

Organizational Commitment as a Predictor of Job Performance among Faculty: Implications for Development of Agricultural Technology in Nigeria

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Abstract

This study investigated the relationship between the organizational commitment facets and job performance of faculty engaged in agricultural training and research in Nigerian universities. Questionnaires were used to elicit information from 302 faculty members of two universities of agriculture and two faculties of agriculture in 2000. The sample consisted of 78.5% men, and the mean age was 40 years (SD = 8.19 years). Principal component analysis showed that the commitment of the faculty is characterised by three facets: orientation toward the profession, peer group, and the employing institution. The commitment facets have no direct significant influence on the productivity of the faculty ($p > 0.05$), but only indirectly as an individual faculty stays longer on the job and advances through the ranks. Intervention efforts must involve socializing the faculty at the early stage of their career to engage in problem-solving agricultural research, while the universities must have explicit research mandate and priorities.

Keywords: Organizational Commitment, Performance, Agricultural Technology, Faculty

Introduction

Experts believe that achieving a sustainable agricultural development in Third World countries requires having in place a viable and functional agricultural research and extension system. This system must operate in a policy-friendly environment and be responsive to the needs of the farmers who mostly are resource poor and constitute the main producers of food and fiber (Arokoyo, 1996). To this end, Nigeria with an estimated population of 120,628,315 (National Population Commission, 1991), and 71 million hectares of arable land with only 47% under cultivation, has a well-established national agricultural research and extension system (NARES). The NARES consists of three specialized agricultural universities, 27 faculties of agriculture, 18 commodity-based institutes, and a national extension specialist support institute. The activities of these national institutions are complemented by three international agricultural research institutes: the International Livestock Center for Africa (ILCA), a sub-station of the International Crops Research Institute for the

Semi-Arid Tropics (ICRISAT), and the International Institute for Tropical Agriculture (IITA) (Republic of Nigeria, 1999).

Issues critical to the relevance and contribution of some of the institutions in NARES to agricultural development have been the subject of discussions among stakeholders in recent years. This concern was born out of the realization that despite the investment in NARES, Nigeria is yet to attain self-sufficiency in food production. Further, the contributions of the agricultural sector to the Gross Domestic Product (GDP) have been on the decline in the last decade (Arokoyo, 1996; Okuneye, 2001).

Specifically, the activities of the universities in NARES have come under focus. It is generally believed that the universities have performed creditably in the area of training manpower for the agricultural industry. In addition, the institutions have, at various times, developed improved agricultural technologies, which have been part of the extension recommendations to farmers, but the adoption of the improved technologies by farmers has been low. Factors militating against effective

performance of the universities have been examined.

Ladebo (2001) surveyed two universities of agriculture, and two general universities with faculties of agriculture, and found that adequacy of infrastructural facilities, institutional culture, decision making that is both rational and collegial, mission awareness/consensus, and staff size are some of the factors that influenced the performance of the sampled universities. Furthermore, Republic of Nigeria (1999) reported that except for the specialized agricultural universities, the faculties of agriculture lack specific mandate on agricultural research. Research activities are based on the inclination of individual faculty and are conducted for gaining advancement on the job (Apantaku, Awotunde & Folorunso, 2001). Therefore, a major criticism of NARES is the incongruity between the expectation for career progress of faculty and national agricultural development goals. The Republic of Nigeria report presented insight into the factors that affect the effective performance of the universities in agricultural development, but did not address the attitudes and behavioral outcomes (performance) of the key actors (the faculty) within the university. Thus, this study sought to investigate the relationship between the organizational commitment facets and productivity as reflected in scholarly output among university teachers, engaged in development-oriented and problem-solving agricultural research.

Theoretical framework: Concept of organizational commitment

Organizational commitment is a multidimensional construct, comprising an affective component, the employee's psychological attachment, and involvement in the organization. Continuance commitment, the cost an employee associates with leaving the organization, while normative commitment refers to the employee's feelings of obligation to remain with the organization (Allen & Meyer, 1990). Research evidence has shown that these forms of commitment are associated with different antecedents and outcomes. For instance, affective commitment is believed to be a better predictor of workers' behavioral outcomes (Mathieu & Zajac, 1990; Dunham, Grube & Castaneda, 1994).

Becker (1992) suggested that there are different foci of commitment. Foci of commitment are the individuals and groups to whom workers are attached. Based on the notion that an organization is composed of different constituents and referents with often-conflicting goals, it is possible for the employee to align with the goals of a particular constituent, and not with others. Studies have shown that workers can be differentially committed to their work-team, organization, profession, career, and supervisors (Becker, Billings, Eveleth, & Gilbert 1996; Ellemers, Gilder, & Heuvel 1998). However, Gouldner's (1957; 1958) analysis of the cosmopolitan-local latent social roles shows that faculty are differentially committed to the values of their profession, exhibit loyalty to the employing institution, or show orientation to a reference group (peers or professional colleagues). Working with hospital professionals, Jauch, Osborn and Terpening (1980) observed that these groups of knowledge workers exhibited commitment orientation to their profession, peers, and the employing organization.

Positive outcomes are associated with high commitment levels. It is believed that workers who are more committed rarely abstain from work, are more satisfied with their jobs, and exhibit pro-social and discretionary behavior that is crucial to overall organizational well-being (Sagie, 1998; Schappe, 1998). Blau and Lunz (1998) observed that medical technologists who exhibit strong commitment to their profession are less likely to leave the profession.

Therefore, this study investigated the facets of organizational commitment of the faculty who are engaged in agricultural training and research in selected Nigerian Universities, and the effects of the commitment facets (if any) on individual performance. Hypothesis I: Faculty commitment has structural dimensions.

Faculty performance

Universally, faculty are expected to, and indeed do, engage in varying degrees in teaching, research and service; but often, faculty performance is usually assessed and rewarded based on scholarly output and publication counts, with less priority being accorded to the performance of teaching and service roles (Massy & Zemsky, 1994; Republic of Nigeria, 1999; Milem, Berger, & Dey, 2000). A survey of five universities under NARES in Nigeria

showed that faculty considered productivity in research (publications) as the most important criterion for promotion in the institutions (Republic of Nigeria, 1999). Therefore, consistent with the literature, scholarly output (publications and books published) was employed to assess faculty performance in this study.

Two biographical factors (tenure and rank) have been linked with the performance of faculty. It is believed that faculty productivity increases with rank, because higher ranked faculty have more opportunities to carry out research and publish their results, due to fewer teaching contact hours, better professional contacts, and access to research grants. In the present study, we suggest that the interaction between faculty rank and commitment facets may result in increased productivity. In addition, commitment literature suggests an association between tenure (years spent with the employing organization) and commitment (Keller, 1997; Schappe, 1998). High tenure employees are known to exhibit higher levels of commitment to the employing organization. This may be due to the accumulated side bets, sunk costs, and investments with the employing organization (Becker, 1960). Therefore, it is being hypothesized that the interaction between tenure and commitment facets may result in enhanced performance of the faculty.

In this study, I assessed the relationship between the organizational commitment facets and performance of the faculty, and the extent to which the commitment facets-performance relationship is moderated by tenure and rank of the faculty. Hypothesis IIa: Faculty commitment facets have direct positive effects on performance. Hypothesis IIb: Faculty commitment facets-performance relationship is moderated by tenure and rank.

Methodology

Sample

The design of the study involved the purposive selection of two Universities of Agriculture (A and B), and two faculties of agriculture (C and D). Data collection was completed between March and May 2000. The author visited the four campuses and addressed the faculty during their union meetings with the assistance of the union executives. Thereafter, the survey was personally delivered to individual faculty in their offices. Based on

simple random procedure, questionnaires were administered as follows: A (163), B (79), C (76), and D (109). The useable questionnaires returned were: A 130(79.7%), B 49(62.0%), C 54(71.1%), and D 69 (63.3%) for a total of 302(76.8%).

Measures

Independent variables: a) Organizational commitment facets: The commitment facet scale was adapted from Jauch, et al., (1980). The original 18-item scale was initially subjected to principal component analysis (PC), (Varimax rotated) to determine its dimensions. A four-factor solution was produced, with the fourth factor containing two items and having low factorial reliability (coefficient alpha .35). The two items were discarded, and the scale re-analysed. The follow-up analysis yielded a three-factor solution, which explained 49.92% variance in the scores (Table 1). Only loadings greater than .40 were accepted for inclusion on a factor, and none of the items included on a factor cross-loaded on other factors. Factor I consists of eight items that tapped the dimension of peer loyalty, and accounted for 19.80% variance. Internal consistency reliability of the factor is (coefficient alpha 0.78). Factor II has five items, which appeared to relate to professional identification. The variance explained by the factor was 18.04% (coefficient alpha 0.76). Three items constituted factor III focusing on organizational attachment (coefficient alpha 0.68), and explaining 12.07% of the variance. b) Value of research grant (obtained between 1996 and 2000): Information on the value of research grants obtained over a five-year period (both internal and external sources) was elicited and reported as separate variables. Receipt of research grants is believed to enhance faculty research performance, which is then translated into higher number of publications. Internal research grant refers to the grants obtained from the employing institution by the faculty, while the external research grant denotes those grants received from organizations external to the employing institution. c) Biographical variables: Information on personal characteristics such as age, sex, rank, educational attainment, and tenure was elicited. Actual ages of respondents were employed in the analysis, while sex was coded, man (1) and woman (2). Educational attainment received the ranks of PhD (3), MSc (2), and BSc (1). Rank of

faculty was operationalised as professor (7), reader (6), senior lecturer (5), lecturer I (4), lecturer II (3), assistant lecturers (2), and graduate assistants (1). Tenure was assessed by measuring the number of years the individual faculty member had spent with the employing institution.

Dependent variable: Job Performance, based on the self-report of individual faculty of total career publications at the time of the study, i.e., articles in peer reviewed journals and conference proceedings, and number of books. These two forms of publication formed separate dependent variables in the analysis. Information regarding the motive for engaging in research was obtained through individual interviews with 41 faculty occupying administrative positions.

Analysis

Moderated hierarchical regression procedure as described by Cohen and Cohen (1983) was employed for analysis. Testing for interaction effects of each tenure and rank required forming the multiplicative terms between tenure and commitment facets, and rank and commitment facets. Separate analyses were conducted for each dependent variable - publication count and books published. In the initial step, biographical factors were placed into the equation, followed by the value of research grant (both internal and external). Next, commitment facets were added to the equation. Finally, the interaction terms of tenure/commitment facets and rank/commitment facets were placed into the regression equations in the fifth and sixth stages, respectively. Moderation exists if an interaction term is significant and if the block of interaction term is able to account for significant unique variance in the dependent variables after the inclusion of the biographical factors and main effects.

Results

Background information

Most of the faculty are men ($n = 237$; 78.5%); 32.1% are professors, readers, or senior lecturers, and lecturers make up 67.9%. The mean age of the respondents is 40 years ($SD = 8.19$ years), while the mean time of stay in the

institutions (tenure) is 6.5 years ($SD = 5.03$ years). The average value of internal research grant obtained was N 24,557.62, and that of external research grant was N 142,715.24 (US\$1 to N100 in 2000). Average publication count for the faculty is 10.01, while the mean for books published by faculty members is 0.58.

Dimensions of commitment orientation

Hypothesis I: Hypothesis I states that faculty commitment has structural dimensions. In Table 1, PC analysis shows that faculty commitment has three identifiable dimensions: peer loyalty, professional identification, and organizational commitment. Peer loyalty highlights the degree of faculty interaction with colleagues in the institution. Such interaction is based on providing mutual support for each other, assisting with professional advice, and recognising each individual for his/her worth. Professional identification reflects faculty preoccupation with satisfying the ideals of his/her profession. Faculty members attempt to build and/or enhance their professional status by engaging in perceived useful and worthwhile endeavours (presumably through research and publication), while at the same time contributing to knowledge in his/her discipline. Organizational attachment is characterised by the extent to which faculty perceive the institutional internal environment provides the necessary intellectual stimulation and opportunities for interpersonal interactions.

Simple correlations showed that peer loyalty is significantly related to professional identification ($r .29$; $p < .01$), and organizational attachment ($r .32$; $p < .01$), but organizational attachment is unrelated to professional loyalty ($r .01$; $p > .05$). These results show that peer loyalty shares some features with professional identification, and organizational attachment, but professional identification and organizational attachment are independent. The implication is that a faculty member who is loyal to his/her peers is likely to exhibit attachment to the institution, whereas an individual who strongly identifies with the profession is less likely to show much attachment to the employing institution.

Table 1

Results of Principal Component Analysis of Orientation Scale (n = 302)

Variables	Factor I	Factor II	Factor III
1. I get good professional advice here	.784		
2. Colleagues here contribute to my professional growth	.762		
3. My important sources of recognition are here	.638		
4. Most faculty staff here are loyal to the university	.631		
5. I work with professionally competent colleagues	.539		
6. I know many academic staff well	.526		
7. I would be happy to introduce fellow staff to colleagues visiting this institution	.522		
8. I have congenial colleagues	.456		
9. I endeavour to build my professional reputation		.787	
10. I do important and worthwhile things here as a faculty staff		.737	
11. I strive to increase knowledge of my field		.728	
12. I contribute new ideas to my field of specialization		.669	
13. I make use of present skills		.593	
14. Staff here are cool and aloof			.819
15. I get no intellectual stimulation here			.803
16. There are few here who share my professional interest			.673
Eigenvalues	3.16	2.88	1.93
Percent variance	19.80	18.04	12.07
Coefficient alpha	0.78	0.76	0.68

Note. Factor I = Peer loyalty, Factor II = Professional identification, Factor III = Organizational attachment.

Results of moderated hierarchical regression analysis

Biographical characteristics account for significant variance in the dependent variables - publication count ($\Delta R^2 = .534; p < .01$), and books published ($\Delta R^2 = .111; p < .05$). Consistent with existing literature, faculty rank and tenure have significant relationships with the criterion variables - publication count (faculty rank, $\beta = -.74; p < .000$ and tenure, $\beta = -.83; p < .01$), and books published (faculty rank, $\beta = -.13; p < .05$ and tenure, $\beta = .23; p < .01$), as shown in Table 2. The addition of research grant to the equation yield additional unique variance in publication count ($\Delta R^2 = .048; p < .01$), but not in books published ($\Delta R^2 = .00$), and individually, external and internal research grants maintain significant relationships with publication count (Table 2).

However, the hypothesized effect of commitment facets on publication count and books published (hypothesis IIa) was not supported by the results. Commitment facets' entry into the model did not account for any change in ΔR^2 beyond that earlier produced by research grants in publication count and the

biographical factors in books published, as indicated in Table 2.

Hypothesis IIb examined the moderating effect of tenure and rank on the relationship between commitment facets and publication count, as well as books published. Interaction terms of tenure and peer loyalty ($\beta = 1.12; p < .000$) and tenure/professional loyalty ($\beta = -.93; p < .01$) make significant contribution to books published, while only the interaction term of tenure/professional loyalty ($\beta = .66; p < .05$) accounted for the incremental change in R^2 found in publication count ($\Delta R^2 = .007; p < .05$). With the inclusion of the interaction terms of rank and commitment facets in the full model, there was no further change in the incremental R^2 value in publication count, but the interaction term of rank/peer loyalty ($\beta = -.17; p < .05$) explains additional variance of (ΔR^2) .006, significant at $p < .05$ in books published. The implication of this result is that tenure (length of service) influences peer loyalty and professional orientation of the respondents and this tends to explain the publication behaviour of the faculty. However, rank only has an influence on peer loyalty towards the production of books.

Table 2

Results of Moderated Hierarchical Regression Analysis (N = 302)

Variable	Publications			Books		
	β	R ²	R ² Change	β	R ²	R ² Change
Stage I Biography		.534	.534**		.111	.111
Gender	-.01			-.05		
Age	-.00			.06		
Tenure	-.83**			.23**		
Rank	-.74***			-.13*		
Educational attainment	-.06			.07		
Stage II		.582	.048**		.111	.000
Internal research grant	.18***			.12*		
External research grant	.09*			.03		
Stage III		.582	.00		.111	.000
Commitment orientations (Co)	-.02			-.05		
Peer loyalty (Pl)	.01			.00		
Professional identification (Pri)						
Organizational attachment (Oa)	.02			-.03		
Stage IV		.589	.007*		.150	.039*
Interaction Co x Tenure						
Pl x Tenure	-.03			1.12***		
Pri x Tenure	.66*			-.93**		
Oa x Tenure	.08			-.06		
Stage V		.589	.00		.156	.006*
Interaction Co x Rank						
Pl x Rank	-.03			-.17*		
Pri x Rank	-.21			.14		
Oa x Rank	.03			-.01		
Full model R		.768				.395
F		84.92***				13.76***
SE		8.16				1.68

* $p < .05$; ** $p < .01$; *** $p < .00$

Discussion

Results show that the commitment of faculty members is characterised by three facets: the employing institution, peer or colleagues, and the profession. The implication is that an individual faculty, while engaged in scholarly pursuit in the employing institution also, has other referents, whose values she/he identifies with. However, the three commitment facets do not have direct influence on the performance of the faculty, but influence indirectly as the faculty stays longer on the job and advances through the ranks.

An aspect of the scholarly activities of the faculty is the relevance to the development of agricultural technologies that will mitigate local farmers' production problems and enhance productivity. Discussions with the respondents

revealed that most research projects were conceived and conducted due principally to availability of resources, and personal interest in a given subject area without adhering to any laid down institutional policy. The institutions did not have any explicit policy and/or priority on agricultural research, in which the individual faculty must engage her/himself. Faculty observed that individuals engage in research endeavours that will either yield quick results, and/or provide avenue for recognition among peers in the academic community. Another view has it that faculty conduct research that obviously is not related to the national agricultural environment, the results of which are published in international journals to gain acceptance and visibility in the academe. These

are consistent with the findings of Republic of Nigeria (1999) and Apantaku, et al., (2001).

Because faculty engages in research projects that are not necessarily problem-oriented and institutionally motivated, there is much possibility that the farmers or end-users of technologies may be precluded from the technology generation process. The results of such research endeavour are likely to be less relevant to the local farm conditions. This might explain why farmers selectively adopt improved technologies in Nigeria. Adoption studies in the country indicate that generally, the adoption of innovations by farmers was low (Arokoyo, 1996; Lahai, Goldey, & Jones, 2000). Increases in the output of the nation's cash and food crops (such as cotton, soybeans, maize, palm oil, cocoa, coffee, rubber, cassava, and yam) in recent years have been due largely to the expansion of cultivated land area, and effects of good rainfall (Central Bank of Nigeria, 2000; Okuneye, 2001).

Intervention efforts by the university administrators/or the government at enhancing the commitment-productivity linkage of faculty members must be multifaceted. First, the nation needs to have agricultural research mandates for the universities, with priorities developed for specific crops, livestock, marketing, etc. This is likely to check the incidence of faculty engaging in research pursuits without specified focus on the country's agricultural needs. Further, it is imperative that farmers be involved in the design and development of technologies. This would help evolve solutions that are suited to the varied farming systems of the farmers.

Second, at the early stage of the faculty career, efforts must be made to socialize the faculty to engage in development-oriented research activities that are tailored toward the needs of the local environment, instead of engaging in research for the instrumental reason of gaining advancement on the job, or recognition in the academe. To make the socialization more meaningful, an advancement criterion that is based solely on works in cosmopolitan publication outlets needs to be reviewed to accommodate works that may not appeal to a cosmopolitan audience, but are relevant in the local environment, and so are published locally.

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