

# INFORMATION SYSTEMS CERTIFICATION: THE PERSPECTIVE OF THE HUMAN RESOURCE MANAGER<sup>1</sup>

**John E. Anderson**  
Penn State Harrisburg  
jeal1@psu.edu

**Kevin S. Barrett**  
Southern Utah University  
barrett@suu.edu

**Paul H. Schwager**  
Appalachian State University  
schwagerph@appstate.edu

## Abstract

*Realizing that HR Managers are often the gatekeepers to the organization, this exploratory study examines the perceptions of HR managers in relation to education, experience, and IS certification. A short survey was administered to Human Resource professionals who are members of local chapters of the Society for Human Resource Management (SHRM) in North Carolina. Based on the findings of this study we can conclude that certification, education, and experience are imperfect substitutes for each other. Thus, each component exerts its own unique positive influence on HR managers' perception formation. In addition, there seems to be a joint- or halo- effect conferred upon a balanced candidate.*

**Keywords:** IS certification, IS recruiting, IT/IS education, IS skill portfolio

## Introduction

Because the current Information Technology (IT) environment is characterized by rapid dynamic change, evolution of current technologies, and creation of new technologies the skills portfolios of IT professionals are under constant pressure to develop in parallel. An important way to develop the IT skills portfolio is certification. While the perspectives of IT professionals and IT managers have been studied in the past (CompTIA 2001), there has been no research on the perspective of the Human Resource (HR) managers toward IT certification.

The perspective of the HR manager is important. As the initial gatekeepers through which potential employees must pass to attain interviews with IT managers, the certification perceptions of HR managers are worthy of study in and of themselves. In addition, the perceptions of HR managers may have important implications for Information Systems (IS) curriculums.

## Review of Relevant Literature

A profession exists when its members are required to obtain requisite training, complete a certification process underpinned with rigorous standards, engage in continuing education, abide by a code of ethics, and submit to sanctions, including loss of certification, for malpractice or unprofessional behavior. Although routinely referred to as a profession, the IT field lacks explicit, generally accepted standards for requisite training and certification, a code of ethics, and sanctions for unprofessional behavior (Linderman and Schiano 2001). While "profession" advocates carry out the painstaking process of consensus building,

---

<sup>1</sup>Note: Authors appear in alphabetical order, each contributed equally.

businesses' support of and individuals' quest for IT certification proceed at a fevered pace and rival the popularity of certification programs in professions such as Accounting, Architecture, Engineering, Financial Planning, Human Resources, Law, Medicine, Military, and so forth. While there is admittedly a lack of generally accepted IT certification standards, the staying power of IT certification is an important profession-like expression that strongly suggests the IT field is moving in the right direction on the profession continuum. Indeed, the popularity of certifications such as A+, CCNA, CNA, Network+, MCSE, and MOUS (Ray and McCoy 2000; Noack 2001) implies that there is a market for the knowledge base and skills associated with those certifications and strongly hints that the Academe is not the only place that requisite training and continuing education can be acquired.

Certification's current popularity is attested to by a number of recent events: 1) a major Technical-Certification-Expo-2000 conference, 2) designation of March 2000 as Certification Month by thirty-two state governors, 3) the availability of over 400 business certifications, and 4) the increasing frequency of employment ads specifying specific certification preferences attest to certification's popularity. Quasi-professions that lack certification are even being enticed to introduce certification to capitalize on commonly cited benefits (Leonard 2002): 1) obtain further professional education and development, 2) move to a higher level of professional expertise, 3) improve career opportunities, 4) and enhance credibility by demonstrating mastery of a relevant body of knowledge (Barry 2001; Library 2002). There also appears to be a growing international interest and participation in U.S. based certification programs (Barber and Brackner 2001). As the economy evolves, new opportunities arise outside of traditional service areas that motivate the need for new certifications to address the often-complex issues associated with emerging markets (AICPA 2000; Braun et al. 2001; Freir 2001; Gerbitz and Salea 2001). Unfortunately, in some cases, certification proliferation causes confusion for consumers who are unfamiliar with a particular certification and the level of its prestige (Braun et al. 2001; Kraus 1999). To some extent, this confusion syndrome is moderated as a given specialization domain matures and convergence is achieved as to which certifications provide the greatest prestige to an individual.

Several studies have explored the value of certification to certified professionals and to the business managers that employee certified professionals (AICPA 2000; Barber and Brackner 2001; Barry 2001; CompTIA 2001; Freir 2001; Hrisak 2001; Ray and McCoy 2000; Schroeder and Reichardt 2001). Professionals earn certifications to improve and assess skills, enhance credibility, improve compensation, increase productivity, open up new career opportunities, and measure training effectiveness. Seventy-six percent of certified professionals actually realized their certification-benefits expectations (CompTIA 2001). Business managers cite improved credibility, employee productivity, higher level and consistency of service, competitive advantage, and ability to attract and retain highly qualified staff as the key benefits of certification. Ninety-two percent of business managers actually realized all or nearly all of their certification-benefits expectations (Ray and McCoy 2000). While these earlier studies certainly reflect positively on certification, they overlook the value of certification to HR managers. As the initial gatekeepers to employment, HR managers' IT certification perceptions are worthy of study in and of themselves. In addition, those perceptions may have important implications for Information Systems curriculums.

Despite the fact that certifications have historically had a negative impact on salaries, many academics have nonetheless obtained certification to augment their skills. The quest for certification has recently been legitimized and indeed given a compelling mandate by the American-Assembly-of-Collegiate-Schools-of-Business' recommendation for greater interaction between academicians and practitioners (Marcis and Bland 2001). There is however, considerable debate as to whether certification has a place in the IS curriculums of four-year educational institutions. One side of the debate employs a generalist argument to make the case for excluding certification from IS curriculums. The generalist argument asserts that the primary mission of most four-year colleges and universities focuses on the development of students' critical thinking and analytical skills and their appreciation for the arts, diverse cultures, foreign languages, the scientific method, and the history and politics of their own and other societies, not community-college oriented, workforce-development training of vendor-specific certification (Brookshire 2001). The other side of the debate uses a value argument to make the case for inclusion of certification in IS curriculums. The value argument focuses on the student, employer, and education institution benefits associated with specific student and professor certification in four major areas, hardware (A+, vendor-neutral), software (MOUS, vendor-specific, Microsoft Office User Specialist), networks (Network+, vendor-neutral), and systems design and analysis (MCP Microsoft Certified Professional), MCSD (Microsoft Certified Solution Developer), and MCSE (Microsoft Certified Systems Engineer), all vendor-specific). Benefits to students and employers correspond closely to those noted above in connection with IT professionals and IT managers. From an institutional perspective, certification provides an assessment tool for evaluating course and program content and student competencies and may contribute to a program's visibility and respect (Ray and McCoy 2000).

## **Problem and Purpose**

While the perspectives of IT professionals and IT managers have been studied in the past, there has been no research on the perspective of the Human Resource (HR) managers toward IT certification. The purpose of the present study is to explore the

perspective of the HR manager toward IT certification. The following objectives were motivated from the literature review and formulated to accomplish the purpose of this study:

1. Determine the value of IT certification to HR managers relative to formal education and experience in the hiring decision for IT professionals.
2. Determine the organizational benefits of a certified IT staff from the perspective of HR managers.
3. Determine the employee benefits of IT certification from the perspective of HR managers.
4. Determine the relative credibility of IT certification as compared to other certifications in business and industry from the perspective of HR managers.
5. Determine whether HR managers prefer theory-based education or application-based education and whether certification should be part of an Information-Systems curriculum.

## Methodology

Due to the exploratory nature of this study, the perceptions of HR managers were solicited with a survey instrument (see Appendix A) that was given to members from local chapters of the Society for Human Resource Management (SHRM) in North Carolina. Parts of this survey reflect the design of portions of the CompTIA survey so that the data generated by HR managers can be compared to data generated by IT managers and certified professionals (CompTIA 2001).

## Presentation and Discussion

Forty-four usable responses were obtained from SHRM members from two local North-Carolina chapters. (We are still gathering surveys from other chapters and should have a sample size of at least 100 by the August presentation.) In this section, demographic data will first be presented. The results will then be presented in order of the research questions answered.

### Demographics

To determine organizational and respondent characteristics, respondents were asked to disclose the number of years served as an HR professional and as an HR manager, the number of full-time employees in their organization, and their organizational affiliations. Table 1 shows that the average HR professional has served as an HR professional for about

**Table 1. Descriptive Statistics for Demographic Data**

Demographics	Statistic				
	N	M	SD	Min.	Max.
Number of full-time employees currently in organization	45	7126.43	21085.62	4	85000
Years served as a HR professional	42	12.8	7	1	30
Years served in a HR management position	40	8.55	7.11	0	23

13 years and as an HR manager for about 9 years and currently works in a medium sized organization (the range values and standard deviation suggest significant skewing is distorting the average employees data).

Figure 1 reveals that 92 percent of the HR professionals participating in this study are in managerial positions and thus intimately involved in the hiring of new personnel (for ease of reference, all respondents are now referred to as HR managers). This finding strengthens the meaningfulness of the HR perceptions that underpin the subsequent analysis of each of this study’s five objectives.

*Objective 1: Determine the value of IT certification to the HR manager relative to formal education and experience in the hiring decision for an IT professional.*

Objective 1 was measured by a set of three scenario questions. Respondents were asked to indicate the relative percentage weights (summing to 100 percent) that they would assign to education, certification, and experience when making a hiring decision in each of the following scenario contexts (the scenario ordering has been changed relative to the survey to facilitate



**Figure 1. Job Title**

discussion): 1) “Scenario 1: Candidate has no degree but several years of experience.” 2) “Scenario 2: Candidate has an Associates Degree from a Community College/Vo-Tech.” and 3) “Scenario 3: Candidate has a Bachelors Degree from a University.” As shown in Figure 2, HR managers, on average, place about 13 percent of the relative weight of their hiring decisions for no-degree candidates on education, apparently establishing the lack of a degree as something that has to be explained, compensated for, or replaced by significant experience and meaningful certification. In moving to the case of candidates with an Associates Degree, HR managers more than doubled the relative weight associated with education. Clearly, having some sort of degree establishes an important milestone in the minds of HR managers faced with a hiring decision. Please note that the increase in the relative weight of education is subsidized largely by a decreasing emphasis on work experience. As a practical matter, this study does not allow us to say how much experience places an Associates-Degree candidate on

par with the “many years of experience” of the no-degree candidate. However, it appears that relevant experience is highly valued and that it takes relatively less experience to place an Associates-Degree candidate on par with a no-degree candidate.

In the case of a Bachelors-Degree candidate, HR managers strike an interesting balance between education and experience and draw nearly equally upon certification and experience to strike that balance. The continued strong presence of each of these components suggests that they are imperfect substitutes for each other. That is, each component exerts its own positive influence on the perception formation of HR managers. The Log curves indicate that each tradeoff component experiences diminishing marginal returns in moving from the no-degree scenario to the Bachelors-Degree scenario, suggesting the obvious outcome of the desirability of the balanced candidate. That is, there appears to be a joint- or halo- effect associated with having all three components adequately represented (this study does not allow us to define what adequate is for each of those components). The relative flatness of the Certification curve suggests that Certification is the least vulnerable to diminishing marginal returns and thus the best investment alternative, given a Bachelors Degree and adequate relevant experience, for becoming a more desirable, balanced candidate.

*Objective 2: Determine the Organizational Benefits of a Certified IT Staff from the Perspective of the HR Manager*

Objective 2 was measured by a set of ten benefit factors drawn for comparative purposes from the survey used in CompTIA’s 2001 Training and Certification Study (CompTIA 2001).

Figure 3 discloses those factors along with HR managers’ corresponding perceptions.

In general, HR managers felt that certification would provide their organizations with at least some benefit for each of the factors. HR managers also perceived substantial (substantial was selected as a modifier to communicate the notion that all of the findings are noticeably beyond the “some benefit, i.e., “4” demarcator) organizational certification benefits arising from enhanced IT staff credibility (5.50), consistency of service provided (5.27), higher level of service (5.16), enhanced competitive advantage (5.05), and improved ability to attract and retain staff (5.05). The transformation of HR managers’ Likert-scale data into frequency distributions makes it possible to use Figure 4 to compare their perceptions on a percentage basis (in the sense that this percent of managers thought this was a perceived organizational benefit of certification) to the IT managers from the CompTIA study (CompTIA 2001).

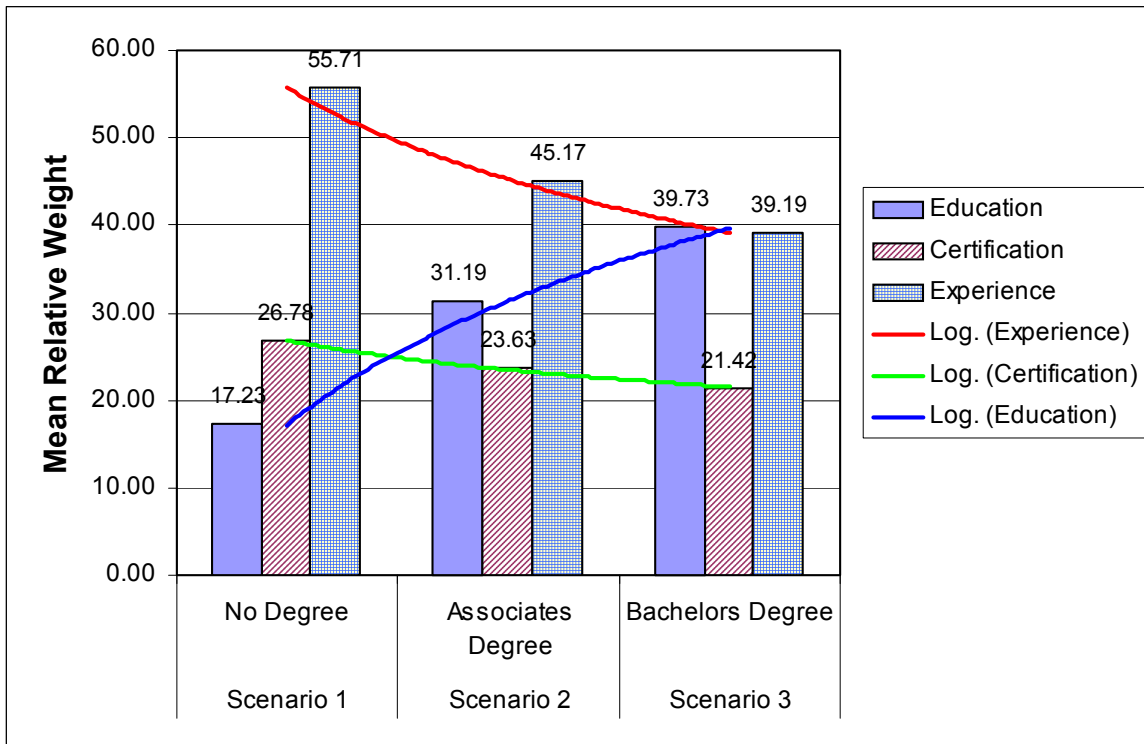


Figure 2. Relative Weights used by HR Manager in Hiring Decision for Hiring an IS Professional

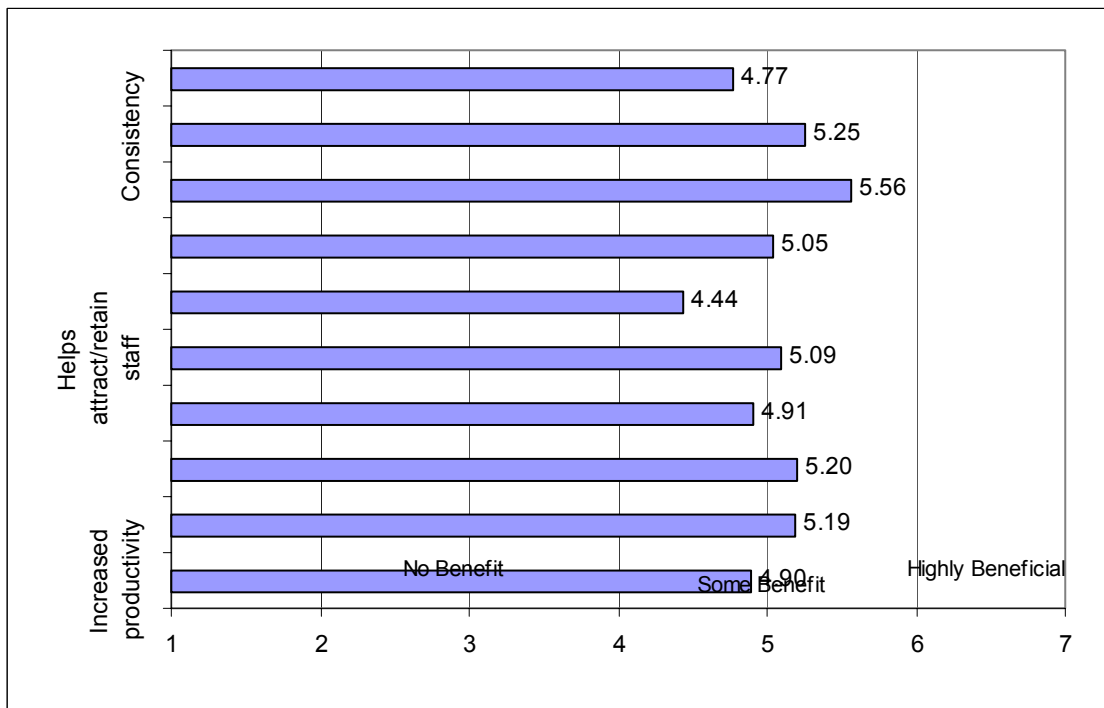


Figure 3. HR's Percieved Organizational Benefits of Certified Staff

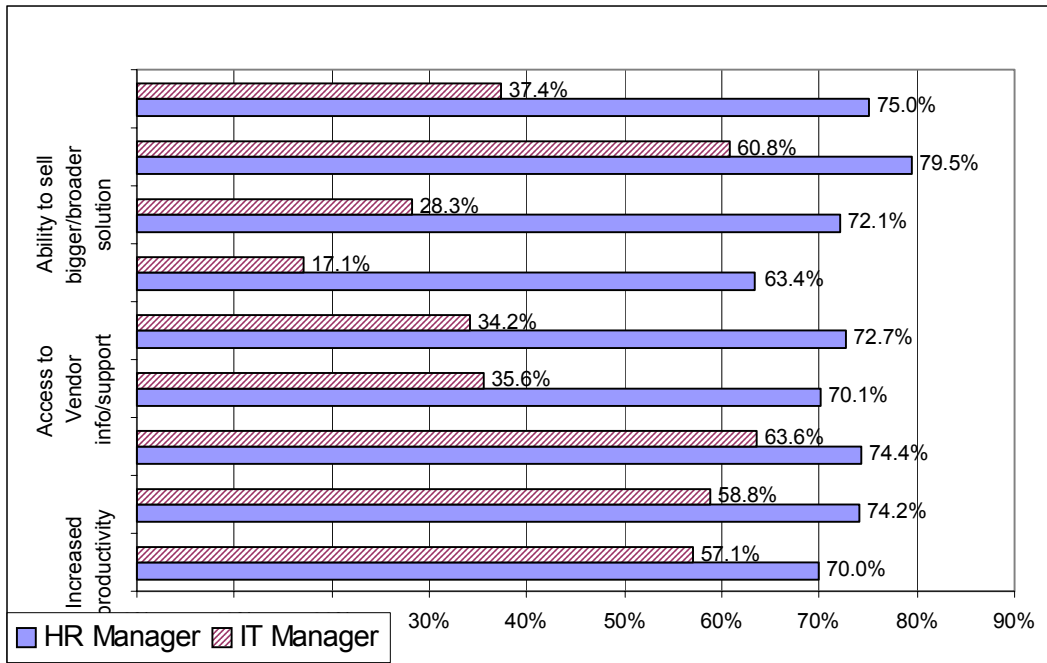


Figure 4. HR vs IT Manager's Perceived Organizational Benefits of a Certified IT Staff

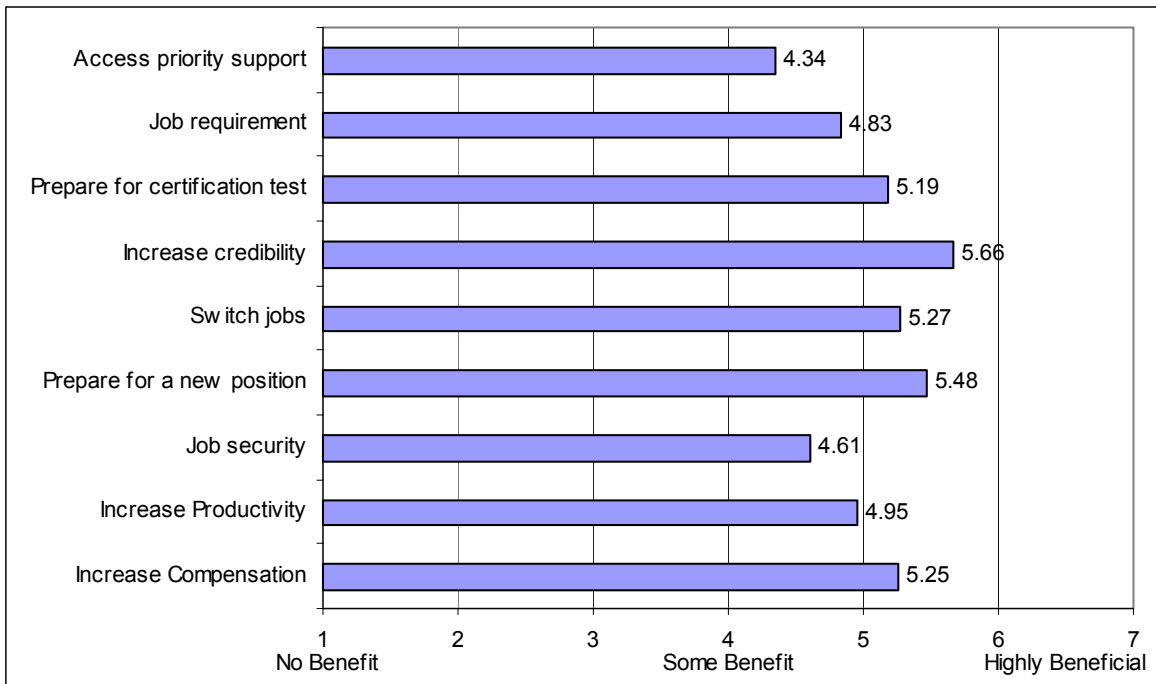
Although it may appear that HR managers' most beneficial factors loosely map those of IT managers, the rankings in Table 2 reveal that there is more variation than meets the eye. Limiting the ranking of IT managers' factors to only significant-benefit factors (the substantial drop from the fourth ranked factor at 57.1 percent to the 37.4 percent of the fifth ranked factor makes a clean break for identifying substantial benefit factors), all but one of the factors of the IT managers have a lower rank in the HR ranking. In addition, the IT ranking gives high marks to factors that did not show up in the IT ranking (consistency of staff's service and sell bigger/ broader solutions). These findings suggest that HR managers believe that IT certification provides more substantial, positive benefits to the organization than IT managers do.

Table 2. Ranking of IT and HR Managers Most Valued Organizational Factors

IT Managers' Perceptions		HR Managers' Perceptions	
1.	Higher Level of Service (63.6 %)	1.	Enhanced Staff Credibility (78.6 %)
2.	Enhanced Staff Credibility (60.8 %)	2.	Consistency of Staff's Service (75.3 %)
3.	Competitive Advantage (58.8 %)	3.	Higher Level of Service (73.7 %)
4.	Increased Staff Productivity (57.1 %)	4.	Sell Bigger/Broader Solution (73.4 %)
		5.	Competitive Advantage (72.1 %)
		6.	Improved ability to attract/retain staff (72.1 %)
		7.	Increased Staff Productivity (68.1 %)

*Objective 3: Determine the Employee Benefits of IT Certification from the Perspective of the HR Manager*

Objective 3 was measured by a set of nine benefit factors drawn for comparative purposes from CompTIA's 2001 Training and Certification Study (CompTIA 2001). Figure 5 discloses those factors along with HR managers' corresponding perceptions. In general, HR managers felt that certification would provide their employees with at least some benefit for each of the factors. HR managers also perceived substantial employee certification benefits arising from their enhanced credibility (5.66), preparation for new position (5.48), mobility (5.27), and compensation (5.25).



**Figure 5. HR’s Perceived Employee Benefits of Certification**

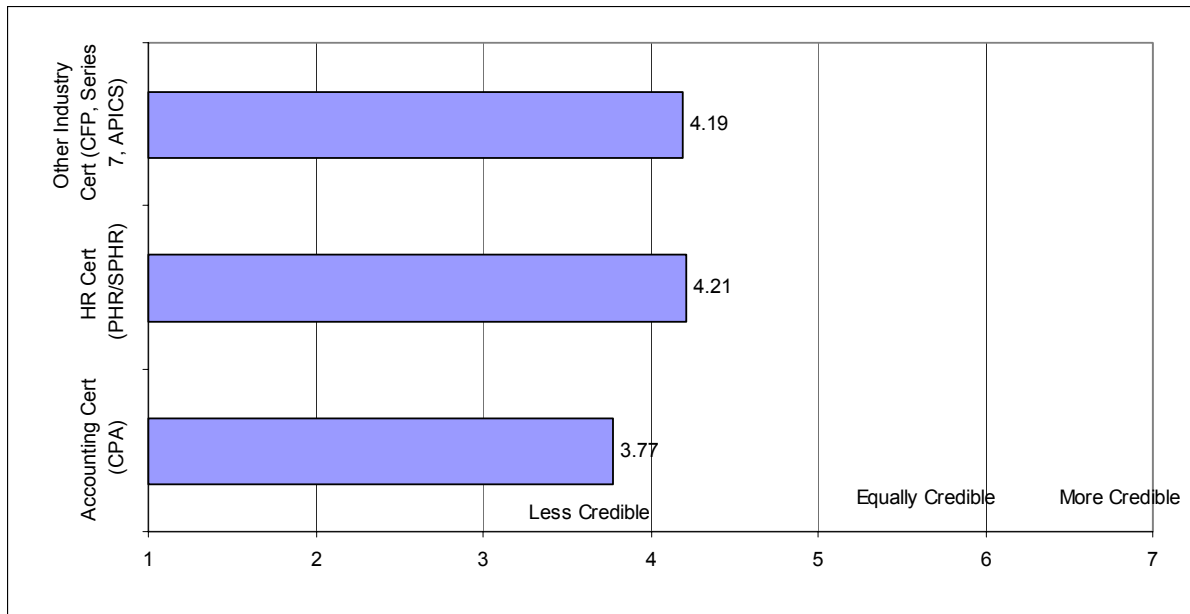
Table 3 provides comparative rankings as a means of evaluating similarities between the perceptions of HR and certified professionals (Though a transformation exists that makes direct percentage comparisons to the CompTIA study’s first-most-important, second-most-important, and third-most-important percentages possible, it would take a day to do the programming and the submission deadline is looming. This transformation will be done before the August conference.). The ranking of certified professionals’ certification differs in very interesting ways from HR managers perceptions of how certification will benefit their certified employees. The top five factors of certified professionals (i.e., Increased Compensation, Increased Productivity, Job Security, Prepare for a New Position, and Fill Job Requirement) seem to cluster around the notion of using certification to improve the quality of work life at their present place of employment. On the other hand, HR managers’ overall rank ordering seems to communicate the notion that certified professionals will use certification as a means of securing new career opportunities outside of their present places of employment (prior research suggests that only 29 percent of certified professionals actually changed employers after receiving certification (CompTIA 2001)). This interpretation seems plausible in light of the joint effect of the “interested-in-mobility” ordering of high ranking factors (enhanced credibility (rank = 1), prepare for a new position (rank = 2; given HR managers’ rank ordering, this factor may be interpreted synonymously with find a new job) and find a new job (rank = 3)) and the low ranking of “improving-things-here” factors, i.e., increased productivity (rank = 6), fill job requirement (rank = 7), and job security (rank = 8).

**Table 3. Rankings of Certified Professionals and HR Mangers Employee Benefit Factors**

Certified Professionals’ Perceptions	HR Managers’ Perceptions
1. Increased Compensation	1. Enhanced Credibility
2. Increased Productivity	2. Prepare for a New Position
3. Job Security	3. Find a New Job
4. Prepare for a New Position	4. Increased Compensation
5. Fill Job Requirement	5. Prepare for Certification Test
6. Find a New Job	6. Increased Productivity
7. Enhanced Credibility	7. Fill Job Requirement
8. Prepare for Certification Test	8. Job Security
9. Access to Priority Support	9. Access to Priority Support

**Objective 4:** Determine the relative credibility of IT certification as compared to other certifications in business and industry from the perspective of the HR manager

Objective 4 was examined with three questions that compared the credibility of IT certification to Accounting, Human Resource, and other industry certifications (e.g., CFP, Series 7, APICS, etc.). Figure 6 reveals that HR managers view IT certification as having about the same level of credibility as those from other service areas. This finding is consistent with the findings associated with prior objectives and reflects HR managers' perceptions that certification helps organizations (if certified employees stay) and employees that certify.



**Figure 6. IS Certification Credibility Relative of Other Certifications**

**Objective 5:** Determine whether HR managers prefer theory-based education or application-based education whether certification should be part of an Information-Systems curriculum

Objective 5 was evaluated by asking respondents to state the extent to which they agreed with two statements: 1) "A Bachelors degree curriculum in Information Systems that produces breadth of knowledge (i.e., a theoretical foundation) is more valuable than a Bachelors curriculum that produces depth of knowledge (i.e., technical or applied skills)." and 2) "Certification courses should be part of the Bachelors degree curriculum." As noted in Figure 7, HR managers were neutral with regard to question one, suggesting that there ought to be a balance between theoretical and technical and applied components in IS curriculums. With regard to question two, HR managers appear to believe that certification may be one way of striking that balance.

## Conclusion

This exploratory study yields a number of interesting insights into HR managers' certification perceptions and the implications those perceptions have for IS curriculums. Based on the findings of this study we can conclude that certification, education, and experience are imperfect substitutes for each other. Thus, each component exerts its own unique positive influence on HR managers' perception formation. In addition, there seems to be a joint- or halo- effect conferred upon a balanced candidate. In light of their neutrality towards the task of declaring either a theory-based or a technical/ application-based IS curriculum most desirable, HR managers seem to be suggesting that there ought to be a balance between theoretical and technical and applied components in IS curriculums. When combined with the balanced-candidate effect, this finding suggests that IS curriculums would benefit from incorporating both systematic internship and certification programs. We can also conclude that HR managers are willing to associate even more substantial positive organizational benefits with certification than their IT-manager counterparts. Like certified professionals, HR managers associate substantial employee benefits with certifications. However,



relative to certified professionals who seem to associate certification benefits with improving the quality of work life at their present place of employment, HR managers seem to believe that certified professionals will use certification as a means of securing new career opportunities outside of their present places of employment. This could be influenced by their gatekeeper position within the organization. Finally, HR managers view IT certification as having about the same level of credibility as certifications from other business service areas.

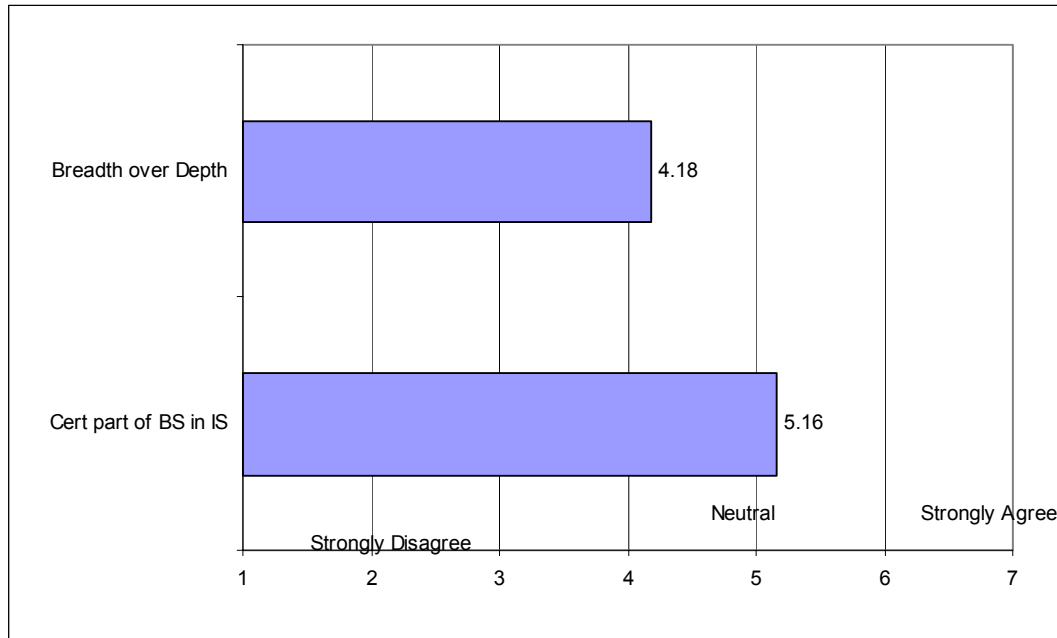


Figure 7. Certification in a Four Year Degree Program

References

AICPA, "IT Credential to Help CPAs make Business Sense out of Technology," *Journal of Accountancy*, July 2000, 95-98.

Barber, R. L. and J. W. Brackner, "Certification," *Strategic Finance*, September 2001, 71-72

Barry, J. N., "Certification, Is It Worth the Price?" *Library Journal*, February 2001, 96.

Braun, R., S. Mauldin, and M. A. Fischer, "The CFE Designation in Perspective," *The CPA Journal*, April 2001, 42-48.

Brookshire, R. G., "Information Technology Certification: Is This Your Mission?" *Information and Technology, Learning, and Performance Journal*, Vol: 18 (2), Fall 2001, 1-2.

CompTIA, "2001 Training & Certification Study," <http://www.comptia.org>, November 15, 2001.

Freir, K. D., "Certification Corner: Certification Statistics and Demographics," *Cost Engineering*, Vol. 43 (8), August 2001, 13.

Gerbitz, K. and R. S. Salea, "Market Research: Data Suggest Demand for Global Business Credential Skills," *Journal of Accountancy*, September 2001, 65-66.

Hrisak, D. M., "Global Challenges Call for More CMAs and CFMs," *Strategic Finance*, June 2001, 46-49.

Kraus, W. E., "Certification Improvement Thanks to Peer Review," *Cost Engineering*, Vol. 41 (4), April 1999, 22-24.

Leonard, B., "A Brief History of HRCI," *HR Magazine*, <http://www.hrci.org/about/history.html>, March 14, 2002.

Library Administration and Management Association, "Certified Public Library Administrator (CPLA) Certification Program Overview," <http://www.pla.org/projects/certification/certification.html>, March 12, 2002.

Linderman, J. L. and W. T. Schiano, "Information Ethics in a Responsibility Vacuum," *The Data Base for Advances in Information Systems*, Vol. 32 (1), Winter 2001, 70-74.

Ray, C. M. and R. McCoy, "Why Certification in Information Systems," *Information and Technology, Learning, and Performance Journal*, Vol: 18 (1), Spring 2000, 1-2.

Marcis, J. G. and E. M. Bland, "The Value of Professional Certifications in Academe," *Atlantic Economic Journal*, Vol. 29 (1), March 2001, 116.

Noack, D., "Certification Mystification," *Link – up*, Vol. 18 (5), September/October 2001, 17.

Schroeder, D. L. and Reichardt, E. Reichardt, "IMA 2000 Salary Guide," *Strategic Finance*, June 2001, 24-37.