THE VALUE OF NATIONAL CERTIFICATION IN AUDIOLOGY

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ABSTRACT

There have been a number of health profession studies that have measured membership loyalty. However, there is paucity of independent audiology research on the topic and none have investigated membership perceptions concerning the value of professional certification. We examine two specific cases, the American Speech-Language-Hearing Association (ASHA) and the American Academy of Audiology (AAA), that explore the determinants of certification value and the influence of member organizations in the valuation process. We conclude that the cohorts holding the American Board of Audiology (ABA) certificate and the Certificate of Clinical Competence in Audiology/ABA dual certificates have greater affinities for AAA and its ABA certification. The finding can be attributed to the perceptions of AAA's sustained superior support for the audiology profession and the certificate's prestige relative to its ASHA counterpart.

INTRODUCTION

There are a number of national audiology organizations. Two of the largest and more prominent are the American Speech-Language-Hearing Association (ASHA), founded in 1925, and the American Academy of Audiology (AAA), founded in 1988. ASHA has more than 150,000 members of which approximately 7.4% are audiologists (ASHA 2011). AAA has nearly 10,961 members of which approximately 82% are audiologists (AAA 2012).

ASHA and AAA both envisioned the need for a national certification process. In 1952, ASHA created the Certificate of Clinical Competence in Audiology (CCC-A) and the Council for Clinical Certification (CFCC) to govern the certification process. To qualify for the CCC-A, applicants must hold a degree from a program accredited by ASHA's Council on Academic Accreditation (CAA). Further, students are required to earn 1820 of their graduate clinical hours under the supervision of a CCC-A audiologist. About 12,000 audiologists hold the ASHA CCC-A (ASHA 2011).

The American Board of Audiology (ABA) certification program was introduced in 1998 (AAA, 1998). There are several fundamental differences between ABA and CCC-A certification processes. ABA certification requires students earn a doctorate degree in audiology from a regionally accredited program but does not require programs to be accredited by a professional audiology association. In addition, the ABA does not require that clinical supervisors of students hold ABA certification. About 1600 audiologists hold the ABA certificate.

The rationales for the creation of the CCC-A and the ABA Board Certification appear to be quite different. In the 1950s, audiology state licensure had not evolved and certification offered a mechanism to define the profession and to ensure that consumers were provided with a certain standard of care based on

uniform training standards. As state licensure evolved, standards were mandated. State licensure is a required credential that is intended to protect consumers, whereas certification is an optional credential that indicates competencies that may exceed those required by state law. During the past four decades, ASHA assumed a major advocacy role for state licensure as the appropriate mechanism for consumer protection (Lynch 1994). More recently, AAA provided advocacy for changes in state licensure to increase the education standards and de-couple licensure from professional certification.

Certification

Certification is a voluntary process that recognizes individuals for advanced sets of skills or knowledge and informs the public of a particular degree of competency (Shenenberg and Smith 1999). Although certification is a nationally recognized standard, it is not required for licensure to practice audiology within the United States (ABA 2005). Since national certification is not a state licensure requirement, why would a professional opt to hold certification? If an audiologist chooses to hold one or both certificates, the audiologist must perceive that certification has value.

Customer Value

Customer valuation changes over time. Individuals may perceive value differently as they transition from a first-time, to a short-term, and eventually to a long-term customer. As a result, customer value criteria will change from an attribute-based level to a consequence-based level to a goal-based level value (Parasuraman 1997).

Attributes are usually what attract a first-time applicant to purchase the initial certification. For example, providing telephone and/or electronic communication support for frequently asked audiology questions may be an important choice criterion for first-time applicants seeking membership in a professional organization. The cost of certification and membership is another consideration. The attribute-based value is usually the level where the organization learns what product or service elements their customer values.

The organization cannot ignore the information learned about the customer at the other value criteria levels (Woodruff 1997). The consequence-level criterion typically is what makes short-term customers feel that the product or service use has value over the first few years. For example, new audiologists may value the professional networking opportunities that exist when they hold a specific certificate (e.g., ABA "Meet and Greet") or become a member of a professional organization (e.g., ASHA mentoring program).

Customer goal-level criteria are what make long-term customers appreciate the value of the consequences of using the product or service. Audiologists making use of their established networks to develop career path opportunities would experience goal-level value. Customer loyalty may also play a role because an organization's relationship is generally strengthened with the customer at this level (Parasuraman 1997).

Need for the Study

Independent assessments of certification value have been conducted in a number of health related fields including nursing (Byrne et al. 2004; Gaberson et al. 2003) and medicine (Panagopoulos et al. 1999). However, there is a paucity of independent audiology research. Surveys have measured audiologists' satisfaction with the ASHA brand and ASHA's products and service delivery (ASHA 2000; 2004; 2005; 2006). Unfortunately, the surveys provided limited information regarding the value of the CCC-A relative to other certifications.

To date, there has been no independent investigation of the perceived value of audiology certification. It is likely that there is a determining factor, or a combination of factors, that influence an audiologist's decisions for certification and membership with a professional organization. Specific research questions included: do audiologists perceive that certification has value? Does the member organization

associated with each certification affect the perception of the value of the certificate? Have the perceptions of the certifications' value changed over time?

METHOD

Survey development

A two-stage process was used to construct a survey instrument. In the first stage, the instrument was developed based on a review of the health care certification satisfaction survey literature. The instrument was subsequently submitted to four audiologists with a background in survey development. The audiologists were asked to complete the survey and to provide comments regarding content and clarity. The comments were used to modify the instrument.

In the second stage, a pre-test of the survey instrument was administered to 20 licensed audiologists using telephone and personal interviews. Seventeen of these audiologists held the ASHA CCC-A, one held ABA certification, and two held both. Modifications to the scales and several questions were made based on the pre-test results. Questions involving factors that influenced respondents to select a specific certificate and renew the certificates were further refined based on the feedback.

The revised instrument consisted of 24 certification questions, 6 demographic questions, and one open-ended question for additional comments concerning national certification. A number of questions instructed respondents to identify as many relevant factors as applicable from a list of variables identified from the literature and the pre-test results. Other questions, using a nine-point, Likert-type scale (1=very dissatisfied, 3=dissatisfied, 5=indifferent, 7=satisfied and 9=very satisfied) were developed to measure the respondents' general satisfaction with both the affiliated membership organizations and the certifications' value during the first year, years two through five, and greater than five years of use. The final instrument was converted to an on-line format using Survey Monkey to administer the data collection.

Survey Participants

A cover letter stating the purpose of the survey and directing participants to access the instrument through the URL www.certificationstudy.net was e-mailed to a stratified random sample of 632 certified audiologists from a purchased mailing list of ASHA and AAA members. The random sample included 372 CCC-A certified ASHA members and 260 ABA certified AAA members. Five of the 632 letters were returned as undeliverable, leaving 627 potential respondents.

Data Analysis

The data for the ASHA CCC-A and ABA-certified respondents were assessed using chi-squared analyses. The data for the respondents possessing both the CCC-A and ABA certificates (CCC-A/ABA group) were assessed using the McNemar Change Test. The McNemar Change Test is a chi-squared statistic applied to within subject data comparisons (i.e., repeated measures). Satisfaction responses regarding membership affiliation and certification value were compared using the t-test. Correlation analysis was used to measure relationships between respondent ratings of member affiliate organizations and the certifications. Questions requiring respondents to identify factors governing initial certification and certification renewals were compared using descriptive statistics.

RESULTS

Demographics

The response rate was 21% (n=131). Three surveys were excluded because responses to professional certification(s) were omitted, resulting in a sample size of 128. Of the 128 respondents, 59 (46%) held CCC-A and ABA certification, 41 (32%) exclusively held the CCC-A and 28 (22%) exclusively held ABA certification.

Respondents were residents of 33 different states with an approximate equal distribution from the South, Northeast, Midwest, and West. The majority (79%) of the CCC-A respondents was female whereas the majority (54%) of ABA respondents was male. Gender difference was statistically significant (χ^2 (1) = 7.9, p = .005). The majority of the combined CCC-A/ABA cohort was female (70%).

Eleven of the 38 responding CCC-A audiologists (29%) held a doctorate as their highest earned degree whereas 21 of the ABA certified audiologists (75%) held a doctorate degree - primarily a clinical doctorate in both cases (9 and 18, respectively). The remaining respondents held a master's degree. The difference between groups was statistically significant (p < .005). Forty of the 54 respondents (74%) from the CCC-A/ABA cohort held a doctorate degree, primarily a clinical doctorate (n = 29).

Reported years of work experience revealed respondents overall were relatively seasoned audiologists. The largest category for each organization was 21+ years of experience (33% of the CCC-A cohort; 54% of the ABA cohort). Other categories included 11-20 years (23% and 21%, respectively), 6-10 years (26% and 14%), and 1-5 years (18% and 11%). The relationship between single-certification respondents (i.e., CCC-A or ABA) and the number of years of audiology experience was not significant (p > .05). In the combined CCC- A/ABA cohort, the largest experience category was also 21+ years (44%) followed by 11-20 years (35%), 6-10 years (11%), 1-5 years (7%) and <1 year (2%). The most commonly reported primary work setting for ABA respondents was private audiology practice (64%) whereas only 15% of the CCC-A respondents reported similar employment. CCC-A respondents were relatively more inclined to be employed in an ear, nose and throat (ENT) practice (21% vs 11%), university (21% vs 4%), hospital (15% vs 4%), and school/non-university (15% vs 4%). The relationship between certification held and work setting was statistically significant (p < .005). For the CCC-A/ABA cohort, the largest employment category was private audiology practice (32%) followed by university (22%), ENT practice (17%), other (17%), hospital (9%), school/non-university (2%) and industry (2%).

The majority of the CCC-A respondents indicated that their standard work week was between 31-40 hours (64%) followed by 41+ hours (21%). Fewer than 10% reported other categories. The majority of ABA respondents indicated they worked longer weekly hours; specifically, 41+ hours (71%), 31-40 hours (21%) and 21-30 hours (7%). The relationship between certificate held and the work hour category was significant (p < .001). The CCC-A/ABA cohort's largest hourly reported work week category was 31-40 hours (50%) followed by 41+ hours (41%).

ASHA and AAA Member Organizations

CCC-A and CCC-A/ABA respondents were queried to indicate the ASHA elements they liked and disliked and the same question was posed to the ABA and CCC-A/ABA cohorts concerning AAA. The elements that the respondents liked and disliked are presented in Tables 1 and 2, respectively. Table 1 indicates the majority of ABA and CCC-A/ABA respondents liked many of AAA's attributes; over 50% of the ABA and CCC-A/ABA cohorts selected 17 and 16 elements, respectively, from a list of 26 items. The most common responses ($\geq$ 80%) from the ABA cohort regarding AAA included the fact that it is at the forefront of audiology, its commitment to increasing audiology's public awareness, its legislative/lobbying efforts, its support/advocacy for audiology, the organization's annual convention, the educational offerings and the support for the Doctor of Audiology degree. Table 1 also indicates that the CCC-A/ABA respondents liked similar elements regarding AAA, although the percentages were slightly lower. In contrast, no single ASHA element was selected by the majority of the CCC-A

Table 1. *Organization elements favored by ASHA and AAA respondents*

	Cohort							
Organization Elements	CCC-A (re: ASHA)		CCC-A/ABA (re: ASHA)		ABA (re: AAA)		CCC-A/ABA (re: AAA)	
	n	(%)	n	(%)	n	(%)	n	(%)
Benefits	4	(10%)	1	(2%)	11	(39%)	33	(60%)
Certification	11	(28%)	9	(17%)	15	(54%)	30	(55%)
Code of Ethics	11	(28%)	15	(28%)	15	(54%)	37	(67%)
Convention	4	(10%)	0	(0%)	23	(82%)	42	(76%)
Cost	4	(10%)	0	(0%)	12	(43%)	20	(36%)
Created alternative to CCC-A	N/A		N/A		21	(75%)	33	(60%)
Credibility of Organization	12	(30%)	10	(19%)	22	(79%)	35	(64%)
Educational Aspects	13	(33%)	9	(17%)	23	(82%)	38	(69%)
Forefront of Audiology	4	(10%)	0	(0%)	25	(89%)	46	(84%)
History	11	(28%)	14	(26%)	15	(54%)	19	(35%)
Legislative Body	14	(35%)	11	(20%)	18	(64%)	22	(40%)
Legislative Efforts	10	(25%)	11	(20%)	24	(86%)	35	(64%)
Multidisciplinary nature of org.	5	(13%)	7	(13%)	N/A		N/A	
Network	5	(13%)	2	(4%)	15	(54%)	23	(42%)
On-line Resources	14	(35%)	10	(19%)	19	(68%)	28	(51%)
Other	3	(8%)	11	(20%)	4	(14%)	7	(13%)
Paperwork	2	(5%)	1	(2%)	4	(14%)	11	(20%)
Phone support	5	(13%)	3	(6%)	2	(7%)	5	(9%)
Politics	6	(15%)	10	(19%)	22	(79%)	34	(62%)
Positive relation w/ other org.	5	(13%)	4	(7%)	0	(0%)	3	(6%)
Public awareness	13	(33%)	9	(17%)	25	(89%)	34	(62%)
Publications	14	(35%)	12	(22%)	18	(64%)	35	(64%)
Scope of Practice	9	(23%)	11	(20%)	12	(43%)	35	(64%)
Special Interest Groups	4	(10%)	1	(2%)	9	(32%)	8	(15%)
Support for Au.D. Movement	3	(8%)	5	(9%)	23	(82%)	33	(60%)
Audiology support/advocacy	10	(25%)	6	(11%)	23	(82%)	48	(87%)
Respondent Totals		40		54		28		55

Table 2. *Organization elements disliked by ASHA and AAA respondents*

	Cohort							
Organization Element	CCC-A (re: ASHA)		CCC-A/ABA (re: ASHA)		ABA (re: AAA)		CCC-A/ABA (re: AAA)	
	n	(%)	n	(%)	n	(%)	n	(%)
Attitude	7	(18%)	24	(42%)	3	(17%)	5	(13%)
Bureaucracy	11	(28%)	18	(32%)	10	(56%)	8	(20%)
Can't supervise	N/A		N/A		5	(28%)	17	(43%)
CCC in state law	9	(23%)	29	(51%)	N/A		N/A	
Certification req to supervise	11	(28%)	30	(53%)	N/A		N/A	
Certification	2	(5%)	9	(16%)	0	(0%)	0	(0%)
Code of ethics	0	(0%)	3	5%)	2	(11%)	1	(3%)
Convention	5%	(2)	17	(30%)	1	(6%)	0	(0%)
Cost	23	(59%)	27	(47%)	3	(17%)	10	(25%)
Created ABA	N/A		N/A		0	(0%)	3	(8%)
Credibility of organization	1	(3%)	7	(12%)	0	(0%)	0	(0%)
Educational aspects	3	(7%)	4	(7%)	0	(0%)	1	(3%)
Hx dispensing	8	(21%)	26	(46%)	N/A		N/A	
Lack of benefits	11	(28%)	19	(33%)	2	(11%)	4	(10%)
Lack of networking opportunity	1	(3%)	2	(4%)	0	(0%)	1	(3%)
Legislative efforts	0	(0%)	6	(11%)	0	(0%)	1	(3%)
Neg rel w other org	17	(44%)	41	(72%)	0	(0%)	16	(40%)
Number SLPs	20	(51%)	26	(46%)	N/A		N/A	
Online resources	0	(0%)	3	(5%)	0	(%0)	4	(10%)
Other	3	(8%)	5	(9%)	7	(39%)	7	(18%)
Paperwork	6	(15%)	2	(4%)	0	(0%)	1	(3%)
Political support/action	0	(0%)	4	(7%)	0	(0%)	1	(3%)
Poor advocacy	12	(31%)	36	(63%)	0	(0%)	1	(3%)
Publications	4	(10%)	9	(16%)	0	(0%)	0	(%0)
SLP emphasis	21	(54%)	26	(46%)	N/A		N/A	
SLP influence	18	(46%)	35	(61%)	N/A		N/A	
Special interest groups	0	(0%)	4	(7%)	0	(0%)	1	(3%)
Telephone support	1	(3%)	1	(2%)	1	(6%)	4	(10%)
Respondent Totals		39		57		18		40

or CCC-A/ABA respondents. Table 1 reveals the elements selected as favored by the largest number of CCC-A respondents (35%) included ASHA's legislative body, on-line resources and publications. The CCC-A/ABA cohort's response rate never exceeded 28% for any one element of ASHA.

The most commonly cited dislikes from the majority of CCC-A respondents were the cost and the number/emphasis of speech-language pathologists (SLP). The CCC-A/ABA cohort's principal dislikes of ASHA included the negative relationship with AAA, poor audiology advocacy, SLP influence, certification requirement for student supervision, and the inclusion of the CCC-A in state law. Bureaucracy was the only disliked element cited by the majority (56%) of the ABA respondents. No AAA item was disliked by the majority of CCC-A/ABA respondents.

Influence of attitudes toward parent organization and intentions to purchase certificate

Respondents were queried if their opinion of the parent organization affected their desire to purchase its certificate. Respondents were given the following three choices: "I have a positive opinion of [AAA or ASHA] and it positively affects my desire to hold [ABA or ASHA] certification", "I have a negative opinion of [AAA or ASHA] and it negatively affects my desire to hold [ABA or ASHA] certification", and "My opinion of [AAA or ASHA] does not affect my desire to hold [ABA or ASHA] certification." The responses are presented in Table 3. The desired to hold certification was not affected by the parent organization for a majority of the single certificate holders. The majority response from the dual certificate cohort tended to be negative regarding ASHA and positive regarding AAA in their desire to hold certification issued by the associations. A chi-squared analysis indicated differences between ASHA and ABA cohorts were significant ($p < .025$). Subsequent 2x2 analyses indicated significant differences between the CCC-A and ABA cohorts for the number of positive and negative responses ($p < .01$). The ABA cohort was more likely to be associated with a positive opinion/positive affect. Other response comparisons were not significant.

The McNemar Change Test results for the CCC-A/ABA cohort indicated significant differences existed between CCC-A and ABA responses when the number of positive and negative responses for each group were compared ($p < .001$). The ABA cohort was more likely to be associated with the positive opinion/positive affect. Other response comparisons were not significant.

Table 3. *Influence of respondent attitude toward the organization on the desire to purchase certification*

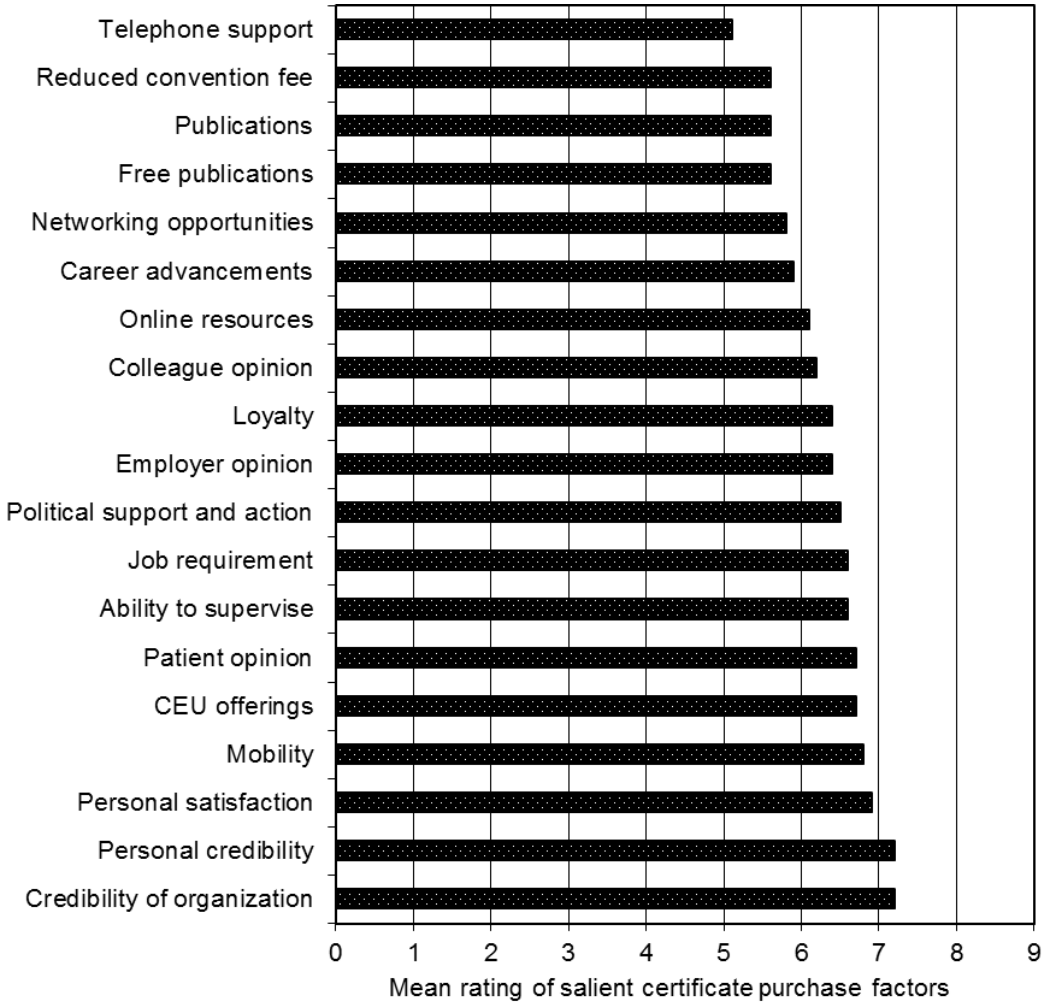
	Cohort			
Attitude	CCC-A (re: ASHA)	CCC-A/ABA (re: ASHA)	ABA (re: AAA)	CCC-A/ABA (re: AAA)
Positive	9 (23%)	7 (13%)	13 (46%)	33 (61%)
Negative	7 (18%)	28 (51%)	0 (0%)	1 (2%)
Neutral	23 (59%)	20 (36%)	15 (54%)	20 (37%)
Response Totals	39	55	28	54

Certification Purchase Criteria

Respondents were queried to rate 19 criteria that generally influence certification purchases. A 9-point Likert-type importance scale (1=not very important; 3=not important; 5=indifference; 7=important; 9=very important) was used to measure respondent purchase criteria. Figure 1 illustrates that the top three criteria, rated as important, were the organization's credibility/reputation, the prospect of enhancing the applicant's credibility and the personal satisfaction associated with professional certification.

Nineteen independent t-tests were conducted to compare the importance ratings of CCC-A to ABA respondents. The t-test results indicated that the personal satisfaction associated with the professional certification (p=.000), the prospect of enhancing the applicant's credibility/reputation (p=.000), and to comply with a job requirement (p=.001) were the only significantly different criteria. Specifically, ABA respondents had greater mean score ratings concerning the influence of personal satisfaction as a motivator to purchase certification (8.0 for ABA; 5.5 for CCC-A) and the certificate's perceived effect to enhance the audiologist's credibility/reputation (8.1 for ABA; 6.5 for CCC-A). The CCC-A respondents had greater mean score rating (7.3), relative to their ABA counterpart (5.5), for the employment requisite rating.

Figure 1. Criteria that influence certification purchase in audiology.



Satisfaction Measurements

Respondents were queried to indicate how satisfied they are with ASHA and AAA and with the certifications using a nine-point satisfaction Likert scale (1=very dissatisfied; 3=dissatisfied); 5=indifference; 7=satisfied; 9=very satisfied). The mean score results indicated that the ABA and CCC-A/ABA cohorts were more than satisfied with AAA (7.82 and 7.96, respectively). The ASHA and CCC-A/ABA cohorts were slightly satisfied and slightly dissatisfied with ASHA (5.7 and 4.27, respectively).

The findings for certification, presented in Figure 2, reveal that the ABA certificate had consistently higher mean satisfaction ratings than the CCC-A over a period of 1 to 6-9 years. Further, the CCC-A/ABA respondents were slightly dissatisfied to indifferent (3.61-4.98) with the CCC-A, whereas the CCC-A cohort who were slightly satisfied (5.53-6.43) over a 1 to 10+ year period. This trend was not the case for the ABA certificate. The CCC-A/ABA respondents had a generally consistent rating of being somewhat satisfied (7.29-7.42) with the ABA certificate and the ABA cohort was consistently quite satisfied (7.5-7.81) with the certificate over a 1 to 6-9 year period.

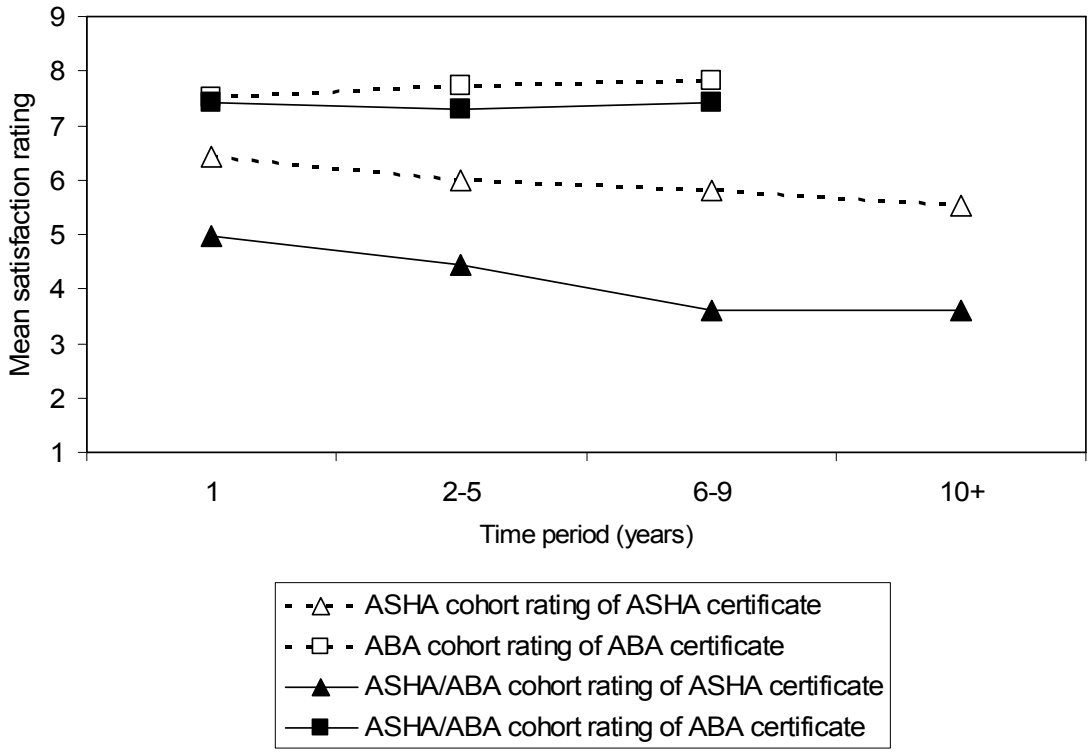
Five independent t-tests were conducted to compare the satisfaction ratings of CCC-A and ABA respondents. The test results indicated that significant satisfaction rating differences existed between the ASHA and AAA organizations (p = .000) and the CCC-A and ABA certificates overall (p = .000). Further, significant differences were revealed concerning the respondents' perceived value of the certificates during the period covering the 2nd through 5th years (p = .000) and 6th through 9th years (p = .001). There was no

significant difference between satisfaction ratings for the certificates during the first year. The t-test results indicated that ABA respondents were more satisfied with AAA than their CCC-A counterparts were with ASHA. Further, the ABA cohort was more satisfied with the ABA certificate at the time of initial purchase, and during the 2nd-5th years and the 6th-9th years, than the CCC-A cohort was with the CCC-A.

Five dependent t-tests were conducted to measure the satisfaction ratings of the CCC-A/ABA cohort. The test results indicated that significant satisfaction rating differences existed between ASHA and AAA organizations (p = .000); between the ASHA and ABA certificates (p =.000); and between the satisfaction ratings during the first year (p = .000), 2nd through 5th years (p = .000), and 6th through 9th years (p = .001).

To ascertain if there were relationships between the respondents' ratings of the interdependent member organizations (ASHA, AAA) and the certificates (ASHA, ABA), four correlations were conducted. All four of these correlations were statistically significant including the CCC-A cohort comparison between ASHA and the CCC-A (p = .000, n = 40), the CCC-A/ABA cohort comparison between ASHA and the CCC-A (p = .000, n=55), the ABA cohort comparison between AAA and the ABA certificate (p = .000, n = 28) and the CCC-A/ABA cohort comparisons between AAA and the ABA certificate (p = .001, n = 54).

Figure 2. Mean satisfaction ratings of ASHA and ABA certificates over time



Drivers of the initial certificate purchase

Respondents were queried to indicate the reasons for their initial certificate purchases. An examination of the data indicates the majority of the CCC-A and CCC-A/ABA cohorts initially purchased the CCC-A in order to possess audiology certification, to comply with a job requirement, and, in the case of the CCC-A/ABA cohort, due to the absence of a rival certificate at the time of initial purchase. The majority of the ABA and CCC-A/ABA respondents initially purchased the ABA certificate because it was an alternative to the CCC-A, personal satisfaction, prestige/credibility, to possess audiology certification, the certifying organization's credibility, and, in the case of the CCC-A/ABA cohort, to support the certifying organization. The only item common to all respondents was "to hold audiology certification."

Certification renewal

The majority of respondents were planning to renew their certification. Thirty-seven certified members from the CCC-A cohort (90%) were planning to renew the CCC-A and 28 members of the ABA cohort (100%) planned to renew the ABA certificate. The difference between groups was not significant ($p > .05$). Forty-eight CCC-A/ABA respondents (87%) planned to renew both certificates, three (5%) were planning to renew the CCC-A but not ABA certification, three (5%) planned to renew ABA certification but not the CCC-A, and one respondent (2%) reported to renew neither certificate. The McNemar Change Test indicated there was no significant difference between the cohorts ($p > .05$).

The respondents were queried to indicate from a list the reasons for certificate renewals. An examination of the data indicates no one reason was selected by the majority of CCC-A and CCC-A/ABA respondents regarding the renewal of the CCC-A. The most frequent CCC-A and CCC-A/ABA cohort reasons for renewal of the CCC-A were to comply with a job requirement, to supervise students and to retain audiology certification. A majority of the ABA and CCC-A/ABA respondents' reasoning for renewing the ABA certificate was attributed to retaining audiology certification, the prestige/credibility of certification, the certifying organization's credibility, personal satisfaction, support of the certifying organization, loyalty to the certifying organization and its mission and, for the ABA cohort, because the ABA is an alternative to the CCC-A.

A comparison of the reasons for the initial purchase compared to the renewal of the certification reveals that the majority of the ABA respondents continued to retain the same initial purchase reasons for the certificate's renewal. These include possessing audiology certification, the certificate's prestige and credibility, personal satisfaction, sought an alternative to the CCC-A and the credibility of the certifying organization. Many of the CCC-A/ABA cohort's initial ABA certificate purchase reasons (i.e., personal satisfaction, to possess audiology certification, the credibility of the certifying organization and the certificate's prestige/credibility) were also selected by the majority for certification renewal.

Certification recommendation

Respondents were queried concerning their willingness to recommend their certificate to others. Twenty-six of the 37 CCC-A respondents (70%) and all 28 of the ABA respondents would recommend the CCC-A and ABA certificates, respectively. The response differences were significant ($p < .005$). Eleven members from the 45 CCC-A/ABA respondents (24%) would recommend both certificates, 29 (64%) would recommend ABA but not CCC-A, 2 (4%) would recommend CCC-A but not ABA and 3 (7%) would not recommend either. The McNemar Change Test indicated a significant difference between groups ($p < .001$) suggesting the respondents were more likely to recommend ABA certification than the CCC-A.

Respondents were queried to indicate yes or no to the question: "Would you recommend ASHA certification to others [e.g., if interested in college teaching]?" Nineteen response items were listed. The results indicate the majority of CCC-A and CCC-A/ABA respondents would recommend the CCC-A to comply with a job requirement (94% CCC-A and 76% CCC-A/ABA), for mobility (88% and 57%, respectively), for future job positions that may require the CCC-A (85% and 61%), to supervise students (84% and 61%), and because the CCC-A is difficult to re-instate (76% and 55%). In addition to the aforementioned reasons, the CCC-A cohort acknowledged if the employer would pay for the certificate (94%), if they were a new audiologist (74%), because the certificate is well recognized (69%), if they were interested in college teaching (68%), to support audiology for the growth of the profession (58%), and for the prestige/credibility of being nationally certified (51%).

Data on the same question relative to the ABA certificate indicates the majority of ABA and ABA/CCC-A respondents would recommend the ABA certificate to support the growth of the audiology profession (100% ABA and 90% CCC-A/ABA), for the prestige/credibility of being nationally certified (100% and 84%, respectively), if a new audiologist (100% and 82%), to support the certifying organization

(100% and 80%), even if it is not required (100% and 73%), as an alternative to CCC-A (100% and 69%), to demonstrate their level of expertise (96% and 84%), for keeping certain standards such as the CEU (96% and 78%), to comply with a job requirement (86% and 85%), for mobility (85% and 63%), for future job positions that may require it (82% and 71%), for marketing purposes (82% and 61%), if the employer would pay for it (76% and 79%), if interested in college teaching (67% and 58%), for the benefits (57% and 58%), and because it is well recognized (55% and 62%).

Alternative Certification

CCC-A and ABA respondents were queried to specify from a list of reasons why they have not purchased the rival certificate. The CCC-A respondents indicated that the ABA certification was not required for their job or state licensure (59%), the ABA certification mirrored the CCC-A's qualities (49%) and the ABA certificate did not have any meaningful value (44%). The primary reasons, selected by 25 ABA respondents, why the CCC-A had not been purchased was because ASHA does not represent the audiology profession as well as AAA (80%) and the CCC-A has no meaningful value (68%).

DISCUSSION

The findings suggest that there are a number of factors that influence an audiologist's decision to purchase professional certification and many of the factors are significantly different across cohorts that possess the Certificate of Clinical Competence in Audiology (CCC-A), the American Board of Audiology (ABA) Certification and both certificates (CCC-A/ABA). Factor differences were measured in terms of ASHA and AAA attributes and the attributes associated with the CCC-A and ABA certificates. In addition, satisfaction with the certificates was examined at specific time intervals. Cohort attitudes were found to be significantly different concerning certification purchase criteria, intentions to purchase and renew certificates, and peer recommendations regarding the adoption of certification. The differences likely can be attributed to the evaluative process audiologists undertake to determine member organization and certification values.

The ABA certified audiologists in this study were generally male (54%), more likely to hold a doctorate degree (75%), more experienced, more inclined to be employed in private practice and have a longer work week than the CCC-A audiologists. The ABA cohort indicated very favorable attitudes concerning their AAA membership. For example, over 80% of the respondents were especially impressed with AAA's role in heightening public awareness and advocating the profession. Satisfaction measurements revealed the ABA cohort was consistently more satisfied with their AAA membership than the CCC-A counterparts were with ASHA membership (p=.000). None of the ABA respondents had a negative attitude towards AAA or intentions not to purchase the ABA certificate. In fact, the ABA cohort was more likely (p<.01) to be associated with positive attitudes toward AAA which positively influenced their desire to purchase the ABA certificate.

The reasons for the ABA respondent's decision to possess the certificate appear to be intrinsically driven. It can be concluded that the ABA cohort were more likely than CCC-A audiologists to be personally satisfied with having secured a certificate that they perceive as prestigious from an organization perceived as credible. As a result, all ABA respondents planned to renew the certificate. Satisfaction measurements revealed ABA respondents were consistently more satisfied with the ABA certification than the CCC-A cohort was with the CCC-A and the positive attitude was sustained over a protracted period of time. The latter is evidenced by the arithmetic mean score differences (i.e., quite satisfied vs. slightly satisfied) over 1 to 6-9 years and the statistical significance of the satisfaction mean score differences that existed during the certification periods covering 2-5 years (p=.000) and 6-9 years (p=.001). Further, all ABA respondents would recommend the ABA certificate.

The CCC-A audiologists in this study were primarily female (79%), more likely to hold a masters degree (71%), less experienced, more inclined to be employed in the ear, nose, and throat/medical practice and a university setting, and work fewer hours per week. A simple majority consensus of the CCC-A cohort was not able to identify one admirable ASHA organizational characteristic. Instead, a majority of the respondents indicated concerns regarding the certificate's cost and ASHA's greater emphasis on the speech-language pathology profession. In addition, one third or more of the respondents indicated concerns regarding a lack of audiology advocacy and the adversarial relationship with AAA. Eighteen percent of the CCC-A respondents held negative attitudes regarding ASHA, which negatively influenced their desire to purchase the CCC-A. Twenty-three percent the CCC-A respondents had a positive attitude towards ASHA that positively influenced their desire to purchase the CCC-A, approximately half the positive figure of their ABA counterpart. As a result of the generally unfavorable feelings, negative behavioral outcomes are likely to follow. Ten percent did not intend to renew the CCC-A and 30% would not recommend the CCC-A.

The aforementioned concerns within themselves may speak volumes as to why the drivers for possessing the CCC-A are primarily motivated to satisfy an extrinsic need whereas, the ABA purchase was almost exclusively intrinsically driven. Support for this assertion can be attributed to at least two known facts: a majority respondent reason for the certificate's purchase was to comply with an employment requisite (p=.001) and 94% of the CCC-A respondents would recommend the CCC-A provided the employer was the payer.

The CCC-A/ABA-certified respondents are more skewed to the female gender (70%), more likely to hold a doctorate (74%), generally well experienced, vocationally more dispersed within the profession, and generally have long work weeks. The CCC-A/ABA cohort embraced similar favorable attitudes indicated by the ABA respondents concerning the reasons they liked AAA. That is, the CCC-A/ABA respondents perceived that AAA has a strong commitment to the audiology profession especially from the perspective of its public awareness initiatives and its support of audiology. As a result, mean score measurements revealed that the CCC-A/ABA cohort had the highest satisfaction rating associated with their AAA membership and their ABA certificate. T-test results indicated that the CCC-A/ABA respondents were relatively more satisfied with AAA (p = .000) and the ABA certificate (p = .000) as well as its value during the first year (p = .000), 2-5 years (p = .000), and 6-9 years (p = .001) compared to ASHA and the CCC-A. Further, 61% harbored positive attitudes toward AAA with positive purchase intentions to possess the ABA certificate and only 2% indicated negative attitudes and negative intentions. Conversely, 51% reported negative attitudes and negative intentions toward ASHA and the purchase of its certification and only 13% reported positive attitudes and positive intentions.

The purchase and renewal of the ABA certificate are primarily intrinsically motivated for the CCC-A/ABA cohort as evidenced by the respondents' personal satisfaction of possessing a certificate (ABA) that they perceive to be prestigious and issued by a credible organization (AAA). In contrast, the initial purchase and renewal of the CCC-A is both intrinsically (to hold certification) and extrinsically (job requirement) motivated. The majority of this cohort (87%) plans to renew both certificates. Further, 64% of the CCC-A/ABA respondents would recommend the ABA certificate and not the CCC-A. This is in marked contrast to the 4% who would recommend the CCC-A but not ABA certification. The McNemar Change Test revealed a statistically significant difference between the two groups suggesting a greater likelihood to recommend ABA certification than the CCC-A ($p \leq 05$).

It can be argued that the findings for the CCC-A/ABA cohort present a more compelling comparison than that of the CCC-A and ABA cohorts. The CCC-A and ABA cohorts vary across a number of demographic variables, including gender, employment, and work hours, which may have affected satisfaction ratings; however, the results for these groups were similar to those of the CCC-A/ABA group.

The CCC-A/ABA cohort served as its own control group, having had an opportunity to concurrently utilize and assess both professional certifications. The t-test results revealed that the protracted years of satisfaction with AAA and ABA certification were statistically significant ($p \leq .001$) for this cohort and a scant 2% indicated negative attitudes toward AAA and negative intentions to purchase the ABA certificate as compared to a 51% negative rating towards ASHA and its certificate. The McNemar Change Test findings indicated significant differences between the two sets of attitudes and intentions as well as the cohort's relative likelihood to recommend ABA certification versus the CCC-A ($p \leq 05$). As was the case with the ABA cohort, it appears CCC-A/ABA motives to initially purchase and renew ABA certification are intrinsically-driven. Evidence of this can be illustrated by the fact that initial purchase reasons includes personal gratification and enhanced personal stature derived from possessing a prestigious certificate issued by a credible, member-driven organization. This suggests that CCC-A/ABA certified audiologists have remained steadfast in their conviction to be aligned with an organization that they perceive is committed to advancing the stature of the profession regardless of the certification cost and an employer inclination to pay for the CCC-A.

REFERENCES

American Academy of Audiology. 1998. "AAA report: Voluntary Audiology Board Certification to Begin in 1998." *Audiology Today* 10(1): 31, 33.

American Academy of Audiology. 2012. "*Academy Information*." http://www.audiology.org/about/Pages/default.aspx, accessed May 7, 2012.

American Board of Audiology. 2005. "*ABA Application Handbook*." http://www.americanboardofaudiology.org/NR/rdonlyres/E7F94E7F-A814-4DFE-9604-1B4317C77962/0/handbook.pdf, accessed November 7, 2007.

American Speech-Language-Hearing Association. 2004. "*Audiology Survey 2004*." Rockville, MD: Author.

American Speech-Language-Hearing Association. (2005). ASHA *member activity programs 2005*. Rockville, MD: Author.

American Speech-Language-Hearing Association. 2000. "*Audiology 2000 Survey Frequency Report."* http://www.asha.org/NR/rdonlyres/9E15C4AB-E094-41AD-A318-4752C11E8D26/0/10219_1.pdf, accessed October 15, 2004.

American Speech-Language-Hearing Association. 2006. "*2006 Audiology Survey: Frequency Report*." Rockville, MD: Author.

American Speech-Language-Hearing Association 2011. "*Membership Profile Highlights and Trends."* http://www.asha.org/uploadedFiles/2009 Member Counts.pdf, accessed May 7, 2012.

American Speech-Language-Hearing Association 2011. "*Highlights and Trends: Member and Affiliate Counts, Year End 2011."* http://www.asha.org/uploadedFiles/2011-Member-Counts.pdf, accessed July 9, 2012.

American Speech-Language-Hearing Association. 2004. "*Audiology Survey 2004*." Rockville, MD: Author.

Byrne, Michelle, W. Valentine, and S. Carter. 2004. "The Value of Certification-A Research Journey. Association Operating Room Nurses Journal." 79(4): 825-835.

Gaberson, Kathleen B., Kathryn Schroeter, Aileen R. Killen, and Wendelny A. Valentine. 2003. "The Perceived Value of Certification by Certified Perioperative Nurses." *Nursing Outlook.* 51: 272-276.

Lynch, C.E. 1994. "Testimony submitted to the House Commerce Committee State of Arizona regarding House Bill no. 2275." American Speech-Language Hearing Association.

Panagopoulos, Georgia, Moshe Schein, and Leslie Wise. 1999. "Perceived Value of the American Board of Surgery Certificate: A Survey of 2,000 Fellows of the American College of Surgeons. *Journal American College of Surgeons."* 188(1): 1-5.

Parasuraman, A. 1997. "Reflections on Gaining Competitive Advantage through Customer Value. *Journal of the Academy Marketing Science* y'all." 25(2): 154-161.

Shenenberg, Ted, and Denny Smith. 1999. "Certifying Compensation and Benefits Management Competencies." *Human Resource Management.* 38(2): 161-164.

Woodruff, Robert B. 1997. "Customer Value: The Next Source for Competitive Advantage." *Journal of the Academy Marketing Science* 25(2): 139-153.