witnessed a sudden decline in IT and IS related job opportunities (Finley, 2003). However, AIS' importance continued unabated. Some of the reasons included (*i*) IT and IS skills generally expected of accountants, (*ii*) expected increase in the time spent on IS/IT audits and SOX's Section 404 projects (Arens & Elder, 2006, p. 346), (*iii*) ERP innovations with pristine installations, upgrades, extensions and maintenance (Arnold & Sutton, 2007), and (*iv*) important strategic role of skills learnt in AIS courses, in even non-technical areas (Fordham, 2005).

2.7 Similarity between the Dotcom and AI-eras

If in the AI-era, there is a potential for accounting education to learn from its Dotcom experience, then it is instructive to discuss parallels between the two eras. Innovations in industry precede academia's response, which invariably lags behind (Kajtazi *et al.*, 2023). Therefore, we discuss similarities with respect to both (*i*) technology innovations in the industry, and (*ii*) the academe's initiatives.

2.7.1 Technology innovations in industry

With respect to industry-led technology innovations, both Dotcom and AI-eras share several similarities including (*i*) rapid innovations; (*ii*) swift expansion; (*iii*) proclaimed significant market potential of new technologies' and their publicized transformative appeal to revolutionize many industries and change societal behavior;

(*iv*) high levels of capital expenditures (CapEx) investment; (*v*) investor overconfidence bordering irrational exuberance despite unprofitable operations; and (*vi*) unrealistic, inflated expectations about new technologies' disruptive potential. The promised potential of new technologies lead to quick emergence of companies and start-ups with attractive demos, catchphrases and often, unproven sustainable business models (Dobre *et al.*, 2020). During Dotcom, just having a website was enough to label a company, an Internet company. Today, just leveraging or plugging into ChatGPT is sufficient to label a business, an-AI business, notwithstanding the absence of a significant differentiation or defensible technology to justify speculative investments (Economic Times-CIO (ET-CIO), 2024). Similar to the Internet, AI is fast becoming a ubiquitous part of the digital landscape. According to Brynjolfsson *et al.* (2019), the hype surrounding the advertized transformative effects of both periods' technologies has little or no productivity impact. Thus, both eras share potential market wide, macro-economic risks.

While AI is still in its infancy, and it is premature to characterize it as a bubble or if it will pop, some indicators that parallel with Dotcom days, are worth mentioning. The layoffs by technology industry in 2023-2024 saw unusual volume due to challenging market conditions which contrasts with the claimed job potential of AI technologies (ET CIO, 2024). Vellante (2024) sees the 'Netscape moment' in the AI chip designer Nvidia's market capitalization of $2 trillion on 23 February 2024, when it achieved "*the single-largest daily market cap gain of any company ever*" (Saul, 2024). On June 18, 2024, Nvidia became the most valuable global company with a market cap of $3.34 trillion, and the best performing stock of last quarter century with a total return of almost 600,000% since its launch on February 1, 1999 (Bloomberg news, 2024). Drawing a parallel with Dotcom days, Netscape rose to the top in 1995, eventually became obsolete in 1998 with its acquisition by America Online, which closed down in 2008. Major tech companies themselves point to limitations in AI's capabilities. Investment advisors are swindling investors by making false and misleading claims about their use of AI. On March 18, 2024, the U.S. Securities and Exchange Commission (SEC) charged two investment advisors with a $400,000 civil penalty for false AI claims, and advised public to be vigilant by issuing an '*Investor Alert*' about AI and investment fraud (SEC, 2024). Some in industry and academia believe that many businesses emerging during the AI-hype period may not survive (Katte, 2023; Dobre *et al.*, 2020). Among reasons for such fallout include businesses' inability to make profits, lost investor support and confidence, lack of proven or sustained business model, investors' overestimate of AI's potential, unrealistic valuations of AI verticals, investment in non-viable ventures, and irrational exuberance.

2.7.2 Academe's landscape

With respect to academe's landscape, specific to higher education in general, both AI and Dotcom-eras bear notable similarities including (*i*) concerns about higher education's continued value proposition; (*ii*) increasing reliance on skills and competencies over formal degrees in hiring practices; (*iii*) imperatives from industry-led innovations to consider pedagogical changes, technology-based solutions and technology-embedded approaches; (*iv*) uncertainty about students' adoption of potential pedagogical changes; (*v*) declining enrollments due to societal, and demographic factors; (*vi*) enrollment issues in high schools affecting enrollment in higher education along the supply chain; and (*vii*) difficulty in predicting future education model. These trends are felt across all disciplines and majors – some are affected more than other disciplines.

Similarities between the two eras specific to accounting education include (*i*) shortage of accounting professionals; (*ii*) non-accounting graduates commanding higher starting salaries than accounting graduates; (*iii*) fewer students opting accounting as their major at the undergraduate level; (*iv*) professional organizations such as AICPA encouraging stakeholders to address issues in the education supply chain and consider changes in accounting education; (*v*) accounting doctorate becoming a less favored option to pursue among graduates; and (*vi*) shrinking and closure of accounting doctoral programs. Such trends are detrimental for the supply of accounting faculty and accreditation of accounting programs, where faculty aging is already an issue.

During Dotcom, MIS student enrollments rapidly increased in 1990s, accelerated at the beginning of 1995, reached its peak in 2001, and fell sharply thereafter (Aiken *et al.*, 2008). Many publicized claims of massive open online courses (MOOCs) remain unrealized (The Economist, 2013). With on-demand and continuous auditing still largely academic concepts, decision-makers face challenges in getting timely audited information. Managers are increasingly relying on un-audited company prepared information to make decisions in the wake of rapid changes in business and growth in information. Stakes are particularly higher for accounting education given its link with licensure requirements to sit for professional examinations including the CPA. Only a licensed CPA can attest to the integrity of a public company's financial statements.

Thus far, the higher education's response to AI, especially ChatGPT has ranged from cautious embrace, judicious skepticism, subdued reaction to an outright ban. The higher education's embrace of AI assumes special significance, given sustained, rising budget cuts and resulting financial challenges. Proponents defend AI for its ability to complement learning, promote higher-order learning, improve accessibility, and increase productivity. Critics use compromised critical thinking, widespread plagiarism, and ceding creation and creativity to machine, as some of the many reasons to voice their apprehensions for the use of ChatGPT in higher education (Jarrah *et al.*, 2023). Changes brought by pace of rapid innovations in AI-led transformative technologies bring to the fore, gaps in skills required by the industry/profession, and skills supplied by accounting education. To recognize AI's reach, appeal and influence on accounting education, the profession, AAA, and professional organizations, such as AICPA, IMA, and IIA, are taking independent and collective initiatives at various levels and form. Institutions are experimenting with different strategies for adoption and integration of AI in curriculum, and supporting their faculty.

Similar views and initiatives made headlines during the advent of the Internet (Pittinsky, 2002). Similarities are prominent despite the two eras being over a quarter century apart. We leverage these similarities to (*i*) explain our results, and (*ii*) explore, for the AI-era, implications of accounting education's Dotcom experience. The learning from the Dotcom experience may engage accounting education towards sustainable curriculum and pedagogical approaches that (*i*) are agile and flexible, (*ii*) imbibe skills in students to adapt and ride the volatility, (*iii*) avoid making similar mistakes, (*iv*) minimize key gaps—capacity, technology, and resources, (*v*) maintain relevance, and (*vi*) sustain capacity building, amidst current technology innovations marked by AI, large language models (LLM), and GPTs.

The aforesaid background provides motivation to examine AIS faculty, a probable proxy for IS and IT skills in graduates, to assess accounting programs' response during the Dotcom. In the current AI- and GenAI-led rapid technological innovations, our findings, from an important historical period, should interest accounting education's constituents.

3. Factors of AIS faculty

Knowledge of factors that associate with AIS faculty is important to understand AIS faculty's descriptive state during the Dotcom and to explore future prescriptions. A dedicated AIS faculty can better manage, in dedicated AIS course/s, the expanding knowledge in IS, IT and AI. A separate, dedicated AIS course affords the coverage of IS and IT concepts in greater depth, that is not always feasible, when embedded only within traditional core accounting courses, for various reasons, including time limitations in the syllabus. In this context, we examine the following four factors of AIS faculty.

3.1 Faculty size

The total faculty size represents a potential for diversity of faculty expertise. A smaller size is likely to focus course offerings only in core accounting areas such as financial, managerial, auditing, and tax. A larger size may likely include non-traditional expertise such as AIS, electronic commerce (E-commerce), extensible business reporting language (XBRL) and AI.

3.2 Resources

Generally, resources should increase with the number of degree offerings (e.g., Masters, MBA or doctoral degrees), status of the institution, independence of business school, and student enrollment. Since focus of most doctoral programs is on core accounting areas, they may likely not need a non-traditional expertise such as AIS. A counter argument uses doctoral programs' higher resources and mission for justifying a dedicated AIS faculty.

An institution's status as a college, university or institute may affect resources. A comprehensive university may garner more resources than a college or an institute. An independent business school may have access to more resources than a business program that is a department in another school or college within the institution. Finally, student enrollment varies directly with resources. A large enrollment attracts more resources. Exceptions to these general relationships are certainly possible.

3.3 Accreditation status

The Association to Advance Collegiate Schools of Business International (AACSB) is a global non-profit organization that accredits business programs and accounting programs at the bachelor's, master's, and doctoral levels of an institution that has met AACSB accreditation requirements. AACSB accounting accreditation is a supplemental accreditation, over and above AACSB business accreditation.

Table 1. Empirical model

Testing Model:	
Minimalist version: $N_s = f\,(TF, DOCT, BUSACR, ACCACR, PUBPVT)$ Expanded version: $N_s = f\,(TF, DOCT, M, MB, CUI, DEP, ENROL, BUSACR, ACCACR, PUBPVT)$	
Dependent variable:	
AIS faculty construct (N_s) and has following five proxies that we examine: 1. Total number of systems faculty (*SF*) 2. Proportion of systems faculty (*PSFO*) 3. Real systems faculty (*RSF*) 4. Originally systems faculty (*OS*) 5. Pure systems faculty (*PS*)	
Independent Variables:	Expected Sign
1. Total Faculty size (*TF*)	+
2. Doctoral program offered (*DOCT*)	+
3. Business school accreditation (*BUSACR*)	+
4. Accounting program accreditation (*ACCACR*)	+
5. Control Type (*PUBPVT*)	+ / -

6. Masters program offered (*M*)	+
7. MBA program offered (*MB*)	+
8. College, University or Institute (*CUI*)	+
9. Dependent or independent status (*DEP*)	+
10. Institutional enrollment (*ENROL*)	+

Notes to Table 1:
SF is an absolute measure and derived by weighting each AIS faculty by the number of interests indicated in the directory. *PSFO* is a relative measure derived by dividing *SF* by *TF*. *RSF* counts only the fraction of the faculty that is AIS when they list multiple functional areas. *OS* counts faculty listed as having systems as one of their teaching and research interests beginning from their first academic position in the directory. *PS* counts faculty who indicated only systems as their interest in the directory. *DOCT, BUSACR, ACCACR, PUBPVT, M, MB, CUI,* and *DEP* are binary variables.*TF* is the number of faculty in an accounting program. *ENROL* is the number of students enrolled in the institution.

In Dotcom-era, AACSB accreditation standards did not specifically require that business programs have IS in their core education or that accounting programs include AIS faculty (Simon & Wang, 1999). However, rising demand for accounting graduates with IS and IT skills encouraged accredited programs to recruit AIS faculty. Further, starting salaries for faculty is generally higher at AACSB accredited institutions and the gap was increasing during the Dotcom (Agarwal & Yochum, 2000). Having faculty with doctoral degrees is important at AACSB accredited programs (Bidgood & Baldwin, 1992).

3.4 Control type

Control is tied to sources of funds. Historically, government funding and subsidies are major sources for public institutions. Comparatively, private ventures, investors, endowments, and tuition fees are major sources for private institutions. Public institutions are larger with more resources, more freedom for curriculum innovations, and higher faculty salaries. Private institutions are smaller with fewer resources, liberal arts focus, limited business curriculum, and often without accounting programs (Bennett, 2001; Honan, 1999; The Chronicle of Higher Education (TCHE) Almanac, 1998). While exceptions to these observations exist, public institutions generally have more AIS faculty.

Consistent with prior research (Kimmell *et al.*, 1998; Sennetti & Dittenhofer, 1997), we represent the size of AIS faculty, *Ns*, as a function of five variables:
$N_s = f\,(TF, DOCT, BUSACR, ACCACR, PUBPVT)$ where, *TF* = size of the entire accounting faculty, *DOCT* = doctoral degree offered in the department, *BUSACR* = status of AACSB business school accreditation; *ACCACR* = status of AACSB accounting program accreditation, *PUBPVT* = public or private status of the institution, and N_s = the size of AIS faculty.

Following our discussion in section 3, we extend equation (*i*) to also include additional five proxies of resources: Masters degree offerings in the accounting program (*M*); MBA degree offerings in the accounting program (*MB*); institution's status as a college, a university or an institute (*CUI*); if the accounting program is dependent or independent within the business school (*DEP*); and total students enrolled in the institution (*ENROL*). The extended model of AIS faculty size, N_s, is represented below:

$N_s = f\,(TF, DOCT, M, MB, CUI, DEP, ENROL, BUSACR, ACCACR, PUBPVT)$ (*ii*)

TF and *ENROL* are continuous variables; all other variables are dichotomous.

Equation (*i*) is a minimalist version, while equation (*ii*) is an expanded version of the relationship between AIS faculty and its factors. For comparison, we estimate both equations. Together, the ten variables (*viz.*, *TF, DOCT, M, MB, CUI, DEP, ENROL, BUSACR, ACCACR, PUBPVT*) in equation (*ii*) above represent institutional factors of AIS faculty relevant to our study. Both equations independently assess the effect of AACSB business and accounting accreditations as separate variables. Table 1 presents empirical models, constructs, their proxies and expected signs. Expected signs indicated in the table follow the rationale presented above.

4. Research design

To answer our research question, we need individual features and institutional factors of each faculty at the peak of Dotcom. HAFD provides faculty and program information in sufficient detail and granularity. HAFD is a frequently used resource in accounting research. We used the 1998-1999 edition of HAFD which is just before the Dotcom bubble bust in March 2000, and is the primary data source for our research.

We hand-collect data from the 1998-1999 edition of HAFD. The directory lists a maximum of four teaching and research interests for each faculty. We used 'systems' as the indicated area of interest for teaching and research to classify faculty as an AIS faculty.

Besides institutional factors discussed above, individual features of AIS faculty relevant for our study include, gender, degrees, professional certifications, and rank of each faculty. We consider five different variants of AIS faculty - total number of AIS faculty (*SF*), proportion of AIS faculty (*PSFO*), number of real AIS faculty (*RSF*), number of originally AIS faculty (*OS*), and number of pure AIS faculty (*PS*). In the following section, we define and explain these proxies.

Besides HAFD, which is our primary data source to collect individual features and institutional factors, we use two other data sources. We use TCHE Almanac (1998) for student enrollment data. We use the AACSB membership directory to obtain the list of institutions with AACSB accreditations at the levels of business school and accounting program. Below we define, explain, and rationalize variables, and their measurement in detail.

4.1 Methodological notes: AIS Faculty construct

We measure AIS faculty by its absolute size, *SF*, calculated as their total number. To allow for AIS faculty hired for teaching and programmatic needs *versus* for both teaching and research needs, we also analyze additional four proxies of AIS systems faculty:

(i) The proportion of systems faculty, *PSFO*, is a relative measure. To derive PSFO, we divide *SF* by *TF*.

(ii) Real systems faculty, *RSF*, counts only the fraction of the faculty that is AIS when they list more than one area for their teaching and research. To compute *RSF*, each AIS faculty is weighted by the number of interests indicated in the HAFD.

(iii) Originally systems faculty, *OS*, measures faculty listed as having systems as one of their teaching and research interests beginning from their first academic position in the directory. *OS* differs from a 'converted faculty'— who has non-accounting or non-AIS PhD but end up later either teaching or doing systems research. For example, The University of Georgia ranks first in terms of preference of a person looking to enter PhD program, as per our analysis in Table 4 (please see later). However, Georgia has little or no AIS faculty in its accounting program. This leads us to believe that Georgia offers little or no training in AIS but Georgia graduates were likely converts — trained in an area other than systems but later end up teaching or doing systems research. To determine *OS*, we traced each AIS faculty to the oldest available version of HAFD that indicated their first academic position. If HAFD reflects them with a systems interest in their first academic position, we classify them as *OS* faculty.

(iv) Pure systems faculty, *PS*, measures faculty who indicated systems as their only area of teaching and research interest in HAFD.

Our sample includes 811 U.S. institutions with 753 faculty or 12% (out of a total of 6,173) having systems interest. AAA's 1998-1999 directory lists 781 members, including international members, in AAA's *Information Systems* (*IS*) *Section*. HAFD lists systems interest for 97% (32 of 33) faculty as editorial board members reported in the *Journal of Information Systems*' (*JIS*) Fall 1998 issue. As an additional test of the quality of HAFD, 90% (26 of the 29) faculty serving in 1998-1999 as officers, committee chairs, editors, or regional coordinators of the AAA's *IS Section* had systems interest. Thus, HAFD seems a reliable data source.

We excluded Deans from the analysis since they generally do not have teaching responsibilities. We included accounting chairs, heads and administrators in the analysis since they usually have some teaching obligations. We excluded faculty labeled as ‘retired’ or ‘visiting’ from the analysis.

4.2 Gender

HAFD does not identify gender. Therefore, to categorize gender, we followed a systematic process that diligently ensured data privacy and confidentiality. All data, including gender information, is collected and analyzed on an aggregate basis without attributing to any faculty individually or personally. Further all data is used only for research purposes.

We made gender classification using faculty members' first names. Most decisions were made collectively by authors from the names in the directory. This method is used in prior studies (Dwyer, 1994; Norgaard, 1989).

For cases where a faculty’s gender was unclear, we followed a sequential process that strictly ensured data privacy and confidentiality: First, we visited each institution’s website to identify gender, wherever faculty photos are available. Second, some journals also publish photos of authors with their published article. Using publicly available sources, we retrieved faculty’s journal publications, where their research publication list was available in respective department’s websites, to confirm their gender. Third, as a last resort, we called respective department office where the administrative staff helped us with faculty classification. In our conversations with the administrative staff, we conveyed our processes to ensure data confidentiality and privacy.

4.3 Other variables

We classified institutions as doctoral or non-doctoral, *DOCT*, based on a doctoral degree program offered within the business school or accounting department as shown in HAFD. Generally, departments offering doctoral programs command more resources. Therefore, *DOCT* is a proxy for resources.

We obtained from HAFD, the highest degree earned and certification credentials for each accounting faculty. HAFD lists only accounting certifications, but does not list non-accounting certifications such as Certified Information Systems Auditor (CISA) and Cyber Security Service Provider (CSSP). We used the AACSB’s 1999-2000 Membership Directory to ascertain the 1998 accreditation status of each business school and its accounting program.

HAFD lists if the accounting program offers masters degree (*M*) and MBA degree (*MBA*). To categorize an institution as a college, a university or an institute (*CUI*), we used the name of the institution as listed in HAFD. Our rationale for using *CUI* is the ability of an institution to command resources. A university status suggests a large, comprehensive structure compared with a college or an institute, and should command more resources vis-à-vis a college or an institute (Jaquette, 2013).

HAFD lists if the accounting program is part of a business school or a separate and independent unit by itself. We used this information to categorize the accounting department as dependent or independent. If the department is a school in itself or a separate unit, then we categorized it as independent. This process helped us to create *DEP* variable. Our rationale for using *DEP* is an accounting program's relative independence which may help to generate and control more resources. A school status for an accounting program may likely give it relatively more independence and, hence, more resources compared with a program that does not have a school status or is part of a business school (Eckel & Ross, 1985).

We used TCHE Almanac (1998) to obtain student enrollment data, *ENROL*. The rationale for using *ENROL* is its expected relationship with resources – a larger student enrollment should associate with more resources for the institution and the accounting program (Jaquette, 2013).

We used TCHE's 1998-1999 Almanac issue to classify each institution as public or private, *PUBPVT*. Prior research has used public-private status of an institution to examine their research questions (Gordon *et al.*, 2002).

4.4 Methodological notes: Estimation models

Several features of our response variable and its proxies suggest that they approximate a Poisson probability distribution. For example, the occurrence of events (*i.e.*, AIS faculty) is random and independent. Data are counts of events and the average rate of their occurrence through time is constant. Further, *SF*, *OS*, and *PS* are count data, discontinuous, left-centered, and measure the 'quality' of AIS faculty; *RSF* and *PSFO* are non-size, continuous and relative measures. Collectively, these features are characteristic of a Poisson probability distribution.

Therefore, following Rock *et al.* (2001) and Cameron and Trivedi (1998), we use count data econometric models corresponding to Poisson and Negative Binomial (NEGBIN) processes. Both processes assume discrete distributions for estimation and consider the progression of AIS faculty joining an accounting program as a stochastic process. Contrarily, OLS regression assumes continuous distributions.

4.4.1 Poisson specification

A Poisson process has a skewed, positive to the right, and discrete distribution. It restricts predicted values to non-negative integers and residual errors are assumed to follow a Poisson distribution. Following Cameron and Trivedi (1998), the exponential mean function of a Poisson process is expressed as:

$$E(y_i \mid X_i) = \exp(X_i'\beta)$$

where, y_i are independent observations with corresponding values x_i. y is the response variable, X is a vector of independent variables, and β are respective parameter coefficients.

4.4.2 NEGBIN specification

NEGBIN is a generalized form of Poisson specification and considers the distribution of parameters as a random variable. Since *PS* has higher density around zero, it exhibits over-dispersion problem with its true δ^2 > mean. The distribution of *PS* differs significantly from *SF* and *OS* proxies. Therefore, NEGBIN is more appropriate for *PS*, whereas Poisson is more appropriate for *SF* and *OS* proxies.

Table 2. Goodness-of-fit statistics for probability distributions

	SF	RSF	PSFO	OS	PS
Mean	0.93	0.40	0.11	1.40	0.09
Variance	1.65	0.53	0.02	0.70	0.25
Normal distribution:					
Akaike Information Criterion (AIC)	2709	1788	-821	517	1170
Bayesian Information Criterion (BIC)	2718	1797	-811	524	1179
Shapiro-Wilk statistics (*p*-value)	(0.00)*	(0.00)*	(0.00)*	(0.00)*	(0.00)*
Anderson-Darling statistics (*p*-value)	(0.00)*	(0.00)*	(0.00)*	(0.00)*	(0.00)*
Poisson distribution:					
Wald/Pearson Chi-Square,	179			19.80	32
(*p*-value)	(0.00)*			(0.00)*	(0.00)*
Akaike Information Criterion (AIC)	2273	1017	525	534	545
Bayesian Information Criterion (BIC)	2278	1045	558	537	550
NEGBIN distribution:					
Dispersion,	46.61	0	0	19.6	3.7
(*p*-value)	(0.0)*			(0.0)*	(0.15)
Akaike Information Criterion (AIC)	2163	1021	1013	537	433
Bayesian Information Criterion (BIC)	2172	1053	1050	544	442
Residual analysis:					
Durban-Watson (*p*-value)	0.85	0.61	0.01	0.57	0.37
Cook's D-Influence (max value)	0.54	2.10	0.03	0.32	0.24

Notes to Table 2:
Numbers in brackets are *p*-values in italics associated with the respective statistic.
* $p < .01$; *SF*: absolute number of AIS faculty; *RSF*: real AIS faculty; *PSFO*: proportion of AIS faculty; *OS*: originally AIS faculty; *PS*: Pure AIS faculty.
Lack-of-Fit test for *SF*: *F*-statistics, *p*>*F*-statistics; 2.5, (0.0)

4.5 Validation of Poisson distribution

Besides the econometric basis and the theoretical rationale presented above, we conducted several statistical tests to further confirm validation of a Poisson distribution for our response variable and its proxies.

Table 2 presents several goodness-of-fit statistics for normal, Poisson and NEGBIN probability distributions for each proxy of AIS faculty. For most proxies, the table shows a broad equality of mean and variance, which is one of the key features of a Poisson distribution. The literature indicates that an exact equality of mean and variance is rare in practice. Evidence from competing alternative tests is usually advised to confirm if the response variable follows a specific distribution. Therefore, to confirm the validity of Poisson model for our response variable, the discussion below seeks insights from alternative tests presented in the table.

Both, Akaike Information Criterion (AIC) and Bayesian Information Criterion (BIC) are used to compare different distributions for selecting a model. BIC seeks parsimony while AIC penalizes large number of parameters less severely. Smaller values of either AIC or BIC are preferred for their better model fit and potential to better predict model performance. Table 2 indicates that for *SF, RSF* and *PS* proxies, Poisson distribution values of both AIC and BIC are lower than their respective normal distribution values. The direction is reversed for *PSFO* and *OS* proxies. However, *p*-values for both Shapiro-Wilk statistics and Anderson-Darling statistics are significant at 1% alpha level of significance for all proxies, thereby, suggesting the rejection of null hypothesis of a normal distribution for each proxy. The significant *F*-statistics for a lack-of-fit test at 1% alpha level further confirms that *SF* does not follow a normal distribution.

Table 2 indicates significant Chi-square goodness-of-fit statistics for Poisson distribution of *SF, OS* and *PS* which are count values for the respective proxies. Significant *p*-values suggest that *SF, OS* and *PS* approximate a Poisson distribution. For *RSF* and *PSFO*, the NEGBIN distribution tests in Table 2 indicate a zero (*0*) dispersion coefficient which estimates dispersion parameter. Theoretically, a zero dispersion parameter reduces a model to the Poisson model. Therefore, both *RSF* and *PSFO* approximate a Poisson probability distribution.

The NEGBIN distribution tests reveal significant dispersion coefficients for *SF* and *OS*. The over-dispersed nature of both proxies confirms their approximating a Poisson distribution. The dispersion coefficient is insignificant for *PS*, thus, suggesting that it approximates a NEGBIN probability distribution.

In summary, the cumulative evidence suggests validation of Poisson model for *SF*, *RSF, PSFO* and *OS* proxies. NEGBIN model better describes the *PS* proxy. In our analyses in section 6, we present results accordingly.

4.5.1 Correlation matrix

Multicollinearity among predictor variables implies a lack of independence which can bias regression estimates, inflate standard errors and impact inference. The overlapping information in variables makes it difficult to individually assess the effect. Table 3 shows multicollinearity matrix among independent variables.

Table 3. Correlations among variables and item reliability

	TIF	DOCT	BUSACR	ACCACR	PUBPVT	SF
Correlation analysis:						
TF	1					
DOCT	0.48	1				
BUSACR	0.61	0.4	1			
ACCACR	0.59	0.39	0.51	1		
PUBPVT	0.36	0.12	0.31	0.22	1	
SF	0.64	0.25	0.41	0.45	0.32	1
Variance inflation factor (VIF)	2.1	1.3	1.7	1.6	1.1	
Reliability analysis:						
Variable combinations			***a***	***b***	***C***	
Cronbach's Alpha			.70	.64	.55	
Standardized Cronbach's Alpha			.72	.66	.81	

Notes to Table 3:

Explanations for variable combinations:

a: all response variables: *SF, PSFO, PSF, OS*, and *RSF*

b: all binary variables: *DOCT, BUSACR, ACCACR,* and *PUBPVT*

c. all variables: *TF, SF, PSFO, PSF, OS, RSF, DOCT, BUSACR, ACCACR,* and *PUBPVT*

TF: total faculty size; *DOCT*: doctoral program offered; *BUSACR*: business school accreditation; *ACCACR*: accounting program accreditation; *PUBPVT*: public or private institution (proxy for control type); *SF*: absolute number of AIS faculty; *RSF*: real AIS faculty; *PSFO*: proportion of AIS faculty; *OS*: originally AIS faculty; *PS*: Pure AIS faculty.

Results do not show any significant correlation coefficients.

To further confirm a lack of collinearity, we computed variance inflation factor (VIF) for each independent variable in the model. VIF measures the extent of inflation in the variance or standard error of the estimated regression coefficient in the presence of collinearity. A VIF of one (*1*) suggests an absence of correlation among the j^{th} predictor and remaining predictor variables. Low values of VIF are preferred. A general rule of thumb is that VIFs of 10 (*ten*) or more indicates violations of multicollinearity assumption and requires correction; VIFs of 4 or more need further examination. Table 3 shows that all VIFs are below the threshold and do not indicate any violation of multicollinearity assumption.

4.5.2 Residual analysis

We performed residual analyses to further assess the appropriateness of Poisson regression model by defining residuals, examining residual plot graphs, and computing Durban-Watson significance tests. Both, residuals by predicted plots and residuals by row diagnostics plots reveal that observations are randomly distributed around the mean zero. Studentized residuals plot which is sensitive to outliers and achieves normalization, does not reveal abnormal patterns. Normal quintile plots for residuals show that all points are along the diagonal. Durban-Watson test for autocorrelation is not significant for any proxy of the response variable. A histogram of Cook's D influence shows that its maximum values are below the cut-off point. A rule of thumb is that a value of 1 (*one*) or greater for Cook's D influence indicates outlier and may need appropriate resolution.

Our analysis shows that the maximum value of Cook's D influence for *RSF* is 2.1, but its mean is .004. This suggests that outlier points do not have significant influence on slope coefficients of the regression model. Similarly, the Durban-Watson statistics for *PSFO* is significant, but its maximum value for Cook's D influence is .03. Taken together, Durban-Watson test and Cook's D influence confirm the appropriateness of Poisson distribution for *RSF* and *PSFO*.

In summary, the cumulative evidence from various tests of residual analysis for all proxies of our response variable suggests that Poisson model is a good fit and valid for our analyses.

4.5.3 Item reliability

Our research design does not have any inherent reliability or internal consistency issue. Four explanatory variables (viz., *DOCT, BUSACR, ACCACR* and *PUBPVT*) are binary and dichotomous in nature. *TF* and *SF* (with all its proxies except *PSFO* are count data.

Table 3 provides a rough estimate of reliability for several combinations of variables. Both, Cronbach alpha and its standardized values, do not suggest any violation of internal consistency in our data. With a high reliability reflecting the stability of a measure that yields similar results under consistent conditions, we expect that measurement errors are small relative to true differences.

5. Primary findings

Appendix A provides descriptive statistics at the peak of the Dotcom. Our sample has 46% (54%) private (public) institutions. The average total accounting faculty size of private institutions was 5.3 compared with 9.6 for public institutions. The mean AIS faculty was 1.3 in public institutions and less than 0.5 in private institutions. AIS faculty were 14% (9%) of total faculty in public (private) institutions.

About 12% institutions offered doctoral degrees in accounting. Number of public institutions offering a doctoral degree was about 2.4 times that of private institutions.

Females comprised 26% of the total accounting faculty and 22% of the AIS faculty. All-accounting faculty (AIS faculty) had about 2.8 (3.4) times more males than females. The all-accounting faculty male-female ratio in private institutions (2.8 times) was marginally more than public institutions (2.7 times). The AIS faculty male-female ratio for private institutions (3.7 times) and public institutions (3.4 times) followed a trend similar to all-accounting faculty.

Results in Appendix A show that public institutions were more than twice (three times) as likely as private institutions to have the AACSB business school (accounting program) accreditation. In 2001-2002, public institutions comprised 12 of the 13 AACSB accredited business schools that had undergraduate AIS programs (Dillon & Kruck, 2004).

AIS faculty were 50% or more of the total faculty in 29 institutions; 22 of these institutions had fewer than three accounting faculty. None of the 29 institutions had doctoral programs, 17 were private, 3 had AACSB business school accreditation and none had accounting program accreditation.

Faculty with a PhD or Doctor of Business Administration (DBA), were 79% for AIS group vis-à-vis 65% for all-accounting group. Higher proportion for AIS faculty suggests that their demand from accounting programs was rising during the Dotcom. Faculty holding only Masters degree was 15% (25%) for AIS (all-accounting) groups. Similar trends are observed for public and private institutions.

Appendix A shows that 66% of AIS faculty had CPA certification compared with 69% for all-accounting faculty. The proportion holding Certified Management Accountant (CMA) and Certified Internal Auditor (CIA) certifications was higher for AIS faculty by 4% and 2% respectively relative to all-accounting faculty. Trends are similar for both institution types. However, CPA certification in private institutions was 6% higher for AIS faculty. HAFD does not provide certification information for IS and IT fields.

Compared with all-accounting faculty, AIS faculty was less by 3% at Professor level, and more by 5% (3%) at Associate (Assistant) Professor levels. Higher proportion at Associate and Assistant ranks for AIS faculty suggests the then recent demand for them during 1990s. Promotion challenges for AIS faculty may also explain their lower proportion at Professor rank. The evolving nature of the systems field likely made it challenging for accounting programs to establish stable performance criteria available in traditional accounting. Brown and Huefner (1994, p. 224) note that "*academic accounting ... has become increasingly more fractionalized*" due to specialization, making it difficult to evaluate the quality of journal publications outside one's narrow specialization. Systems journals in 1990s generally received low ranks for familiarity and perceived quality in Brown and Huefner's survey of senior accounting faculty at major MBA programs. Lack of familiarity and perceived low quality for systems journals may have adversely affected AIS faculty in their evaluations by P&T (promotion and tenure) committees. Newell *et al.* (1996) find stricter tenure and promotion requirements in almost all institutions. While research productivity increased in importance, top academic accounting journals were not generally supportive of AIS research (Hutchison *et al.*, 2004; Stone, 2002). "*IS discipline is an extremely diverse discipline, where researchers publish their best work in hybrid journals outside the IS mainstream…*" (Valacich *et. al.*, 2006, p. 122). Consequently, promotion and tenure for AIS faculty in 1990s was likely more challenging than for faculty with non-systems specializations.

Public and private institutions largely mirrored trends similar to the entire sample. An exception was Assistant Professor rank that was less by 4% for AIS group in private institutions. This exception appears to be in line with less AIS faculty in private institutions compared with public institutions as seen in Appendix A.

5.1 Accreditation status

The AACSB accreditation correlates positively with AIS faculty (Table 4). About half institutions (52%) had at least one AIS faculty. Further, 88% (63%) institutions with accounting program (only business school) accreditation had at least one AIS faculty *versus* 37% in non-accredited institutions.

Table 4. Association of AIS faculty with program accreditation

Accr -type	Institutions			At least one systems faculty					
					Yes			No	
	Public	Private	Total	Public	Private	Total	Public	Private	Total
A	104	29	133	93	24	117	11	5	16
				89%	83%	88%	11%	17%	12%
B	145	70	215	105	31	136	40	39	79
				72%	44%	63%	28%	56%	37%
C	186	277	463	98	73	171	88	204	292
				53%	26%	37%	47%	74%	63%
D	435	376	811	296	128	424	139	248	387
				68%	34%	52%	32%	66%	48%

Notes to Table 4: Accr-type denotes following accreditation types - A: Both Business and Accounting Accredited; B: Business Accredited but Not Accounting; C: Business Not Accredited; D: Grand Total

In terms of the proportion, compared to private institutions, twice as many public institutions had at least one AIS faculty. Accounting accredited institutions particularly stood out with similar proportion in public (89%) and private (83%) categories. Nationally, 48% of accounting programs did not have any AIS faculty.

5.2 Institutions with most AIS faculty

We ranked accounting programs according to the number of AIS faculty. Twenty institutions had five or more AIS faculty (Table 5). Indiana University ranked first with 11 of its faculty listed with a systems interest. Eleven of the 20 institutions had accounting doctoral programs and 17 were public institutions. Seven institutions were among Hutchison *et al.* (2004)'s top 19 institutions list developed using publications in *JIS* during 1986-2001. All 20 institutions had an AACSB business accreditation and 15 also had an AACSB accounting program accreditation. These results suggest that institutions offering doctoral degrees and with accounting accreditation affect the number of AIS faculty.

We used several publicly available independent rankings to assess how "*the 20 largest AIS faculty institutions*" (hereafter, the 20-largest) listed in Table 5 measure on other dimensions. The *Public Accounting Report*'s professors' annual survey (Public Accounting Report (PAR), 1998) included six of the 20-largest among their top 20-undergraduate programs, four among their top 20-graduate non-doctoral programs, and none among their top 5-doctoral programs.

Of the 20-largest, only University of Southern California ranked among the top-50 national universities in *The U.S. News & World Report America's Best Colleges 1998*. Six of the 20-largest were ranked as 'second tier,' five as 'third tier' and three as 'fourth tier' among national universities. *The U.S. News & World Report* (1997) classified the remaining four institutions as 'regional universities'.

With respect to the prestige of business schools, only Indiana University and University of Southern California were ranked in *Business Week's Top-25 MBA* programs for 1998 (Reingold, 1998). With regard to institutional resources, we considered technology resources, library resources, and endowments. Seven of the 20-largest were among *1999 Yahoo's 100-Most Wired Colleges*. Only three institutions – Indiana, Delaware, and Texas A&M – ranked in the *Yahoo's Top 50* list. Twelve of the 20-largest belonged to institutions among the *98-Charter* members of *Internet2 Universities*. Arizona State, Brigham Young, Texas A&M, and University of Southern California were among the *Top-25 Techno-MBA Programs* in a 1999 survey of recruiters and institutions by *Computerworld* (Fryer, 1999). Ten of the 20-largest were in the list of institutions having one of *100-Largest Research Libraries* in the U.S. in 1998 (TCHE, 2000, A23). Six of the 20-largest were in the list of institutions with 1997-endowments among the *100-Largest Institutions* (TCHE Almanac, 1998).

Table 5. Rank of institutions according to number of AIS faculty

Rank	# Accounting faculty	# AIS faculty	Institution
1	39	11	Indiana University
2	24	9	Virginia Poly Inst & State University
3	21	8	University of Delaware
4	16	7	University of Kansas
5*t*	30	6	Arizona State University
5*t*	26	6	Brigham Young University
5*t*	26	6	California State University at Northridge
5*t*	26	6	Georgia State University
5*t*	41	6	University of Southern California
5*t*	20	6	Southwest Missouri State University
11*t*	17	5	University of Akron
11*t*	21	5	California State University at Hayward
11*t*	24	5	DePaul University
11*t*	16	5	Eastern Michigan University
11*t*	25	5	Florida International University
11*t*	20	5	University of North Texas
11*t*	14	5	Northern Arizona University
11*t*	23	5	Ohio State University
11*t*	33	5	Texas A&M University
11*t*	18	5	University of Utah

t: tied

5.3 Institution of degree of AIS faculty

In our sample, 475 of the 575 AIS faculty obtained a doctoral degree from one of the 93 institutions, which offered accounting doctorates, listed at the beginning of HAFD. Table 6 lists longitudinal rankings of the 24 accounting doctoral programs, which supplied nine or more AIS faculty (hereafter, the 24-Institutions).

All 24-Institutions are public institutions and many are located in southern states. Eleven of these 24-Institutions were among the Hutchinson *et al.* (2004)'s list of 19-institutions whose graduates had published most frequently in *JIS* during the period 1986-2001. University of Georgia, the leading supplier of 1998 AIS faculty with accounting doctorates, did not itself had any AIS faculty in 1998. Eleven of the 19 doctoral programs, which did not supply any AIS faculty, were private institutions. Fifteen of the 24-Institutions without any AIS graduate were private. Five of the 24-Institutions are among the 11 doctoral programs with at least five AIS faculty in 1998. Eight of the 11 doctoral programs in Table 6 with at least five AIS faculty in 1998 supplied eight or more AIS faculty.

Table 6. 1998 AIS faculty's institution of degree – Doctoral programs supplying AIS faculty - Ranking over time

Institution Name	Total No. of systems graduates	Rank Overall - All periods	Rank 1978-1997	Rank 1988-1997	Rank 1993-1997
University of Georgia	21	1	1	1	4*t*
Michigan State University	19	2	13*t*	4*t*	1*t*
University of Missouri	17	3	8*t*	-	-
University of Texas at Austin	16	4	8*t*	18*t*	30*t*
Texas A&M University	15	5	3*t*	11*t*	4*t*
University of Arkansas	13	6*t*	3*t*	4*t*	30*t*
Louisiana State University	13	6*t*	34*t*	28*t*	-
Mississippi State University	13	6*t*	2	2	13*t*
Oklahoma State University	13	6*t*	7	18*t*	4*t*
Virginia Polytechnic Institute	13	6*t*	3*t*	3*t*	13*t*
University of Wisconsin	13	6*t*	18*t*	18*t*	30*t*
University of Kentucky	12	12*t*	3*t*	7*t*	4*t*
Penn State University	12	12*t*	8*t*	18*t*	-
Georgia State University	11	14*t*	23*t*	18*t*	13*t*
University of Illinois	11	14*t*	28*t*	11*t*	30*t*
Ohio State University	11	14*t*	18*t*	11*t*	13*t*
University of Tennessee	11	14*t*	8*t*	28*t*	4*t*
Arizona State University	10	18*t*	8*t*	28*t*	4*t*
University of Nebraska	10	18*t*	13*t*	18*t*	30*t*
Florida State University	9	20*t*	13*t*	7*t*	13*t*
University of Houston	9	20*t*	23*t*	28*t*	-
Kent State University	9	20*t*	23*t*	7*t*	13*t*
Louisiana Tech University	9	20*t*	13*t*	3*t*	4*t*
University of Mississippi	9	20*t*	13*t*	4*t*	13*t*

t: tied

Table 6 indicates that rankings varied by period. Several patterns are visible. Some institutions (e.g., Michigan State University) gradually improved their rankings overtime leading to 1998; rankings of other institutions (e.g., University of Texas at Austin) continued to decline before rising in 1998; still other institutions (e.g., University of Missouri) were ranked initially, did not make it in the list in later periods and ranked again in the 1998 list of the 24-Institutions. Several ranks are tied among institutions.

5.4 Year of degree of AIS faculty

HAFD lists the number of accounting doctorates conferred each year starting with 1978. Figure 1 shows the distribution from 1978 to 1997. The range was from 5% in 1978 to nearly 16% in 1997, with most years between 9% and 12%. The representation in Figure 1 helps to assess the trend of AIS faculty with doctoral degrees in accounting over time as a percentage of total accounting doctoral graduates.

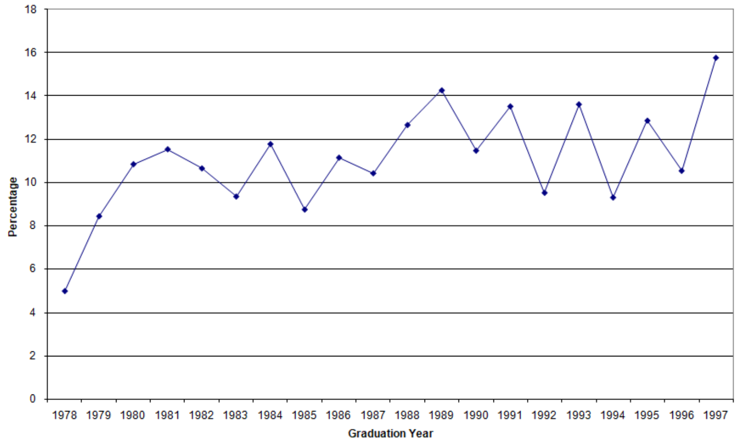

Figure 1. AIS faculty's year of degree - percentage of accounting to total doctorates
Source: The data for Figure 1 is hand-compiled from HAFD which lists total number of accounting doctorates every year from each university. HAFD also provides information for each faculty's doctoral graduation year, university of degree, information systems as their research and teaching interests, and if their doctoral degree is in accounting.

Figure 2 shows a rising trend in the number of AIS faculty both with and without an accounting doctorate since 1963. The peak was reached with 26 AIS faculty in 1993 and dropped steeply to 14 in 1995. The figure illustrates the deployment of non-accounting doctorates as a strategy to complement the shortage of AIS faculty with accounting doctorates in the background of increased demand during the Dotcom.

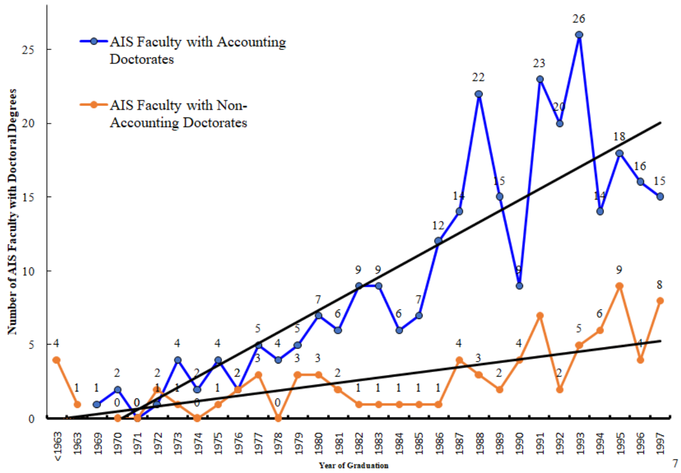

Figure 2. AIS faculty's year of graduation with doctoral degrees
Source: The data for Figure 2 is hand-compiled from HAFD which lists total number of accounting doctorates every year from each university. HAFD also provides information for each faculty's doctoral graduation year, university of degree, information systems as their research and teaching interests, and if their doctoral degree is in accounting.

We submit that there are limitations to the presentations in both figures since the analyses do not take into account retirements and deaths, which could impact earlier years. Also, Figure 1 does not consider non-academic job market opportunities, which would likely have a greater impact on the then more recent years closer to year 2000. The limitations noted above are primarily due to non-availability of data.

5.5 Certification credentials of AIS faculty

Our analysis suggests that the percentage of AIS faculty holding a CPA credential (66.5%) was slightly lower than the overall accounting faculty (69.6%). However, the percentage of AIS faculty holding CMA and CIA credentials was slightly higher than the overall accounting faculty. Thus, AIS faculty were largely similar to other accounting faculty with regard to professional certifications.

HAFD does not identify CISA, Certified Information Systems Security Professional (CISSP), Certified Cost Professional (CCP) or other systems related certifications. According to Monaco (2002, p. 13), "*certifications provide the necessary benchmark to measure a professional against his/her peers. There is no single uniform examination for IT professionals to prove proficiency*." A survey of accounting department chairs found that "*all schools perceived certification as very important for an auditing (faculty) candidate but not for one specializing in systems*" (Iyer & Clark, 1998, p. 8). AIS faculty are more likely than other accounting faculty to have systems-oriented credentials including CISA, CISSP or CCP.

5.6 AIS doctorates from private institutions

Private institutions generally produce fewer graduates compared to public institutions. A similar trend holds for AIS doctoral accounting graduates from private institutions. For example, from 1978 and beyond, public institutions represent 11 of 12 accounting doctoral programs that had AIS doctoral graduates exceeding 20% of their total accounting doctoral graduates. Private institutions do not fare better after adjusting for size by examining AIS graduates as a percentage of all accounting doctoral graduates.

5.7 Research orientation of the 20-largest AIS faculty institutions

Faculty research is important for student learning through critical thinking and methodical problem solving. Research fosters new ideas, addresses pedagogical issues, enriches teaching and improves learning management system practices to influence students' knowledge, skills and career development. Therefore, it is insightful to assess the research orientation of the 20-largest AIS faculty institutions.

We find that four of the 20-largest were among the 61-Major U.S. research universities comprising the *Association of American Universities* (AAU) (2002). Six of the 20-largest were among the top-100 universities in total research expenditures for 1998.

Seven of the 11 doctoral institutions in Table 5 were among the *Top 50-Business Schools* of the Academy of Management Journal's *(AMJ)* research rankings on the basis of selected top tier journals in eight business disciplines for the period 1986-1997 (Trieschmann *et al.*, 2000).

Eleven of the 20-largest appear among the *AMJ*'s *Top-100 Accounting Research Programs*. Eight of the 20-largest in Table 5 were ranked among the *AMJ*'s *Top-100 MIS Research Programs*. However, none of the 20-largest were among the *Top-10 Schools* in the *AMJ*'s accounting and MIS rankings.

5.8 Perceived prestige of the 24-largest suppliers of AIS faculty

Perceived prestige is significant for student outcomes and career prospects through academic excellence, higher standards, better quality education, enhanced learning experience, superior access to opportunities and personal growth. Institution rankings are considered an important indicator of quality by academic institutions and their constituencies (Kayyali, 2023). Therefore, we examine if prestige and coveted rankings characterize the 24-largest suppliers of AIS faculty.

We find that eight of the 24-Institutions ranked amongst the top-20 undergraduate programs in *PAR 1998* professors' annual survey. Six of the 24-Institutions were ranked in *PAR*'s *Top 20-Graduate*, non-doctoral programs. Two institutions (*viz*. Texas at Austin and Illinois) were among the top-five doctoral programs in 1998.

Of the 24-Institutions, only three ranked among the *Top-50 National Universities* in the *U.S. News & World Report America's Best Colleges 1998*. Eleven institutions were ranked as 'second tier,' seven as 'third tier' and three as 'fourth tier' among national universities. Texas and Wisconsin were the only major suppliers of AIS faculty ranked in *Business Week's Top-25 MBA Programs* in 1998 (Reingold, 1998). With regard to financial resources, nine of the 24-Institutions had endowments among the 100-largest in 1997 (TCHE Almanac, 1998). With regard to their research orientation, eight institutions are among the then 61 U.S. members of the *AAU*. This finding is significant since *AAU*'s (*i*) mission is improving education, research, and discovery, (*ii*) membership is only by invitation, and (*iii*) criteria for ranking its members include research spending, faculty awards, research citations, and membership of faculty in the *National Academies*.

Seventeen of the 24-Institutions ranked among 1998's *Top-100* universities in total research expenditures. Thirteen of the 24-Institutions were among Trieschmann *et al.* (2000)'s *Top-50* institutions in overall research productivity in eight business disciplines for the period 1986-1997. Although 16 of the 24-Institutions were among the *AMJ*'s *Top-100 Accounting Research Programs*, none were in the *Top-10* list. Only 11 of the 24-Institutions were ranked in the *AMJ*'s *Top-100 Institutions* in MIS research productivity, including three in the *Top-10* list.

Evidence from several themes presented in this section provides a multi-faceted understanding of AIS faculty's demographic and institutional features. In the following section, we examine, using Poisson models discussed in Section 4, the association of AIS faculty with its four factors discussed in Section 3.

6. Regression results and discussion

6.1 Poisson estimates

Tables 7.1 and 7.2 respectively present parameter estimates of Poisson regression for the minimalist and expanded versions represented by equations (*i*) and (*ii*) using AIS faculty's four proxies: *SF, OS, RSF*, and *PSFO*. Table 7.3 presents parameter estimates of NEGBIN regression for both minimalist and expanded versions using pure systems proxy, *PS*.

Table 7.1. Poisson estimates for AIS faculty: minimalist version

Variables	SF	PSFO	RSF	OS
Log Likelihood	-554.08	-1,627.68	-1,111.72	-776.70
Intercept	-1.41*	-2.45*	-2.58*	-0.15***
	(0.09, 242.33)	(0.07, 989.97)	(0.09, 697.23)	(0.09, 2.83)
TF	0.07*		0.08*	0.02*
	(0.00, 154.27)		(0.00, 256.62)	(0.00, 42.93)
DOCT	-0.35*	-0.31**	-0.20**	0.20*
	(.10, 11.32)	(0.15, 4.26)	(0.10, 4.29)	(0.07, 7.02)
PUBPVT	0.56*	0.40*	0.69*	0.06
	(0.08, 40.26)	(0.09, 17.97)	(0.09, 57.09)	(0.07, 0.73)
BUSACR	0.39*	0.06	0.41*	-0.06
	(.10, 14.76)	(0.10, 0.32)	(0.10, 15.98)	(0.08, 0.53)
ACCACR	0.26*	0.26**	0.23*	0.09
	(0.09, 7.77)	(0.13, 4.10)	(0.09, 6.78)	(0.07, 1.62)

Notes to Table 7.1:
Standard errors and chi-square are in parenthesis.
* $p< .01$; ** $p< .05$; *** $p< .1$
TF: total faculty size; *DOCT*: doctoral program offered; *BUSACR*: business school accreditation; *ACCACR*: accounting program accreditation; *PUBPVT*: public or private institution (proxy for control type); *SF*: absolute number of AIS faculty; *PSFO*: proportion of AIS faculty; *RSF*: real AIS faculty; *OS*: originally *AIS* faculty.

For the minimalist version, Table 7.1 shows that *SF* has the largest log likelihood value (Panel A). This means that the absolute size of AIS faculty offers a better fit to the data. Panel B of Table 7.1 shows independent sources of variations. Results are largely similar across five proxies. Therefore, to discuss our results, we use *SF* which has the largest log likelihood value and shows all five parameters significant at 99% confidence level.

Positive sign for *TF* suggests that each additional faculty in the department associates with about .07% ($e^{\beta 1} = e^{0.0737}$ =1.07) increase in AIS faculty, holding other variables constant in the model. Coefficient for *DOCT* is negative which suggests that having a doctoral degree offering in accounting programs associates with a reduction of about 30% ($e^{\beta 2} = e^{-.359}$ = -.302) in AIS faculty in that accounting program. The positive sign for *PUBPVT* suggests that public institutions have about 1.76 times ($e^{\beta 3} = e^{0.566}$) more AIS faculty vis-à-vis private institutions.

Institutions with only business program (accounting program) accreditation have about 1.48 (1.3) times more AIS faculty compared to institutions without respective accreditations. All five parameters are statistically significant at 99% confidence interval. Results for other three proxies reveal that (*i*) *DOCT* is significant at 5% alpha level for *PSFO* and *RSF*; (*ii*) *BUSACR* is not significant for *PSFO* and *OS*, and (*iii*) *ACCACR* is significant at 5% alpha level for *PSFO*, but not significant for *OS*.

Table 7.2. Poisson estimates for AIS faculty: expanded version

Variables	SF	PSFO	RSF	OS
Log Likelihood	-541.24	-1,601.46	-1,098.69	-746.93
Intercept	-1.76*	-2.62*	-3.00*	-0.08
	(0.21, 65.36)	(0.18, 191.32)	(0.23, 157.03)	(0.21, 0.14)
TF	0.07*		0.08*	0.02*
	(0.00, 113.13)		(0.00, 176.02)	(0.00, 25.38)
DOCT	-0.24**	-0.22	-0.12	0.16***
	(.12, 4.04)	(0.18, 1.54)	(0.11, 1.25)	(0.08, 3.57)
PUBPVT	0.56*	0.41*	0.68*	0.04
	(0.09, 35.0)	(0.10, 15.54)	(0.09, 47.21)	(0.08, 0.26)
BUSACR	0.31*	0.07	0.32*	-0.01
	(.11, 7.68)	(0.12, 0.41)	(0.11, 8.15)	(0.09, 0.03)
ACCACR	0.25**	0.30**	0.21**	0.08
	(0.09, 6.56)	(0.13, 4.91)	(0.09, 5.16)	(0.07, 1.15)
M	0.09	0.00	0.04	-0.07
	(0.08, 1.05)	(0.10, 0)	(0.08, 0.25)	(0.07, 0.93)
MB	-0.03	0.00	-0.07	-0.09
	(0.07, 0.17)	(0.09, 0.01)	(0.07, 0.93)	(0.06, 2.28)
CUI	0.14	0.13	0.14	0.01
	(0.12, 1.29)	(0.11, 1.36)	(0.13, 1.2)	(0.11, 0.02)
DEP	0.19	-0.06	0.30***	-0.06
	(0.15, 1.62)	(0.13, 0.23)	(0.16, 3.44)	(0.14, 0.23)
ENROL	0	0	0	0

Variables	SF	PSFO	RSF	OS
	(0, 3.01)	(0, 0.89)	(0, 1.55)	(0, 0.63)
Scale	1	0.42	0.64	0.48
	(0)	(0)	(0)	(0)

Notes to Table 7.2:
Standard errors and chi-square are in parenthesis.
* p< .01; ** p< .05; *** p< .1
TF: total faculty size; DOCT: doctoral program offered; BUSACR: business school accreditation; ACCACR: accounting program accreditation; PUBPVT: public or private institution (proxy for control type); M: masters program offered; MB: MBA program offered; CUI: college, university or institute; DEP: dependent or independent status; ENROL: student enrollment; SF: absolute number of AIS faculty; PSFO: proportion of AIS faculty; RSF: real AIS faculty; OS: originally AIS faculty.

For the expanded version, Table 7.2 shows that results are largely similar to Table 7.1: absolute size of AIS faculty, *SF*, has the largest log likelihood value (Panel A), suggesting its better fit to the data. All five factors of the minimalist version are significant in the expanded version, with the exception of the AACSB accounting accreditation which is moderately significant at 10% alpha level. None of the five proxies of resources—*M, MBA, CUI, DEP,* and *ENROL*—associate with any proxy of AIS faculty.

6.2 NEGBIN estimates

Theoretical rationale discussed earlier supports analyzing pure systems faculty, *PS*, using negative binomial or zero-inflated model (NEGBIN). Table 7.3 shows similar log likelihood values for both versions of the regression model. The AACSB accreditation does not associate with *PS*. The minimalist version shows weak association with: (*i*) *TF* and *DOCT* – significant at 5% alpha level, and (*ii*) *PUBPVT* – significant at 10% alpha level. The expanded version shows an association with *DOCT* at 1% alpha level, and with *ENROL* at 10% alpha level. None of the other variables associate with *PS* in our analyses.

For comparison, we estimated *OLS* parameters (results not reported) for two proxies (*PSFO* and *RSF*) that are continuous in nature. For the minimalist version, the model was significant for both proxies with *R-square* of .03 for *PSFO*, and .40 for *RSF*. Regarding sources of variation, results were consistent with Poisson estimates. An exception was noted for *RSF* which has insignificant *DOCT* and *BUSACR* coefficients.

Patterns in the expanded version were similar to the minimalist version. An exception was noted for *RSF* where (*i*) *BUSACR* and *DEP* were in-significant, and (*ii*) *MBA* was significant at 5% alpha level. All other sources of variation did not change from Poisson estimates.

Table 7.3. NEGBIN estimates for pure AIS faculty, PS

Variables	Minimalist	Expanded
PANEL A:		
Log Likelihood	-176.83	-174.45
PANEL B:		
Intercept	-3.36*	-3.50*
	(0.35, 90.79)	(0.81, 18.27)
TF	0.10**	0.04
	(0.04, 5.34)	(0.05, 0.78)
DOCT	-1.868**	-2.55*
	(0.8598, 4.72)	(0.96, 7.04)
PUBPVT	0.70***	0.42
	(0.39, 3.15)	(0.45, 0.88)
BUSACR	-0.75	-0.72
	(0.48, 2.36)	(0.51, 2.0)
ACCACR	0.37	0.26
	(0.61, 0.37)	(0.63, 0.17)
M		-0.13
		(0.48, 0.07)
MB		0.00
		(0.39, 0)
CUI		0.13
		(0.51, 0.07)
DEP		-0.08
		(0.54, 0.02)
ENROL		0.00***
		(0, 3.18)
Dispersion	11.13	9.84
	(3.19)	(2.94)

Notes to Table 7.3:
Standard errors and chi-square are in parenthesis.
* $p < .01$; ** $p < .05$; *** $p < .1$
TF: total faculty size; *DOCT*: doctoral program offered; *BUSACR*: business school accreditation; *ACCACR*: accounting program accreditation; *PUBPVT*: public or private institution (proxy for control type); *M*: masters program offered; *MB*: MBA program offered; *CUI*: college, university or institute; *DEP*: dependent or independent status; *ENROL*: student enrollment
Minimalist version: *Ns*= *f* (*TF, DOCT, BUSACR, ACCACR, PUBPVT*)
Expanded version: *Ns*= *f* (*TF, DOCT, M, MB, CUI, DEP, ENROL, BUSACR, ACCACR, PUBPVT*)

6.3 Interpreting our results

Our analysis at the peak of Dotcom finds that total faculty size, availability of resources, AACSB accreditation status and control type correlate with AIS faculty in accounting programs. Since AIS faculty generally teach AIS courses which cover

IS, IT, business process and internal control concepts, the nature and strength of correlation may inform stakeholders about such skills of accounting graduates.

Our results suggest the parsimony of the minimalist model; the expanded version did not inform significantly better. While each proxy of AIS faculty has theoretical and economic foundations as discussed earlier, we find the absolute size of AIS faculty, *SF*, to have more explanatory power.

The likelihood of AIS faculty in accounting program declines with the offering of a doctoral degree which is a proxy for resources. The data indicate a differential response to the Dotcom, as one-third of doctoral programs had no AIS faculty. Proxies of resources other than a doctoral degree offering did not significantly associate with AIS faculty.

The magnitude of coefficients suggest that the likelihood of AIS faculty is most in public institutions followed by AACSB business accreditation, AACSB accounting accreditation, doctoral degree offering, and the size of accounting faculty. This finding suggests that in public institutions, AIS courses are generally taught by AIS faculty. We cannot comment if private institutions and smaller institutions have AIS courses, and if they are taught by AIS faculty.

Our findings have a prescriptive appeal: During technology innovations with transformative features such as those exhibited by the current AI-era, AIS faculty seeking employment, employers seeking IS and IT skills in accounting graduates, or students aspiring to gain IS and IT skills can choose from large, non-doctoral, public institutions with business and accounting AACSB accreditations. This prescription is noteworthy and useful since findings are based on the sample drawn at the peak of the Dotcom. The current AI-era, which is still in its infancy, shares similarities with the Dotcom-era, as discussed previously.

During the Dotcom-era, largest suppliers of AIS faculty with doctoral degrees were public institutions and primarily in southern states. These suppliers are independent of institutions with brand prestige such as *Top Ten* and *Ivy League*, and likely have financial resources different from other accounting doctoral programs. This information is worth considering by doctoral aspirants intending to concentrate in AIS while selecting a doctoral program.

At the peak of the Dotcom, we find that AIS faculty tend to be at lower ranks than overall accounting faculty. This finding suggests that tenure and promotions present challenges for AIS specialization. Evidence suggests that systems journals were in their infancy during eighties and nineties (Hall & Ross, 1991; Howard & Nikolai, 1983). The perceived quality of systems journals was higher in systems area than in non-systems area. We should note that this landscape was at the turn of the century when the Dotcom reached its peak. The number and prestige of systems journals have since increased. A comparative analysis of ranks of AIS faculty between the two eras is worth considering in future extensions of this research.

Our results are consistent with prior research that finds positive influence of large, public institutions with doctoral programs and AACSB accreditation on faculty management, strategy, innovation, continuous improvement, resource availability, mission-based outcomes, and assurance-of-learning (AOL) process (Bitter, 2014). In summary, the extant literature documents that the quality of the accounting program and its graduates positively associates with the size, public status, doctoral degree offerings and the AACSB accreditation (Fogarty *et al.*, 2016). Our results from Poisson estimates discussed in this section and thematic analyses discussed in Section 5 together support these findings in the extant literature.

7. Implications, contributions, limitations and extensions

7.1 Implications

Why should we care about results drawn from a period that was once-a-century event? The answer may lie in comparing features of accounting education and its market-place during the Dotcom period and the current AI-led environment.

Our discussion in an earlier section provided evidence suggesting that several issues during contemporary times are similar to those in 1990s (Accenture, 2023; Dawkins & Dugan, 2023; World Economic Forum, 2020; Brown, 2018). Examples include, dwindling student enrollment, declining interest among students to pursue an accounting degree, lower starting salaries for accounting graduates, faculty issues amidst shrinking doctoral programs, and demand from stakeholders for AI, IT, IS, and data-analytic skills in accounting graduates (CAQ, 2023; Fogarty & Holder, 2012).

Despite efforts of accounting programs to meet the desired contemporary skill-sets, challenges still remain (Kroon & Alves, 2023; Wiley Report, 2021). Rapid innovations in AI, GenAI, and LLMs are further contributing to the uncertainty and anxiety (Ballantine *et al.*, 2024; Rudolph *et al.*, 2024). Hence, a stock analysis helps us to understand the past and explore, for the future, strategies that are informed from historical findings.

We discuss significance of our results by posing questions whose answers potentially have implications for stakeholders: accounting education, profession, accounting programs, administrators, employers, faculty, and students. Below, we first present our findings and then identify potential implications in the form of questions that contextualize those findings. For each question, we also offer probable answers as exemplars. This discussion draws upon parallels between the Dotcom and AI-eras presented earlier.

We found that public institutions have most AIS faculty. This finding raises following questions:

How will programs in private institutions and smaller institutions adapt to changes? Resource is a common constraint in small and private institutions (Brophy, 2019; General Accounting Office (GAO), 1978). Therefore, private institutions and smaller institutions should adopt adaptive strategies. Examples include (*i*) training current faculty in new technologies; (*ii*) allowing transfer credits from other institutions, other departments within their campus, or online courses; (*iii*) requiring new faculty hires to also have the AI expertise besides core accounting expertise; (*iv*) collaboration with local, regional, national or foreign institutions with variants of joint degree options; and (*v*) using their alumni base to explore joint teachers or guest speakers.

Where will employers find 21stcentury accounting professionals? With skills and competencies gaining prominence over formal degrees (Talerico, 2023; World Economic Forum, 2020), employers prefer graduates with capabilities beyond conceptual knowledge. The use and application of concepts are equally important. Therefore, we believe that employers would focus their recruiting strategies to accounting programs that train their graduates in skills and competencies over and above a mere coverage of concepts. Programs that merely check off bullet points only to satisfy compliance requirements may fall out of favor with employers. We believe that graduates of programs that effectively integrate AI across their curriculum would carry preference amongst employers (Tatar *et al.*, 2024; Southworth *et al.*, 2023).

Our results revealed that the presence of doctoral program, a proxy for resources, associates negatively with AIS faculty. Following questions emerge from this finding:

How should AIS faculty adapt? Must they choose between doctoral and non-doctoral institutions for employment? Many non-doctoral programs have rigorous, motivating research environment often similar to doctoral granting institutions. With doctoral programs shrinking in size and number (Fogarty & Holder, 2012; Freeman *et al.*, 2000), and only few accounting doctoral programs currently offering an AIS, IS, or IT concentration, a pure AIS faculty may find it challenging to secure a position in a traditional doctoral granting institution. Therefore, AIS faculty may need to cross-specialize in core accounting areas to increase their chances for a position in doctoral granting institutions. In the short term, we expect that most AIS faculty may settle with non-doctoral granting accounting programs.

What are the implications of other resource proxies for AIS faculty to fund tools, software, systems and related needs? With the state support for higher education increasingly shrinking, reliance on other resources should rise (Sav, 2016). To address and manage resource constraints, higher education would see variants of several options including consolidation or merger, tuition increases, and innovative specialized degree offerings in new technologies at undergraduate or graduate levels, either as a minor or a certificate course. Accounting programs with a school status or an independent status may also become an appealing option, if such a status is associated with a lower revenue sharing obligation with the central administration.

We found a stronger association with business school accreditations. This result begs following questions: How relatively weaker association with accounting accreditation affect choices for employers, AIS faculty and prospective students? A relatively larger coefficient for business school accreditation suggests more resources, diversity and a cross pollination of knowledge. Accounting programs can leverage these advantages of business school accreditation in their curriculum design, pedagogy, and new specialized degree offerings. Such strategies may raise the strength of accounting accreditation and increase choices for employers, students and AIS faculty.

We used AIS faculty as a probable proxy for IS and IT skills in graduates. This design raises following questions: What is the relationship between the presence and size of AIS faculty in an accounting program, and IT, IS or AI skills of graduates of that program? A *priori*, we expect a positive relationship between the two constructs. However, when considering more than one AIS course and probably a large-sized (*i.e.*, more than one) AIS faculty, a pre-requisite may entail an assured, sustained supply of customer base of enrolled students and employers seeking graduates with such skills. Effectively managing this pre-requisite with evidence-based data will justify requested resource allocation.

What are the best practices in 1998-99 institutions (i) with largest AIS faculty, and (ii) supplying AIS faculty? Both groups are exemplars in their own space for embracing innovations and instituting processes to sustain those innovations. Examples of processes that are worth emulating include opportunities for collaboration, research, interactions with constituents, product innovations (*e.g.*, new, specialized degree offerings), and field experiment possibilities. Such best practices potentially generate additional resources, carve out a niche for their programs, and increase their appeal to stakeholders. The Dotcom experience suggests that institutions embracing innovations (*i*) enjoyed first mover advantage; (*ii*) offered new, specialized courses, minors, certificate or degrees at undergraduate or graduate levels; (*iii*) refurbished existing courses; and (*iv*) witnessed better opportunities for their graduates (Dillon & Kruck, 2004; AICPA, 1999; Rittenberg, 1998).

The best practices offer useful guidance for institutions considering an AI and new technologies strategy for their programs. Institutions should also consider existing challenges, including (*i*) currently only few accounting doctoral programs that offer a concentration in AIS, IS, or IT; and (*ii*) closed, dormant, or shrunk doctoral programs that do not admit students every year (Fogarty & Holder, 2012). A possible solution to manage such challenges is a preference for accounting doctorates who complete a minor in new technologies as part of their degree requirements.

How would various proxies of AIS faculty contribute to policy and strategy formulation? A practical solution is to integrate the AI content across the accounting curriculum. Further, accounting programs may likely prefer new AIS faculty hires with crossed or multiple teaching and research interests, besides AIS. This alternative increases opportunities for students to learn, in non-AIS accounting courses, diverse applications of AI's conceptual knowledge gained in AIS courses.

In the industry and the profession, we expect AI to impact various functional processes including audit, tax, cost control and management, and financial accounting. To manage AI-embedded business processes, employers would likely prefer accounting graduates with AI's applied knowledge. A blend of strategies including cross-course integration of AI, new AIS faculty hires with core accounting functional specialization besides AI, and training existing faculty in AI can help graduates become market-ready.

These arguments suggest that pure AIS faculty would likely have limited demands and only from select niche programs where AIS is a major theme. Role of other proxies of AIS faculty would vary as a function of program's vision.

With graduate programs in data analytics, cyber-security and AI in some institutions, how would AIS faculty associate with resource proxies? Increase in new technologies-related specialized degree offerings would likely raise demand for both AIS faculty and related resources. Association of AIS faculty with other resource proxies may become significant if requirements for new degree offerings are housed within the accounting program. Alternately, programs may choose to outsource the need for AIS faculty to practitioners, part-time professionals, or IS and CIS departments within their institutions.

How would private and smaller institutions attract AIS faculty, and provide IS, IT, and AI skills in their graduates? Resource constraint is a perennial issue for most small and private institutions. With state support declining for public institutions (Sav, 2016) and access to endowed funds limited even for private institutions (Brophy, 2019), administration will need to explore alternative, competing avenues for resources. Some options include, training existing faculty in AI and new technologies, requiring new hires to also have AI skills, use transfer credits option for AI related courses completed from other institutions, and leverage their alumni for practitioners or part-time professionals to teach courses.

How would AIS faculty add value amidst a preference for skills and competencies over formal degrees? Examples for AIS faculty to add value may include developing AIS course content with cases from different accounting functions, training other accounting faculty in AI technologies to properly integrate across the accounting curriculum, use of hands-on tools and software in AIS courses to train students in AI-enabled business process, and training students in AI code using assignments or demos. New content coverage such as AI technologies in just one AIS course may not suffice to instill the rigor and depth without diluting content or overwhelming students.

What programmatic and process changes are needed to align accounting's competencies with 21stcentury skills without diluting core courses? Examples of changes include (*i*) integrating new technologies across the accounting curriculum; (*ii*) leveraging professionals for guest speakers, co-teaching courses or as guest lecturers; (*iii*) designing courses with enriched cases, material, and assignments that apply new technologies to train students in real world processes; (*iv*) training and retooling existing faculties in new technologies; (*v*) requiring new faculty hires with AI skills; (*vi*) requiring AI coding skills or course credits as pre-requisites; and (*vii*) working with high schools to introduce new technologies at +2 level for raising the technical knowledge and skills of students entering the higher education.

How would students choose their university and acquire 21stcentury skills if the accounting curriculum does not have sufficient opportunities? Existing Internet-enabled environment offers several options including self-learning from online platforms such as YouTube, complete related courses in CS or IS departments, use internship or co-op opportunities with organizations that offer AI related exposure, assignments, or projects, and take crash courses or certificate programs offered by professional organizations or companies.

How should accounting education respond to enable students acquire the needed skills and competencies? Several organizations including AAA, Big Four firms, professional organizations, SEC, are individually and collectively taking initiatives in this respect (see for example, *JIS*, 2023). Illustrative examples of accounting education's initiatives include (*i*) organizing boot camps, podcasts, symposia, workshops, webinars, training sessions, and train-the-trainer sessions, (*ii*) training by software companies such as SAP, Oracle, and Microsoft; (*iii*) designing and developing courses, assignments and cases; (*iv*) sharing syllabi and best practices among academe; (*v*) creating and sharing a repository of data sources; and (*vi*) organizing focused sessions at national, regional, section and local academic meetings. Authors of textbooks have begun including AI and new technologies in their revised editions, and organizing offline and online sessions to train faculty.

The foregoing is an illustrative list of implications for the current AI environment. Our discussion of possible solutions to each issue is also representative and exemplar in nature. We expect that accounting programs will develop solutions as they consider AI and innovative technologies strategies for their curriculum. The response process can happen both (*i*) individually at the program level and (*ii*) collectively at the discipline level, with inclusive input from academe, industry, standard setting bodies and the regulation.

7.2 Contributions

We contribute to the existing research stream that examines accounting program quality and faculty background which proxy graduate's market-readiness. As discussed in a previous section, within this research stream, limited evidence exists on AIS faculty which we examine in this study.

The underlying basis of both the Dotcom and the AI-eras is new, innovative technologies' transformative nature to spur growth, process efficiencies and productivity improvements. Within accounting curriculum, students learn systems and technology concepts in relative detail, depth and focus in AIS courses which are taught by AIS faculty. By analyzing the less examined AIS faculty, our study extends the literature in the extant research stream.

At the theoretical and usefulness level, we contribute by using accounting education's Dotcom experience to identify specific implications for the AI-era. These implications emerge from understanding the nature of findings of the stock analysis of AIS faculty at Dotcom's peak. For each implication, we also suggest possible solutions for accounting education.

At the methodological level, we theorize the count-data econometric features of AIS faculty. Further, the depiction of teaching and research interests for faculty in the directory allows us to consider five proxies of AIS faculty, each with a different theoretical significance to associate with its factors. By using Poisson and NEGBIN models, we provide empirical evidence for the association of AIS faculty with its factors.

7.3 Limitations

We preface our conclusions by submitting that our model may likely suffer from self-containment bias. This is true of all efforts at modeling complex real-world phenomenon. Data availability and practical constraints prevented consideration of all possible factors that might affect the number of AIS faculty. To the extent that unexplained variance in our model is due to non-random variables and correlated omitted variables, estimates of predictor coefficients and measure of AIS faculty are likely biased. For example, it is not known how accounting programs, that did not have in-house AIS faculty, provided IT or IS skills in their students. A better research design, improved methodology, and precise measurement of variables may improve the model's explanatory ability.

During Dotcom, some institutions integrated their accounting and IS departments. In an integrated model, possibly some IS instructors never taught AIS classes and/or did AIS research. Lately, there is an indication of the reverse trend. A few of those institutions have since reverse-split into IS and accounting departments.

We did not stratify our sample based on strictly IS and AIS faculty. We also did not segregate AIS faculty hired primarily for teaching or research or both. The directory does not provide such data. However, we believe that omission to account for such differences is not material for our results.

7.4 Conclusions

Limitations noted above imply alternate methodologies in future extensions of this study. To test the robustness of our model and provide AIS faculty's current status, future analyses and comparisons with current data should add value.

Further, HAFD is not the only data source. Other data sources exist and are needed for comparisons, confirmation and completeness. Theory and policy formulations can benefit from analyses of longitudinal, cross-sectional and regional data to understand regional disparities, inequities, and nuances. Future research can add value by providing solutions to questions posed above in the implications section. Accounting education's stakeholders have an interest to maintain, sustain and enrich its relevance.

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Appendix A: Descriptive statistics

	Private	Public	All	Private (%)	Public (%)	All (%)
N	376	435	811	46.4%	53.6%	
Total Faculty	2010	4163	6173	32.6%	9.3%	12.2%
AIS Faculty	178	575	753	2.9%	8.5%	12.1%
Doctoral program:	29	69	98	3.6%	8.5%	12.1%
Accreditation:						
Business school	99	249	348	12.2%	30.7%	42.9%
Accounting program	28	104	132	3.5%	12.8%	16.3%
Gender:						
Male	1486	3056	4542	24.1%	49.5%	73.6%
Female	524	1107	1631	8.5%	17.9%	26.4%
Male – AIS	140	443	583	2.3%	7.2%	9.4%
Female – AIS	38	132	170	0.6%	2.1%	2.8%
Faculty degrees:						
PhD/DBA	1099	2914	4013	17.8%	47.2%	65.0%
Masters	670	889	1559	10.9%	14.4%	25.3%
Others	79	111	190	1.3%	1.8%	3.1%
Unknown	162	249	411	2.6%	4.0%	6.7%
PhD/DBA – AIS	122	474	596	2.0%	7.7%	9.7%
Masters – AIS	43	76	119	0.7%	1.2%	1.9%
Others – AIS	10	20	30	0.2%	0.3%	0.5%
Unknown – AIS	3	5	8	0.0%	0.1%	0.1%
Certifications:						
CPA	1355	2941	4296	22.0%	47.6%	69.6%
CMA	226	468	694	3.7%	7.6%	11.2%
CIA	42	137	179	0.7%	2.2%	2.9%
CPA – AIS	131	370	501	2.1%	6.1%	8.1%
CMA – AIS	31	91	122	0.5%	1.5%	2.0%
CIA – AIS	7	24	31	0.1%	0.4%	0.5%
Rank:						
Professor	467	1309	1776	7.6%	21.2%	28.8%
Associate	733	1295	2208	11.9%	21.0%	32.9%
Assistant	637	1064	1701	10.3%	17.2%	27.6%
Others	173	495	668	2.8%	8.0%	10.8%
Professor – AIS	36	156	192	0.6%	2.5%	3.1%
Associate – AIS	77	197	274	1.2%	3.2%	4.4%
Assistant – AIS	49	179	228	0.8%	2.9%	3.7%
Others – AIS	16	43	59	0.3%	0.7%	1.0%

Appendix B: Acronyms used in this paper

AAA	American Accounting Association.
AACSB	Association to Advance Collegiate Schools of Business International.
AAU	Association of American Universities.
ACCA	Association of Chartered Certified Accountants.
AECC	Accounting Education Change Commission.
AI	Artificial Intelligence, refers to the intelligence exhibited by computer systems and related machines.
AICPA	American Institute of Certified Public Accountants, is a professional organization of CPAs in the US.
AIS	Accounting Information Systems.
AMJ	Academy of Management Journal.
AOL	Assurance of Learning.
CAPEX	Capital Expenditures.
CAQ	Center for Audit Quality.
CCP	Certified Cost Professional.
ChatGPT	Chat Generative Pre-Trained Transformer.
CIA	Certified Internal Auditor.
CIS	Computer Information Systems.
CISA	Certified Information Systems Auditor.
CISSP	Certified Information Systems Security Professional.
CMA	Certified Management Accountant.
CPA	Certified Public Accountant, is a licensed accounting professional who has met state licensing requirements to earn the CPA designation through educational training, experience and passing the CPA Exam administered by a state's Board of Accountancy.
CS	Computer Science.
CSSP	Cyber Security Service Provider.
DBA	Doctor of Business Administration.
Dotcom	Internet era that generally corresponds to the 1995 through 2000 period. The Dotcom bubble peaked on March 10, 2000.
E-Commerce	Electronic Commerce.
ERP	Enterprise Resource Planning.
ET-CIO	Economic Times-CIO.
GAO	General Accounting Office.
GenAI	Generative Artificial Intelligence is a type of AI to generate wide variety of data including text, image, video, audio, and 3D models.
GPT	Generative Pre-trained Transformers.
HAFD	Hasselback Accounting Faculty Directory, compiled by James R. Hasselback, of US colleges and universities, and few global institutions.
IFAC	International Federation of Accountants.
IS	Information Systems.
IT	Information Technology.
JIS	Journal of Information Systems.
LLM	Large Language Models: LLMs use deep learning, a type of machine learning, to understand and generate human language text without human intervention by analyzing and learning massive datasets.

MIS	Management Information Systems.
MOOC	Massive Open Online Course which is available over the Internet and followed by a large number of geographically dispersed students.
P&T	Promotion & Tenure.
PAR	Public Accounting Report.
SEC	Securities and Exchange Commission.
SOX	Sarbanes Oxley Act 2002.
TCHE	The Chronicle of Higher Education.
XBRL	Extensible Business Reporting Language: it is a freely available and global framework for exchanging business information.
Y2K	Year 2000: commonly known as the year 2000 problem refers to potential computer errors related to the formatting and storage of calendar data for dates in and after the year 2000. Many computer programs represented four-digit years with only the final two digits, making the year 2000 indistinguishable from 1900. Computer systems' inability to distinguish dates correctly had the potential to affect the functioning of global infrastructures for computer reliant organizations.