Faculties attitudes towards academic research: a basis for improvement in publication productivity.

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ABSTRACT

Faculties at new capacity building institutions of higher education in Ethiopia are subjected to strong engagement to participate in academic research publication activities. After more than four years there are few published journal articles from the thirteen new Ethiopian universities. The objective of this study was to identify and describe the Aksum University (AKU) faculties "attitudes towards research" as a basis of improvement in publication productivity. The stratified random sample was 51 faculties from five of the six Colleges at AKU which represented 16.3% of the on campus teaching staff. The hypothesis for this study was that the AKU faculties' attitudes towards academic research publications were negative. The empirical analysis found highly positive faculty attitudes for all aspects of the academic research process. The three principle component factors were described as; AFAC1, academic research is positive for me; AFAC2, reading research is enjoyable and it helps build the institution's reputation; and AFAC3, a research team experience is positive and will make me work harder. These findings provided support for institutional administrations to implement new ways to facilitate and utilize this latent faculty resource. Faculties' inactivity and low productivity in academic research publications should not be attributed to "a bad attitude" but rather to a lack of experience and/or the influence of Lotka's law.

Keywords: Attitudes, Faculty, Research, Publications, Ethiopia

INTRODUCTION

As acknowledged in the literature, university generated research ideas are important in promoting innovations for economic growth and competitiveness of industrialized economies (Jaffe, 1989; Mansfield, 1991). Magolda (1999) explained the importance of research as a constructive development pedagogy … (in which) teachers model the process of constructing knowledge in their disciplines, teach that process to students, and give students opportunities to practice and become proficient at it. However, the twin principal research mandate of universities and public-funded organizations are also to extend commercial or industrial application of their research outputs and advancing the frontiers of knowledge and generating quality human resources called graduates.

Over the last decade, new legal and institutional structures have been put in place in Ethiopia within the university system to foster better university-industry linkages to ensure that ideas and inventions generated by academic research reach the marketplace. In Ethiopia and around the world universities are constantly pressured to improve in response to environmental influences and competitive forces by means of research. Even the desire to ascend the rankings ladder drives university administrators (Clarke, 2004) in such countries as China (Ng & Li, 2000), the United Kingdom (Tapper & Salter, 2004), and the U.S. (Tierney, 1999) to the research resource allocation decisions. Since ranking methodologies invariably place a significant emphasis on faculty research productivity, university leaders and consequently faculty members are constantly seeking to enhance their research profiles (Tien & Blackburn, 1996).

University faculties are the primary actors in this research production system and ultimately, it is their attitude and perception that determine the output of academic research. Faculty attitudes are described as a psychological evaluation such as good-bad, harmful - beneficial, pleasant-unpleasant, and likable-dislikable (Ajzen & Fishbein, 2000; Brendl & Higgins, 1996; Eagly & Chaiken, 1993; Petty et al., 1997; Tesser & Martin, 1996). Few studies have investigated faculty research attitudes that shape academic research behaviors (Papanastasiou, 2005). Wilson et al. (2000) suggested when attitudes change, the new attitude overrides but not necessary it will replace the old attitude. Fazio et al. (1986) explained that attitudes are activated automatically only by stimuli that elicit a quick, conscious evaluative response.

The major objective of this study was to identify and describe AKU faculties attitudes toward academic research in Ethiopia's rapidly expanding higher education system. A questionnaire was used to ask ten Likert item questions like: (a) I can contribute to AKU's academic reputation by publishing research papers; (b) the intellectual challenge of academic research motivates me to work harder; and (c) I want to build my reputation as an academic scholar through research. Answers from this study provided valuable information for AKU administrators as well as administrators from other transitioning nation universities as their academic leaders seek new ways to stimulate research and publications activities in the face of financial threats to their research missions (Johnstone & Marcucci, 2007). Bridges can be built between these often fractious communities of faculty and administration. Research administrators need to create opportunities for listening to those they serve as well as collecting and analyzing research data as a basis for planning new ways forward.

The hypothesis for this study was that the AKU faculties' attitudes towards academic research publications were negative.

PROBLEM STATEMENT

In 2005 the Federal Democratic Republic of Ethiopia Ministry of Education (MoE) (FDRE MoE, 2005) established a National Higher Education Program Action Plan III of conducting and publishing academic research for faculty in Ethiopian higher education. Faculties at new capacity building institutions of higher education in Ethiopia were subjected to strong engagement to participate in academic research publication activities. After more than four years there were few published journal articles from the thirteen new Ethiopian universities.

Frustration and anxiety was high for both the institution faculties and administration. From a Google Scholar search it was determined that more than 80% of the academic publications in Ethiopia were from old universities. In 2010 thirty five of the thirty nine Ethiopian academic journals were published in Addis Ababa (Library of Congress Overseas Office, 2010).

Are the faculties' attitudes towards academic research publications negative in the new universities?

METHODOLOGY

Research Design

A non-experimental cross sectional design within the target population was used with five nonequivalent groups with multiple replications to reduce non-random self-selection bias. This design used a hypothesized expectation based on the pretest instrument and random interviews of pretest respondents. The design was situational and implementable. Problems in measurement and database construction were adjusted to improve the quality of the responses, to eliminate irrelevant variables and to improve the construct and internal validity of the data. Efforts were made to obtain appropriate cross-sections of the population groups through repeated individual solicitations of responses.

Research Study Population

This study was conducted with the target population of current on-campus teaching faculties at AKU. This campus was selected on the basis of the proximity and accessibility of the target population to the researchers and the newness of the educational institution and its faculties. Open-ended comments from respondents reflected their appreciation of the study in anticipation of changes that may occur to facilitate the implementation of the strategic research and publication objectives at AKU.

Sampling Method and Sample Statistics

Approximately 10 to 25 questionnaires were randomly distributed to faculties in each of the five Colleges on the main campus depending on the size of the staff. The College of Agriculture located in the city of Shire, 65 kilometers from the main campus, was excluded from the sampling. Collection of the completed questionnaires was tedious; however, through repeated personal requests fifty two questionnaires were obtained. The final sample represented 16.3% of the target population which is adequate to assure the internal validity of the findings.

The number of responses from each of the colleges and the total number of faculties in each are shown in Table 1 (Appendix).

The demographics of the respondents are shown in Table 2 (Appendix). It should be noted that the respondents' median age is twenty six and their median years in education is two. Almost half of the respondents are bachelors degree qualified, more than thirty percent have master degrees and less than ten percent have doctorate degrees.

Sampling Instrument

A pilot instrument was developed based on interviews and administrative presentations on the academic research strategic objective of the AKU. The pilot instrument was completed by fifteen College of Business and Economics full-time faculties. Analysis of the responses documented numerous misunderstandings of English survey questions by an Amharic and Tigray native language community. Elimination of confusing questions and rewording of other questions was completed with the assistance of native language speakers. The statements were randomly alternated between positive and negative to reduce the possibility of respondent responses on only one of the five Likert item scales. Demographic data was collected for each respondent relative to significant pretest determined independent descriptive variables. The quality of the data was validated by checking the logical consistency of the responses to the positive and negative statements. Individual responses were logically linked to the research question under investigation. It was determined that the respondents were highly motivated to provide thoughtful responses. One respondent questionnaire was eliminated from the sample due to consistent selection of a single Likert scale value. The data collection instrument is shown Figure 1 (Appendix).

Statistical Procedures for Data Analysis

The researchers used non-parametric statistical methods to determine the initial results of the research study (Corder & Foreman, 2009). Statistical analysis was accomplished using the SPSS statistical package as the primary driver. Spearman correlations were used to investigate the relationships of the ten attitude variables. The Wilcoxon Signed Rank test for a single sample was used to determine the significant difference of each research statement median from the Likert median of three. In the data analysis phases the negatively worded question responses were re-coded to represent a positive response.

Analysis of the construct validity of the Likert scale responses used Spearman correlations between each of the variables and the total scores (Packer, 2004). Variables that were not significantly correlated with total score ($p<.05$) or had a correlation coefficient less than .4 were eliminated from the analysis. Variables A1, A2 and A7 were eliminated due to low correlations and/or low correlation coefficients with total score.

The internal validity of the data was verified using Cronback's Alpha (Cronbach, 1951) and the reliability of the seven variables produced an acceptable alpha of .719.

Principle Component Analysis (PCA) with Varimax rotation analysis was used to consolidate the remaining seven variables. Although PCA is a parametric procedure, numerous research papers over many years confirmed that the PCA is a very robust analysis and violation the underlying normality assumption did not provide incorrect answers (Norman, 2010; Carifio, & Perla, 2008; Darlingtonn, 1966; Pearson, 1931). None of the seven variables were found to be

normally distributed using the statistical goodness-of-fit tests Anderson-Darling and Kolmogorov-Smirnov.

RESULTS

Data Descriptive Statistics, Distribution and Significance Tests

Table 3 (Appendix) shows the summary descriptive statistics for the ten variables relating faculties' attitudes about academic research. The One sample Wilcoxon Signs Rank Test (Null: Median/Mean = 3) hypotheses test significance for each variable are noted. The respondent data for all negatively worded questions were recoded to represent a positive response on the Likert scale.

Spearman ρ Correlations A1-A10 Variables with Demographic Variables

The significant (p <.05) Spearman correlation matrix for A1-A10 variables relating to the respondent demographic variables are shown in Table 4 (Appendix). Three of the attitude variables were correlated with the demographic variable age, years at AKU and years in education. This finding provided valuable insight to the positive impact of career longevity on attitude toward academic research publications. A further finding was the relationship between highest degree and years in education.

The significant (p <.05) Spearman correlations between the demographic variables is shown in Table 5 (Appendix). It should be noted that the demographic variables age, years at AKU and years in education are all significantly correlated with each other. This reflects on the attitude measures A1, A8 and A10 shown in Table 4 (Appendix). Masters level faculties are utilized in academic leadership responsibilities at AKU which reduces their teaching responsibilities which explained the significant relationship between credits and highest degree.

Principle Components Factor Analysis

Principle Components Factor (PCA) analysis using Varimax rotation was used to reduce the seven variables relating to faculties attitudes toward academic research (Darlington, 1966; Norusis, 2004). As previously discussed, the limitations of Principle Component Factor Analysis with Likert Scale data were considered (Allen & Seaman, 2007; Clason & Dormody, 1993; Colman, Norris & Preston, 1997; Dawes, 2008; Lubke & Muthen, 2009; McCall, 2001). Based on evidence from the statistical analysis the researchers judged the application of PCA was appropriate. The three factors identified by the analysis explained 74.4% of the variance by sum of squared loadings. The results of the complete Principle Components Factor Analysis are shown in Tables 6 (Appendix) through Table 8 (Appendix) and Figure 2 (Appendix) and Figure 3 (Appendix).

Figure 2 (Appendix) is Cattell's scree test (Cattell, 1966) of the components shown as the X axis and the corresponding eigenvalues as the Y axis. Where the decrease in eigenvalues flattens and the curve makes an elbow, Cattell's scree test suggests not considering further components. Therefore, an eigenvalue of 1.0 was used for the selection of 3 principle component factors.

Table 7 (Appendix) shows the Variable Loadings (correlations) for each factor after rotation. Variable loadings in a factor arbitrarily should be approximately .7 or higher to confirm that independent variables initially selected are represented by a particular factor or about half of the variance in the variable (r^2 = .49) was being explained by the factor. Factor 1 lowest factor loading value for the three variables (A8, A9, A10) was .736; Factor 2 lowest factor loading value for the two variables (A3, A6) was .652; Factor 3 lowest factor loading value for the for the two variables (A4, A5) was .808.

Figure 3 (Appendix) shows each of the seven variables included in the three factors found in this analysis of faculties attitudes toward academic research. Factor 1 variables (A8, A9, A10) were well clustered. Factor 2 variables (A3, A6) were clustered in component 3 plane of the rotated space separated slightly in component 1 and component 2 space. Factor 3 variables (A4, A5) were in component 1 plane of the rotated space only slightly separated in component 2 and component 3 space.

Table 8 (Appendix) shows the standardized component factor scores which were used as coefficients for the variables in resulting factor models. Using the standardized component scores as coefficients in the factor models allows all seven variables to be included in the three factors and each variable contributes to the factor score.

Factor Models, Correlations and Test of significance

The following three factor calculation sets, AFAC1, AFAC2, and AFAC3 demonstrate the Factor mathematical models, their means, medians and the test of significance against an implied neutral Likert scale median of three. The relative closeness of the factor mean and median indicated that the respondent data is only slightly skewed to the left toward the lower Likert scores (mean < median).

(AFAC1) Factor 1 (Variables A8, A9, A10)

Factor Name: Academic research is positive for me.
Observation Values = .055*A3+.054*A4-.156*A5-.214*A6 +.296*A8+.378*A9+.468*A10
Factor mean = 4.18
Factor median = 4.35
Factor Median Test Value = .055*3+.054*3-.156*3-.214*3 +.296*3+.378*3+.468*3 = 2.64
Test of Medians: 4.35 > 2.64 = Strongly Agree

(AFAC2) Factor 2 (Variables A3, A6)

Factor Name: Reading research is enjoyable and research helps build the institutions' reputation.
Observation Value = .395*A3-.147*A4+.137*A5+.677*A6 +.161*A8+.010*A9-.280*A10
Factor mean = 4.1
Factor median = 4.13
Factor Median Test Value = .395*3-.147*3+.137*3+.677*3 +.161*3+.010*3-.280*3 = 2.86
Test of Medians: 4.13 > 2.86 = Strongly Agree

(AFAC3) Factor 3 (Variables A4, A5)

Factor Name: A research team experience is positive and will make me work harder.
Observation Value = .000*A3+.592*A4+.596*A5+.008*A6 -.167*A8-.042*A9+.099*A10
Factor mean = 4.7
Factor median = 4.9
Factor Median Test Value = .000*3+.592*3+.596*3+.008*3 -.167*3-.042*3+.099*3 = 3.26
Test of Medians: 4.9 > 3.26 = Strongly Agree

In Table 9 (Appendix) the three factors mean and median calculations are shown. The factor medians were tested against the factor test median mean calculated by assuming a median value of 3 for each of the Likert scale items included in the factor. The One-Sample Wilcoxon Signs Rank Test (Null: Median >3; one tail test) nonparametric statistic was used and all three factor median scores were highly significant (p<.001). The factor median score > the test median score indicates that AKU faculties attitudes, as consolidated in the three factors, were significantly positive towards academic research.

Attitude Factors Related To Demographic Variables

The three factors identified were not significant (p >.05) correlation with each other as defined by Varimax rotation. Spearman correlation analysis between each the three factors (AFAC1, AFAC2, AFAC3) and the demographic variables were not significant (p >.05). There were significant correlations between the original individual survey variables and the demographic variables, however, these relationships dissipated upon consolidation of the seven variables into three factors.

Respondent Comments

The twenty respondents' comments to the open ended question at the end of the survey instrument are summarized for attitudes in Table 10 (Appendix). The recurring theme was the need for research methodology and writing training. Even though the respondents in aggregate were overwhelmingly positive about academic research there was some discouragement expressed that colleagues were not supportive of participation in research activities and thought it was a waste of time. The AKU respondents' comments indicated that there was resistance to academic research activities at a subliminal level. Intellectual curiosity was not a universal trait of AKU faculties.

DISCUSSION

The major objective of this study was to identify and describe the faculties' attitudes toward academic research in an expanding higher education system in a developing nation. The instrument used in this study was constructed through an iterative process that included expressed faculty opinions from: (a) a University wide research training lecture, (b) a College of Business research training session, (c) faculty informal personal interviews and (d) the researchers' experiences on the University campus in efforts to facilitate faculty research teams. The culmination of these activities resulted in the pilot survey instrument and the finalized survey instrument.

The researchers hypothesized that the faculties' attitudes about academic research publications were negative in new universities. This research study found that this hypothesis was rejected ($p < .05$) by all measures of faculties' attitudes toward academic research.

To further clarify the respondents' attitudes, PCA indicated that the seven variables used to measure attitudes reduced to three factors that all confirmed the rejection of the hypothesis of this study. The first factor AFAC1 was academic research activities are personally positive which was strongly supported (Strongly Agree). The second factor AFAC2 was reading research is enjoyable and it helps build the institution's reputation which was strongly supported (Strongly Agree). The third factor AFAC3 was a research team is positive and will make me work harder which was strongly supported (Strongly Agree). A consistent theme in all three factors was the significantly positive attitude of the faculties in three distinct domains of academic research activities.

The empirical implication of positive faculties' attitudes toward all aspects of academic research activities provides significant direction for university administrations to seek new ways to capitalize on this latent faculty resource. Faculties' inactivity and low productivity in academic research publications cannot be attributed to "a bad attitude" toward their peers, their institution or their profession.

The specific correlations of A1, A8, and A10 with the demographic variables of age, years at AKU and years in education (and academic rank) identified a potential confounding factor in this study.

> Nowick (2008) identified a potentially confounding factor for this study relating to academic research publication productivity. Results from this study are consistent with Lotka's law (1926), which states that a relatively few scholars contribute disproportionately to the body of scientific literature. Full professors make up 25% of the total U.S. faculty (Almanac, 2007). In this study, full professors were found to author 46% of open access journal articles and 63% of for-free journal articles.

Other research studies have linked faculties propensity for research publication to academic rank and prior publication success but have ignored the role that faculty's seniority in education and attitude towards research influence the research process. Bibliometric studies for Africa confirmed that this relationship of rank to academic research publications is present in Ethiopia (Schamp & Schmid; & Mugabushaka, 2008).

To mitigate this scarcity of post-graduate faculties, AKUs cadre of Masters degree faculty (30%) and Doctorate degree faculty (10%) was being rapidly expanded under the National Higher Education Program Action Plan IV. The National "grow-your-own" government scholarship programs enrolling approximately 11,000 candidates in 2010. Also more than 1000 Ethiopian students were annually funded and enrolled in foreign Doctorial programs. (FDRE MoE, 2010) However, Ethiopian professors were found to be willing participants in the well established academic globalization brain drain which has further deteriorated the limited pool of research oriented faculties.

Research about this confounding factor (Serenko, et al., 2010; Thanuskodi & Venkatalakshmi, 2010) is beyond the scope of this study but is a fertile field for further exploration of research publication capacity building in academic environments with scarce resources and a limited pool of qualified faculties.

Additional research is needed to identify the motivation and incentives needs for academic research activities. From the open ended comments section of the questionnaire the need for training and support in research methodology and research report writing was clearly

identified. Even though the respondents, in aggregate, were overwhelmingly positive about research activities, there was some discouragement expressed that colleagues were not supportive of or participants in research activities and thought it was a waste of time.

The external validity of these findings is restricted to Ethiopia's rapidly expanding public higher education institutions. Additional replication studies are necessary to confirm the extrapolation of these results to other higher education systems worldwide.

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APPENDIX

FIGURE 1
Attitudes About Academic Research Questions

Please ☑ check the appropriate response (1 to 5 or NA) for each question!							
Q. #	**Attitude about Research Questions**	**Strongly Disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**	**Not Applic.**
A1	I believe that doing academic research is important for building my career.	☐1	☐2	☐3	☐4	☐5	☐NA
A2	I don't understand how academic research improves my teaching?	☐1	☐2	☐3	☐4	☐5	☐NA
A3	I can contribute to AKU's academic reputation by publishing research papers.	☐1	☐2	☐3	☐4	☐5	☐NA
A4	An academic research team experience would be positive for me personally.	☐1	☐2	☐3	☐4	☐5	☐NA
A5	The intellectual challenge of academic research motivates me to work harder	☐1	☐2	☐3	☐4	☐5	☐NA
A6	I enjoy reading academic research papers on topics I am interested in.	☐1	☐2	☐3	☐4	☐5	☐NA
A7	I don't choose to use my teaching preparation time for doing research.	☐1	☐2	☐3	☐4	☐5	☐NA
A8	Sharing research results with other academics is very self-satisfying.	☐1	☐2	☐3	☐4	☐5	☐NA
A9	I want to build my reputation as an academic scholar through research.	☐1	☐2	☐3	☐4	☐5	☐NA
A10	Academic research has no value to me and I will not participate at AKU..	☐1	☐2	☐3	☐4	☐5	☐NA

FIGURE 2
Cattell's Scree Plot

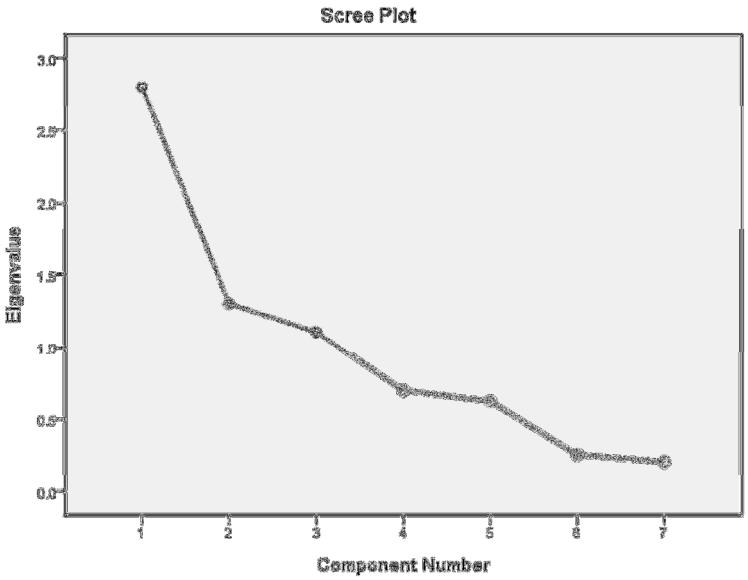

FIGURE 3
Component (variables) Plot in Rotated Space

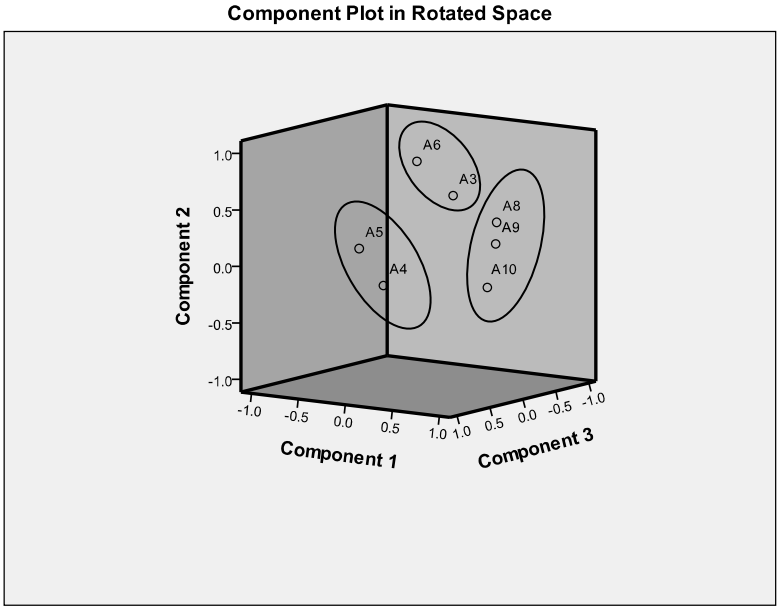

TABLE 1
Data Collection by College

College	# Responses	% Resp/51	Tot # Fac	Resp % Tot Fac
Business & Economics	15	29.4	66	22.7
Engineering & Technology	6	11.8	70	8.6
Natural & Comp. Science	10	19.6	85	11.8
Social Science & Language	15	29.4	81	18.5
Health Sciences	5	9.8	11	4.5
Agriculture	0	0	0	0.0
TOTAL	51	100	313	16.3

TABLE 2
Demographics of Respondents

Variable	N	Statistics		
Age	51	Mean = (27.0) 72.5%	Median = (26) 58.8%	21 to 29 = (42) 82.4%
Gender	51	Male = (44) 86.3 %	Female = (4) 7.8%	missing = (3) 5.9%
Birth Nation	51	Ethiopia = (47) 92.2%	India = (4) 7.8%	
Yrs. AKU	51	Mean = 2.12	Median = 2	1 & 2 yrs. = (42) 82.4%
Yrs. In Educ.	51	Mean = 3.75	Median = 2	1 to 4 yrs. = (42) 82.4%
Credits	51	Mean/Median = 10	0 to 9 credits = 41.2%	0 to 12 credits = 88.2%
Highest Deg.	51	Bachelors = (24) 47.1%	Masters = (16) 31.4%	Doctorate = (5) 9.8%

TABLE 3
Original Variable Descriptive Statistics

Variable	Mean[a]	Med[b]	Sig.[b]	Variance	#SD[c]	#D[c]	#N[c]	#A[c]	#SA[c]	N
A1	4.94	5	.001	.056				3	48	51
A2+	4.46	5	.001	.888	1	2	4	9	35	51
A3	4.40	5	.001	.640		2	4	17	28	51
A4	4.45	5	.001	.893	1	2	4	10	34	51
A5	4.12	4	.001	1.158	3	2	3	21	22	51
A6	4.41	5	.001	.527		1	4	19	27	51
A7+	3.42	4	.027	1.964	7	7	10	12	15	51
A8	4.50	5	.001	.619		2	3	13	33	51
A9	4.52	5	.001	.690	1	1	2	13	34	51
A10+	4.80	5	.001	.441	1		1	4	45	51

(+) Recoded as positive for analysis
(a) Missing values were replaced with the mean of the variable.
(b) One sample Wilcoxon Signs Rank Test (Null: Median > 3; one tail test)
(c) #SD=Strongly Disagree; #D=Disagree; #N=Neutral; #A=Agree; #SA=Strongly Agree

TABLE 4
Spearman ρ Correlations A1-A10 with Demographic variables

Variable	Demo. Variable	Corr. Coef. ρ	Significance
A1	Age	.319	.028
A8	Years at AKU	.277	.049
A10	Years in Educ.	-.318	.023

TABLE 5

Spearman ρ Correlations between Demographic variables

Demo. Variable	Demo. Variable	Corr. Coef. ρ	Significance
Age	Years in Educ.	.384	.005
Age	Highest Degree	.527	.001
Years in Educ.	Highest Degree	.456	.001
Years At AKU	Years in Educ.	.574	.001
Credits	Highest Degree	-.459	.001

TABLE 6
Factor Components and Variance Explained

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.801	40.012	40.012	2.801	40.012	40.012	2.267	32.384	32.384
2	1.300	18.575	58.587	1.300	18.575	58.587	1.551	22.162	54.546
3	1.107	15.820	74.407	1.107	15.820	74.407	1.390	19.861	74.407
4	.699	9.986	84.393						
5	.626	8.940	93.333						
6	.258	3.691	97.024						
7	.208	2.976	100.000						

Extraction Method: Principal Component Analysis.

TABLE 7
Factor Variable Loadings

Rotated Component Matrix[a]			
	Component		
	1	2	3
A8	.736	.429	-.112
A9	.850	.278	.057
A10	.891	-.080	.225
A3	.407	.652	.093
A6	.002	.898	.077
A4	.194	-.075	.810
A5	-.076	.216	.808

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 5 iterations.

TABLE 8
Standardized Variable Scores by Factor

Standardized Component Score Coefficient Matrix				
		Component		
	Question	1	2	3
A8	Sharing research results with other academics is very self-satisfying.	.296	.161	.167
A9	I want to build my reputation as an academic scholar through research.	.378	.010	-.042
A10	Academic research has value to me and I will participate at AKU..	.468	-.280	.099
A3	I can contribute to AKU's reputation by publishing research papers.	.055	.395	.001
A6	I enjoy reading academic research papers on topics I am interested in.	-.214	.677	.008
A4	A research team experience would be positive for me personally.	.054	-.147	.592
A5	The intellectual challenge of research motivates me to work harder	-.156	.137	.596
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.				

TABLE 9
Summary of Factor tests of significance

Factor	Mean	Median	Test Md.[b]	Sig.[a]	N
AFAC1	4.18	4.35	2.64	.001	51
AFAC2	4.10	4.13	2.86	.001	51
AFAC3	4.7	4.9	3.26	.001	51

(a) One-Sample Wilcoxon Signs Rank Test
(Null: Median >3; one tail test)
(b) Test Median (all factor variables = 3)

TABLE 10
Respondent Attitudes Comments

Personally motivated to know the result of this study.
I want to conduct a research but it is considered by other faculty as a waste of time.
Pessimistic peers, and work load are the obstacle in conducting research.
This study will help to create Research Environment at AKU.
Research can improve the teaching quality.
Faculty want recognition in the University
I want to conduct but not possible in this situation.
Doing research is positive. My credit hour are more so I don't have time to do research.
Faculty wants to become a researcher.