

UNIVERSITY OF CAPE COAST

**SUPERVISORS' PROFESSIONAL COMPETENCIES AS PERCEIVED BY
SUPERVISORS AND EXTENSION AGENTS UNDER THE
UNIFIED AGRICULTURAL EXTENSION SYSTEM IN GHANA**

by

Moses Ekow Ogoe

**A thesis submitted to the Department of Agricultural Economics and Extension,
School of Agriculture, in partial fulfilment of the requirements
for the award of**

Master of Philosophy (Agricultural Extension) Degree

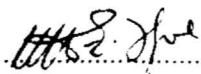
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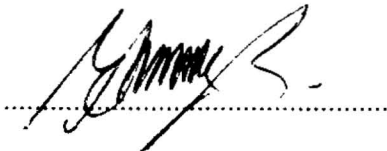
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Moses Ekow Ogoe
(Candidate)

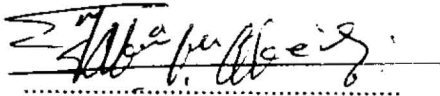
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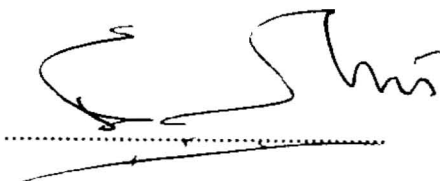
Dr. Edward Ntifo-Siaw
(Principal supervisor)

Date 18/03/99



Dr. J. A. Kwarteng
(Co-supervisor)

Date 15/3/99



Drs. N. K. T. Ghartey
(Co-supervisor)

Date 12 March 1999

ABSTRACT

The aim of this study was to examine the competency levels of Agricultural Extension Supervisors in the Ministry of Food and Agriculture in Ghana. It was also to determine the Competency needs of the Supervisors. The study was based on the perceptions of the Supervisors and Extension Agents. It also compared the self-perceived competencies by Supervisors with their competencies as perceived by the Extension Agents and determined the competency needs of Supervisors. In addition, the study looked at the differences between demographic characteristics of Supervisors and the competencies (grouped into eight categories), when the competencies were acquired and the best time to learn them.

A descriptive correlational survey design was used. The study covered three out of the ten Regions of Ghana, namely Western, Brong Ahafo and Upper East. In all, 221 Extension Agents and 73 supervisors were involved in the study.

Generally, self-evaluation by the Supervisors and the evaluation by the Agents were very similar and most of the 100 competency items studied were rated between 'Moderate' and 'High'. Only one competency, 'Completing monthly or annual reports', was rated above 'High' level. There were 16 competency items for which supervisors were rated below 'Moderate' level and which need urgent attention. They include competencies that relate to:

- Preparation of long-range programme of work and involving stake holders in planning extension programmes under Programme Planning.
- the development and use of teaching aids including audio-visuals under Teaching. Also planning, organizing and conducting tours and field trips.

- the use of non-verbal communication, extension publications and communication equipment in the area of Communication.
- Socio-cultural factors affecting the behaviour of people and how they affect the thinking process in the Understanding Human Behaviour category.
- the use and analysis of questionnaires, interpreting research findings and using library resources relating to Evaluation.

The ratings by the Supervisors and the Agents showed significant differences in few competencies and where significant differences occurred, the Supervisors rated themselves higher than the Agents. For almost all the 100 competency items, the ratings were around 'Moderate level' which implies that there was more room for improvement. Supervisors claimed that 76 percent of the competency items were acquired on the job and 18 percent were acquired before the job. They were of the opinion that the best place and time to learn most (81.0 percent) of the competencies is on-the-job.

Age, gender, highest educational level attained and area of residence showed significant relationships with the competencies. Younger and female supervisors rated themselves significantly higher than their older and male counterparts, respectively. Supervisors holding M.Sc. Degrees and those residing outside their area of operation also rated themselves higher than those holding lower degrees and residing outside their area of operation.

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DEDICATION

I dedicate this work to my parents, wife and children.

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CHAPTER 1

INTRODUCTION

1.1 BACKGROUND TO THE STUDY

Agricultural extension has been one of the features of agricultural development in Ghana since the early 1900s.

Ghana's agricultural extension system has undergone several transformations since pre-independence era in the government's efforts to establish an efficient and effective system. Initially, the primary interest was on export crops like rubber and cocoa. Later, greater emphasis was given to food crops and livestock. Agricultural extension, then, was part of the activities of church missionaries and foreign owned companies interested in the production of export crops. From the time of independence, Ghana has experimented on various approaches to agricultural extension under the co-operative movements, church related development scheme and several donor assisted projects (Draft Report on Orientation Workshop: National Agricultural Extension Project, 1992).

Before 1988, the Department of Agricultural Extension did not exist in the then Ministry of Agriculture. The existing departments in the Ministry offered their own extension services to farmers in the various sectors of agricultural production. Non-Governmental organizations (NGOs) also provided extension services to farmers through their own field agents. In 1988, the present department of Agricultural Extension Services was formed out of the then Crops Services and Animal Health and Production Departments.

The Unified Agricultural Extension System was introduced in Ghana in 1992 as one of the objectives of the National Agricultural Extension Project (NAEP). NAEP is one of the main vehicles for accelerating growth in the agricultural sector under the Medium Term Agricultural Development Programme. It had as its main objective to initiate and implement a unified agricultural extension system with strong research linkages in order to promote the wide spread and use of proven agricultural technologies and farming practices.

According to the draft report on NAEP (1992), the bases for the creation of NAEP included training the extension staff in both technical subjects and in extension methodologies and also behavioral sciences to understand farmers' attitudes towards the numerous variables which affect them in their economic development. This was to enable them to perform their tasks confidently and effectively. It employs a modified version of the Training and Visit (T&V) model of extension which was developed by Benor.

The training and visit system has been one of the most significant extension organizational developments in the World during the last two decades. Billions of dollars have been invested in this system by the World Bank since 1975. The system tries to achieve changes in production technologies used by the majority of farmers through assistance from well trained extension agents who have close links with agricultural research (van den Ban and Hawkins, 1996). It evolves around "Training" and "Visits". Training equips the Frontline Staff (FLS) with innovations or solutions to farmers' problems from research. Through a scheduled programme of visits, the FLS make available to farmers these innovations and furnish research with farmers' problems.

The T & V system has been diffused very rapidly, first in South and South-East Asia where it has been shown to increase the effectiveness of agricultural extension in irrigated areas in a number of countries, thus contributing to rapid increases in food production and later in Africa where it was not always so successful (van den Ban and Hawkins, 1996).

The T & V system of agricultural extension depends on well-conceived and well-conducted supervision of extension staff in order to be effective. Supervision alone cannot produce good agricultural extension but good extension is rarely possible without effective supervision (Benor and Baxter, 1984).

In the view of Buford and Bedeian (1988), improved quality of extension supervision is one target for bringing about improvement in agricultural production, and subsequently, in the National economy. A properly managed and supervised organization creates progress - it transforms its inputs into the satisfaction of human needs.

According to the proponents of T & V (Benor and Baxter, 1984), supervisory visits are made to ensure that staff do their work in a correct and timely manner and also to assist and guide staff to do their assigned tasks effectively. Arnon (1989) confirms this by saying that the key function of agricultural extension officers is the effective monitoring of the work of the village level workers and that this function is of critical importance for the effectiveness of the entire service. He explained that monitoring does not simply signify administrative supervision but also guiding, advising and encouraging the village-level workers in their work. There are various levels at which supervision is done within the Ministry of Food and Agriculture (MOFA) in Ghana. Supervision starts right from the Ministry Headquarters to Regional and District Levels. Within these levels of supervision dimensions and emphasis may differ but basically, supervision at all these levels have similar basic principles and functions.

Apart from the formulation of government agricultural policies, preparation and writing of projects and programmes, allocation of funds and other resources to the regions and districts, the Ministry Headquarters staff have to guide field officers, during supervision, on policy and technical matters. They also ensure that officers thoroughly understand what they are expected to do. Their added responsibility is to ensure that the projects and programmes are

implemented within the policy framework and within the specified time schedules. The Director of Agricultural Extension and his Deputies, in addition to reports from the field, visit from time to time to monitor and inspect field activities in the regions and districts. They have to supervise in order to discover constraints and monitor both managerial, technical and financial abilities of field staff to implement projects achieving stated objectives.

The major role of regional headquarters staff is to monitor and evaluate the agricultural extension programmes in the districts. They are supposed to make, at least, four (4) supervisory visits in a fortnight.

The Subject Matter Specialists (SMS) are important in providing technical support and implementing training for the FLS. They should spend, at least, a third of their time making field visits to, among others, check if their recommendations or impact points are being passed correctly by FLS to farmers.

The District level extension officer is a critical level in supervision as the district staff are closer to the FLS and it is an important level for project implementation. Officers at this level are to use eight (8) days in a fortnight to make supervisory field visits to check, among others, the regularity of visits to farmers by FLS.

1.2 STATEMENT OF THE PROBLEM

According to Agunga and Kimball (1997), in 1989, the World Bank noted in a report titled "Sub-Saharan African; From Crisis to Sustainable Growth - Long-term perspective study (LTPS)", that African economies must grow by 4 to 5 percent a year if hunger was to be averted and productive jobs and rising incomes secured for their growing populations.

The contribution that agriculture can make towards the growth of African economies cannot be overemphasized. Agunga and Kimball (1997) confirmed this by stating that agricultural

development is identified by the Government of Zambia as a major priority area for its National Development Plan of the 1990s. They added, however, that effective agricultural production requires a well-trained extension service yet it is not clear how well-trained are Zambia's field extension agents to effectively carry out the governments agricultural development policy.

The old extension systems which T&V replaced, have been very slow in changing, and many of their weaknesses have continued, particularly their lack of field orientation. This has manifested itself in too few field visits by senior project staff, and a poor understanding of supervision and extension management (Venkatesan, 1994). He added that an extension system with sole emphasis on increasing farmers' adoption of technology has been new to most countries, where extension was principally thought of as either an "inspectorial" service (e.g. in Sudan and some West African Franco phone Countries) or as a delivery of credit or scarce inputs (e.g.. Nigeria, Ghana, Tanzania and Malawi).

Supervision in agricultural extension has not been free from criticisms. In some studies, failures of agricultural extension systems have been attributed to ineffective supervision. Budke and Padde (1994) cite Bucanayandi (1990) and USAID (1987) as haven identified supervision as one of the weaknesses in Uganda's extension system.

Part of an organization's overall effectiveness is influenced by the job knowledge and skills possessed by organizational employees (Waldman and Spangler, 1989). Bradfield (1966), Maunder (1972) and Easter (1985), indicated that Extension agents and specialists need skill and competence to design, implement and evaluate educational programs for farmers.

The more than 500,000 agricultural extension agents in the world have a crucial role to play in increasing farmers' competence. They also are expected to play new roles such as promoting sustainable agriculture for which new skills are required. At the same time their conditions of work are changing rapidly, for example, through the privatization of government

services, including extension and the growing role commercial companies and non-governmental organizations (NGOs) play in agricultural extension, very competent extension agents are needed to make decisions (van den Ban and Hawkins, 1996).

Lack of a proper balance between technical and professional competencies in staff has been identified as a common problem in the extension services of developing countries. It is said that the T&V Extension system depends on well-conceived and well-conducted supervision of extension staff in order to be effective. This implies that the quality of an extension programme like the National Agricultural Extension Project and its impact on farmers will, to a large extent, depend on the quality of supervision.

Agunga and Kimball (1997) noted that a more fundamental extension problem often masked by the fanfare and huge financial investments T&V often brings, is the critical analysis of the quality of extension personnel. According to Easter (op cit), one of the weaknesses in past approaches in preparing extension personnel in developing countries is the inability to focus on the development of professional competencies. Agunga and Kimball (1997) quote Hulme (1991) as stating ^{that} between 1974 and 1984, about 2.3 billion dollars was spent by the World Bank for T&V system projects yet nowhere is it stated that these investments are made based on a critical examination of the quality of field staff to implement the T&V system successfully.

As Rivera and Gustafson (1991) rightly put it, "Extension must be responsive to be effective. To be effective at responding to needs requires up-to-date skills and knowledge". The extension agent is a professional on his own and as such needs to be competent in a certain field if he/she is to carry out assigned roles effectively. For this reason there is the need for an extension service to have a sufficient number of trained people who understand the new technologies developed by research and who are in a position to demonstrate these new practices, and their ability to a reasonable number of farmers (Arnon, 1981).

This implies that for Ghana's Unified Agricultural Extension System (UAES) to be successful, the supervisors must be very competent and to be competent calls for effective training. There is the need, therefore, to identify supervision lapses in terms of competencies and competency areas that need emphasis for improvement. Under the UAES in Ghana very little, if at all, has been done regarding the identification of lapses in professional competencies for improvement.

1.3 RESEARCH OBJECTIVES

The purpose of this study is to examine competency levels and identify the competencies needed by extension supervisors in Ghana. The specific objectives of the study are to:-

1. determine the competency levels of supervisors as perceived by extension agents and their supervisors.
2. compare the self-perceived competencies by supervisors with their competencies as perceived by Extension agents.
3. identify the competency needs of supervisors in agricultural extension.
4. determine the differences on distribution on personal characteristics of supervisors and their self-perceived competencies.
5. determine when the supervisors acquired the various competencies.
6. determine from extension supervisors when they perceive as the best time to learn the competencies.
7. determine the degree of association among the various competency categories.

1.4 RESEARCH QUESTIONS

Questions to be answered in this study include the following:

1. What are the competency levels of supervisors in agricultural extension in Ghana ?
2. How do self-perceived competencies of supervisors compare with perceptions of extension agents ?
3. What are the competency needs of the agricultural extension supervisors in Ghana ?
4. Do differences exist in supervisors' self-perceived competencies on distribution on demographic characteristics ?
5. When did the supervisors acquire the various competencies ?
6. When do supervisors perceive as the best time to learn the competencies ?
7. How are the various competency categories associated with each other ?

1.5 HYPOTHESES

The following hypotheses stated in null and alternative forms are offered for testing the differences between the demographic characteristics of supervisors and their self-perceived competencies and also the association among the various competency categories:

H_0 : There are differences on distribution on demographic characteristics and supervisors' self-perceived professional competencies.

H_1 : There are no differences on distribution on demographic characteristics and supervisors' self-perceived professional competencies.

H_0 : There are differences on distribution on professional characteristics and supervisors' self-perceived professional competencies.

H_1 : There are no differences on distribution on professional characteristics and supervisors' self-perceived professional competencies.

1.6 DEFINITION OF TERMS

Professional Competence - This denotes the ability or fitness for a task. The possession of adequate skills or knowledge for a task, and the ability to perform to a level that is acceptable.

Supervisors - This covers all District Agricultural Directors, District Development Officers and Subject Matter Specialists (SMS) in the Ministry of Food & Agriculture.

Extension Agent - In this study, extension agent implies a person whose main task is to give extension assistance and manage an extension organization at the farmer level in the Ministry of Food and Agriculture.

Pre-service and In-service training - In this study pre-service simply denotes training before entering the extension service or during formal education while In-service denotes training after entering the extension service or the period of work as an extension worker.

1.7 LIMITATIONS OF THE STUDY

Owing to limited resources including time, logistics and funds, the study could not cover all agricultural extension supervisors and agents in Ghana. However, the sample size was large enough to allow the results to be generalised.

CHAPTER 2 LITERATURE REVIEW

The purpose of this study was to examine the competency levels of and identify competencies needed by extension supervisors in Ghana. This chapter reviews the literature related to competency under two broad categories: Supervision and Supervisors, and Competence. The literature reviewed under competence is classified into competence theory, developing competence, measuring competence, self and independent evaluation and independent variables relating to supervisors' competency levels.

2.1 SUPERVISION AND SUPERVISORS

Supervision, as defined by Collings (1972), is a process by which workers are helped to do their jobs with increasing satisfaction to themselves, to the people with whom they work, and to the agency. Extension supervision is concerned with the improvement or growth of extension personnel as individuals and as educational leaders.

In contributing to individual growth, the goal of supervision is the maximum development of the potential capacities of the extension agent as a person. In contributing to the effectiveness of the worker as an educational leader, its goal is to provide the best possible extension programme for the people of the country. Through activity and habitual practice, supervisors live out the process which we call supervision and demonstrate the extent to which they meet criteria.

The under listed criteria for supervision have been identified by a review of the literature from the fields of education (including extension) and from industry and voluntary agencies.

A good supervisor:

- is guided by clear purposes.
- guides agents to get job done: to carry out the purposes of the agency.
- makes a careful analysis of the needs of each individual agent.

- concentrates his/her supervisory programmes on helping to meet needs.
- makes supervision a co-operative activity. He/She draws on the ideas and experience of all staff members.
- assumes responsibility to develop staff competence. He/She motivates professional improvements.
- studies the extension job. He/She uses each activity of the job as a practice in problem solving
- uses evaluation to improve every major phase of the country extension programme
- evaluates his/her own effectiveness.
- demonstrates a desire to be of assistance to the agents or the staff members involved. personally and professionally (Collings 1972).

According to Benor and Baxter (1984), supervision should determine whether the extension system is operating effectively in both organizational and technical areas, and identify key constraints to its effectiveness. Common constraints may be the result of the fact that the Village Extension Worker (VEW) and other staff are not interested in their work or do not undertake the required appropriate messages to teach farmers, training is inadequate, or leadership and guidance for extension staff is poor.

While it is obvious that the Training and Visit system of agricultural extension depends on well-conducted supervision of extension staff in order to be effective, it is not always clear how this can be achieved. Supervision of extension activities cannot be conducted in the same way as supervision of administrative work because of its different nature. Supervision must be tailored to fit the needs of the extension service.

Benor and Baxter (1984) specified that supervision of extension activities should not be paper-based or report-oriented as staff are not evaluated on the bases of paper work or written reports they produce. Very few reports are required of any extension staff. Village Extension Workers (VEWs) and Agricultural Extension Officers (AEOs) are only required to keep a daily diary to record their activities and the main problems they encounter in the field, especially with respect to farmers' reactions to production recommendations.

The purpose of extension supervision is not merely to check that staff do their work in a correct and timely manner: more important is the objective of assisting and guiding staff to do their assigned tasks effectively. Staff should focus on the quality of the work and on ways to improve the effectiveness of individual staff, which in turn, will benefit farmers and the extension service at large. Supervision cannot be haphazard or casual; it must be highly planned. The time in the field should be spent primarily on scheduled visits, although a small number of visits may be unscheduled. The schedule of visits of the supervisors should normally be known to all staff. Unscheduled visits are made to check on staff who may not be performing adequately, or in response to particular field or training problems.

Benor and Baxter added that since supervision cannot be conducted through a review of written reports, it must be done at the location where the activity to be supervised normally takes place; field activities are supervised in the field, training is supervised in training sessions.

They also stated that on each field visit, supervisory staff should spend a considerable amount of time at one particular place. Except on the rare occasions when unannounced visits are made to check on staff who, it is believed, are not doing their work as required, there is no use in quick visits. In addition to being aware of shortcomings, supervisors should identify the achievements of field staff, giving credit where credit is due. If their achievements are not acknowledged and appreciated, even the best extension workers soon cease, or at least reduce, their activities.

From the point of view of teaching production recommendations to farmers, extension is conducted only by the Village Extension Worker(VEW). The tasks of all other extension staff are to support the work of VEWs. This support ranges from the frequent direct individual contact of the Agricultural Extension Officer(AEO) with all the VEWs in his/her range to running training programs and assisting in field production problems by subject matter specialists (SMSs) to the support and review of field activities, training, and input coordination by subdivision, district, zone, and headquarters staff.

In the view of Benor and Baxter (1984), supervisory visits to the field focus on organizational (methodological) and technical matters. The importance given to either depends

on the level of responsibility of staff making the visit. Most important, however, is to check the end result: Do farmers benefit from extension? This check should be done by supervisors at all levels. Training activities (particularly fortnightly training and monthly workshops) should also be supervised regularly. The quality of training is readily apparent from contact with extension and farmers in the field and, consequently, may be partly supervised in the course of field supervision.

There is some disagreement concerning the importance of immediate supervision on workers' satisfaction. Putman (1930), in discussing the results of the programme of interviewing in the Hawthorne works of the Western Electric company, takes the position that supervision is the most important determinant of worker attitudes. On the basis of their study of accountants and engineers, however, Herzberg, Mausner and Snyderman (1959) suggest that the importance of supervision has been overrated.

Quantitative evidence concerning the importance of supervision is inconclusive. Herzberg, Mausner, Peterson and Capwell (1957) have compiled data from 15 studies in which workers were asked what made them satisfied or dissatisfied with their jobs. Supervision was mentioned as a source of satisfaction more frequently than job security, job content, company and management, working conditions and opportunity for advancement and wages.

One of the most important influences on employee motivation is the supervisor. Supervisors enhance attitudes by helping employees more accurately perceive the value of the job's returns to satisfying their needs. The supervisor or manager is directly involved in many of the most significant human resource management activities.

The supervisor and the work group constitute the social environment within which the individual learns the norms and expectations for production. A favorable and constructive social environment is conducive to positive individual motivation and productivity. A negative social environment inhibits motivation, which has an unfavorable impact on performance. The success of the entire human resource management system depends on how thoughtfully and fairly the supervisor manages it (Milkovich and Bondreau, 1988).

The influence of the first supervisor on a new employee's subsequent performance has also been noted by a number of researchers including Bray, Campbell and Grant (1974). Special training, patience, and insight are required by supervisors of new employees for a number of reasons. First, new employees are likely to make a higher-than-average number of mistakes, and if impatient supervisors overreact to those mistakes, they will weaken the new employee's self-image and enthusiasm. Second, insecure supervisors often control new employees too closely - either to keep them from making mistakes or to prevent them from appearing too successful or knowledgeable. As a result, the employees are not permitted to learn from their mistakes and may not achieve recognition for their successes. Finally, and most important, the expectations of supervisors affect new employee's attitude and performance, since the employees will tend to fulfil those expectations regardless of their actual ability. A supervisor who looks upon newcomers as potentially outstanding performers will treat them accordingly thereby motivating them to do their best - and the supervisors expectation will tend to be confirmed. Conversely, a supervisor who expects newcomers to perform poorly will communicate these expectations directly or indirectly, thereby triggering the indifferent performance that fulfills the negative expectations (Stoner and Freeman, 1992).

Immediate supervisors strongly influence the motivation and performance of employees by example and instruction as well as by rewards and penalties ranging from praise, salary increase, and promotions to criticism, demotions, and dismissals. According to Adewuni (1976), authors subscribe to the idea that some degrees of competency are required before individuals can establish themselves in the World of work.

2.2 COMPETENCE

This section looks at competence under competency theory, developing competency and measuring competence.

2.2.1 Competency Theory

Fagan (1984) states that the current usage of the term competence in education suggests that its precise meaning is of less importance to many people than its use for purely rhetoric purposes. The term has been used in such a variety of ways that meaningful communication on the subject of competence has been exceedingly difficult, if not impossible. Even educational practices involving the idea of competence frequently embody such different conceptions of competence that little relationship can be detected among them.

Competence, according to Webster's New World Dictionary of American Language (1980), identifies *compete* as its root with the following definitions for *compete*: "to strive together for," "contend," "contest"; *competence* picks up the striving connotation with its refined definitions such as: "a meeting, agreement," "power," "the quality of being competent." The Cambridge International Dictionary (1996) defines competence "as the ability to do something to a level that is acceptable".

Klemp, Jr. (1977) defines competency as a generic knowledge, skill, trait, self-schema or motive of a person that is causally related to effective behavior referenced to external performance criteria, where:

- Knowledge is a set of usable information organized around a specific content area (for example, knowledge of mathematics)
- Skill is the ability to demonstrate a set of related behaviors or processes (for example, logical thinking).
- Trait is a disposition or characteristic way of responding to an equivalent set of stimuli (for example, initiative).
- Self-schema is a person's image of himself or herself and his or her evaluation of that image (for example, self-image as a professional).

- **Motive** is a recurrent concern for a goal, state or condition which drives, selects, and directs behavior of the individual (for example, the need for efficiency).

For a knowledge, skill, trait, self-schema, or motive to be generic, it must manifest itself in a number of specific ways. A useful analogy can be drawn between a competency and a tool, both of which may be used to operate on different situations with different results. Just as the nature of the tool is seldom evident from observed behavior.

A professional competency reflects the ability to perform effectively all the professional tasks appropriate to a given position such as that of extension workers (Patel & Leagans, 1968). Doll, Jr. (1977) conceives of competence as much more than behavior or performance. He views competence as a state of being, a capacity, or an intellectual power. He traces the contributions of Noam Chomsky, Jean Piaget and Jerome Bruner to our current understanding of competence. From this analysis, he generates a model of competence based on cognitive structuralist assumptions rather than on behaviorist ones. This model has clear pedagogical implications, and Doll identifies some of these: principles of action, skills, and structures; the role of contrast, play, and mastery; and the development of experience (Short, 1984).

Doll, Jr. (1977) points out that the competency-based movement wrongly equated competence with performance, and in so doing did disservice not only to the word and notion of competence, but also to a very exciting idea which he believes holds great pedagogic potential. He continues that the words themselves - competence and performance - are, as any etiological dictionary will show, of quite different origin and have different thrusts or senses. Performance refers to a "doing", particularly to a "doing" which is "completed, finished, achieve". It originated as a word to distinguish between promises made but not completed and those completed. Hence performance is a task finished. It carries no judgement of value as to how well the task is done, just that it is done. Competence refers essentially to a state of being or to a capacity. One who is competent is one who has a certain "fitness, sufficiency, or aptitude;" or to take the word's Latin derivation, a competent person is one who possesses a certain confluence, "symmetry, conjunction, or meeting together" of powers which allow him or her "to adequately deal with a situation." In short, performance is the outward and public manifestation of underlying and

internal powers. The problem, of course, lies in determining just what these powers are, and in determining the relation which exists between them and their performance manifestations.

Unfortunately, these powers cannot be determined directly, but must always be inferred from observable performances. Doll, Jr. (1977) observes that the simple solution, which certain radical behaviorists have taken, is to deny the efficacy of the competence concept and to work exclusively at the level of performance. Those in the competency movement have not, to his knowledge, made such strong theoretical statement; but they are operating out of a similar framework. That is, they are simplistically equating competence with performance and assuming that those who perform well are competent and those who perform poorly are incompetent. This is evidenced in their development of performance checklists as indicators of competence.

Noddings (1980) points out that performance is neither a necessary nor a sufficient criteria for competence. Yet the two are related, and to possess or pursue one without the other is to possess or pursue little.

Fagan (1984) adds that advocates of competence are quick to note that a given task, goal, skill has been learned, and that evidence of that learning can be verified. Questioners of competency practitioners ask, "who establishes the task, skill, knowledge for the competence to be demonstrated?" and, "How long will the competency last?". Concerning the latter question, all of us have, at one time or another, demonstrated academic competence (that is, the ability to perform with a passing grade) in foreign languages, statistics, computer science, or the like but an update of our test performance right now might show a loss of that competence. Had we the time, interest, and motivation to review the test materials we might re-establish that passing level competence. The lesson to be learned about losing formerly established competence is that planned reinforcement and review are crucial for its maintenance.

When we return to the first question (who establishes the task, skill, knowledge for the competence to be demonstrated?), the identification of those who establish competence, our search for information proves even more enigmatic. The enigma is posed by engineers, computer scientists, microbiologists, technicians from a host of fields all of whom exhibit competence of one sort or another (passing examinations, licensure) but who, almost by

definition, will become incompetent if they do not keep up with new information techniques, and applications in their fields. Competence for such professionals is an ephemeral pause in the hourglass of time. According to Fagan (1984), unless those who are to achieve the competencies are given some part in their formation, the rhetoric about the advantages of competency are not very persuasive.

Ryan and Cooper (1980), identify three areas common to all Competence-Based Teacher Education (CBTE) programs which condense behaviors associated with teaching; these are as follows:

1. Teacher knowledge - facts, principles, generalizations, awareness, and sensitivities that the teacher is expected to acquire and demonstrate (quite possibly measured by paper and pencil tests);
2. Teacher performance - behaviors that the teacher is expected to demonstrate that are believed to help foster desired outcomes in children; and
3. Teacher consequences - outcomes that the teacher is expected to bring about in the pupils' emotional and intellectual growth.

2.2.2 Developing Competence

Several researchers have examined when professional competence should be developed by extension agents. Gonzalez (1982) identified 144 competencies needed by extension agents in Pennsylvania. Of the 144 competencies, 26 were identified as appropriate for development before entering the job, 6 during a graduate program and the remaining 112 through in-service education.

Easter (1985) found that a majority of the competencies should be learned through in service training. Similarly, Ogondo (1984) reported that extension agents in Kenya perceived that all professional competencies in the area of program planning, program execution, communication, maintaining professionalism, and evaluation should be learned on the job. However, competencies in the category of administration and others related to extension philosophy, history, knowledge, understanding human behavior, and teaching should be learned before entering the job.

Results of a study by Pezeshki-Raad (1993) suggest that almost all the professional competencies should be learned or developed after the agents are employed. The results also suggest that even after pre-service programs are implemented there remains a substantial need for continuing education programs for extension personnel and that this will require an articulated continuing education program which addresses the specific professional needs of agents.

Ayewoh (1983) reported that extension agents in Bendel State of Nigeria identified that 59 out of 61 selected professional competencies should be learned on the job through workshops, seminars, orientation programs, induction programs, symposia, conferences, training sessions, clinics, and demonstrations.

van den Ban and Hawkins (1996) are of the view that all extension services require a systematic in-service training programme, but it is especially important in those services which have had to attract extension agents with a rather low level of competence because of the lack of well-trained agriculturists in their country. They find two types of training desirable:

1. Regular training at staff meetings to ensure agents are capable of performing their work satisfactorily in the next few weeks. This training may be given mainly by the Subject Matter Specialists (SMS) and extension managers.
2. A series of short courses to increase agents' competence in specific fields. These courses may be given both by SMSs and by the staff of training centres. The courses may focus on an aspect of production technology or on extension methods.

Doll, Jr. (1977) argues that competence can and should be developed in the schools, and that the curriculum design needed for such development will be radically different from the design now in use. The question is how are the competencies determined and formulated into curricula? According to Adewumi (1976), authors and researchers have not adopted a single classification for approaches to curriculum development. The most common classification includes the subject approach, integrated approach, job or occupational analysis approach, and function of industry approach.

He stated that Smith, et al (1957), conceived the approaches differently and classified them as administrative approach, grassroots approach, demonstration approach, systematic

approach to curriculum change, curriculum change as action research, etc. He recognizes the constancy of change hence he centred his discussion on curriculum change. All the classifications have several procedures built into them.

Procedures for Determining curriculum content :-

Adewumi (1976) outlined procedures utilized by curriculum workers for selecting their subject matter content for pre-training decisions on competencies that they consider as essential for adequate post-training occupational performance of trainees. The common ones are identified to be judgmental, experimental, analytical, and consensual.

Judgemental procedure - is based on the decision of the curriculum worker. He makes decisions as to what must be included in the curriculum.

Experimental Procedure - helps to classify the suitability of a particular subject matter. It provides an avenue for detecting changes that are necessary before adapting or re-designing curriculum to meet desired levels of competency.

Analytical procedure - is about the most widely used and it consists of analyzing things that people do in an occupation. This procedure is said to form the building block for determining competencies.

Consensual procedure - yields an aggregate of people's opinion about what they believe the curriculum or situation should be. The procedure derives its nutrition from the opinion of outstanding leaders of the appropriate profession, representatives of the community to be affected, specialists and experts in the profession, etc. He states that all the above procedures have their advantages and disadvantages.

Adewumi (1976) added that the competencies which formed the foundation block for these series of research were obtained by Crawford (1971), Cotrell (1972), Feck (1971), Huddleton & Williams (1972), and Erpelding (1972), who utilized a combination of the above procedures. The pioneers of the Department of Agriculture and Extension education, University of Wisconsin series of Competence-Based Teacher Education studies are also known to have utilized the procedures before and during the selection and condensation of those competencies

that are considered suitable for Wisconsin secondary and post-secondary agriculture instructors.

2.2.3 Measuring Competence

It can be seen from the brief overview of approaches to defining competence that the type of behaviors considered important to competent professional practice can be viewed quite narrowly (for example, in terms of knowledge) or quite broadly (for instance, in terms of complex interactions among knowledge, behaviors, and covert variables). It is commonly accepted, however, that any professional practice domain is complex and multi-dimensional (Pottinger, 1979: P.29). Pottinger adds that clearly, how one defines the domain of competence will greatly affect one's choice of measurement procedures. In simplest terms, if one considers competent practice to comprise exclusively of knowledge, then knowledge tests may be appropriate and if one considers behaviours a part of competence, then tests must evoke behaviours which reflect this aspect of competence simulation techniques. Also, if one considers personal attributes such as empathy, well-developed cognitive processes, moral reasoning abilities, interpersonal effectiveness, or motivation as important aspects of competence then these attributes must also be reflected in the assessment process.

Pottinger (1979: P.32) states that perhaps the most consistent finding in Klemp's (1977) analysis of professional competence is that the amount of knowledge of a content area is generally unrelated to superior performance in an occupation. Of greater significance, he often found it unrelated even to minimally acceptable performance. The implication of this finding for the majority of current licensing practices is quite obvious. Existing requirements of knowledge are not necessarily required for competence in many occupations. While knowledge is required for the satisfactory discharge of work-related duties, Klemp found it was more important that an individual be willing and able to learn.

In particular, he found that "it is not the acquisition of knowledge or even the use of knowledge that distinguishes the outstanding performer, but rather the cognitive skills that are exercised and developed in the process of knowledge acquisition and use that constitute occupational competence. In other words, the information processing skills related to learning,

recall, and forgetting are not so important to success as the conceptual skills that enable one to bring order to information chaos that characterizes one's every day environment."

According to Pottinger (1979: P.32) Klemp identified three cognitive skills related to competent performance in a broad array of occupations. One is the ability to see thematic consistencies in diverse information and the ability to organize and communicate those differences. A second related cognitive skill is the ability to conceptualize the many sides of a controversial issue.

He quoted Klemp (1977) as saying, "conflicting information results in a kind of cognitive dissonance which some people are better at resolving than others. Those who are able to see things conceptually, and therefore understand both the underlying issue as well as the different perspectives on it, are better at resolving informational conflict for themselves and for others than people who are unable to conceptualize in this way". A third cognitive skill that Klemp finds often taken for granted is the ability to learn from experience. He writes: "Regarding, in particular, the most effective process consultants and workers in human services, this means, in conceptual terms, the ability to inductively translate observations from work experience into a theory which is then used to generate behavioral alternatives. Here the information that is conceptualized looks very different from facts and figures gleaned from memoranda, articles, or lectures. This skill relates first to being involved and participating in an experience and second to analyzing one's behavior in the context of that of others. People who excel at experiential learning not only tend to be more astute observers to behavior but also tend to recognize the fact that direct experience is an important primary learning mode, for example, in situations involving helping and counseling."

Pottinger (1979: P.33) further states while Klemp's work draws from a wide range of occupations, McGuire's (1978) research on cognition in medical practice also reflects the complexity and multi dimensionality of cognition in professional practice. He referred to the seven levels of cognitive domain defined by Loveland (1976): recall of isolated information, recognition of meaning or implication of performance, simple interpretation of data or application of a single principle or standard, combination of principles, analysis of data or application of a

unique combination of principles to a novel problem, evaluation of a total situation, and analysis of a variety of element of knowledge and application to a novel problem situation in its entirety. He adds that both Klemp and McGuire have developed and/or identified new measures of these complex aspects of cognition which appear to be related to professional competence in a variety of occupations and that their studies provide ample evidence that the majority of current licensing exams do not reflect what is known about competence and what can be measured.

We can easily fall prey, however, to further reductions in the quality of assessment by limiting ourselves to only one method of measurement (Pottinger, 1979: P.33). He cited Campbell and Fiske (1959) who have documented the common sense notion that the more one increases different perspectives and techniques in measuring a phenomenon the better will be the measurement.

He stated that, typically, in testing for licenses, we have limited ourselves to a set of respondent-type measures, usually multiple, forced-choice, paper and pencil format. By using these paper and pencil test, we are measuring the effect of test format as much as we are measuring the knowledge, skills, and abilities being assessed (Pottinger, op cit). He adds that assessing professional competence by using a series of paper and pencil tests is analogous to measuring how fast someone can drink by requiring one to use a straw. In this example, the paper and pencil tests and the straw are equivalent in that they both reliably limit the phenomenon being measured. We would get a better understanding of true professional ability (as well as the ability to drink quickly) if we worked toward eliminating the constraints of measurement. One way to do this is to use measures that break away from simple modes of measurement. We also must require that the measurement techniques used are objective and quantifiable.

In the past, someone was judged to be professionally competent by the outcome of his work. A farmer was competent if his crops grew; a mechanic if his engine ran; a teacher if her students learned and their parents were pleased, and so forth. In each case competence was demonstrated by the observable quality of some outcome. As long as consumers could freely choose their service providers and judge the quality of outcomes-however subjectively - this determination of competence was viable and socially acceptable (Pottinger, 1979: P.35).

Recently, educators and other professionals have adopted the jargon of job relatedness by distinguishing between tests of academic knowledge and those of job related knowledge, or "competency based" tests. This distinction is trivial, because the quality of job performance outcomes - the only real evidence of competence - is not required in either type of test Pottinger, 1979: P.36).

Fagan (1984) states that in Pennsylvania, Maurer and Associates (1973) tried to get suggestions about competencies for teachers from a variety of sources. subjects (as opposed to specialized competencies applicable only to a specific level). These 66 were categorized under titles such as "motivational technique," "use of resources," "evaluating measurement" and consisted of competencies such as: "The teacher will maintain an educational environment conducive to developing positive attitudes toward learning". No one would seriously question the intent behind Generic Item 37, but who is to decide whether an environment is "conducive" according to what criteria? Also, how are "positive attitude" determined? In spite of many suggestions for the establishment of competencies from myriad, professional sources, there still seems to be the aura of fiat with arbitrary criteria in the Pennsylvania Department of Education (PDE) list.

Studies by Randavay & Vaughn, 1991; Najjingo-Kasujja & McCaslin,(1991); Easter,(1985); Ongondo,(1984);Ayewoh,(1983);Umuhak,(1980); Gonzalez,(1982); Al-Zaidi,(1979); Karami,(1979); Boonruang,(1973); Sabihi,(1978); Ntifo-Siaw & Agunga,(1994) have identified professional competencies needed by extension personnel in various countries. Findings from these studies indicate that extension agents in developing countries should possess professional competence in the areas of administration, program planning and execution, evaluation, communications, teaching and extension methods, and understanding human behavior.

In his study of professional competencies needed by extension specialists and agents in Iran, Pezeshki-Raad (1993) developed the survey instrument by adapting components from the instruments developed by Gonzalez (1982), Easter (1985), Ogondo (1984), and Ayewoh (1983). The final version of the instrument contained two major sections. Section one contained 125 competencies grouped within 8 competency categories (administration, program planning,

program execution, teaching, communication, understanding human behaviour, maintaining professionalism and evaluation). Items in this section were rated in terms of being needed by extension personnel using a scale that ranged from 1 = no, 2 = low value, 3 = moderate value, 4 = high value, 5 = very high value. In addition, perceptions when the competencies should be learned (pre-service or in service) were also examined. His findings, based on the three highest rated competency areas were as follows; write realistic goals for the extension programs (4.54) in administration; determine the needs of clients for extension programs (4.42) in the Program Planning category; use a variety of techniques to influence people to change (4.40) in the program execution category; Present information with televised and video taped materials (4.57) in the area of teaching; Prepare extension Publications (4.31) in the communication category; recognize traditional culture and its effect on change (4.43) in the understanding human behaviour category; identify opportunities for Professional improvement (4.38) in maintaining professionalism; and use of the experimental approach in extension work (4.66) in the evaluation category.

Adewumi (1976) states that the first part of his research was conducted by Matteson (1975), BJORAKER and Jensen (1971). Through an exclusive review of literature, they were able to identify a list of 416 competencies from the writings and previous research of Crawford (1971), Cotrell (1972), Feck (1971), Huddleston (1972) and Erpelding (1972). The list of competencies was then evaluated, refined, revised, condensed and adapted to suit the conditions that prevail in the state of Wisconsin. The result yielded a list of 11 competencies, 39 tasks and 84 competencies which were rated in a questionnaire as follows: (1) high degree of competency, (2) above average competency, (3) average competency (4) little competency and (5) no competency.

In the study of participatory management training needs of extension personnel in Zambia, Agunga and Kimball (1997) identified job satisfaction and level of proficiency of supervisors in the areas of management and communication skills to be related. The officers are more satisfied in their jobs when their supervisors are better communicators, involve them in decision-making processes make them feel a part of the department, allow them to use their skills and abilities and provide variety and challenge to the job. The level of management and communication skills among field extension supervisors is generally low. Agents rank these skills as being important

to their supervisors performance, yet they do not think that their supervisors possess these skills at a high enough level for success at the job. They also concluded that field extension officers are severely deficient in most areas of communication skills. These areas include interpersonal communication, print communication radio broadcasting and programming, audio visuals, and organizational skills. In Ghana, Ntifo-Siaw & Agunga (1994) found that Extension Officers lacked most of the communication and management skills.

2.3 SELF AND INDEPENDENT EVALUATION

Harris (1968) defines evaluation as "The systematic process of judging the worth, desirability, effectiveness, or adequacy of something according to definite criteria and purpose. The judgement is based upon a careful comparison of observation data with criteria standards." That is, it is a form of assessment.

Evaluation is essential for assessing the success or failure of an objective. It is a continuous process which all human beings perform, more subconsciously than consciously. Bureaucrats, administrators, teachers, etc. at all levels stress the need for evaluation but shy away from it. Stufflebeam (n.d.) refers to evaluation as a science of providing information for decision making. It has tremendous value if properly and carefully conducted. This usually requires trained evaluators.

Adewumi (1996) states that evaluation, most particularly formal evaluation, would remain a necessity as long as objective, scientific data are required for planning and development. A question which, according to him, researchers face in teacher evaluation is "who is to perform the evaluation?"

There are arguments that point to the fact that self-assessment of the instructor would be more accurate than those of the independent observer. According to Peter and Hull (n.d.), competence, like truth, beauty and contact lenses, is in the eye of the beholder. The risk exists for the observer to over-depend upon personal experiences, hearsay evidence, authoritative opinion, etc. In the opinion of Furst (n.d.), based on available theories, there are usually too many things going on at a time for an observer to observe all at once. Therefore, the observer concentrates

mostly on those things which interest him or that he considers important. He contends that an individual is in a better position to observe his own activities than an outside observer.

On the contrary, other researchers argue in favour of evaluation by an observer. For example, Worthen and Sanders describe the idea that every school system or every teacher can today be regarded as capable of meaningful evaluation of his/her own performance as an absurdity. In their study of the relationship between supervisory techniques of extension supervisors and organizational outcomes in Uganda, Budke and Paddie (1994), found out that a wide discrepancy occurred between the supervisors and deputy supervisors' self-ratings and the subordinates' (extension agents) ratings of their leadership. The leaders tended to inflate their scores above those generated by subordinates, thereby giving the impression that they were more effective than they actually were.

Adewumi (1976) concludes that within the limits of available time and resources, a comparison between instructors' self-perceived level of competence and the evaluation of instructors by independent observers is necessary. Such comparison provides useful insights into the areas and depth of differences and/or similarities between instructors' self-evaluation and independent evaluation. This could be an asset in determining need and also for planning.

He adds that similarities (and dis-similarities) between self and independent evaluation aggregate around certain over-all task areas. Competencies in which self and independent evaluation are above average and similar may be a good indicator of satisfactory instructor competence. Strong dissimilarities may be an indicator of the extent of need or deficiency that the instructor has (if we accept the validity of independent evaluation). Though self and independent evaluation do not show absolute agreement, they also do not show absolute disagreement, or disagreement as large as usually portrayed by instructors. The unfavourable attitude towards evaluation, most particularly, towards independent evaluation which is exhibited by instructors, administrators, and society, may simply be a part of the massive, negative fear and myths that exist about evaluation.

Adewumi (1976) suggests a combination of both self and independent evaluation as a probable third alternative since there is a myriad of arguments for and against either alternative.

This, he adds, would strengthen the advantages of both while each also compensates for the disadvantages of the other. According to him those competencies which show no significant differences under the two evaluation approaches can reasonably be assumed to represent the truth and that further investigation might be necessary in those competencies where divergent results were obtained.

In his study, Adewumi (1976) found out that instructors' self-evaluation compared to independent evaluation showed a positive agreement (similarity) in 66 competencies. A negative agreement (dissimilarity) was obtained in the remaining 23 competencies. In the 66 competencies where positive agreement was obtained, the degree of agreement varied from very strong to very weak agreement. The same distribution of weak to very weak exists for those 23 competencies in which dissimilarities were obtained. The highest dissimilarity between self and independent evaluation was observed in competencies that deal with evaluation and execution. The greatest similarity between self and independent evaluation was in competencies that are related to planning.

2.4 INDEPENDENT VARIABLES RELATING TO SUPERVISORS' COMPETENCY LEVEL

In his study of competency levels of Wisconsin Secondary School vocational agriculture instructors, Adewumi (1976) selected four personal characteristics of the instructors and treated as independent variables for comparison with instructor competency levels. These are age, education level, teaching experience and number of credits earned beyond the B.Sc. degree.

Other researchers examined differences or relationships between demographic characteristics of extension personnel and the perceived level of competency needed by extension agents. Findings from these studies indicate that variables such as age (Gonzalez, 1982; Sabihi, 1978), educational level (Najjingo-Kasujja and McCaslin, 1991) and prior work experience are related to the perceived importance of specific professional competencies needed by extension agents.

Age and years of experience were the only two demographic variables that were significantly related to the perceived level of competencies of extension specialists and agents in

Khorasan State of Iran. No significant relationships were found for the rest of the demographic variables examined in this study (Pezeshki-Raad, 1993).

Adewumi (1976) found significant correlation (at 0.05 level) between certain personal characteristics of instructor and instructor self-evaluation in some competencies. Characteristics or factors such as age, level of education and length of teaching experience bear significant relationship in certain competencies, and that considering such factors gives evaluation a fuller meaning and may also suggest that different groups have different needs. However, Easter (1985) found no significant differences between the perceived level of competencies needed for Swaziland extension agents and demographic characteristics such as age, gender, educational level, position, area of responsibility and prior experience.

2.4.1 Age

Adewumi found out that in one out of the 89 competencies, age was found to be a significant factor at the .05 level. At the .05 significance level, age was a significant factor affecting the perceived competency of instructor in judging competency of student's performance or products in relation to instructional goals.

It also came out that instructors who are above 45 years old seem to rate themselves lower than younger instructors. In a study of the relationship between supervisory techniques of Extension supervisors and organizational outcomes in Uganda, Budke and Paddie (1994) found out that older extension agents tended to exert less extra effort and were less satisfied with their supervisors and rated them low on organizational effectiveness. In Gonzalez's (1982) work, younger agents rated certain competencies lower than older agents. Sabihi (1978) reported that younger agents and specialists perceived a greater need for training in extension philosophy, organization and administration than older agents and specialists.

Randavay and Vaughn (1991), however, did not find any difference between importance ratings of professional competencies needed by extension agents and age.

In the study by Pezeshki-Raad (1993), significant differences in the average ratings by age were found for competencies in administration, communication and maintaining professionalism.

Agents and specialists under 29 years rated the above competencies higher than those who were 30 years or older. However, no significant differences were found by age in the competency areas of program planning, program execution, teaching, understanding human behavior and evaluation.

2.4.2 Educational Level

In Adewumi's (1976) study, the general trend of rating was that the B.Sc. degree holders rated themselves lower than the M.S. degree holders. However, the difference in rating was significant in five out of 89 competencies. All the B.Sc. degree holders rated themselves as possessing less than average competency in the development of objectives and competencies are best tapped if the members are given an adequate orientation about their roles and functions. No significant correlation was obtained between number of credits beyond B.Sc. degree and instructors' self-evaluation.

Gonzalez (1982) reported that agents with bachelor's degree rated some competencies (teaching and 4-H) lower than those who had master's degrees. According to Sabihi (1978), agents with lower educational levels perceived a greater need for training in extension philosophy, organisation, administration and evaluation. However, Randavay and Vaughn (1991), reported no differences between importance ratings of professional competencies needed by extension agents and education.

According to Arnon (1989), the qualifications of middle level administrators and supervisors should be a university degree with special training in extension education.

2.4.3 Working Experience

Adewumi's study (1976) also revealed a significant relationship between length of teaching experience and instructors' self-evaluation in two competencies.

These are:

- I. evaluate quality of instruction.
- ii. orient the advisory committee members to their roles and functions. In these two competencies,

the longer the instructors' teaching experience the lower their self rating.

According to Budke and Padde (1994), supervisors who held their positions for a long period of time tended to generate less extra effort and satisfaction from their subordinates. Celis (1971) found that Mexican agents with less than three years experience expressed a greater need for technical information, while those with more than three years expressed a need for training in the social sciences/agricultural extension.

Sabihi (1978) also reported that specialists who had more experience perceived a lesser need for training in extension philosophy, organization and administration.

Pezeshki-Raad's (1993) work showed significant differences in the average ratings by years of extension experience for competencies in administration, program execution; communication and maintaining professionalism. Agents and specialists with less than three years experience rated the above competencies higher than those agents and specialists with three or more years of extension experience. However, no significant differences were found by years of extension experience in the competency areas of program planning, teaching, understanding human behavior and evaluation.

2.4.4 Number of Courses and Meetings Attended

Leaders who held meetings and attended in-service courses regularly generated significantly more extra effort and satisfaction from their subordinates (Budke and Paddies, 1994). A significant relationship was found between number of courses attended and the extension agent's perception. The more courses the extension agent had attended, the more critical they seem to be of their supervisors' capability in organizational effectiveness. The strength of the relationship between extension agents' perception of outcome factors and their frequency of meeting with their supervisors were all positive and moderate. The more meetings, the closer the perceptions of the extension agents are to those of their supervisors.

2.4.5 Marital Status

Married extension agents tended to exert less extra effort but tended to be more satisfied with their supervisors. They rated their supervisors higher on relations to higher-ups unit and job effectiveness (Budke and Paddies, 1994).

2.4.6 Administrative Functions

According to Maunder (1972), every extension officer who has administrative functions such as chief of bureau, is an office manager and has to devote part of his time to managing the office procedures and keeping red tape to a minimum is an important objective of extension administration. However, it is vitally important that the office of each unit be adequately staffed. This requires that the total office work to be done is broken down into clearly defined tasks. A common error in determining requirements for staff and clerical positions in extension organizations is to underestimate the amount of office work required by its various units. Consequently, they are under-staffed both in number and quality of technical and clerical personnel. Thus a crippled organization is created from the beginning. Office work is seriously hampered and extension staff members spend much of their time doing routine work to the detriment of their main function.

2.4.7 Geographic Dispersion of Subordinates

Normally there is an inverse relationship between a manager's span of control and the geographic dispersion of his/her subordinates e.g. a sales manager whose sales peoples are scattered over a wide geographic region cannot supervise as many subordinates as a manager can whose subordinates are in one building. This is especially true when the manager and the subordinates must meet on a regular basis (Kinrad, 1988).

2.5 SUMMARY OF REVIEWED LITERATURE

From the above literature review, it can be deduced that the success of the Training and Visit agricultural extension system hinges on proper supervision. Supervision determines whether the extension system is operating effectively in both organizational and technical areas.

It is agreed that one of the most important influences on employee motivation is the supervisor. Immediate supervisors strongly influence the motivation and performance of employees by example and instruction as well as by recognition when due. In view of this, supervisors need to possess professional competence which reflects the ability to perform effectively all the professional tasks appropriate to the position of extension workers.

Findings from various studies indicate that extension specialists and agents in developing countries must possess professional competence in the areas of administration, program Planning and execution, evaluation, communication, teaching and extension methods, and understanding human behaviour.

Different views are held by various school of thoughts as to when the professional competencies are to be acquired (Preservice or Inservice), and also when to perform the evaluation and whether self assessment or by an independent observer. There is the question of how the competencies are to be determined and formulated into curricula. In the past, someone was judged to be professionally competent by the outcome of his work.

CHAPTER 3

RESEARCH METHODOLOGY

The methodology covers the following areas: Research design, study area, the target population, sampling, research instrumentation, research variables, data collection procedures and data analysis.

3.1 RESEARCH DESIGN

A descriptive correlational survey design was used to gather data concerning the competencies of agricultural extension supervisors in Ghana.

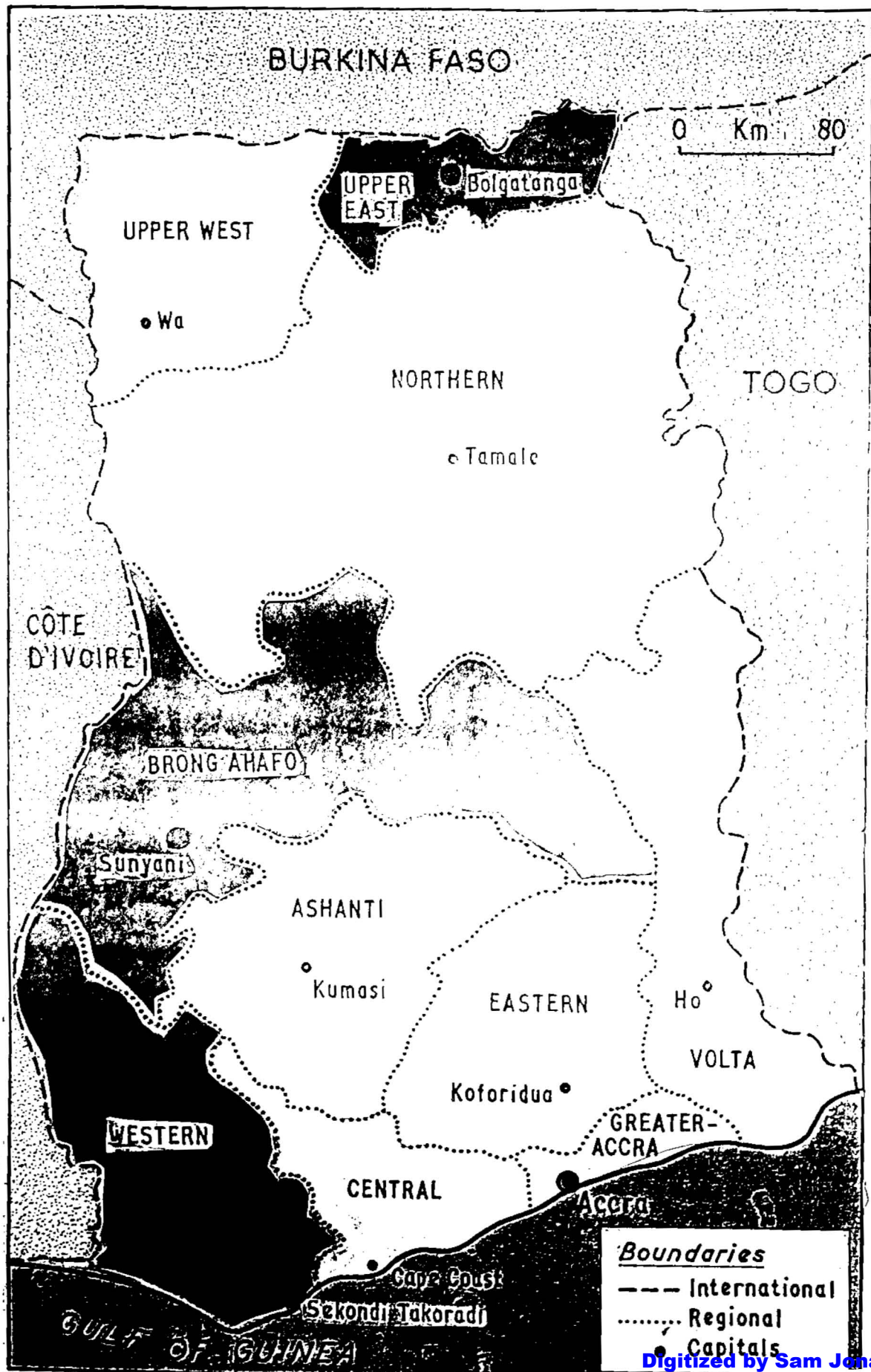
3.2 STUDY AREA

The study covered three (3) Regions in Ghana. They are the Western, Brong Ahafo and the Upper-East Regions of Ghana (Figure 1). This is to ensure wide coverage and enable comparative analysis to be made.

The Western Region

This region lies in the southwestern end of Ghana, and covers an area of 24,092 sq. kms. The Atlantic Ocean borders it in the south. It is the third largest Region and occupies 16.2 percent of Ghana's total land area. Western Region has the seventh highest population of 1,136,930 (1984-census) in Ghana. Crop production dominates livestock and poultry production. Its climate and geographical position favour the production of tree crops, tubers, grains and pulses. Many rivers and its topography makes inland fish farming favourable. It has a bimodal rainfall pattern.

Figure 1. The Map of Ghana showing the Administrative Regions (shaded) covered in the study



The Brong Ahafo Region

This region lies, almost, in the Midwestern portion of Ghana with a land area of 38,550 sq km occupying about 10 percent of the country's total land area. The human population, as at 1984, was 1,194,386 which is the 5th highest in the country. The production of some tree crops, grains, tubers and livestock and poultry is favoured.

The Upper East Region

The region occupies the Northeastern corner of Ghana with a land area of 8,676 sq.km, the 9th largest and takes about 3.6 percent of the total land area of the country. Its human population (1984 censuses) is 628,731 which is the 9th highest in Ghana. It has an unimodal rainfall pattern.

Cereals and pulses are the major crops grown and crop production lags behind livestock and poultry production. The seasonality of crop production is more pronounced than the other two study areas.

3.3 TARGET POPULATION

The population for this study consisted of the agricultural extension supervisors (ie District Directors, District Development Officers and Subject Matter Specialists) and the agricultural extension agents in the District Agricultural Development Units (DADU) of the Ministry of Food and Agriculture in Ghana.

3.4 SAMPLING

The three regions used for this study ie, Western, Brong Ahafo and Upper East Regions, were randomly selected from the ten regions in Ghana. All the Supervisors and extension agents

in all the District Agricultural Development Units in the selected regions were involved in the study. Table 3.1. gives the number of Agricultural Extension Agents of the Agricultural Extension Department of the Ministry of Food and Agriculture in the three Regions as at April 1997.

Table 3.1. Number of Agricultural Extension Agents in the areas of study as at 30th April, 1997.

Region	Number of Extension Agents
Western Region	115
Brong Ahafo Region	166
Upper East Region	68
Total	349

Source: MOFA, Ghana, Dept. of Agric.Extension, April 1997.

3.5 RESEARCH INSTRUMENTATION

Two separate questionnaires were developed and used to collect data from supervisors and extension agents (appendices III & IV). These instruments were adapted from that used by Pezeshki-Raad (1993) which was a review of what was developed by Gonzalez (1982), Easter (1985), Ogondo (1984) and Ayewoh (1983). They consisted of two (2) sections. Section I consisted of Eight (8) competency categories containing a total of 100 competencies. Items in this section were rated on a five point Likert-type scale that ranged from 1 = lack of competency, 2 = low competency, 3 = moderate competency, 4 = high competency and 5 = very high competency. The Eight competency categories are; Administration, Programme Planning, Program Execution, Teaching, Communication, Understanding Human Behaviour, Maintaining Professionalism and Evaluation.

In addition, the questionnaires for Supervisors also enquired as to when supervisors acquired those competencies (ie before the job or on-the-job) and when they perceive as the most ideal time to learn those competencies (ie Pre-service or in-service).

Section II contained items that were used to seek information about demographic and professional characteristics of respondents.

Content validity was ensured by specialists' review and test of reliability was done using extension personnel who had just been admitted for a degree program at the Sasakawa Centre of the University of Cape Coast. These personnel, until their enrolment into the University, occupied various positions and performed various functions in the Ministry of Food and Agriculture.

Table 3.2. Shows the reliability coefficients of the eight competency categories. The Cronbach's alpha coefficients ranged from 0.7448 to 0.9242.

Table 3.2. Cronbach's Alpha Reliability Test Results for summated subscales.

Competency Category	No. Of Items	Sample Size	Cronbach's Alpha
Administration	21	292.0	0.8786
Programme Planning	8	294.0	0.8829
Programme Execution	7	294.0	0.7689
Teaching	18	294.0	0.8835
Communication	15	294.0	0.8767
Understanding Human Behaviour	12	294.0	0.9242
Maintaining Professionalism	4	294.0	0.7448
Evaluation	15	294.0	0.8489

3.6 RESEARCH VARIABLES

In this study the variables are the demographic characteristics and the 100 competency items grouped into eight (8) categories as:

- a. administration - using a working knowledge of extension philosophy, objectives and procedures
- b. Program Planning:- designing educational experiences based on clientele (farmers, staff, etc) needs, interests and problems.
- c. Program execution:- utilizing resources to provide learning experiences.
- d. Teaching:- facilitating the learning experiences of extension clientele.
- e. communication:- informing staff and extension clientele of the images, accomplishments, and purposes of the program.
- f. Understanding human behaviour:- working successfully with staff and clientele.
- g. Maintaining professionalism:- developing plans for continuing education to enhance job performance.
- h. evaluation:- Collecting, analyzing and interpreting information to determine the strengths and weaknesses of a program.

3.7 DATA COLLECTION PROCEDURES

A letter from the office of the National Director of Agricultural extension was sent to the Regional Directors of Agriculture requesting them to assist in the administration of the questionnaires and data collection.

The questionnaires were sent personally to the Regional Directors in the selected regions. They, in turn, administered them to respondents through all the district Directors in their regions. They were returned through the same channel. In some cases direct contacts were made with

District Directors to retrieve questionnaires which were unduly delayed. Regular visits and telephone calls were made during the data collection to ensure greater response. Questionnaires were administered in January, 1998 and respondents were requested to return them by the close of February, 1998. The bulk of them was retrieved in June 1998. By the end of 1997 the technical staff strength had increased because of the addition of technical staff from the Subject Matter Departments of the Ministry of Food and Agriculture. Enough questionnaires (400) were sent out to the respondents. A total of 294 responses were retrieved from the three regions.

Table 3.3 shows the details.

Table 3.3. Number of Questionnaires Administered to the Regions and the corresponding responses.

	No. Administered	No. Returned
Western	140	138
Brong Ahafo	190	107
Upper East	70	49
Total	400	294

The response was higher in the Western Region than in the two (2) other Regions. Because it is the researcher's home Region he could make more follow-up visits during data collection. Though Upper East Region is farther than the Brong Ahafo Region, the response rate was higher and this can be attributed to the fewer number of districts and their relative ease of accessibility.

3.8 DATA PROCESSING AND ANALYSIS

All the questionnaires received were brought back to the University of Cape Coast and screened. Usable data from questionnaires were analyzed using the Statistical Package for Social Science Data Analysis (SPSS). The following statistical procedures were used: Descriptive correlational statistics such as frequencies, percentages, means and standard deviations.

A t-test was used to determine the significance of differences between the mean perceptions of the supervisors and extension agents of the competencies of supervisors.

ANOVA and t-tests were used to determine the differences on distribution on demographic characteristics and the self perceived competencies of supervisors.

Correlational Analysis was used to determine the associations among the various competency categories.

The alpha level was established at 0.05.

CHAPTER 4

RESULTS AND DISCUSSION

The chapter describes the demographic and professional characteristics of the respondents: Agricultural Extension Supervisors and Extension Agents. It begins with the purpose of the study.

4.1 Purpose of the study

The purpose of this study is to examine the competency levels of and identify the competencies needed by agricultural extension supervisors in the Ministry of Food and Agriculture in Ghana.

It is guided by the following objectives:

1. To determine the competency levels of supervisors as perceived by themselves and their extension agents.
2. To compare the self-perceived competency levels by supervisors with those as perceived by the agents.
3. To identify the competency needs of supervisors in agricultural extension.
4. To determine the differences on distribution on personal characteristics of supervisors and their self-perceived competencies.
5. To determine when the supervisors acquired the various competencies.
6. To determine from extension supervisors when they perceive as the best time to learn the competencies.
7. To determine the degree of association among the various competency categories.

4.2 DEMOGRAPHIC AND PROFESSIONAL CHARACTERISTICS OF RESPONDENTS

This section gives the detailed description of the respondents including

- age
- gender
- marital status
- highest educational level
- whether supervisors have had a course in agricultural administration or management
- years of experience in the Ministry of Food and Agriculture
- title as supervisor
- percent of office time used for administrative and field work
- major areas of responsibility of respondents
- number of extension personnel supervised
- area of residence
- where respondents spent most of their youth
- years of other work experience
- number of short courses undertaken

Details based on the three regions used in the study are given. In all, 221 extension agents and 73 supervisors were involved. There were 38 supervisors and 100 agents from the Western Region, 22 supervisors and 85 agents from the Brong Ahafo Region and 13 supervisors and 36 agents from the Upper East Region. The total number of respondents was therefore 294.

4.2.1 Age

In the Western Region, 8.1% of supervisors and 4.2% of extension agents were between 20 and 29 years of age (table 4.1). Sixty-two percent (62.2%) of supervisors and 50% of extension agents were between 30 and 39 years. Nineteen percent (18.9%) of supervisors and

34.4% of extension agents were between 40 and 49 years while 10.8% of supervisors and 11.4% of extension agents were between 50 and 59 years of age. The average age of the supervisors in the Western region was 36.9 years while that of extension agents was 38.3 years with an overall mean age of 37.8 years (Table 4.2).

In the Brong Ahafo Region, 11.9% of the extension agents were found between 20 and 29 years of age. 45.5% of supervisors and 47.6% of agents were between 30 and 39 year category while 45.5% supervisors and 34.5% of the agents were between 40 and 49 years. Nine percent (9.0%) of the supervisors and six percent (6.0%) of the agents were between 50 and 59 years of age (Table 4.1). The mean age of supervisors and extension agents were 39.8 years and 37.8 years, respectively, with an overall average age of 38.2 years (table 4.2).

The picture in the Upper East Region, as shown in table 4.1, is as follows: About eight percent (7.7%) of supervisors and three percent (3.0%) of extension agents were between 20 and 29 years, 15.4% of supervisors and 27.8% of agents were between 30 and 39 years. Sixty-nine percent (69.2%) supervisors and 50.0% of agents were between 40 and 49 years while about eight percent (7.7%) of supervisors and 19.4% of the agents were between 50 and 59 years of age. The average age of supervisors was 43.0 years and that of the agents was 42.4 years. The overall average age of respondents in the Brong Ahafo Region was 42.6 year (Table 4.2).

4.2.2 Gender

In the Western Region, males formed 92.1% and females formed 7.9% of the supervisors, while males formed 96.0% and females formed four percent (4.0%) of the agents (Table 4.1). In the Brong Ahafo Region, the supervisors were 95.5% males and 4.5% females while the agents were 95.2% males and 4.8% females. In the Upper East Region, supervisors were all males (100.0%) while extension agents comprised 94.4% males and 5.6% females.

4.2.3 Marital Status

Extension supervisors in the Western Region was made up of 88.9% married officers with about eleven percent (11.1%) single. Ninety-four (94.0%) of the agents were married while 6.0% were either single or divorced (Table 4.1).

In the Brong Ahafo Region, 95.5% of the supervisors were married while about five percent (4.5%) were divorcees. 83.5% of the agents were married with about twelve percent (11.7%) unmarried. about five percent (4.8%) were either divorced or widowed (Table 4.1).

The situation in the Upper East Region was that all supervisors and about three percent (2.8%) of the agents were married, about eighty nine percent (88.9%) of the agents were unmarried and about six percent (6.4%) of the agents were either divorced or widowed (Table 4.1).

4.2.4 Highest Educational Level Attained

Educational level of respondents were either certificate in agriculture, Diploma in agriculture, Bachelors degree in agriculture or Master's degree in agriculture in all the three regions. In the Western Region, the figures were 68.4%, 21.1%, 7.9% and 2.6% respectively for supervisors and 71.0%, 14.0%, 9.0% and 6.0%, respectively, for the agents (Table 4.1). In the Brong Ahafo Region the figures for certificate, Diploma, B.Sc. and M.Sc. were 63.6%, 18.2%, 9.1% and 9.1% respectively for supervisors while those of the agents were 76.1%, 15.5%, 6.0% and 2.4% respectively. The situation in the Upper East Region for the certificate, Diploma, B.Sc. and M.Sc. were 69.2%, 15.4%, 7.7% and 7.7% respectively for supervisors and 66.7%, 19.4%, 8.3% and 5.6% respectively for the agents (Table 4.1).

Table 4.1: Demographic Characteristics of Respondents in the Regions.

Characteristics	Western Region				Brong Ahafo Region				Upper East Region			
	Supervisors		Agents		Supervisors		Agents		Supervisors		Agents	
	N	%	N	%	N	%	N	%	N	%	N	%
Age (years)												
20 - 29	3	8.1	4	4.2	0	0.0	10	11.9	1	7.7	1	2.8
30 - 39	23	62.2	48	50.0	10	45.5	40	47.6	2	15.4	10	27.8
40 - 49	7	18.9	33	34.4	10	45.5	29	34.5	9	69.2	18	60.0
50 - 59	4	10.8	11	11.4	2	9.0	5	6.0	1	7.7	7	19.4
Total	37	100.0	96	100.0	22	100.0	84	100.0	13	100.0	36	100.0
Gender												
Male	35	92.1	95	96.0	21	95.5	80	95.2	13	100.0	34	94.4
Female	3	7.9	4	4.0	1	4.5	4	4.8	0	0.0	2	5.6
Total	38	100.0	99	100.0	22	100.0	84	100.0	13	100.0	36	100.0
Marital Status												
Married	32	89.9	93	94.0	21	95.5	71	83.5	13	100.0	1	2.8
Single	4	11.1	4	4.0	0	0.0	10	11.8	0	0.0	32	88.9
Divorced	0	0.0	2	2.0	1	4.5	2	2.4	0	0.0	2	5.6
Widowed	0	0.0	0	0.0	0	0.0	2	2.4	0	0.0	1	2.8
Total	36	100.0	99	100.0	22	100.0	85	100.0	13	100.0	36	100.0
Highest Educational Level												
Cert. in Agric. Diploma	26	68.4	71	71.0	14	63.6	64	76.1	9	69.2	24	66.7
B.Sc.	8	21.1	14	14.0	4	18.2	13	15.5	2	15.4	7	19.4
M.Sc.	3	7.9	9	9.0	2	9.1	5	6.0	1	7.7	3	8.3
Total	1	2.6	6	6.0	2	9.1	2	2.4	1	7.7	2	5.6
Total	38	100.0	100	100.0	22	100.0	84	100.0	13	100.0	36	100.0
Course in Administration												
Yes	5	13.2	9	9.0	3	7.9	6	6.0	2	5.3	5	5.0
No	33	86.8	91	91.0	35	92.1	94	94.0	36	94.7	95	95.0
Total	38	100.0	100	100.0	38	100.0	100.0	100.0	38	100.0	100	100.0
Years of Experience in MOFA												
1 - 10	19	52.7	39	39.0	8	36.4	33	38.9	1	7.7	8	22.2
11 - 20	13	36.1	44	44.0	12	54.6	33	38.8	9	69.2	17	47.2
21 - 30	3	8.4	15	15.0	1	4.5	19	22.3	2	15.4	7	19.4
31 - 40	1	2.8	2	2.0	1	4.5	0	0.0	1	7.7	4	11.2
Total	36	100.0	100	100.0	22	100.0	35	100.0	13	100.0	36	100.0

Table 4.1: Demographic Characteristics of Respondents in the Regions.

Characteristics	Western Region				Brong Ahafo Region				Upper East Region			
	Supervisors		Agents		Supervisors		Agents		Supervisors		Agents	
	N	%	N	%	N	%	N	%	N	%	N	%
Title as Supervisor												
Dev. Officer	22	57.9	-	-	13	59.1	-	-	7	53.8	-	-
SMS	7	18.4	-	-	0	0.0	-	-	2	15.4	-	-
Dist. Director	8	21.1	-	-	4	18.2	-	-	2	15.4	-	-
Special Duties	1	2.6	-	-	5	22.7	-	-	2	15.4	-	-
Total	38	100.0	-	-	22	100.0	-	-	13	100.0	-	-
% of time for Office work												
0 - 25	20	57.1	57	61.3	11	57.9	47	66.2	3	25.0	21	67.8
26 - 50	14	40.0	30	32.2	6	31.6	18	25.4	7	58.4	8	25.8
51 - 75	1	2.9	5	5.4	2	10.5	4	5.6	1	8.3	1	3.2
76 - 100	0	0.0	1	1.1	0	0.0	2	2.8	1	8.3	1	3.2
Total	35	100.0	93	100.0	19	100.0	71	100.0	12	100.0	31	100.0
% of time for Field work												
0 - 25	0	0.0	1	1.0	0	0.0	2	2.4	0	0.0	1	2.9
26 - 50	2	5.4	9	9.2	3	13.6	6	7.2	1	8.4	1	2.9
51 - 75	16	43.2	33	33.7	5	22.7	24	28.9	7	58.3	12	34.2
76 - 100	19	51.4	55	56.1	14	63.7	51	61.5	4	33.3	21	60.0
Total	37	100.0	28	100.0	22	100.0	83	100.0	12	100.0	35	100.0
Major Area of Responsibility												
Gen. Agric.	28	73.7	76	76.0	19	86.4	72	84.7	9	69.2	30	83.3
Livestock	4	10.5	7	7.0	2	9.1	6	7.1	2	15.4	3	8.3
Crops	2	5.3	10	10.0	1	4.5	7	8.2	2	15.4	0	0.0
WIAD	1	2.6	1	1.0	0	0.0	0	0.0	0	0.0	1	2.8
Fisheries	1	2.6	3	3.0	0	0.0	0	0.0	0	0.0	1	2.8
Mon. & Eval.	1	2.6	2	2.0	0	0.0	0	0.0	0	0.0	1	2.8
Quarantine	1	2.6	1	1.0	0	0.0	0	0.0	0	0.0	0	0.0
Total	38	100.0	99	100.0	22	100.0	85	100.0	13	100.0	85	100.0
No. Of Ext. Personnel												
0 - 20	6	85.7	-	-	5	100.0	-	-	1	50.0	-	-
21 - 40	0	0.0	-	-	0	0.0	-	-	1	50.0	-	-
41 - 60	0	0.0	-	-	0	0.0	-	-	0	0.0	-	-
61 - 80	1	14.3	-	-	0	0.0	-	-	0	0.0	-	-
81 - 100	0	0.0	-	-	0	0.0	-	-	0	0.0	-	-
Total	7	100.0	-	-	5	100.0	-	-	2	100.0	-	-

Table 4.1: Demographic Characteristics of Respondents in the Regions.

Characteristics	Western Region				Brong Ahafo Region				Upper East Region			
	Supervisors		Agents		Supervisors		Agents		Supervisors		Agents	
	N	%	N	%	N	%	N	%	N	%	N	%
Residence in your Area of Work												
Yes	32	86.5	86	88.7	21	95.5	81	95.3	13	100.0	28	80.0
No	5	13.5	11	11.3	1	4.5	4	4.7	0	0.0	7	20.0
Total	37	100.0	97	100.0	22	100.0	85	100.0	13	100.0	35	100.0
Residence as a youth												
Rural	10	27.8	39	39.8	11	50.0	28	35.0	7	53.8	21	60.0
Urban	12	33.3	24	24.5	6	27.3	31	38.8	3	23.1	5	14.3
Semi-urban	14	38.9	35	35.7	5	22.7	21	26.2	3	23.1	9	25.7
Total	36	100.0	98	100.0	22	100.0	80	100.0	13	100.0	35	100.0
Years of other Work Experience												
1 - 5	14	93.3	29	93.5	6	100.0	25	92.6	6	60.0	11	84.6
6 - 10	1	6.7	2	6.5	0	0.0	2	7.4	3	30.0	2	15.4
11 - 15	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
16 - 20	0	0.0	0	0.0	0	0.0	0	0.0	1	10.0	0	0.0
Total	15	100.0	31	100.0	6	100.0	27	100.0	10	100.0	13	100.0
No. of Short Courses Less than One Month												
1 - 5	10	76.9	44	93.6	12	80.0	34	85.0	8	100.0	18	81.8
6 - 10	3	23.1	3	6.4	3	20.0	4	10.0	0	0.0	3	13.6
11 - 15	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
16 - 20	0	0.0	0	0.0	0	0.0	2	5.0	0	0.0	1	4.6
Total	13	100.0	47	100.0	15	100.0	40	100.0	8	100.0	22	100.0
No. of Short Courses One Month or More												
1 - 5	13	100.0	16	100.0	5	100.0	16	100.0	6	100.0	4	100.0
6 - 10	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Total	13	100.0	16	100.0	5	100.0	16	100.0	6	100.0	4	100.0

4.2.5 Course in Agricultural Administration or Management

As to whether respondents have had a course in administration or management, 13.2% of the supervisors and 9.0% of the agents responded positively in the Western Region. About eight percent (7.9%) of supervisors and 6.0% of the agents responded positively in the Brong Ahafo Region while 5.3% of supervisors and 5.0% of the agents responded in the affirmative in the Upper East Region (table 4.1).

4.2.6 Years of Experience in the Ministry of Food and Agriculture (MOFA)

Table 4 shows the details of the above in the regions. In the Western Region, 52.7% of supervisors and 39.0% of agents had between one to 10 years experience, 36.1% of supervisors and 44.0% of agents had between 11 and 20 years experience. About eight percent (8.4%) of supervisors and 15.0% of agents had between 21 and 30 years experience while 2.8% of supervisors and 2.0% of agents had between 31 and 40 years experience. The overall average years of experience of all respondents in the region was 13.3 years (Table 4.2).

In the Brong Ahafo Region, 36.4% of supervisors and 38.9% of agents had between one and 10 years experience, 54.6% of supervisors and 38.8% of agents had between 11 and 20 years of experience. About five percent (4.5%) of supervisors and 22.3% of agents had between 21 and 30 years of experience while about five percent (4.5) of supervisors had between 31 and 40 years of experience. All the respondents in the Brong Ahafo Region had an average of 13.4 years of experience (Table 4.2).

About eight percent (7.7%) of the supervisors and 22.2% of the agents in the Upper East region had experience of between one and 10 years. Sixty-nine (69.2%) of the supervisors and 47.2% of the agents had between 11 and 20 years of experience, 15.4% and 19.4% of supervisors and agents respectively had between 21 and 30 years experience. About eight percent (7.7%) and 11.2% of supervisors respectively had between 31 and 40 years of experience. The average years

Table 4.2: Descriptive Profile of Respondents in the Regions for Age, Years of experience, % of time for office & field work, No. of Extension personnel supervised, and Years of other work experience.

Variable		Western Region					Brong Ahafo Region					Upper East Region				
		N	Mean	SD	Range Min. Max.		N	Mean	SD	Range Min. Max.		N	Mean	SD	Range Min. Max.	
Age (years)	Supervisors	38	36.9	9.4	26.0	57.0	22	39.8	6.2	33.0	58.0	13	43.0	6.2	28.0	53.0
	Agents	100	38.3	10.5	25.0	56.0	85	37.8	8.2	25.0	58.0	36	42.4	7.5	27.0	59.0
	Total	138	37.8	10.2	25.0	57.0	107	38.2	7.9	25.0	58.0	49	42.6	0.1	27.0	59.0
Years of experience	Supervisors	38	10.9	7.9	1.5	34.0	22	14.0	6.3	6.0	33.0	13	18.7	6.6	2.0	31.0
	Agents	99	14.1	7.5	2.0	33.0	85	13.2	7.6	1.0	30.0	36	18.8	8.7	2.0	38.0
	Total	137	13.3	7.7	1.5	34.0	107	13.4	7.4	1.0	33.0	49	18.8	8.1	2.0	38.0
% of time for office work	Supervisors	38	22.3	15.4	2.0	60.0	22	23.6	18.5	5.0	60.0	13	34.6	24.7	10.0	100.0
	Agents	100	23.5	16.1	5.0	80.0	35	21.6	18.5	2.0	85.0	36	23.1	21.3	0.0	100.0
	Total	128	23.1	15.8	2.0	80.0	107	22.0	18.3	2.0	85.0	49	26.2	22.6	0.0	100.0
% of time for field work	Supervisors	38	75.1	19.5	40.0	100.0	22	76.4	18.5	40.0	100.0	13	65.4	24.7	40.0	100.0
	Agents	100	74.5	19.1	20.0	100.0	85	75.9	21.6	15.0	100.0	36	76.9	21.2	1.0	100.0
	Total	135	74.7	19.1	20.0	100.0	107	76.0	20.9	15.0	100.0	49	73.8	22.5	1.0	100.0
No. of Ext. personnel supervised	Supervisors	10	12.5	21.4	7.0	72.0	25	14.2	8.6	8.0	25.0	3	13.3	16.7	8.0	32.0
	Agents	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Total	10	12.5	21.4	7.0	72.0	25	14.2	8.6	8.0	25.0	3	13.3	16.7	8.0	32.0
Years of other work experience	Supervisors	38	0.5	0.7	0.0	8.0	22	0.6	1.3	0.0	5.0	13	4.1	4.5	0.0	16.0
	Agents	100	0.8	1.6	0.0	8.0	85	0.9	1.7	0.0	7.0	36	1.0	1.7	0.0	6.0
	Total	138	0.9	1.6	0.0	8.0	107	0.9	1.7	0.0	7.0	49	1.8	3.0	0.0	16.0

of experience for all the respondents in the region was 18.8 (Table 4.2).

4.2.7 Title as a Supervisor

In this study the supervisors in the districts were made up of District Directors, Subject Matter Specialists (SMSs), Development Officers and Officers assigned special duties including management information systems and Agricultural economics.

In the Western Region, 57.9 of the supervisors were Development Officers, 18.4% were SMSs, 21.1% were District Directors and 2.6% were in charge of special duties.

In the Brong Ahafo Region, 59.1% of the supervisors, were Development Officers, 18.2% were District Directors and 22.7% were for special duties. There were no SMS responses.

The situation in the Upper East Region was 53.8% Development Officers, 15.4% SMSs, 15.4% District Directors and another 15.4% for special duties (Table 4.1).

4.2.8 Time Allocation for Office or Administrative Work

Ninety-seven percent (97.1%) of the supervisors in the Western Region used between zero and 50% of their office time for administrative work while the remainder used more than 50.0% of their time for that. A greater proportion (93.5%) of the agents used less than 50.0% of their time for office work (Table 4.1).

In the Brong Ahafo Region, larger proportions of supervisors (89.5%) and agents (91.6%) used not more than 50.0% of their time for office work.

The situation was similar in the Upper East Region. Eighty-three percent (83.4%) of supervisors and 93.6% of agents used not more than 50.0% of their time for office work.

The reverse was true regarding the percent of work time used for field work in the three regions (Table 4.1).

The average percent of time used by supervisors and agents for office work were 23.1% for Western Region, 22.0% for Brong Ahafo Region and 26.2% for the Upper East Region (Table 4.2).

The average time used for field or technical duties for the supervisors and agents together were 74.7% for Western Region, 76.0% for Brong Ahafo Region and 73.8% for Upper East Region (Table 4.2).

4.2.9 Major Area of Responsibility

In the Western Region, 73.7% of supervisors and 76.7% of agents were generalists while the remainder were in subject matter areas including Livestock, Crops, Women in Agricultural Development (WIAD), Fisheries, monitoring & Evaluation and Quarantine (Table 4.1).

In the Brong Ahafo Region, 86.4% of supervisors and 84.7% of agents were generalists with the remaining being specialists. Sixty-nine (69.2%) of supervisors and 83.3 of agents in the Upper East Region were generalists with the remaining being specialists.

4.2.10 Number of Extension Agents Supervised

Eighty-six (85.7%) of supervisors supervised between zero and 20 extension agents in the Western Region while the rest supervised larger numbers (Table 4.1). Sixty percent (60.0%) of supervisors controlled not more than 20 extension personnel in the Brong Ahafo Region. Forty percent (40.0%) controlled between 21 and 40 extension personnel.

In the Upper East Region 50.0% controlled not more than 20 personnel and the other 50.0% personnel and the other 50.0% controlled between 21 and 40 extension agents.

The average number of extension agents per supervisor in the Western, Brong Ahafo and Upper East Regions were 12.5, 14.2 and 13.3 respectively.

4.2.11 Area of Residence

About fourteen percent (13.5%) of supervisors and 11.3% of extension agents in the Western Region, resided outside their area of operation. The figures were 27.3% and 38.8% for supervisors and Extension Agents in the Brong Ahafo Region and in the Upper East Region, only 20.0% of extension agents resided outside their area of operation (Table 4.1).

4.2.12 Residence as a Youth

As to whether respondents had rural, urban or semi-urban background, 27.8%, 33.3% and 38.9% of supervisors belonged to the three areas in the Western region (Table 4.1). The distribution for the extension agents were 39.8%, 24.5% and 35.7% respectively.

In the Brong Ahafo Region 50.0% of supervisors had rural background while about equal proportions (27.3% and 22.7%) had urban and semi-urban background. Thirty-five percent (35.0%), 38.8% and 26.2% of agents had rural, urban and semi-urban backgrounds respectively.

In the Upper East Region, the figures were similar to those of the Brong Ahafo Region ie, 53.8%, 23.1% and 23.1%, respectively, with respect to supervisors. Sixty percent (60.0%), 14.3% and 25.7% of the agents had urban, rural and semi-urban backgrounds (Table 4.1).

4.2.13 Years of Other Work Experience

All supervisors and extension agents who had other work experience had between one and 10 years work experience in the Western Region (Table 4.1). The situation is similar in the other two regions.

All respondents had an average of about a year in the Western and Brong Ahafo Regions while the average for the Upper East Region was about two years (Table 4.2). They worked in public organisations like the Education Service (as pupil teachers), in the Banks (as clerks), in farms (as farm attendants) and sales agents in trading organisations.

4.2.14 Number of Short Courses Attended

About 77.0% (76.9%) of the supervisors in the Western Region, 80.0% in the Brong Ahafo Region and 100.0% in the Upper East Region have had between one and five courses that lasted less than one month. The rest of the supervisors have had between six and ten courses. The picture is similar for the extension agents (Table 4.1). Almost all those who have had short courses that lasted less than one month were in the one to five category.

Almost all the supervisors and agents who had attended courses that lasted one month or more had not exceeded five courses (Table 4.1).

4.2.15 Summative Demographic Characteristics of Respondents

In all 73 supervisors and 221 extension agents were involved in the study. In this section, the characteristics of all the 221 extension agents are reported alongside those of the 73 supervisors.

Age

About Six percent (5.6%) of supervisors and seven percent (6.9%) of agents were between 20 and 29 years of age. Forty nine percent (48.6%) of supervisors and 46.2% of agents were between 30 to 39 years. Thirty six (36.1) percent of supervisors and 37.0% of agents were between 40 and 49 years while the rest were between 50 and 59 years. A total of 83.0% of the respondents belonged to the 30 to 49 year group (Table 4.3). The overall mean age of the respondents was 38.8 years.

Gender

About equal proportions of supervisors and agents (5.5% and 4.6%) respectively, were females. A total of five percent (4.8%) of all the respondents in this study was female (Table 4.3).

Marital Status

Ninety three percent of supervisors and 89.5% of agents were married. A total of ninety percent (90.3%) of the respondents were married while the rest were either single, divorced or widowed (Table 4.3).

Highest Educational Level Attained

Forty nine percent, 14.0%, 6.0% and 4.0% of supervisors and 72.3%, 15.5%, 7.7% and 4.5% of agents have had certificate, diploma, B.Sc. and M.Sc. educations respectively (Table 6). Seventy one percent of all respondents have had certificate in agriculture, sixteen percent (16.4%) have had diploma, eight percent (7.8%) have had B.Sc. degree and five percent (4.8%) have had M.Sc. degree as the highest level of education (Table 4.3).

Percent of Time Used for Office and Field Work

More than one half (56.2% of supervisors and 64.1% of agents) use 25% or less of their working time for office or administrative work. Most of their working hours are used for field or technical work (Table 4.3).

Major Area of Responsibility

Seventy seven percent (76.7%) of the supervisors and 80.9% of the agents are Generalists while the rest are Specialists of Livestock, crops, Women in Agricultural Development (WIAD), Fisheries, Monitoring and Evaluation and Quarantine (Table 4.3). In all, 79.9% of respondents were for General Agriculture. About eight percent (8.2%) were for Livestock and Poultry.

About eight percent (7.5) were for Crops, and the remaining 4.4% were for WIAD, Fisheries, Monitoring & Evaluation and Quarantine.

Courses in Agricultural Administration or Management

About 14 percent (13.7%) of supervisors and 9.0% of agents have had training in agricultural administration or management. About ten percent (10.2%) of all respondents have had training in agricultural administration or management (Table 4.3).

Table 4.3 Summary of Demographic Characteristics of Supervisors and Extension Agents.

Characteristics		Supervisors		Extension Agents		Total	
		N	%	N	%	N	%
Age (years)	20 - 29	4	5.6	15	6.9	19	6.6
	30 - 39	35	48.6	98	45.4	133	46.2
	40 - 49	26	36.1	80	37.0	106	36.8
	50 - 59	7	9.7	23	10.7	30	10.4
	Total	72	100.0	216	100.0	288	100.0
Gender	Male	69	94.5	209	95.4	278	95.2
	Female	4	5.5	10	4.6	14	4.8
	Total	73	100.0	219	100.0	292	100.0
Marital Status	Married	66	93.0	196	89.5	262	90.3
	Single	4	5.6	16	7.3	20	6.9
	Divorced	1	1.4	5	2.3	6	2.1
	Widowed	0	0.0	2	0.9	2	0.7
	Total	71	100.0	219	100.0	290	100.0
Highest educational level	Certificate	49	67.1	159	72.3	208	71.0
	Diploma	14	19.2	34	15.5	48	16.4
	B.Sc	6	8.2	17	7.7	23	7.8
	M.Sc.	4	5.5	10	4.5	14	4.8
	Total	73	100.0	210	100.0	293	100.0

Table 4.3 Summary of Demographic Characteristics of Supervisors and Extension Agents.

Characteristics		Supervisors		Extension Agents		Total	
		N	%	N	%	N	%
% of time for Administrative work	0 - 25	41	56.2	125	64.1	166	61.9
	36 - 50	27	36.9	56	28.7	83	31.0
	51 - 75	4	5.5	9	4.6	13	4.9
	76 - 100	1	1.4	5	2.6	6	2.2
	Total	73	100.0	195	100.0	268	100.0
% of time for Technical work	0 - 25	2	2.7	5	2.3	7	2.4
	36 - 50	6	8.2	16	7.4	22	7.6
	51 - 75	28	38.4	69	31.8	97	33.4
	76 - 100	37	50.7	127	58.5	164	56.6
	Total	73	100.0	217	100.0	290	100.0
Major area of responsibility	General Agric.	56	76.7	178	80.9	234	79.9
	Livestock	8	11.0	16	7.3	24	8.2
	Crops	5	6.8	17	7.7	22	7.5
	WIAD	1	1.4	2	0.9	3	1.0
	Fisheries	1	1.4	1	0.5	2	0.7
	Monitoring & Evaluation	1	1.4	4	1.8	5	1.7
	Quarantine	1	1.4	2	0.9	3	1.0
	Total	73	100.0	220	100.0	293	100.0
Course in Administration	Yes	10	55.6	20	41.7	30	45.5
	No	8	44.6	28	58.3	36	54.5
	Total	18	100.0	48	100.0	66	100.0

Table 4.3: Summary of Demographic Characteristics of Supervisors and Extension Agents.

Characteristics	Supervisors		Extension Agents		Total	
	N	%	N	%	N	%
Years of experience in MOFA	1 - 10	39.4	80	36.2	108	37.0
	11 - 20	47.9	94	42.5	128	43.8
	21 - 30	8.5	41	18.6	47	16.1
	31 - 40	4.2	6	2.7	9	3.1
	Total	100.0	221	100.0	292	100.0
Title as supervisor	Dev. Officer	60.9	-	-	42	60.9
	SMS	13.0	-	-	9	13.0
	Dist. Director	17.4	-	-	12	17.4
	Special Duties	8.7	-	-	6	8.7
	Total	100.0	-	-	69	100.0
No. of Extension personnel supervised	0 - 20	71.4	-	-	10	71.4
	21 - 40	21.4	-	-	4	21.4
	41 - 60	6.7	-	-	0	0.0
	61 - 80	7.2	-	-	1	7.2
	81 - 100	0.0	-	-	0	0.0
Total	100.0	-	-	14	100.0	
Resident in area of work	Yes	91.7	195	89.9	261	90.3
	No	8.3	22	10.1	28	9.7
	Total	100.0	217	100.0	289	100.0

Table 4.3: Summary of Demographic Characteristics of Supervisors and Extension Agents.

Characteristics		Supervisors		Extension Agents		Total	
		N	%	N	%	N	%
Resident as a youth	Rural area	28	39.4	88	41.3	116	40.9
	Urban area	21	29.6	60	28.2	81	28.5
	Semi-rban area	22	31.0	65	30.5	87	30.6
	Total	71	100.0	213	100.0	284	100.0
Years of other work experience	1 - 5	26	83.9	65	91.5	91	89.2
	6 - 10	4	12.9	6	8.5	10	9.8
	11 - 15	0	0.0	0	0.0	0	0.0
	16 - 20	1	3.2	0	0.0	1	1.0
	Total	31	100.0	71	100.0	102	100.0
No. of short courses less than 1 month	1 - 5	33	82.5	96	88.0	129	86.6
	6 - 10	7	17.5	10	9.2	17	11.4
	11 - 15	0	0.0	0	0.0	0	0.0
	16 - 20	0	0.0	3	2.8	3	2.0
	Total	40	100.0	109	100.0	149	100.0
No. of short courses 1 month or more	1 - 5	24	100.0	29	100.0	53	100.0
	6 - 10	0	0.0	0	0.0	0	0.0
	Total	24	100.0	29	100.0	53	100.0

Years of Experience in MOFA

Eighty seven percent (87.3%) of supervisors and seventy nine percent (78.7%) of agents have between one and twenty years of experience in the Ministry (Table 4.3). A total of 80.8% of respondents have between one and 20 years experience in the Ministry. The rest have between 21 and 40 years experience.

The average years of experience of supervisors is 13.2 while that of agents is 11.5. The average for all the respondents is 11.9 years.

Title as Supervisor

About sixty one percent (60.9%) of the supervisors were Development Officers, 13.0% were subject Matter Specialists, 17.4% were District Directors and 8.7% were for Special duties including Management Information Systems and Monitoring & Evaluation (Table 4.3).

Number of Extension Personnel Supervised

Seventy one percent (71.4%) of the supervisors supervise not more than 20 extension agents, twenty one percent (21.4%) supervise between 21 and 40 agents (Table 4.3). The rest (7.2%) of the supervisors supervised between 61 and 80 agents. The average span of control of supervisors in this study is fourteen (13.7%) extension agents.

Area of Residence

Ninety two percent (91.7%) of all the supervisors and ninety percent (89.9%) of all the agents are resident in their area of operation (Table 4.3). Ninety percent (90.3%) of all the respondents are resident in their area of operation. Ten percent (9.7%) stay outside their area of jurisdiction.

Residence as a Youth

Thirty nine percent (39.4%) of supervisors and 41.3% of extension agents had rural background, 29.6% of supervisors and 28.2% of agents had urban background. The remaining 31.0% of supervisors and 30.5% of the agents had semi-urban background (Table 4.3).

Forty one percent (40.9%) of all the respondents had rural background, 28.5% had urban background and 30.6% had semi-urban background.

Years of other Work Experience

A greater number of supervisors (57.5%) and agents (70.6%) had no other work experience. Most of the respondents who worked elsewhere before entering the Ministry of Food and Agriculture, ie, 35.6% of supervisors and 29.4% of agents, had worked for one to five years. About six percent (5.5%) of supervisors and 2.7% of agents had between six and 10 years of experience (Table 4.3).

About 65.0 % (65.3%) of all the respondents had no other work experience. Thirty one percent (30.7%) of all the respondents had between one and five years of experience while 3.7% had between six and ten years of work experience outside the Ministry of Food and Agriculture. Only one percent had more than ten years experience.

Number of Short Courses Attended

Almost one half of the supervisors and agents had not attended any short courses. About forty five percent (45.2%) of supervisors and 43.4% of agents had attended between one and five short courses that lasted less than one month (Table 4.3).About ten percent (9.6%) of supervisors and five percent (4.5%) of agents had attended between six and ten such short courses. In all, 50.7% of all the respondents had attended between one and 20 such courses. For courses that lasted one month or more, most of the 294 respondents (82.0%) had not attended any (Table 4.3). More supervisors (32.9%) than agents (13.1%) had attended such courses.

4.3 LEVELS OF SUPERVISORS' PROFESSIONAL COMPETENCIES AND DIFFERENCES IN COMPETENCIES AS PERCEIVED BY SUPERVISORS AND EXTENSION AGENTS

This section combines two specific objectives; 'Determining competency levels of supervisors and comparing self-perceived competencies with the perceptions of extension agents. These are based on the means of the ratings. Differences are determined using the t-test at the 0.05 level of significance.

Administration

In the Western Region, all the 21 competencies were rated between 'Moderate' (3.12) and 'High' (4.05). Differences between ratings by the two groups were not significant (Table 4.4).

The agents rated 'Managing time effectively' as highest (3.90) followed by 'Conducting staff meetings' (3.89) 'Placing extension personnel in their area of work' (3.89) and 'Supervising extension personnel' (3.82).

Supervisors ranked 'Conducting staff meetings' as the highest (4.05) followed by 'supervising extension personnel' (4.03), 'Managing time effectively' (3.92) and 'coordinating work schedules of staff' (3.82).

The lowest ranked administration competencies by extension agents were 'Supervising budget expenditure'(3.12), 'Assisting in budget preparation' (3.18) 'Orienting new staff members' (3.30) and 'Understanding how policies are formulated' (3.32). The lowest ranked competency by supervisors were 'Budget preparation' (3.24), 'Writing realistic goals for the extension programme' (3.26), 'Promoting inter-office communication' (3.29) and 'Orienting new staff members' (3.29). The grand mean perceptions of agents (3.53) and supervisors (3.55) did not differ significantly.

In the Brong Ahafo Region, all the competency items were rated between 'High' (4.32) and 'Moderate' (3.01). Both agents and supervisors ranked 'Conducting staff meetings'(4.13 and

Table 4.4: Means, Standard Deviations and Ranking for Administration Competencies by Position Title of Respondents in the Regions.

Administration Competency	Western Region						Brong Ahafo Region						Upper East Region								
	Agents N = 100			Supervisors N = 38			t	Agents N = 85			Supervisors N = 22			t	Agents N = 36			Supervisors N = 13			t
	Mean	SD	Rank	Mean	SD	Rank		Mean	SD	Rank	Mean	SD	Rank		Mean	SD	Rank	Mean	SD	Rank	
1. In-depth knowledge and understanding of the "Unified Agric. Extension system"	3.45	0.81	13	3.32	0.81	16	.87	3.08	1.03	20	3.64	0.85	7	-2.77*	3.11	1.06	12	3.31	0.95	10	-.62
2. Writing realistic goals for the extension programme	3.40	0.79	15	3.26	0.76	20	.93	3.24	1.03	14	3.23	1.07	20	.03	3.33	0.96	7	3.31	0.95	10	.08
3. Ability to manage scarce resources for optimum productivity	3.49	0.92	10	3.66	0.97	6	-.92	3.48	2.51	7	3.50	1.34	13	-.04	3.08	0.77	15	3.54	0.88	4	-1.65
4. Coordinating the use of equipment, facilities and resources with office staff	3.62	0.95	7	3.68	0.78	5	-.41	3.40	1.03	9	3.45	0.86	16	-.25	2.92	0.81	20	3.46	1.33	5	-1.39
5. Budget preparation	3.18	1.08	20	3.24	1.03	21	-.29	3.22	1.12	16	3.14	1.17	21	.32	2.94	1.09	19	3.08	1.55	13	-.28
6. Supervising budget expenditure	3.12	1.00	21	3.34	1.24	15	-.99	3.12	1.19	19	3.41	1.26	17	-.98	2.81	1.28	21	2.77	1.42	21	.08
7. Managing time effectively	3.90	0.86	1	3.92	0.91	3	-.12	3.72	0.91	4	4.14	0.94	2	-1.87	3.36	0.80	5	3.38	0.77	8	-.09

Scale: 1 = Lack of competence, 2 = Low competency, 3 = Moderate competency, 4 = High competency, 5 = Very high competency

*P ≤ 0.05

Table 4.4: Means, Standard Deviations and Ranking for Administration Competencies by Position Title of Respondents in the Regions.

Administration Competency	Western Region						Brong Ahafo Region						Upper East Region								
	Agents N = 100			Supervisors N = 38			t	Agents N = 85			Supervisors N = 22			t	Agents N = 36			Supervisors N = 13			t
	Mean	SD	Rank	Mean	SD	Rank		Mean	SD	Rank	Mean	SD	Rank		Mean	SD	Rank	Mean	SD	Rank	
8. Coordinating the work schedules of staff	3.75	0.90	5	3.82	0.61	4	-.49	3.79	0.90	3	3.95	0.95	3	-.74	3.66	0.83	2	3.38	1.39	8	.69
9. Supervising extension Personnel	3.82	0.88	4	4.03	0.68	2	-1.47	3.65	1.02	5	3.82	0.85	4	-.80	3.61	0.84	3	3.69	0.75	1	-.32
10. Placing extension personnel in their area of work	3.89	1.00	2	3.66	1.26	6	1.02	3.91	1.25	2	3.82	0.77	4	.41	3.39	1.08	4	3.00	1.16	15	1.06
11. Understanding how Policies are formulated	3.32	1.01	18	3.42	1.03	14	-.52	3.21	1.21	17	3.36	0.89	18	-.52	3.06	1.22	16	2.85	1.28	19	.51
12. Ability to identify Policies specific to your area(s) responsibility	3.39	0.96	16	3.32	0.99	16	.40	3.15	1.19	18	3.55	1.10	11	-2.03*	3.00	0.89	18	3.62	0.65	3	-2.63*
13. Conducting staff meetings	3.89	0.95	2	4.05	0.66	1	-1.14	4.13	1.16	1	4.32	0.85	1	-.96	3.78	1.07	1	3.69	1.11	1	.24
14. Promoting inter-office	3.67	3.82	6	3.29	1.09	18	.90	3.35	1.20	10	3.68	0.91	6	-1.43	3.11	1.19	12	3.00	1.16	15	.29

Scale: 1 = Lack of competence, 2 = Low competency, 3 = Moderate competency, 4 = High competency, 5 = Very high competency

*P ≤ 0.05.

Table 4.4: Means, Standard Deviations and Ranking for Administration Competencies by Position Title of Respondents in the Regions.

Administration Competency	Western Region						Brong Ahafo Region						Upper East Region								
	Agents N = 100			Supervisors N = 38			t	Agents N = 85			Supervisors N = 22			t	Agents N = 36			Supervisors N = 13			t
	Mean	SD	Rank	Mean	SD	Rank		Mean	SD	Rank	Mean	SD	Rank		Mean	SD	Rank	Mean	SD	Rank	
15. Delegating responsibility and authority	3.49	0.94	10	3.58	0.98	8	-0.48	3.29	1.14	11	3.50	0.91	13	-0.81	3.36	0.93	5	3.00	1.00	16	1.14
16. Orienting new staff member	3.30	1.17	19	3.29	1.11	18	0.05	3.01	1.25	21	3.60	0.77	8	0.80*	3.03	0.91	17	2.92	1.38	18	0.25
17. Providing recognition for staff	3.47	1.61	12	3.45	1.06	12	0.10	3.28	1.21	13	3.32	0.89	19	-0.15	3.17	1.06	9	3.00	1.23	17	0.44
18. Maintaining staff morale	3.57	1.05	9	3.55	1.01	10	0.09	3.29	1.19	11	3.59	1.10	9	-1.11	3.11	1.21	12	3.15	0.99	12	-0.13
19. Preparing job descriptions	3.60	0.10	8	3.55	0.98	10	0.25	3.49	1.16	6	3.59	0.85	9	-0.44	3.31	0.86	8	3.39	0.65	7	-0.34
20. Dealing with complaints	3.38	1.11	17	3.58	0.98	8	-1.03	3.24	1.20	14	3.50	0.91	13	-1.13	3.17	1.00	9	3.08	1.04	13	0.27
21. Analysing personnel record	3.42	0.97	14	3.45	0.80	12	-0.17	3.41	1.14	8	3.54	0.91	12	-0.58	3.14	1.02	11	3.46	0.78	5	-1.18
GRAND MEAN	3.53	0.59		3.55	0.50		-0.16	3.40	0.69		3.60	0.62		-1.32	3.21	0.60		3.24	0.77		-0.13

Scale: 1 = Lack of competence, 2 = Low competency, 3 = Moderate competency, 4 = High competency, 5 = Very high competency

*P ≤ 0.05.

4.32) highest (table 4.4). Agents ranked 'Placing extension personnel in their area of work' (3.91) second while supervisors ranked 'Managing time effectively' (4.14) second. Both agents and supervisors ranked 'coordinating work schedules of staff' (3.79 and 3.95) third.

The lowest ranked competencies by agents were 'Orienting new staff members (3.01), 'In-depth knowledge and understanding of the unified agric. extension system' (3.05) and 'Supervising budget expenditure' (3.12). The following administrative competencies were ranked lowest by supervisors: 'Budget preparation' (3.14), 'Writing realistic goals for the extension programme' (3.23) and 'Providing recognition for staff (3.32).

Differences between the mean perceptions of the two groups were not significant in 18 out of the 21 competencies. Those that showed significant differences were 'In-depth knowledge and understanding of the unified agricultural extension system', 'Identifying policies specific to your areas of responsibility' and 'Orienting new staff members'. In all these, however the mean ratings were within the 'Moderate' range. The grand mean perceptions for agents (3.40) and supervisors (3.60) in the Brong Ahafo Region did not show any significant difference.

In the Upper East Region, the mean perceptions of agents and supervisors did not differ significantly in 20 out of 21 items. The competency that showed a significant difference was identifying policies specific to your area(s) of responsibility though both ratings were within the 'Moderate' range (3.00 and 3.62). This difference also occurred in the Brong Ahafo Region. 'Supervising budget expenditure' was rated within the 'Low' range by both groups (2.18 for agents and 2.77 for supervisors). Agents placed 'Coordinating the use of equipment, facilities and resources with office staff' and also 'Budget preparation', in the 'Low' level while supervisors placed 'Understanding how policies are formulated' and 'Orienting new staff members' in the 'Low' level. The grand mean perceptions of agents and supervisors did not differ significantly i.e., 3.21 and 3.24 respectively (Table 4.4).

Programme Planning

Table 4.5 compares the mean perceptions of agents and supervisors in the three regions in terms of Programme Planning competencies.

Respondents in the Western Region ranked all the eight competencies within the 'Moderate' range ie, between 3.06 and 3.84. There were no differences between mean perceptions of all the items except 'Determining the needs of clientele for extension programmes'. Agents ranked 'Developing a calendar of extension activities' (3.07) first, followed by 'Determining objectives/goals of the extension programme' (3.59). Supervisors rated these two competencies in the opposite.

Both groups ranked 'Involving extension support groups and clientele in programme planning' last. There was no significant difference between the overall means for the two groups in the Western Region.

The ratings in the Brong Ahafo Region were all within the 'Moderate' range except 'Preparing a long-range programme of work' and 'Involving extension support groups and clientele in programme planning', which the agents ranked within the 'Low' range (Table 4.5).

The means of the two groups differed significantly in four out of the eight competencies. Like the Western Region, agents ranked 'Developing a calendar of extension activities' first.

Supervisors ranked 'Preparing an annual programme of work for your area of responsibility' highest. Both groups ranked the competency 'Involving extension support groups and clientele in programme planning' last. Though the overall mean perceptions of the two groups were in the moderate range, the difference was significant.

In the Upper East, both groups placed 'Preparing a long-range programme of work' within the 'Low' level ie, 2.75 and 2.85 for agents and supervisors respectively. Agents placed only one competency in the 'Low' level while supervisors placed three in the 'Low' level. The remaining items were placed in the 'Moderate' level by both groups. Agents, like those in the

Table 4.5: Means, Standard Deviations and Ranking for Programme Planning Competencies by Position Title of Respondents in the Regions.

Programme Planning Competency	Western Region						Brong Ahafo Region						Upper East Region								
	Agents N = 100			Supervisors N = 38			t	Agents N = 85			Supervisors N = 22			t	Agents N = 36			Supervisors N = 13			t
	Mean	SD	Rank	Mean	SD	Rank		Mean	SD	Rank	Mean	SD	Rank		Mean	SD	Rank	Mean	SD	Rank	
1. Developing a Calendar of extension activities	3.67	1.03	1	3.74	0.83	2	-0.40	3.34	1.40	1	3.59	0.85	3	-1.05	3.69	0.92	1	3.54	0.66	2	0.63
2. Determining the needs of clientele for extension programme	3.29	1.09	6	3.63	0.68	3	-2.21*	3.09	1.30	5	3.41	0.80	5	-1.43	3.25	1.25	6	3.62	0.77	1	-1.23
3. Determining objectives/ goals of the extension programme	3.59	0.88	2	3.84	0.72	1	-1.73	3.31	1.17	2	3.55	0.96	4	-0.99	3.36	1.13	4	3.54	0.88	2	-0.58
4. Establishing programme priorities	3.44	0.98	4	3.58	0.83	6	-0.84	3.18	1.28	4	3.41	1.10	5	-0.85	3.28	1.37	5	3.46	1.05	4	-0.50
5. Preparing an annual programme of work for your area of responsibility	3.51	1.12	3	3.63	0.97	3	-0.63	3.20	1.31	3	3.73	0.77	1	-2.44*	3.44	1.21	2	3.46	1.39	4	-0.40

Scale: 1 = Lack of competence, 2 = Low competency, 3 = Moderate competency, 4 = High competency, 5 = Very high competency

*P ≤ 0.05.

Table 4.5: Means, Standard Deviations and Ranking for Programme Planning Competencies by Position Title of Respondents in the Regions.

Programme Planning Competency	Western Region						Brong Ahafo Region						Upper East Region								
	Agents N = 100			Supervisors N = 38			t	Agents N = 85			Supervisors N = 22			t	Agents N = 36			Supervisors N = 13			t
	Mean	SD	Rank	Mean	SD	Rank		Mean	SD	Rank	Mean	SD	Rank		Mean	SD	Rank	Mean	SD	Rank	
6. Preparing a long-range programme of work	3.13	1.17	7	3.26	1.16	7	-0.60	2.76	1.23	7	3.27	0.99	7	-2.04*	2.75	1.03	8	2.85	1.28	8	-0.24
7. Involving co-workers in programme planning	3.31	1.15	5	3.63	1.17	3	-1.45	3.08	1.30	6	3.68	0.10	2	-2.35*	3.44	1.08	2	2.92	1.44	6	1.19
8. Involving extension support groups and clientele in programme planning	3.06	1.07	8	3.16	0.92	8	-0.53	2.44	1.16	8	3.05	0.72	8	-3.07*	3.22	1.20	7	2.92	1.19	6	0.78
GRAND MEAN	3.38	0.72		3.56	0.63		-1.48	3.05	0.99		3.46	0.67		-2.31*	3.31	0.93		3.29	0.81		0.06

Scale: 1 = Lack of competence, 2 = Low competency, 3 = Moderate competency, 4 = High competency, 5 = Very high competency

*P ≤ 0.05.

Western and Brong Ahafo Regions, ranked 'Developing a calendar of extension activities' (3.69) first. Supervisors placed this competency (3.54) in the second position. Both placed, 'Preparing a long-range programme of work' last. The overall mean perceptions did not differ significantly.

Programme Execution

In the Western Region the two groups ranked 'Completing monthly or annual reports' first and between 'High' and 'Very high'. The other six were ranked between 'Moderate' and 'High' ie, 3.39 and 3.92. Agents placed 'Following a written programme of work' last (3.39) while supervisors placed 'Utilizing a calendar of activities/events' and 'Providing leadership for programme planning and execution' last (3.53). The means and grand mean of the two groups did not differ significantly for all the items (table 4.6).

The picture in the Brong Ahafo Region was close to that of the Western Region except that there was a significant difference between the means for 'Providing leadership for programme planning and execution'. The overall means did not differ significantly (Table 4.6).

In the Upper East, all the items were placed between 'Moderate' and 'High' except 'Involving others in executing plans' which the agents placed between 'Low' and 'Moderate' (2.89). 'Completing monthly or annual reports' was ranked first by supervisors while involving others in executing plans was ranked first by agents.

There were no significant differences between the means for all the competencies and their grand means. In the three regions, 'Completing monthly or annual reports' maintained its topmost position (Table 4.6).

Table 4.6: Means, Standard Deviations and Ranking for Programme Execution Competencies by Position Title of Respondents in the Regions.

Programme Execution Competency	Western Region							Brong Ahafo Region							Upper East Region						
	Agents N = 100			Supervisors N = 38			t	Agents N = 85			Supervisors N = 22			t	Agents N = 36			Supervisors N = 13			t
	Mean	SD	Rank	Mean	SD	Rank		Mean	SD	Rank	Mean	SD	Rank		Mean	SD	Rank	Mean	SD	Rank	
1. Utilizing a Calendar of activities/events	3.47	0.99	5	3.53	0.86	6	-0.33	3.35	1.17	6	3.55	0.74	7	-0.95	3.33	0.86	4	3.38	0.77	4	-0.20
2. Following a written programme of work	3.39	1.05	7	3.66	0.78	4	-1.63	3.52	1.10	3	3.91	0.87	2	-1.78	3.33	0.93	4	3.31	0.95	6	0.08
3. Providing leadership for programmes planning and execution	3.60	2.04	3	3.53	0.76	6	0.31	3.24	1.02	7	3.68	0.78	4	-2.24*	3.19	0.79	6	3.38	0.77	4	-0.76
4. Developing a working relationship with clientele	3.66	0.93	2	3.87	0.81	3	-1.29	3.54	0.95	2	3.68	0.89	4	-0.65	3.47	0.97	3	3.62	0.96	2	-0.46
5. Completing monthly or annual reports	4.07	0.84	1	4.13	0.96	1	-0.35	4.05	1.02	1	4.05	0.65	1	0.90	3.72	0.78	2	3.85	0.69	1	-0.54
6. Involving others in executing plans	3.44	0.88	6	3.61	0.92	5	0.96	3.42	0.93	5	3.64	0.90	6	0.81	2.89	1.12	1	3.31	0.95	6	-1.30
7. Conducting home/farm visits.	3.60	1.09	3	3.92	0.85	2	-1.82	3.46	1.09	4	3.77	0.81	3	-1.50	3.19	1.04	6	3.62	0.87	2	-1.42
GRAND MEAN	3.60	0.70		3.75	0.58		-1.22	3.51	0.71		3.75	0.50		-1.84	3.31	0.60		3.49	0.74		-0.83

Scale: 1 = Lack of competence, 2 = Low competency, 3 = Moderate competency, 4 = High competency, 5 = Very high competency

*P ≤ 0.05.

Teaching

All the 18 items in this competency area were rated between 'Lack' of competence and 'High' competence (Table 4.7). No significant differences occurred between the mean perceptions of agents and supervisors for all the items including the overall mean perceptions. The overall mean perceptions were within the 'moderate' range though the standard deviations for the various items differed widely.

In the Western Region, agents ranked 'Recognizing the importance of punctuality' highest (3.90) followed by 'Encouraging audience to ask questions' (3.87) and 'Presenting information in a lecture' (3.75) and 'Presenting information at a meeting' (3.75). Supervisors ranked 'Presenting information at a meeting' highest (3.92) followed by 'Encouraging audience to ask questions' and 'Recognizing the importance of punctuality' (3.71).

The lowest ranked items were 'Presenting information with slides' and 'Presenting information with an overhead projector' for both agents and supervisors.

In the Brong Ahafo Region, both agents and supervisors ranked 'Recognizing the importance of punctuality' as the highest with 'Presenting information with slides' and 'Presenting information with overhead projectors' as lowest (Table 4.7.)

In the Upper East, the topmost item was 'Presenting information at a meeting' for both agents and supervisors (Table 4.7) with 'Presenting information with an overhead projector' and 'Presenting information with slides' as the lowest (Table 4.7).

Communication

Table 11 shows the mean perceptions of agents and supervisors for all the 15 items under Communication including their overall means in the three regions.

There were no significant differences between means and all the competencies were rated between 'Lack of competency' and 'High competency'. The various standard deviations varied

Table 4.7: Means, Standard Deviations and Ranking for Teaching Competencies by Position Title of Respondents in the Regions.

Teaching Competency	Western Region							Brong Ahafo Region							Upper East Region						
	Agents N = 100			Supervisors N = 38			t	Agents N = 85			Supervisors N = 22			t	Agents N = 36			Supervisors N = 13			t
	Mean	SD	Rank	Mean	SD	Rank		Mean	SD	Rank	Mean	SD	Rank		Mean	SD	Rank	Mean	SD	Rank	
1. Using principles (basic ideas or rules) of learning and teaching.	3.36	1.12	9	3.34	1.24	10	0.08	3.16	1.11	11	3.41	0.91	8	-1.07	3.28	0.74	6	3.31	1.18	3	-0.09
2. Developing teaching materials.	2.97	1.17	14	3.00	1.19	14	-0.13	3.88	1.20	14	3.14	1.08	13	-0.96	2.81	1.06	13	3.23	1.12	4	-1.15
3. Ability to select non-formal methods and techniques for particular situations	3.06	0.93	12	3.29	0.93	11	-1.30	3.09	1.02	13	3.05	0.79	15	0.24	2.78	0.80	14	3.15	0.99	11	-1.24
4. Presenting information in a lecture	3.75	3.10	3	3.50	0.86	8	0.74	3.46	1.12	7	3.59	0.73	4	-0.67	3.14	1.22	9	3.00	1.53	12	0.30
5. Presenting a concept, principle, or skill through a method demonstrations	3.43	0.90	7	3.63	0.91	4	-1.16	3.16	1.24	11	3.23	1.41	11	-0.23	3.19	1.01	7	3.31	1.18	3	-0.31
6. Presenting information in a meeting	3.75	0.78	3	3.92	0.71	1	1.56	3.61	1.10	3	3.64	1.09	2	-0.09	3.72	0.74	1	3.69	0.86	1	0.11

Scale: 1 = Lack of competence, 2 = Low competency, 3 = Moderate competency, 4 = High competency, 5 = Very high competency

*P ≤ 0.05.

Table 4.7: Means, Standard Deviations and Ranking for Teaching Competencies by Position Title of Respondents in the Regions.

Teaching Competency	Western Region						Brong Ahafo Region						Upper East Region								
	Agents N = 100			Supervisors N = 38			t	Agents N = 85			Supervisors N = 22			t	Agents N = 36			Supervisors N = 13			t
	Mean	SD	Rank	Mean	SD	Rank		Mean	SD	Rank	Mean	SD	Rank		Mean	SD	Rank	Mean	SD	Rank	
7. Presenting information in a seminar	3.00	1.12	13	3.13	1.04	13	0.45	3.19	1.13	9	3.36	0.90	9	0.77	2.97	1.11	10	2.77	1.48	15	0.45
8. Presenting information at a field day	3.13	1.18	11	3.39	0.97	9	0.32	3.46	0.97	7	3.45	0.80	7	0.02	3.19	1.19	7	3.23	1.17	4	-0.10
9. Presenting information with an overhead projector	2.62	1.16	17	2.13	1.19	18	1.56	2.24	1.34	17	2.64	1.18	17	-1.38	2.25	1.23	17	1.77	1.36	18	1.12
10. Presenting information with slides	2.29	1.23	18	2.18	1.23	17	0.45	2.05	1.20	18	2.55	1.22	18	-1.71	2.22	1.31	18	1.85	1.28	17	0.90
11. Presenting information with charts	2.84	1.15	15	2.76	1.32	16	0.32	2.81	1.29	15	3.18	1.14	12	-1.32	2.86	1.20	11	2.87	1.14	14	0.24
12. Presenting information with chalk board	3.52	1.14	6	3.55	1.13	6	-0.15	3.48	1.05	6	3.31	1.27	10	0.55	2.05	1.23	16	3.31	0.86	3	-1.78
13. Conducting group discussions	3.61	0.91	5	3.58	1.13	5	0.15	3.52	1.03	4	3.55	0.91	5	-0.12	3.42	0.65	3	3.23	1.17	4	0.55

Scale: 1 = Lack of competence, 2 = Low competency, 3 = Moderate competency, 4 = High competency, 5 = Very high competency

*P ≤ 0.05.

Table 4.7: Means, Standard Deviations and Ranking for Teaching Competencies by Position Title of Respondents in the Regions.

Teaching Competency	Western Region						Brong Ahafo Region						Upper East Region								
	Agents N = 100			Supervisors N = 38			t	Agents N = 85			Supervisors N = 22			t	Agents N = 36			Supervisors N = 13			t
	Mean	SD	Rank	Mean	SD	Rank		Mean	SD	Rank	Mean	SD	Rank		Mean	SD	Rank	Mean	SD	Rank	
14. The use of the problem solving approach to teaching	3.23	0.87	10	3.16	1.00	12	0.39	3.18	0.85	10	3.09	1.19	14	0.32	2.86	1.02	11	2.92	1.32	13	-0.15
15. Encouraging audience to ask questions.	3.87	0.92	2	3.71	1.01	2	0.85	3.68	0.83	2	3.73	0.83	2	-0.23	3.42	0.94	3	3.31	1.03	3	0.33
16. Planning, organizing and conducting tours and field trips.	2.76	1.24	16	2.79	1.28	15	-0.12	2.51	1.07	16	2.95	0.10	16	-1.85	2.78	1.15	15	2.69	1.11	16	0.24
17. Judging exhibits at agricultural shows	2.41	1.10	8	3.52	1.11	7	-0.55	3.49	2.45	5	3.50	0.80	6	-0.02	3.33	0.93	5	3.31	1.11	3	0.07
18. Ability to recognize the importance of punctuality	3.90	0.89	1	3.71	0.98	2	1.04	3.80	0.10	1	3.95	0.90	1	-0.07	3.58	0.87	2	3.54	1.13	2	0.13
GRAND MEAN	3.25	0.66		3.24	0.69		0.08	3.15	0.78		3.30	0.68		-0.84	2.03	0.63		3.03	0.81		0.02

Scale: 1 = Lack of competence, 2 = Low competency, 3 = Moderate competency, 4 = High competency, 5 = Very high competency

*P ≤ 0.05.

Table 4.8: Means, Standard Deviations and Ranking for Communication Competencies by Position Title of Respondents in the Regions.

Communication Competency	Western Region						Brong Ahafo Region						Upper East Region								
	Agents N = 100			Supervisors N = 38			t	Agents N = 85			Supervisors N = 22			t	Agents N = 36			Supervisors N = 13			t
	Mean	SD	Rank	Mean	SD	Rank		Mean	SD	Rank	Mean	SD	Rank		Mean	SD	Rank	Mean	SD	Rank	
1. Establishing communications among extension staff	3.53	1.02	6	3.50	1.11	6	0.15	3.38	1.17	9	3.55	0.86	7	-0.76	3.11	1.24	7	3.31	1.18	6	-0.51
2. Writing letters and / or memos	3.61	1.04	2	3.61	1.03	4	0.02	3.41	1.11	8	3.59	1.10	6	-0.68	2.86	1.27	9	3.38	1.12	3	-1.39
3. Writing and/or completing special reports	3.72	0.85	1	3.74	0.89	2	-0.10	3.67	0.91	1	3.86	0.89	1	-1.01	3.25	1.03	4	3.08	1.38	8	0.41
4. Speaking to groups	3.55	0.98	5	3.71	0.96	3	-0.88	3.65	0.88	1	3.77	0.75	4	-0.67	3.36	1.18	2	3.69	0.75	1	-1.16
5. Speaking to individuals	3.58	1.13	4	3.76	1.13	1	-0.85	3.60	1.16	3	3.11	1.18	9	0.68	3.53	1.00	1	3.54	1.45	2	-0.02
6. Using non-verbal communications	3.03	1.02	11	2.92	1.22	11	0.49	2.98	0.98	11	2.95	0.90	11	0.10	2.53	1.23	10	2.77	1.17	11	-0.63

Scale: 1 = Lack of competence, 2 = Low competency, 3 = Moderate competency, 4 = High competency, 5 = Very high competency

*P ≤ 0.05.

Table 4.8: Means, Standard Deviations and Ranking for Communication Competencies by Position Title of Respondents in the Regions.

Communication Competency	Western Region						Brong Ahafo Region						Upper East Region								
	Agents N = 100			Supervisors N = 38			t	Agents N = 85			Supervisors N = 22			t	Agents N = 36			Supervisors N = 13			t
	Mean	SD	Rank	Mean	SD	Rank		Mean	SD	Rank	Mean	SD	Rank		Mean	SD	Rank	Mean	SD	Rank	
7. Possession of listening skills	3.59	0.85	3	3.39	0.95	7	1.11	3.45	0.97	7	3.45	0.91	8	-0.03	3.31	1.11	6	3.31	1.11	6	0.15
8. Preparing extension publications	2.81	1.17	12	2.55	1.13	12	1.18	2.38	1.19	12	2.45	0.91	12	-0.34	2.50	1.13	11	2.31	1.18	12	0.51
9. All on correspondence promptly	3.53	0.97	6	3.53	0.92	5	0.02	3.55	1.04	4	3.64	1.41	5	-0.31	3.19	1.14	6	2.85	1.07	9	0.99
10. Providing recognition for achievement	3.33	1.01	10	3.32	1.09	8	0.07	3.22	1.14	10	3.41	1.01	9	-0.75	2.97	1.13	8	2.85	1.28	3	0.31
11. Establishing working relationships with other governmental organizations and agencies	3.35	1.01	9	3.18	1.01	10	0.86	3.49	1.51	6	3.82	0.80	2	-1.38	3.22	1.22	5	3.38	0.96	6	-0.48

Scale: 1 = Lack of competence, 2 = Low competency, 3 = Moderate competency, 4 = High competency, 5 = Very high competency

*P ≤ 0.05.

Table 4.8: Means, Standard Deviations and Ranking for Communication Competencies by Position Title of Respondents in the Regions.

Communication Competency	Western Region			Brong Ahafo Region			Upper East Region														
	Agents N = 100		Supervisors N = 38	Agents N = 85		Supervisors N = 22	Agents N = 36		Supervisors N = 13	t											
	Mean	SD	Rank	Mean	SD	Rank	Mean	SD	Rank												
12. Establishing working relationships with other governmental organizations and agencies	3.38	0.97	8	3.24	0.88	9	0.83	3.52	1.01	5	3.82	0.96	2	-1.30	3.25	1.16	4	3.38	0.96	3	-0.41
13. The use of a camera and/or other photographic equipment	1.65	1.01	14	1.66	1.12	14	-0.04	1.87	2.35	13	2.32	1.43	13	-1.13	1.75	0.77	15	1.54	1.13	14	0.63
14. The use of a tape recorder	1.89	1.25	13	1.82	1.21	13	0.32	2.05	1.31	15	2.09	1.07	14	-0.14	1.86	1.10	13	1.62	1.19	13	0.65
15. The use of a (desktop) computer	1.45	0.94	15	1.50	0.98	15	-0.27	1.35	0.86	14	1.64	1.18	15	-1.06	1.81	0.98	14	1.46	0.97	15	1.10
GRAND MEAN	3.07	0.61		3.03	0.73		0.29	3.04	0.68		3.18	0.63		-0.97	2.84	0.74		2.83	0.72		0.03

Scale: 1 = Lack of competence, 2 = Low competency, 3 = Moderate competency, 4 = High competency, 5 = Very high competency

* $P \leq 0.05$.

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In the Western Region agents ranked 'Writing and/or completing special reports' as topmost (3.72) followed by 'Writing letters and/or memos' (3.61), Supervisors ranked 'Speaking to individuals' as highest (3.76) followed by 'Writing and/or completing special reports' (3.74). Both agents and supervisors ranked 'The use of computers lowest (1.45 and 1.50) followed by the use of a camera and/or other photographic equipment' (1.65 and 1.66).

In the Brong Ahafo Region agents ranked 'Writing and/or completing special reports' (3.72) and 'Speaking to groups' (3.65) topmost (table 4.8). Supervisors ranked 'Writing and/or completing special reports' (3.86) topmost followed by 'Establishing working relationship with non-governmental organizations and agencies' (3.82) and 'Establishing working relationship with other governmental organization and agencies' (3.82).

In the Upper East, 'Speaking to individuals' (3.53) and 'Speaking to groups' (3.36) were ranked by agents as first and second while the supervisors placed the same competencies second and first in their ranking (Table 4.8). 'Possession of listening skills' was ranked second by agents. The lowest ranked items by both agents and supervisors were 'The use of a camera and/or other photographic equipment' and 'The use of a desk top computer'.

Understanding Human Behaviour

For agents in the Western Region, all the 12 items were rated within the 'Moderate' range (3.08 to 3.61) with 'Recognizing differences in age groups' as the topmost followed by 'Ability to influence people to accept change' (Table 4.9). They ranked 'Determining the effect of pressure groups on the thinking process' lowest (3.08). This also appeared as the lowest in the ranking by supervisors (2.92). Supervisors ranked 'Ability to influence people to accept change' and also 'Recognizing difference in age groups' (3.66) topmost. The overall mean perceptions did not show any significant difference.

Table 4.9: Means, Standard Deviations and Ranking for Understanding Human Behaviour Competencies by Position Title of Respondents in the Regions.

Understanding Human Behaviour Competency	Western Region						Brong Ahafo Region						Upper East Region								
	Agents N = 100			Supervisors N = 38			t	Agents N = 85			Supervisors N = 22			t	Agents N = 36			Supervisors N = 13			t
	Mean	SD	Rank	Mean	SD	Rank		Mean	SD	Rank	Mean	SD	Rank		Mean	SD	Rank	Mean	SD	Rank	
1. Application of principles of motivation	3.17	0.98	10	3.11	0.86	10	0.38	3.02	1.04	9	3.09	1.07	9	-0.27	2.81	0.86	10	3.31	1.03	11	-1.57
2. Identification of factors that influence people to become involved	3.32	0.86	6	3.24	0.88	8	0.54	3.01	1.08	10	3.09	1.02	9	-0.32	2.94	0.96	9	3.62	0.77	3	-2.52
3. Determining the effect of pressure groups on the thinking process	3.08	1.07	12	2.92	0.91	12	0.87	2.81	0.99	12	2.95	1.13	11	-0.54	2.69	0.98	11	3.15	0.90	12	-1.54
4. Recognizing the factors influencing goal settings	3.28	1.07	7	3.39	0.64	5	-0.77	3.09	0.10	8	3.18	0.91	7	-0.40	2.97	0.91	8	3.38	0.87	9	-1.45
5. Applying factors affecting behaviour of people	3.17	0.10	10	3.05	0.84	11	0.70	2.95	1.02	11	2.91	0.92	12	0.19	2.67	1.17	12	3.38	1.04	9	-2.06
6. Ability to influence people to accept change	3.56	0.97	2	3.66	0.78	1	-0.61	3.27	1.08	6	3.14	0.99	8	0.56	3.19	1.12	1	3.69	0.86	2	-1.65

Scale: 1 = Lack of competence, 2 = Low competency, 3 = Moderate competency, 4 = High competency, 5 = Very high competency

*P ≤ 0.05.

Table 4.9: Means, Standard Deviations and Ranking for Understanding Human Behaviour Competencies by Position Title of Respondents in the Regions.

Understanding Human Behaviour Competency	Western Region						Brong Ahafo Region						Upper East Region								
	Agents N = 100			Supervisors N = 38			t	Agents N = 85			Supervisors N = 22			t	Agents N = 36			Supervisors N = 13			t
	Mean	SD	Rank	Mean	SD	Rank		Mean	SD	Rank	Mean	SD	Rank		Mean	SD	Rank	Mean	SD	Rank	
7. Ability to identify the power structure within the community	3.21	0.99	8	3.34	0.99	6	-0.70	3.28	0.91	5	3.41	4.85	3	-0.61	3.08	1.11	5	3.46	0.97	7	-1.16
8. Ability to identify pressure groups within the community	3.18	1.03	9	3.18	0.80	9	-0.30	3.31	0.93	4	3.32	1.08	4	-0.05	3.03	1.03	7	3.62	0.65	3	-2.36*
9. Utilizing knowledge of interaction of people in groups	2.40	0.79	5	3.45	0.72	3	-0.33	3.20	1.03	7	3.03	0.92	6	-0.12	3.14	1.10	2	3.46	1.27	7	-0.80
10. Recognizing differences in age groups	3.61	0.95	1	3.66	0.91	1	-0.27	3.39	1.23	2	3.27	1.08	5	0.44	3.11	0.95	4	3.54	0.78	6	-1.60
11. Recognizing traditional culture and its effect on change	3.46	0.96	4	3.26	1.11	7	-0.97	3.36	1.15	3	3.64	0.90	1	-1.18	3.08	1.05	5	3.62	0.77	3	-1.93
12. Recognizing the role of different sexes and how it influences change	3.48	0.87	3	3.45	1.01	3	0.18	3.52	1.09	1	3.59	1.01	2	-0.30	3.14	1.10	2	3.77	0.93	1	-2.00
GRAND MEAN	3.33	0.73		3.31	0.63		0.14	3.19	0.77		3.23	0.65		-0.30	3.00	0.79		3.50	0.66		-2.27*

Scale: 1 = Lack of competence, 2 = Low competency, 3 = Moderate competency, 4 = High competency, 5 = Very high competency

*P ≤ 0.05.

In the Brong Ahafo Region 'Recognizing the role of different sexes and how it influences change' came first in the agents' rating (3.48) followed by 'Recognizing differences in age groups' (3.39). Supervisors placed 'Recognizing traditional culture and its effect on change' (3.59) first in their self-rating. The two lowest placed items in respondents' ratings were 'Determining the effect a pressure groups on the thinking process' and 'Applying factors affecting behaviour of people' (Table 4.9). No significant difference occurred between all the mean perceptions of agents and supervisors in the regions.

In the Upper East, the agents ranked 'Ability to influence people to accept change' first (3.19) followed by 'Utilizing knowledge of interaction of people in groups' (3.14). Supervisors ranked 'Recognizing the role of different sexes and how it influences change' (3.77) first followed by 'Ability to influence people to accept change' (3.69). The lowest ranked item by agents was 'Applying factors affecting behaviour of people' (2.67) and 'Determining the effect of pressure groups on the thinking process' (3.15) followed by 'Application of principles of motivation' (3.31). Of the 12 items in this competency area, only one showed a significant difference between the mean of agents ratings and that of supervisors ie, 'Ability to identify pressure groups within the community though the two ratings were all within the 'Moderate' to 'High' range. The overall mean ratings of both groups also showed a significant difference (Table 4.9).

Maintaining Professionalism

In this area, there were no significant differences between the mean perceptions of agents and supervisors in all the three regions. The overall means also were not significantly different (Table 4.10).

The ratings in the Western Region were between 3.14 and 3.63 for both agents and supervisors. Those of the Brong Ahafo Region were between 2.95 and 4.45 while the ratings were between 2.69 and 3.62 in the Upper East Region.

Table 4.10: Means, Standard Deviations and Ranking for Maintaining Professionalism Competencies by Position Title of Respondents in the Regions.

Maintaining Professionalism Competency	Western Region			Brong Ahafo Region			Upper East Region														
	Agents N = 100		Supervisors N = 38	Agents N = 85		Supervisors N = 22	Agents N = 36		Supervisors N = 13												
	Mean	SD	Rank	Mean	SD	Rank	Mean	SD	Rank												
1. Identifying opportunities for professional improvement	3.35	0.97	2	3.55	0.98	2	-1.09	3.32	0.95	2	4.45	4.32	1	-1.23	3.28	0.88	2	3.51	1.20	2	-0.72
2. Developing a plan for professional competencies	3.14	1.03	4	3.26	0.95	4	-0.67	3.02	1.07	4	2.95	1.33	4	0.23	2.69	0.86	4	3.28	1.12	4	0.31
3. Maintaining professional organizations and activities	3.46	0.96	1	3.63	0.85	1	-1.02	3.41	1.02	1	3.59	1.18	2	-0.65	3.19	0.92	1	3.62	0.87	1	-1.47
4. Participation in professional organizations and activities	3.22	1.11	3	3.37	0.88	3	-0.82	3.32	1.00	2	3.55	1.01	3	-0.94	3.14	1.20	3	3.31	0.95	3	-0.51
GRAND MEAN	3.29	0.81		3.45	0.73		-1.13	3.27	0.87		3.64	1.40		-1.18	3.08	0.76		3.38	0.94		-1.06

Scale: 1 = Lack of competence, 2 = Low competency, 3 = Moderate competency, 4 = High competency, 5 = Very high competency

*P ≤ 0.05.

All the respondents in the three regions except the supervisors in Brong Ahafo, ranked 'Maintaining professional competencies' topmost with 'Developing a plan for professional improvement' as the last (Table 4.10)

Evaluation

In the Western Region both the agents and supervisors rated 'Evaluating the performance of the extension staff' as highest out of the 15 evaluation competencies. The mean perceptions were significantly different for this item. Both rated 'Conducting a literature search utilizing library resources' as lowest (2.72 and 2.63). Significant difference occurred between the means of 'Evaluating the performance of the extension staff' though both ratings were between 'Moderate' and 'High' (3.59 and 3.92). The overall means did not differ significantly (Table 4.11).

In the Brong Ahafo Region agents ranked 'Evaluating the performance of the extension staff' second (3.52) while supervisors ranked the same item first (4.77). The top rank for the agents was 'Analyzing reports' (3.58). 'Conducting a literature search utilizing library resources' was ranked lowest by both groups (2.36 and 2.68). No significant difference occurred between overall mean perceptions of agents and supervisors (Table 4.11).

In the Upper East Region, agents ranked 'Identifying problems requiring additional research' (3.36) first followed by 'Cooperating with research stations' (3.28). Supervisors ranked 'Evaluating the performance of the extension staff' topmost (3.92) followed by 'Evaluating the effectiveness of national, regional and district or local extension programme' (3.54). Though the mean perceptions of agents and supervisors for these items showed significant differences, they all fell between 'Moderate' and 'High' levels (Table 4.11). The overall mean perceptions of agents and supervisors in the three regions did not differ significantly.

Table 4.11: Means, Standard Deviations and Ranking for Evaluation Competencies by Position Title of Respondents in the Regions.

Evaluation Competency	Western Region						Brong Ahafo Region						Upper East Region								
	Agents N = 100			Supervisors N = 38			t	Agents N = 85			Supervisors N = 22			t	Agents N = 36			Supervisors N = 13			t
	Mean	SD	Rank	Mean	SD	Rank		Mean	SD	Rank	Mean	SD	Rank		Mean	SD	Rank	Mean	SD	Rank	
1. Evaluating the effectiveness of a national, district, or local extension programme	3.43	0.82	3	3.47	0.73	3	-0.30	3.15	1.09	9	3.32	1.21	7	-0.58	3.00	0.89	7	3.54	0.78	2	-2.06
2. Evaluating the performance of the extension staff	3.59	0.88	1	3.92	0.85	1	-2.02*	3.52	1.02	2	4.77	4.14	1	-1.41	3.25	1.03	3	3.92	0.86	1	-2.29*
3. Interpreting the impact of change and/or trends upon the clientele served	3.45	1.29	2	3.55	0.96	2	-1.60	3.19	1.05	7	3.59	0.80	4	-1.97	2.97	0.94	10	3.38	0.77	3	-1.56
4. Using questionnaires to seek information	2.86	1.12	14	3.05	1.23	10	-0.81	3.12	1.09	10	3.18	1.01	11	-0.26	3.08	1.20	5	3.08	0.95	10	0.02
5. Using observation method to seek information	3.08	1.02	9	3.39	0.82	5	-1.87	3.34	0.97	4	3.23	0.75	8	0.59	3.00	0.93	7	3.23	1.01	7	-0.72
6. Using interviews to seek information	3.42	4.25	4	3.00	1.34	12	0.88	3.44	1.02	3	3.23	1.11	8	0.80	3.19	0.75	4	3.38	1.04	3	-0.60

Scale: 1 = Lack of competence, 2 = Low competency, 3 = Moderate competency, 4 = High competency, 5 = Very high competency

*P ≤ 0.05.

Table 4.11: Means, Standard Deviations and Ranking for Evaluation Competencies by Position Title of Respondents in the Regions.

Evaluation Competency	Western Region						Brong Ahafo Region						Upper East Region								
	Agents N = 100			Supervisors N = 38			t	Agents N = 85			Supervisors N = 22			t	Agents N = 36			Supervisors N = 13			t
	Mean	SD	Rank	Mean	SD	Rank		Mean	SD	Rank	Mean	SD	Rank		Mean	SD	Rank	Mean	SD	Rank	
7. Interpreting results of questionnaires	2.87	1.04	13	3.03	1.10	11	-0.76	2.94	1.08	13	3.05	1.33	14	-0.34	2.81	1.09	13	3.08	1.04	10	-0.80
8. Evaluating the results	3.36	1.01	6	3.47	1.01	3	-0.59	3.21	1.05	6	3.64	0.90	2	-1.90	2.92	1.03	12	3.38	0.96	3	-1.48
9. Analyzing reports	3.42	1.08	4	3.34	1.21	6	0.35	3.58	0.88	1	3.64	1.00	2	-0.26	3.06	1.24	6	3.38	0.96	3	-0.98
10. Interpreting research findings from research stations and universities	2.90	1.17	12	2.97	1.20	13	-0.33	2.69	1.06	14	3.18	1.26	11	-1.67	2.75	1.20	14	2.92	1.04	13	-0.49
11. Applying research findings when making recommendations to clientele	2.29	1.11	7	3.24	1.05	7	0.26	3.29	1.10	5	3.55	1.18	5	-0.90	2.97	1.03	10	3.23	0.83	7	-0.90
12. Cooperating with research stations	3.01	1.17	10	2.95	1.06	14	0.30	3.16	1.06	8	3.23	0.97	8	-0.26	3.28	1.16	2	3.23	1.01	7	0.14

Scale: 1 = Lack of competence, 2 = Low competency, 3 = Moderate competency, 4 = High competency, 5 = Very high competency

*P ≤ 0.05.

Table 4.11: Means, Standard Deviations and Ranking for Evaluation Competencies by Position Title of Respondents in the Regions.

Evaluation Competency	Western Region						Brong Ahafo Region						Upper East Region								
	Agents N = 100			Supervisors N = 38			t	Agents N = 85			Supervisors N = 22			t	Agents N = 36			Supervisors N = 13			t
	Mean	SD	Rank	Mean	SD	Rank		Mean	SD	Rank	Mean	SD	Rank		Mean	SD	Rank	Mean	SD	Rank	
13. Identifying problems requiring additional research	2.95	1.02	11	3.08	0.97	9	-0.69	3.02	1.02	12	3.14	1.25	13	-0.39	3.36	0.99	1	2.92	1.19	13	1.19
14. Keeping up-to-date with current research findings	3.17	1.05	8	3.13	1.10	8	0.19	3.08	1.09	11	3.36	1.14	6	-1.04	3.00	0.99	7	3.00	1.00	12	0.00
15. Conducting a literature search utilizing library resource	2.72	2.32	15	2.63	1.17	15	0.29	2.36	1.07	15	2.68	1.25	15	-1.09	2.36	1.20	15	2.46	1.27	15	-0.25
GRAND MEAN	3.17	0.79		3.22	0.67		-0.36	3.14	0.68		3.38	0.79		-1.33	3.00	0.72		3.21	0.78		-0.85

Scale: 1 = Lack of competence, 2 = Low competency, 3 = Moderate competency, 4 = High competency, 5 = Very high competency

P ≤ 0.05.

4.4 COMPARING THE MEAN PERCEPTIONS OF ALL EXTENSION AGENTS AND SUPERVISORS

In this section, the perception of all the extension agents, those of the supervisors and the combined perception of all the respondents are compared using the t-test at the 0.05 level of significance.

Administration

Under Administration, there were no significant difference between the means of agents and supervisors for any of the competencies (Table 4.12), Both groups ranked 'Conducting staff meetings' first but the ratings of supervisors was higher (4.07) than that of agents (3.96). The same competency item came first in the combined rating (3.99).

The other 20 competencies were rated between 'Moderate' (3.07) to 'High' (3.90) by agents and supervisors with 'Supervising budget expenditures' being the lowest ranked by agents and 'Budget preparation' being the lowest ranked by supervisors.

The combined assessment by agents and supervisors placed 'Supervising budget expenditures' last (3.12). In 17 out of the 21 competencies, ratings by supervisors were higher than the agents though not significant.

Programme Planning

In the ratings by agents, supervisors and also in the combined ratings, 'Developing a calendar of activities' and 'Determining objectives/goals of the extension programme' appeared in the top two positions. Ranking for four competencies were identical for agents, supervisors and all respondents (Table 4.13).

All the respondents placed 'Preparing a long-range programme of work' and 'Involving extension support groups and clientele in programme planning' between 'Low competency' and

Table 4.12: Means, Standard Deviations and Rankings for Programme Planning Competencies by Position Title of all Respondents.

Administration Competency	Extension Agents			Supervisors			t value	Total		
	N = 221			N = 73				N = 294		
	X	SD	Rank	X	SD	Rank		X	SD	Rank
1. In-depth knowledge & understanding of the "Unified Agric. Extension system"	3.24	.96	16	3.41	.85	14	-1.45	3.28	.93	16
2. Writing realistic goals for the extension programme	3.33	.92	14	3.26	.88	19	0.54	3.31	.91	15
3. Ability to manage scarce resources for optimum productivity	3.42	1.70	8	3.59	1.07	5	-0.99	3.46	1.57	7
4. Coordinating the use of equipment, facilities and resources with office staff	3.42	.99	8	3.58	.91	7	-1.23	3.46	.97	8
5. Budget preparation	3.16	1.09	19	3.18	1.16	21	-0.13	3.16	1.11	20
6. Supervising budget expenditure	3.07	1.13	21	3.26	1.28	19	-1.15	3.12	1.17	21
7. Managing time effectively	3.74	.89	4	3.89	.92	3	-1.20	3.78	.89	2
8. Coordinating work schedules of staff	3.75	.89	3	3.78	.90	4	-0.24	3.76	.89	4
9. Supervising extension Personnel	3.72	.93	5	3.90	.75	2	-1.71	3.77	.89	3
10. Placing extension personnel in their area of work	3.81	.99	2	3.59	1.17	5	1.49	3.76	.89	5
11. Understanding how Policies are formulated	3.24	1.06	16	3.30	1.15	18	-0.43	3.25	1.08	18

Scale: 1 = Lack Competency, 2 = Low Competency, 3 = Moderate Competency, 4 = High competency, 5 = Very High Competency

*P ≤ 0.05.

Table 4.12: Means, Standard Deviations and Rankings for Programme Planning Competencies by Position Title of all Respondents.

Administration Competency	Extension Agents			Supervisors			t value	Total		
	N = 221			N = 73				N = 294		
	X	SD	Rank	X	SD	Rank		X	SD	Rank
12. Ability to identify policies specific to your area(s) responsibility	3.24	.99	16	3.44	.87	13	-1.68	3.29	.96	16
13. Conducting staff meetings	3.96	.98	1	4.07	.81	1	-0.91	3.99	.94	1
14. Promoting inter-office communications	3.46	2.69	7	3.36	1.07	15	0.46	3.43	2.39	9
15. Delegating responsibility and authority	3.39	.99	10	3.45	1.01	12	-0.43	3.41	1.00	11
16. Orienting new staff members	3.14	1.17	20	3.32	.09	17	-1.14	3.19	1.15	19
17. Providing recognition for staff	3.35	1.39	13	3.33	.04	16	0.13	3.34	1.31	13
18. Maintaining staff morale	3.39	1.14	10	3.49	1.03	9	-0.73	3.41	1.11	10
19. Preparing job descriptions	3.51	1.04	6	3.53	.88	8	-0.18	3.52	1.00	6
20. Dealing with complaints	3.29	1.13	15	3.47	.97	11	-1.29	3.33	1.09	14
21. Analysing personnel record	3.37	1.04	12	3.48	.82	10	-0.91	3.40	.99	12
TOTAL	3.43	.69		3.51	.59		-0.98	3.45	.63	

Scale: 1 = Lack Competency, 2 = Low Competency, 3 = Moderate Competency, 4 = High competency, 5 = Very High Competenc

*P ≤ 0.05.

Table 4.13: Means, Standard Deviations and Rankings for Programme Planning Competencies by Position Title of all Respondents.

Programme Planning Competency	Extension Agents			Supervisors			t value	Total		
	N = 221			N = 73				N = 294		
	X	SD	Rank	X	Rank	X		SD	Rank	
1. Developing a Calendar of extension activities	3.55	1.18	1	3.66	.80	2	-0.90	3.57	1.10	1
2. Determining the needs of Clientele for extension programme	3.21	1.20	6	3.56	.73	4	-3.02*	3.30	1.11	6
3. Determining objectives / goals of the extension programme	3.44	1.13	2	3.70	.12	1	-2.13*	3.51	1.00	2
4. Establishing programme priorities	3.31	1.17	4	3.51	.95	6	-1.43	3.36	1.12	4
5. Preparing an annual programme of work for your area of responsibility	3.38	1.21	3	3.63	.99	3	-1.76	3.44	1.16	3
6. Preparing a long-range programme of work	2.93	1.18	7	3.19	1.13	7	-1.72	2.99	1.17	7
7. Involving co-workers in programme planning	3.24	1.20	5	3.52	1.19	5	-1.71	3.31	1.20	5
8. Involving extension support groups and clientele in programme planning	2.85	1.17	8	3.08	.91	8	-1.71	2.90	1.11	8
TOTAL	3.24	.87		3.48	.67		-2.47*	3.30	.83	

Scale: 1 = Lack Competency, 2 = Low Competency, 3 = Moderate Competency, 4 = High competency, 5 = Very High Competency

*P ≤ 0.05.

'Moderate competency' (2.99 and 2.90, respectively). There were significant difference between means for agents and supervisors for two of the competencies and also for the grand means, though all the paired means were between 3.00 and 4.00. Where significant differences occurred, supervisors rated themselves higher.

Programme Execution

The means for agents and supervisors differed significantly for two competencies, ie, 'Following a written programme of work' and 'Conducting home/farm visits'. All the paired means, however, were between 3.00 and 4.00 (Table 4.14). The grand means for agents and supervisors also showed significant difference. In each of these competencies, supervisors rated themselves higher. 'Completing monthly or annual reports' was rated highest while 'Involving others in executing plans' was rated lowest by all the respondents.

Teaching

No significant difference occurred in any of the items under Teaching competency between the means of agents and supervisors (table 4.15). Their grand means also did not differ significantly. In 12 out of the 18 items, supervisors' ratings were higher. In the ratings by all the respondents, 'Ability to recognize the importance of punctuality and presenting information in a meeting were the topmost. The two lowest ranked were presenting information with an overhead projector and presenting information with slides.

All the competencies, except five, were rated within 'Moderate' to 'High' competency range. The other five competencies were rated within 'Low' to 'Moderate' competency range. They are 'Developing teaching materials', 'Presenting information with an overhead projector', 'Presenting information with slides', 'Presenting information with charts' and 'Planning organizing and conducting tours and field trips'.

Table 4.14: Means, Standard Deviations and Rankings for Programme Execution Competencies by Position Title of all Respondents.

Programme Execution Competency	Extension Agents			Supervisors			t value	Total		
	N = 221			N = 73				N = 294		
	X	SD	Rank	X	SD	Rank		X	SD	Rank
1. Utilizing a Calendar of activities/events	3.40	1.04	5	3.51	.80	7	-.89	3.43	.99	6
2. Following a written programme of work	3.43	1.05	4	3.67	.85	4	-1.98*	3.49	1.01	4
3. Providing leadership for programmes planning and execution	3.39	1.55	6	3.55	.77	6	-1.12	3.43	1.39	5
4. Developing a working relationship with clientele	3.56	.94	2	3.77	.86	3	-1.54	3.63	.92	2
5. Completing monthly or annual reports	4.00	.91	1	4.05	.83	1	-.44	4.02	.89	1
6. Involving others in executing plans	3.34	.96	7	3.56	.91	5	-1.75	3.40	.95	7
7. conducting home/farmvisits.	3.48	1.09	3	3.82	.84	2	-2.80*	3.56	1.04	3
TOTAL	3.52	.69		3.70	.59		-2.22*	3.57	.67	

Scale: 1 = Lack Competency, 2 = Low Competency, 3 = Moderate Competency, 4 = High competency,

*P ≤ 0.05.

Table 4.15: Means, Standard Deviations and Rankings for Teaching Competencies by Position Title of all Respondents.

Teaching Competency	Extension Agents			Supervisors			t value	Total		
	N = 221			N = 73				N = 294		
	X	SD	Rank	X	SD	Rank		X	SD	Rank
1. Using principles (basic ideas or rules) of learning and teaching.	3.27	1.05	9	3.36	1.12	10	-.57	3.29	1.08	10
2. Developing teaching materials.	2.91	1.16	14	3.08	1.14	14	-1.12	2.95	1.16	14
3. Ability to select non-formal methods and techniques for particular situations	3.03	.95	13	3.19	.89	11	-1.35	3.07	.94	13
4. Presenting information in a lecture	3.54	2.26	4	3.44	.99	7	.53	3.51	2.01	5
5. Presenting a concept, principle, or skill through a method demonstrations	3.29	1.07	8	3.45	1.03	6	-1.16	3.33	1.06	8
6. Presenting information in a meeting	2.41	1.93	17	3.79	.87	1	-.86	3.72	.90	2
7. Presenting information in a seminar	3.69	.91	3	3.14	1.10	12	-.46	3.09	1.11	12
8. Presenting information at a field day	3.07	1.12	12	3.38	.95	9	-.87	3.30	1.07	9
9. Presenting information with an overhead projector	3.27	1.11	9	2.22	1.24	18	-.99	2.36	1.78	17

Scale: 1 = Lack Competency, 2 = Low Competency, 3 = Moderate Competency, 4 = High competency, 5 = Very High Competency

*P ≤ 0.05.

Table 4.15: Means, Standard Deviations and Rankings for Teaching Competencies by Position Title of all Respondents.

Teaching Competency	Extension Agents			Supervisors			t value	Total		
	N = 221			N = 73				N = 294		
	X	SD	Rank	X	SD	Rank		X	SD	Rank
10. Presenting information with slides	2.19	1.23	18	2.23	1.24	17	-.28	2.20	1.23	18
11. Presenting information with charts	2.83	1.21	15	2.90	1.24	15	-.43	2.85	1.21	15
12. Presenting information with chalk board	3.38	1.15	7	3.44	1.13	7	-.38	3.39	1.15	7
13. Conducting group discussions	3.54	.92	4	3.51	1.07	4	.26	3.53	.96	4
14. Using the problem solving approach to teaching	3.15	.90	11	3.10	1.11	13	.37	3.14	.95	11
15. Encouraging audience to ask questions.	3.72	.90	2	3.64	.96	3	.63	3.70	.91	3
16. Planning, organizing and conducting tours and field trips.	2.67	1.16	16	2.82	1.16	16	-1.00	2.70	1.16	16
17. Judging exhibits at agricultural shows	3.43	1.73	6	3.48	1.02	5	-.30	3.44	1.58	6
18. Ability to recognize the importance of punctuality	3.81	.93	1	3.75	.98	2	.43	3.80	.95	1
TOTAL	3.18	.71		3.22	.71		-.43	3.19	.70	

Scale: 1 = Lack Competency, 2 = Low Competency, 3 = Moderate Competency, 4 = High competency, 5 = Very High Competency

*P ≤ 0.05..

Communication

There were no significant differences between means of the perceptions of extension agents and supervisors for all the 15 competency items under communication and also the grand means. Supervisors rated themselves higher in 10 out of the 15 competencies than agents (Table 4.16).

Agents and supervisors separately and collectively placed 'Writing and /or completing special reports', 'Speaking to groups' and 'Speaking to individuals' as the top three competencies.

'The use of a camera and/or other photographic equipment', 'The use of a tape recorder' and 'The use of a (desk top) computer' were rated as the three lowest competency items under Communication.

Ten competencies were rated within 'Moderate'(3.00) and 'High' (4.00) competency range, two were rated within 'Low'(2.00) and 'Moderate'(3.00) competency range, while three were below the 'Low' competency range (2.00).

Understanding Human Behaviour

Agents and supervisors alike rated 11 competencies in this category between 'Moderate' and 'High'. 'Determining the effect of pressure groups on the thinking process' was however rated between 'Low competency' and 'Moderate competency' (Table 4.17).

In all the 12 competencies, supervisors rated themselves high than the agents however none of the differences was significant. Agents and supervisors separately and collectively placed 'Recognizing the role of different sexes and how it influences change', 'Recognizing differences in age groups' and 'Ability to influence people to accept change' highest in their ranking. 'Applying factors affecting behaviour of people' and 'Recognizing factors that influence goal settings' were ranked lowest.

Table 4.16: Means, Standard Deviations and Rankings for Communication by Position Title of all Respondents.

Communication Competency	Extension Agents			Supervisors			t value	Total		
	N = 221			N = 73				N = 294		
	X	SD	Rank	X	SD	Rank		X	SD	Rank
1. Establishing communications among extension staff	3.40	1.12	8	3.48	1.04	6	-.54	3.42	1.10	7
2. Writing letters and /or memos	3.41	1.10	6	3.56	1.05	4	-1.03	3.45	1.11	6
3. Writing and/or completing special reports	3.62	.92	1	3.66	1.02	2	-.31	3.63	.94	1
4. Speaking to groups	3.56	.98	3	3.73	.85	1	-1.42	3.60	.95	2
5. Speaking to individuals	3.58	1.12	2	3.62	1.20	3	-.23	3.59	1.13	3
6. Using non-verbal communications	2.93	1.05	11	2.90	1.11	12	.16	2.92	1.06	11
7. Possession of listening skills	3.50	.92	4	3.40	.95	10	.79	3.47	.93	4
8. Preparing extension publications	2.59	1.18	12	2.48	1.07	13	.76	2.56	1.15	12
9. Act on correspondence promptly	3.48	1.03	5	3.44	1.04	7	.33	3.47	1.03	5
10. Providing recognition for achievement	3.23	1.08	10	3.26	1.11	11	-.20	3.24	1.09	10

Scale: 1 = Lack Competency, 2 = Low Competency, 3 = Moderate Competency, 4 = High competency, 5 = Very High Competency

*P ≤ 0.05.

Table 4.16: Means, Standard Deviations and Rankings for Communication by Position Title of all Respondents.

Communication Competency	Extension Agents			Supervisors			t value	Total		
	N = 221			N = 73				N = 294		
	X	SD	Rank	X	SD	Rank		X	SD	Rank
11. Establishing working relationships with other governmental organizations and agencies	3.38	1.26	9	3.41	.97	9	-19	3.39	1.19	9
12. Establishing working relationships with other governmental organizations and agencies	3.41	1.02	6	3.44	.94	7	-20	3.42	1.00	8
13. The use of a camera and/or other photographic equipment	1.75	1.63	14	1.84	1.25	15	-46	1.77	1.55	14
14. The use of a tape recorder	1.95	1.25	13	1.86	1.22	14	-50	1.93	1.24	13
15. The use of a (desk top computer	1.47	.92	15	1.53	1.03	15	-47	1.49	.95	15
TOTAL	3.02	.66		3.04	.70		-24	3.02	.67	

Scale: 1 = Lack Competency, 2 = Low Competency, 3 = Moderate Competency, 4 = High competency, 5 = Very High Competency

*P ≤ 0.05.

Table 4.17: Means, Standard Deviations and Rankings for Understanding Human Behaviour Competencies by Position Title of all Respondents.

Understanding Human Behaviour Competency	Extension Agents			Supervisors			t value	Total		
	N = 221			N = 73				N = 294		
	X	SD	Rank	X	SD	Rank		X	SD	Rank
1. Application of principles of motivation	3.05	.99	10	3.14	.95	10	-.64	3.07	.97	10
2. Identification of factors that influence people to become involved	3.14	.97	9	3.26	.91	9	-.96	3.17	.96	9
3. Determining the effect of pressure groups on the thinking process	2.91	1.03	12	2.97	.97	12	-.44	2.93	1.02	12
4. Recognizing goal settings	3.16	1.02	8	3.33	.77	7	-1.51	3.20	.97	8
5. Applying factors affecting behaviour of people	3.00	.64	11	3.07	.62	11	-.50	3.02	1.01	11
6. Ability to influence people to accept change	3.39	1.05	3	3.51	.88	3	-.94	3.42	1.01	3
7. Ability to identify the power structure within the community	3.22	.98	6	3.38	.94	5	-1.30	3.26	.97	6
8. Ability to identify pressure groups within the community	3.20	.99	7	3.30	.88	8	-.80	3.23	.96	7

Scale: 1 = Lack Competency, 2 = Low Competency, 3 = Moderate Competency, 4 = High competency, 5 = Very High Competenc

*P ≤ 0.05.

Table 4.17 : Means, Standard Deviations and Rankings for Understanding Human Behaviour Competencies by Position Title of all Respondents.

Understanding Human Behaviour Competency	Extension Agents			Supervisors			t value	Total		
	N = 221			N = 73				N = 294		
	X	SD	Rank	X	SD	Rank		X	SD	Rank
9. Utilizing knowledge of interaction of people in groups	3.28	.95	5	3.38	.89	5	-.84	3.31	.93	5
10. Recognizing differences in age groups	3.44	1.08	1	3.52	.94	2	-.58	3.46	1.04	4
11. Recognizing traditional culture and its effect on change	3.36	1.06	4	3.44	1.00	4	-.56	3.38	1.04	4
12. Recognizing the role of different sexes and how it influences change	3.44	1.00	1	3.55	.99	1	-.82	3.47	1.00	1
TOTAL	3.22	.76		3.32	.64		-1.14	3.24	.73	

Scale: 1 = Lack Competency, 2 = Low Competency, 3 = Moderate Competency, 4 = High competency, 5 = Very High Competency

*P ≤ 0.05.

Eleven out of the 12 competencies were rated between 'Moderate' and 'High' while 'Determining the effect of pressure groups on the thinking process' was rated just below 'moderate' competency level.

Maintaining Professionalism

All the four competencies in this category were rated between 'Moderate' and 'High' competency levels. In all the competencies, supervisors rated themselves higher but none of the differences between the means was significant. The grand means did not differ significantly (Table 4.18).

Respondents separately and collectively ranked 'Identifying opportunities for professional improvement' and 'Maintaining professional competencies' above the others. 'Developing a plan for professional improvement' was ranked lowest followed by 'Participation in professional organisations and activities'.

Evaluation

Thirteen of the 15 competencies were rated higher by supervisors than did agents. The ratings were between 'Low competency' and 'Very high competency'. Supervisors rated one competency above 'High' level and rated one competency within the 'Low' and 'Moderate' range. Agents placed three competencies between 'Low level' and 'Moderate level'. The remaining competencies were rated within the 'Moderate' to 'High' range (Table 4.19). There were significant differences between the means of agents and supervisors for three of the competencies in this category.

Agents and supervisors separately and collectively ranked 'Evaluating the performance of the extension staff' highest. 'Interpreting results of questionnaires', 'Interpreting research findings from research stations and Universities' and 'Conducting a literature search utilizing library

Table 4.18: Means, Standard Deviations and Rankings for Maintaining Professionalism Competency by Position Title of all Respondents.

Maintaining Professionalism Competency	Extension Agents			Supervisors			t value	Total		
	N = 221			N = 73				N = 294		
	X	SD	Rank	X	SD	Rank		X	SD	Rank
1. Identifying opportunities for professional improvement	3.33	.95	2	3.82	2.52	1	-1.65	3.45	1.51	2
2. Developing a plan for professional competencies	3.02	1.02	4	3.14	1.10	4	-.78	3.05	1.04	4
3. Maintaining professional organizations and activities	3.39	.98	1	3.62	.95	2	-1.69	3.45	.97	1
4. Participation in professional organizations and activities	3.24	1.08	3	3.41	.93	3	-1.28	3.29	1.05	3
TOTAL	3.25	.82		3.50	1.00		-1.92	3.31	.87	

Scale: 1 = Lack Competency, 2 = Low Competency, 3 = Moderate Competency, 4 = High competency, 5 = Very High Competency

* $P \leq 0.05$.

Table 4.19: Means, Standard Deviations and Rankings for Evaluation Competencies by Position Title of all Respondents.

Evaluation Competency	Extension Agents			Supervisors			t value	Total		
	N = 221			N = 73				N = 294		
	X	SD	Rank	X	SD	Rank		X	SD	Rank
1. Evaluating the effectiveness of a national, district, or local extension programme	3.25	.95	5	3.44	.90	4	-1.50	3.30	.94	6
2. Evaluating the performance of the extension staff	3.51	.96	1	4.18	2.38	1	-2.35*	3.37	1.47	1
3. Interpreting the impact of change and/ or trends upon the clientele served	3.27	1.16	4	3.53	.73	2	-2.27*	3.34	1.07	3
4. Using questionnaires to seek information	3.00	1.12	12	3.10	1.11	10	-.67	3.02	1.12	12
5. Using observation method to seek information	3.17	.99	8	3.32	.83	7	-1.25	3.20	.96	8
6. Using interviews to seek information	3.39	2.94	3	3.14	1.22	9	1.04	3.33	2.62	4
7. Interpreting results of questionnaires	2.89	1.06	13	3.04	1.15	13	-1.01	2.93	1.08	13
8. Evaluating the results of an extension event/ activity	3.23	1.03	7	3.51	.96	3	-2.09*	3.30	1.02	5

Scale: 1 = Lack Competency, 2 = Low Competency, 3 = Moderate Competency, 4 = High competency, 5 = Very High Competency

*P ≤ 0.05.

Table 4.19: Means, Standard Deviations and Rankings for Evaluation Competencies by Position Title of all Respondents.

Evaluation Competency	Extension Agents			Supervisors			t value	Total		
	N = 221			N = 73				N = 294		
	X	SD	Rank	X	SD	Rank		X	SD	Rank
9. Analyzing reports	3.42	1.05	2	3.44	1.11	4	-.12	3.43	1.06	2
10. Interpreting research findings from research stations and universities	2.80	1.13	14	3.03	1.18	14	-1.47	2.85	1.15	14
11. Applying research findings when making recommendations to clientele	3.24	1.10	6	3.33	1.06	6	-.62	3.06	1.08	7
12. Cooperating with research stations	3.11	1.12	9	3.08	1.02	11	.22	3.11	1.10	10
13. Identifying problems requiring additional research	3.05	1.02	11	3.07	1.08	12	-.16	3.05	1.04	11
14. Keeping up-to-date with current research findings	3.11	1.05	9	3.18	1.09	8	-.48	3.13	1.06	9
15. Conducting a literature search utilizing library resources	2.52	1.77	15	2.62	1.20	15	-.50	2.55	1.61	15
TOTAL	3.13	.74		3.27	.72		-1.39	3.16	.73	

Scale: 1 = Lack Competency, 2 = Low Competency, 3 = Moderate Competency, 4 = High competency, 5 = Very High Competency

*P ≤ 0.05.

resources' were ranked lowest.

4.5 COMPETENCY NEEDS OF SUPERVISORS IN AGRICULTURAL EXTENSION

The overall mean scores of the 294 respondents were used to determine the competency needs of the supervisors.

Of the 100 competencies, 83 were rated between 'Moderate' and 'High' only one was rated above 'High' level, ie. 'Completing monthly/or annual reports'. The rest (16) were rated below 'Moderate' level. In effect, 84 competencies were rated above 'Moderate' while 16 were rated below 'Moderate'.

The ideal situation is for all the supervisors to possess 'High' to 'very High' competencies in all the 100 competencies. Therefore, all the 83 competencies rated between 'Moderate' and 'High' need improvement.

Those competencies that were rated below 'Moderate' level ('Lack of competency' and 'Low competency') and which need urgent attention are;

Programme Planning:

- Involving extension support groups and clientele in programme planning (2.90)
- preparing a long-range programme of work (2.95).

Teaching:

- Developing teaching materials (2.95)
- Presenting information with an overhead projector (2.36).
- Presenting information with slides (2.20)
- Presenting information with charts (2.85)
- Planning, organizing and conducting tours and field trips (2.70).

Communication:

- Using non-verbal communications (2.92)
- Preparing extension publications (2.56)
- The use of a camera (1.77)
- The use of a tape recorder (1.93)
- The use of a (desk top) computer (1.45).

Understanding Human Behaviour:

- Determining the effect of pressure groups on the thinking process (2.93).

Evaluation:

- Interpreting results of questionnaires (2.93).
- Interpreting research findings from research stations and universities (2.85).
- Conducting a literature search utilizing library resources (2.55).

4.6 WHEN COMPETENCIES WERE ACQUIRED BY SUPERVISORS AND PERCEPTIONS OF THE BEST TIME TO LEARN COMPETENCIES

In addition to determining their competency levels, the supervisors were asked to indicate when (pre-service or in-service) they acquired the various competencies they possessed and also when they perceive as the best time to learn each competency (pre-service or in-service). This was done using percent distribution of respondents under pre-service or in-service.

Out of the 100 competency items, supervisors identified 76 (76.0%) as having been acquired on the job (in-service). Eighteen (18.0%) were said to have been acquired before the job (pre-service) probably in the various institutions attended. For the remaining six (6.0%) competencies supervisors were divided in thought as to when they acquired them.

Regarding the best time to learn the competencies, the supervisors identified 81 (81.0%) out of the 100 competencies as suitable to be learned on the job (in-service), 16 (16.0%) as

suitable to be learned before the job (pre-service). For three (3.0%) of the competencies, they were not sure as to when they perceive as the best time to learn them.

Administration

Out of the 21 administration competencies, 17 were identified by the supervisors as having been acquired on the job (in-service). Two were acquired before the job (pre-service). They are 'Managing time effectively' and 'Dealing with complaints'. For the remaining two, they were divided in thought as to when they were acquired (Table 4.20). These are 'Conducting staff meetings' and 'Providing recognition for staff'.

Supervisors identified 15 of the 21 competencies as suitable to be learned on the job (In-service) and only five as suitable to be learned before the job (pre-service). They are 'Coordinating work schedules of staff', 'Understanding how policies are formulated', 'Promoting inter-office communication', 'Delegating responsibility and authority' and 'Orienting new staff members'. The supervisors' opinions were divided on one of the competencies as to the best time to learn it, ie. 'Managing time effectively' (table 4.20).

Programme Planning

All the eight (8) competencies in this category were identified by the supervisors as having been acquired on the job (in-service).

Seven (87.5%) out of the eight (8) were identified as suitable to be learned on the job (in-service). The only one which was claimed to be suitable to be learned before the job (pre-service) is 'Preparing a long-range programme of work' (Table 4.20).

Table 4.20: Percent distribution in respect of when supervisors acquired (pre-service or in-service) and when they perceive as the best time to learn the Administration and Programme Planning competencies (pre-service or In-service).

Competencies	When Acquired			Best Time To Learn		
	N	Pre-service (%)	In-service (%)	N	Pre-service (%)	In-service (%)
Administration :						
1. In-depth knowledge & understanding of the "Unified Agric. Extension system"	18	12.5	87.5	60	46.7	53.3
2. Writing realistic goals for the extension programme	17	23.5	76.5	59	32.2	67.8
3. Ability to manage scarce resources for optimum productivity	18	38.9	61.1	59	42.4	57.6
4. Coordinating the use of equipment, facilities and resources with office staff	17	32.3	64.7	60	35.0	65.0
5. Budget preparation	18	33.3	66.7	58	51.7	48.3
6. Supervising budget expenditure	18	16.7	83.3	58	34.5	65.5
7. Managing time effectively	18	55.6	44.4	55	50.9	49.1
8. Coordinating work schedules of staff	18	27.8	72.2	56	30.4	69.6
9. Supervising extension Personnel	17	5.9	94.1	55	38.2	61.8
10. Placing extension personnel in their area of work	17	23.5	76.5	55	36.4	63.6
11. Understanding how Policies are formulated	17	41.2	58.8	58	63.8	36.2
12. Ability to identify policies specific to your area(s) responsibility	18	27.8	72.2	60	31.7	68.3
13. Conducting staff meetings	18	50.0	50.0	58	43.1	56.9
14. Promoting inter-office communications	18	33.3	66.7	56	53.6	46.4
15. Delegating responsibility and authority	18	44.4	55.6	56	53.4	46.6
16. Orienting new staff member	18	33.3	66.7	57	54.4	45.6

Scale: 1 = Pre-service, 2 = In-service

*P ≤ 0.05.

Table 4.20: Percent distribution in respect of when supervisors acquired (pre-service or in-service) and when they perceive as the best time to learn the Administration and Programme Planning competencies (pre-service or In-service).

Competencies	When Acquired			Best Time To Learn		
	N	Pre-service (%)	In-service (%)	N	Pre-service (%)	In-service (%)
17. Providing recognition for staff	18	50.0	50.0	57	38.6	61.4
18. Maintaining staff morale	18	44.4	55.6	56	42.9	57.1
19. Preparing job descriptions	18	22.2	77.8	54	33.3	66.7
20. Dealing with complaints	18	55.6	44.4	55	41.8	58.2
21. Analysing personnel record	18	22.2	77.8	55	32.7	67.3
Programme Planning :						
1. Developing a Calendar of extension activities	17	17.6	82.4	55	43.6	56.4
2. Determining the needs of Clientele for extension programme	18	22.2	77.8	56	42.9	57.1
3. Determining objectives/goals of the extension programme	18	22.2	77.8	56	41.1	58.9
4. Establishing programme priorities	18	22.2	77.8	54	38.9	61.1
5. Preparing an annual programme of work for your area of responsibility	18	27.8	72.2	58	37.9	62.1
6. Preparing a long-range programme of work	18	33.3	66.7	59	55.9	44.1
7. Involving co-workers in programme planning	18	22.2	77.8	59	39.0	61.0
8. Involving extension support groups and clientele in programme planning	17	23.5	74.5	56	42.9	57.1

Scale: 1 = Pre-service, 2 = In-service

* $P \leq 0.05$.

Programme Execution

Supervisors claimed that all the seven (7) competencies in this category were acquired on the job. They also identified all the competencies as suitable to be learned on the job (Table 4.21).

Teaching

There are 18 competencies in this category and supervisors claimed that eight (44.4%) were acquired on the job (in-service) and nine (50.0%), before the job (pre-service). For the remaining competency, they were divided as to when they acquired it. This is 'Presenting information with slides' (Table 4.21).

Regarding the best time to learn the competencies, 13 were perceived as suitable to be learned on the job (in-service) and three, suitable before the job (pre-service). These are 'Presenting information in a seminar', 'Presenting information with charts' and 'Ability to recognize the importance of punctuality'. The respondents were divided in perception as to the best time to learn two of them, which are 'Presenting information with in a meeting' and 'Planning organizing and conducting tours and field trips'.

Communication

Supervisors claimed that 10 of the 15 competencies were acquired on the job (in-service) while five were acquired before the job (pre-service). Those acquired before the job are 'Speaking to individuals', 'Possession of listening skills', 'The use of a camera and/or other photographic equipment', 'The use of a tape recorder' and 'The use of a (desk top) computer'. (Table 4.22).

As to the best time to learn the competencies, 11 items were identified to be suitable to be learned on the job. Four were identified as suitable to be learned before the job. They are 'Writing letters and/or memos', 'The use of a camera and/or other photographic equipment', 'The

Table 4.21: Percent distribution in respect of when supervisors acquired (pre-service or in-service) and when they perceive as the best time to learn the Programme Execution and Teaching competencies (pre-service or in-service).

Competencies	When Acquired			Best Time To Learn		
	N	Pre-service (%)	In-service (%)	N	Pre-service (%)	In-service (%)
Programme Execution:						
1. Utilizing a Calendar of activities/events	18	27.8	72.2	55	40.0	60.0
2. Following a written programme of work	18	33.3	66.7	57	24.6	75.4
3. Providing leadership for programmes planning and execution	18	27.8	72.2	57	31.6	68.4
4. Developing a working relationship with clientele	18	39.9	61.1	55	30.9	69.1
5. Completing monthly or annual reports	17	35.3	64.7	55	21.8	78.2
6. Involving others in executing plans	18	38.9	61.1	57	33.3	66.0
7. conducting home/farmvisits.	18	27.8	72.2	55	30.9	69.1
Teaching:						
1. Using principles (basic ideas or rules) of learning and teaching.	18	61.1	38.9	62	48.4	51.6
2. Developing teaching materials.	17	35.3	64.7	60	43.3	56.7
3. Ability to select non-formal methods and techniques for particular situations	18	27.8	72.2	59	40.7	59.3
4. Presenting information in a lecture	18	61.1	38.9	56	44.6	55.4
5. Presenting a concept, principle, or skill through method demonstrations	18	33.3	66.7	56	35.7	64.3
6. Presenting information in a meeting	17	58.8	41.2	56	50.0	50.0
7. Presenting information in a seminar	18	66.7	33.3	55	56.4	43.6
8. Presenting information at a field day	18	22.2	77.8	54	33.3	66.7
9. Presenting information with an overhead projector	16	31.3	68.7	59	47.5	52.5

Scale: 1 = Pre-service, 2 = In-service

* $P \leq 0.05$.

Table 4.21: Percent distribution in respect of when supervisors acquired (pre-service or in-service) and when they perceive as the best time to learn the Programme Execution and Teaching competencies (pre-service or In-service).

Competencies	When Acquired			Best Time To Learn		
	N	Pre-service (%)	In-service (%)	N	Pre-service (%)	In-service (%)
10. Presenting information with slides	14	50.0	50.0	59	47.5	52.5
11. Presenting information with charts	18	61.1	38.9	58	51.7	48.3
12. Presenting information with chalk board	18	66.7	33.3	54	46.3	53.7
13. Conducting group discussions	17	52.9	47.1	56	37.5	62.5
14. Using the problem solving approach to teaching	18	38.9	61.1	58	43.1	56.9
15. Encouraging audience to ask questions.	18	66.7	33.3	56	37.5	62.5
16. Planning, organizing and conducting tours and field trips.	18	38.9	61.1	57	49.1	50.9
17. Judging exhibits at agricultural shows	18	11.1	88.9	56	26.8	73.2
18. Ability to recognize the importance of punctuality	18	77.8	22.2	55	58.2	41.8

Scale: 1 = Pre-service, 2 = In-service

$p \leq 0.05$.

Table 4.22: Percent distribution in respect of when supervisors acquired (pre-service or in-service) and when they perceive as the best time to learn the Communication competencies (pre-service or In-service).

Competencies	When Acquired			Best Time To Learn		
	N	Pre-service (%)	In-service (%)	N	Pre-service (%)	In-service (%)
Communication:						
1. Establishing communications among extension staff	18	27.8	72.2	56	39.3	60.7
2. Writing letters and /or memos	18	44.4	55.6	51	51.0	49.0
3. Writing and/or completing special reports	18	33.3	66.7	53	41.5	58.5
4. Speaking to groups	18	44.4	55.6	54	33.3	66.7
5. Speaking to individuals	17	52.9	47.1	51	47.1	52.9
6. Using non-verbal communications	15	33.3	66.7	53	39.6	60.4
7. Possession of listening skills	18	61.1	38.9	54	48.1	51.9
8. Preparing extension publications	17	23.5	76.5	58	44.8	55.2
9. Act on correspondence promptly	18	44.4	55.6	53	45.3	54.7
10. Providing recognition for achievement	17	47.1	52.9	53	35.8	54.2
11. Establishing working relationships with other governmental organizations and agencies	18	16.7	83.3	55	32.7	67.3
12. Establishing working relationships with other governmental organizations and agencies	18	22.2	77.8	55	34.5	65.5
13. The use of a camera and/or other photographic equipment	14	78.6	21.4	61	54.1	45.9
14. The use of a tape recorder	15	73.3	26.4	59	55.9	44.1
15. The use of a (desk top) computer	9	55.6	44.4	58	55.2	44.8

Scale: 1 = Pre-service, 2 = In-service

*P ≤ 0.05.

use of a tape recorder' and 'The use of a (desk top) computer' (Table 4.22).

Three of the items which were acquired before the job were also identified as best to be learned on the job. They are 'The use of a camera and/or other photographic equipment', 'The use of a tape recorder' and 'The use of a (desk top) computer'.

Understanding Human Behaviour

This category has 12 competencies Eight of which were acquired on the job by the supervisors and one, before the job, ie. 'Recognizing the role of different sexes and how it influences change'. They were divided as to when the remaining three were acquired (Table 4.23). They are 'Application of principles of motivation', 'Recognizing differences in age groups' and 'Recognizing traditional culture and its effect on change'.

As to the best time to learn them 10 of the competencies were identified with 'in-service' with the remaining two which are 'Recognizing traditional culture and its effect on change' and 'Recognizing the role of different sexes and how it influences change' identified with 'pre-service'.

Eight of the competencies which they claimed to have acquired on the job (in-service) were also identified as suitable to be learned on the job (Table 4.23).

Maintaining Professionalism

The respondents claimed that all the four (4) competencies under this were acquired on the job. They also identified the best time to learn all the competencies to be on-the-job (Table 4.24).

Evaluation

There were 15 competencies in this category. Fourteen of them were acquired on the job. One was acquired before the job, ie. 'Conducting a literature search utilizing library

Table 4.23: Percent distribution in respect of when supervisors acquired (pre-service or in-service) and when they perceive as the best time to learn the Understanding Human Behaviour competencies (pre-service or In-service).

Competencies	When Acquired			Best Time To Learn		
	N	Pre-service (%)	In-service (%)	N	Pre-service (%)	In-service (%)
Understanding Human Behaviour:						
1. Application of principles of motivation	18	50.0	50.0	58	36.2	63.8
2. Identification of factors that influence people to become involved	18	38.9	61.1	56	44.6	55.4
3. Determining the effect of pressure groups on the thinking process	18	38.9	61.1	53	45.3	54.7
4. Recognizing goal settings	18	33.3	66.7	56	37.5	62.5
5. Applying factors affecting behaviour of people	18	33.3	66.7	56	44.6	55.4
6. Ability to influence people to accept change	18	38.9	61.1	56	35.7	64.3
7. Ability to identify the power structure within the community	18	38.9	61.1	55	34.4	63.6
8. Ability to identify pressure groups within the community	18	44.4	55.6	56	42.9	57.1
9. Utilizing knowledge of interaction of people in groups	18	22.2	77.8	56	39.3	60.7
10. Recognizing differences in age groups	18	50.0	50.0	56	44.6	55.4
11. Recognizing traditional culture & its effect on change	18	50.0	50.0	57	61.4	38.6
12. Recognizing the role of different sexes and how it influences change	18	55.6	44.4	56	51.8	48.2

Scale: 1 = Pre-service, 2 = In-service

* $P \leq 0.05$.

Table 4.24: Percent distribution in respect of when supervisors acquired (pre-service or in-service) and when they perceive as the best time to learn the Maintaining Professionalism and Evaluation competencies (pre-service or In-service).

Competencies	When Acquired			Best Time To Learn		
	N	Pre-service (%)	In-service (%)	N	Pre-service (%)	In-service (%)
Maintaining Professionalism:						
1. Identifying opportunities for professional improvement	18	27.8	72.2	58	39.7	60.3
2. Developing a plan for professional competencies	18	27.8	72.2	56	37.5	62.5
3. Maintaining professional organizations and activities	18	33.3	66.7	57	47.4	52.6
4. Participation in professional organizations and activities	18	27.8	72.2	56	35.7	64.3
Evaluation:						
1. Evaluating the effectiveness of a national, district, or local extension programme	17	17.6	82.4	57	33.3	66.7
2. Evaluating the performance of the extension staff	17	17.6	82.4	56	33.9	66.1
3. Interpreting the impact of change and/or trends upon the clientele served	18	16.7	83.3	55	29.1	70.9
4. Using questionnaires to seek information	17	35.3	64.7	56	37.5	62.5
5. Using observation method to seek information	17	29.4	70.6	54	42.6	57.4
6. Using interviews to seek information	18	33.3	66.7	57	36.8	63.2
7. Interpreting results of questionnaires	18	27.8	72.2	59	42.4	57.6
8. Evaluating the results of an extension event/activity	18	27.8	72.2	57	31.6	68.4

Scale: 1 = Pre-service, 2 = In-service

* $P \leq 0.05$.

Table 4.24: Percent distribution in respect of when supervisors acquired (pre-service or in-service) and when they perceive as the best time to learn the Maintaining Professionalism and Evaluation competencies (pre-service or In-service).

Competencies	When Acquired			Best Time To Learn		
	N	Pre-service (%)	In-service (%)	N	Pre-service (%)	In-service (%)
9. Analyzing reports	18	37.5	62.5	53	30.2	69.8
10. Interpreting research findings from research stations and universities	16	56.3	43.7	55	47.3	52.7
11. Applying research findings when making recommendations to clientele	18	38.9	61.1	57	31.6	68.4
12. Cooperating with research stations	18	11.1	88.9	58	41.4	58.6
13. Identifying problems requiring additional research	18	16.7	33.3	62	29.0	71.0
14. Keeping up-to-date with current research findings	18	33.3	66.7	59	33.9	66.1
15. Conducting a literature search utilizing library resource	17	47.1	52.9	57	52.6	47.4

Scale: 1 = Pre-service, 2 = In-service

* $P \leq 0.05$.

resources' (Table 4.24).

The picture was the same when it came to their perceptions as to the best time to learn the competencies. All the 14 competencies acquired before the job were identified to be suitable for learning on the job.

4.7 DIFFERENCES ON DISTRIBUTION ON PERSONAL CHARACTERISTICS OF SUPERVISORS AND THEIR SELF-EVALUATION OF COMPETENCIES

The personal characteristics used for this relational analysis were region, age, gender, marital status, highest educational level attained and whether or not respondents have had courses in agricultural administration or management. Included also were years of experience in the Ministry, title as a supervisor, time allocation between office and field work, major area of responsibility, and span of control. The rest were area of residence, residence as a youth, years of other work experience and number of short courses attended.

Scheffe tests (one-way ANOVA) and t-tests, depending on the number of independent variable categories, were used for the analysis. For the purpose of presentation, only personal characteristics that showed significant differences are reported.

Age:

The t-test was used and as indicated in table 4.25, distribution on age showed a significant relationship with Programme Planning Competencies. Younger supervisors (20-40 years) rated themselves significantly higher (3.88) than older ones (41-60 years) though both groups placed themselves between 'Moderate' (3.00) and 'High' (4.00). This, somehow, agrees with Pezeshki-Raad's (1993) finding in which the difference by age showed under administration, communication and maintaining professionalism. Adewumi (1976) also came out with a similar finding.

Table 4.25: T-tests for Differences in Ratings of Supervisors for the Competency Categories by Age.

Competency Category	Age				
	N	Mean	SD	T-value	
Administration	20 - 40	4	3.73	0.41	1.34
	41 - 60	35	3.43	0.54	
Programme Planning	20 - 40	4	3.88	0.10	3.70*
	41 - 60	35	3.39	0.72	
Programme Execution	20 - 40	4	3.61	0.27	-0.71
	41 - 6	35	3.73	0.64	
Teaching	20 - 40	4	3.01	0.30	-0.83
	41 - 60	35	3.17	0.75	
Communication	20 - 40	4	3.23	0.45	0.98
	41 - 60	35	2.98	0.80	
Understanding Human Behaviour	20 - 40	4	3.52	0.49	0.94
	41 - 60	35	3.27	0.67	
Maintaining Professionalism	20 - 40	4	3.38	0.72	-0.39
	41 - 60	35	3.54	1.17	
Evaluation	20 - 40	4	3.13	0.82	-0.30
	41 - 60	35	3.26	0.74	

Scale: 1= Lack of competence, 2= Low competence, 3= Moderate competence, 4= High competence, 5= Very high competence.

* $P \leq 0.05$

Gender:

The t-test was used for this analysis and the results are shown in table 4.26. Distribution on gender showed a significant relationship with Administration and Programme Planning Competencies.

In both competency categories, female supervisors rated themselves higher than their male counterparts. Under Administration, the females placed themselves just above the 'High' competency level while the males placed themselves between 'Moderate' and 'High' competency levels. Both males and females ranked themselves between 'Moderate' and 'High' competency levels for Programme Planning.

Table 4.26: T-tests for Differences in Ratings of Supervisors for the Competency Categories by Gender.

Competency Category		Gender			T-value
		N	Mean	SD	
Administration	Male	69	3.48	0.59	-3.91*
	Female	4	4.05	0.26	
Programme Planning	Male	69	3.46	0.69	-3.60*
	Female	4	3.78	0.06	
Programme Execution	Male	69	3.69	0.59	-0.83
	Female	4	3.93	0.55	
Teaching	Male	69	3.19	0.71	-2.35
	Female	4	3.76	0.46	
Communication	Male	69	3.02	0.70	-1.19
	Female	4	3.38	0.59	
Understanding Human Behaviour	Male	69	3.30	0.65	-2.17
	Female	4	3.69	0.32	
Maintaining Professionalism	Male	69	3.49	1.02	-0.18
	Female	4	3.56	0.72	
Evaluation	Male	69	3.25	0.70	-0.60
	Female	4	3.58	1.10	

Scale: 1= Lack of competence, 2= Low competence, 3= Moderate competence, 4= High competence, 5= Very high competence.

*P ≤ 0.05

Highest Educational level Attained:

Scheffe test (one-way ANOVA) was used for this analysis.

The results are shown in table 4.27. Significant relationships between educational level and the competency categories showed in Administration, Teaching, Communication, Understanding Human Behaviour and Evaluation.

Table 4.27: ANOVA Tests for the Differences in Ratings of Supervisors for the Competency Categories by Highest Educational Level.

Competency Category	Highest Educational Level Attained			F value
	Diploma	B.Sc.	M.Sc.	
Administration	3.63a	3.45b	4.36ab	6.56*
Programme Planning	3.52	3.50	4.13	3.21
Programme Execution	3.73	3.52	4.36	3.32
Teaching	3.31a	3.25b	4.31ab	5.30*
Communication	3.13a	3.20b	4.17ab	7.91*
Understanding Human Behaviour	3.38a	3.18b	4.27ab	5.57*
Maintaining Professionalism	3.50	4.13	4.69	2.50
Evaluation	3.25a	3.49	4.40a	6.21*

Scale: 1= Lack of competence, 2= Low competence, 3= Moderate competence, 4= High competence, 5= Very high competence.

*P ≤ 0.05

Note: Means with common alphabets differ significantly from each other.

In all these competency categories, supervisors with M.Sc. degree rated themselves higher than B.Sc. degree and Diploma holders. In Evaluation, however, the B.Sc. mean rating was neither significantly different from M.Sc. nor the Diploma mean ratings. The ratings for the M.Sc. and Diploma holders were, however, significantly different.

Adewumi (1976) and Gonzalez (1982) came out with similar results whereby in most of the competencies studied, the B.Sc. degree holders rated themselves lower than the M.Sc. degree holders.

Area of Residence:

The mean ratings for supervisors who reside outside their area of work and those who reside within their area of work were compared using the t-test (Levene's test). (3.66).

Table 4.28: T-tests for Differences in Ratings of Supervisors for the Competency Categories by Area of Residence.

Competency Category	Area of Residence			
	N	Mean	SD	T-value
Administration				
Yes	66	3.49	0.62	-0.96
No	6	3.64	0.33	
Programme Planning				
Yes	66	3.44	0.67	-1.38
No	6	3.77	0.56	
Programme Execution				
Yes	66	3.66	0.59	-2.44*
No	6	4.05	0.35	
Teaching				
Yes	66	3.21	0.68	-1.46
No	6	3.62	0.66	
Communication				
Yes	66	3.02	0.72	-0.71
No	6	3.18	0.50	
Understanding Human Behaviour				
Yes	66	3.29	0.65	-0.66
No	6	3.43	0.47	
Maintaining Professionalism				
Yes	66	3.50	1.03	0.68
No	6	3.29	0.70	
Evaluation				
Yes	66	3.24	0.73	-1.04
No	6	3.50	0.59	

Scale: 1= Lack of competence, 2= Low competence, 3= Moderate competence, 4= High competence, 5= Very high competence.

*P ≤ 0.05

Table 4.28 shows the detailed results. This personal characteristic showed a significant relationship with only Programme Execution Competency. It is interesting to note that those who were resident outside their area of work rated themselves higher (4.05) than those resident within their area of work

4.8 LEVEL OF ASSOCIATION AMONG THE COMPETENCY CATEGORIES

Pearson's Correlation Coefficient (r) was used for this analysis. The correlation matrix in table 4.29 was arrived at using a zero-order correlations between all the eight (8) competency categories.

Table 4.29: Correlations for the competency categories for all Respondents.

Competency category	1	2	3	4	5	6	7	8
1. Administration	1.00							
2. Programme Planning	0.54*	1.00						
3. Programme Execution	0.69*	0.59*	1.00					
4. Teaching	0.66*	0.48*	0.63*	1.00				
5. Communication	0.62*	0.46*	0.61*	0.70*	1.00			
6. Understanding Human Behaviour	0.60*	0.46*	0.55*	0.66*	0.66*	1.00		
7. Maintaining Professionalism	0.49*	0.38*	0.40*	0.51*	0.49*	0.59*	1.00	
8. Evaluation	0.60*	0.48*	0.60*	0.70*	0.63*	0.64*	0.61*	1.00

* $P \leq 0.05$ $N = 294$

Note: All were significant at $P = 0.000$

There were positive association among all the eight competency categories with the strength varying from 0.38 to 0.70. The association was strongest (0.70) between 'Teaching' and 'Communication' and also 'Teaching' and 'Evaluation' competencies. This was followed by the association between 'Programme Planning' and 'Administration' competencies (0.69).

The associations among all the categories were quite strong except that between 'Maintaining Professionalism' and 'Programme Planning' (0.38) and also 'Maintaining Professionalism' and 'Programme Execution' (0.40) which were Low. Hence an improvement in one competency category will bring about a considerable improvement in the others.

CHAPTER 5

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

This chapter outlines the purpose of the study, the summary of the methodology, results and discussions. It also presents the conclusions and recommendations arrived at.

5.1 PURPOSE OF THE STUDY

The study examined the competency levels of and the competencies needed by extension supervisors in Ghana. It is guided by the following specific objectives:

- to determine the competency levels of supervisors as perceived by themselves and their extension agents.
- to compare the self-perceived competencies by supervisors with their competencies as perceived by extension agents.
- to identify the competency needs of supervisors in agricultural extension.
- to determine the differences on distribution on personal characteristics of supervisors and their self-Perceived competencies.
- to determine when the supervisors acquired the various competencies and when they perceive as the best time to learn them.
- to determine the extent of associations among the various categories of competencies.

5.2 METHODOLOGY

The study area comprised the Western, Brong Ahafo and Upper East Regions of Ghana. All the technical staff of the Ministry of Food and Agriculture in all the District Agricultural Development Units (DADUs) were involved in the study. In all, 73 agricultural extension supervisors and 221 extension agents took part in the study. The supervisors were made up of

District Directors, Development Officers and Subject Matter Specialists (SMSs). Two separate questionnaires, which were divided into two sections, were used to collect data on competency levels and demographic profile of respondents. The instruments, having been face and content validated, were administered to the respondents through the respective Regional Directors and the District Directors in the study areas. A total of 294 usable responses were received for analysis.

5.3 SUMMARY OF THE RESULTS AND DISCUSSION

This section outlines the summary of demographic characteristics, results and discussions, conclusions of the study and recommendations.

5.3.1 Demographic characteristics of respondents

The overall mean ages of Supervisors and agents were 38.9 and 38.8 years, respectively, with a general mean age of all respondents as 38.8 years.

Females formed only 4.8% of all the respondents. The remaining 95.2% was male. A total of about 90.0% of the respondents were married.

Almost all the agents held the agricultural certificate. A greater number of the supervisors possessed the Diploma Certificate with the least number possessing the M.Sc. degree.

The respondents claimed that they used a greater portion (more than 75.0%) of their work time in the field and used less than 25.0% for office duties. About 80.0% of the respondents were generalists while the rest were specialists. About 10.0% of the supervisors and agents had undertaken courses in agricultural administration or management.

The average years of experience for the respondents was about 12. Sixty percent of the supervisors were Development Officers, 13.0% were Subject Matter Specialists and about 17.0% were District Directors. The rest were for special duties. The average span of control for the

supervisors was 14 personnel.

Ninety percent of all respondents resided within their area of work. About 40.0% of the respondents had rural background while about equal proportions of the remainder had urban and semi-urban background.

Respondents who had Prior work experience had between six and ten years of work experience. Almost 50.0% of respondents had attended short courses that lasted less than one month. For courses that lasted more than one month, most of the respondents (82.0%) had not attended any.

5.3.2 Perceived level of Supervisors' Professional Competencies and Differences between Perceptions of Supervisors and Agents.

This assessment was based on the perceptions of supervisors themselves and Extension Agents. The Summary is in relation to the eight Competency Categories. The means of the two groups (table 36) fell between 'Moderate level' (3.00) and 'High level' (4.00) for all the competency categories. Generally, supervisors' ratings were higher than those of the agents. Differences between the means were significant only in a few competencies in 'Programme Planning' and 'Programme Execution', however, both groups placed the competency levels within the 'Moderate' to 'High' range.

Ranking of the competency categories by both groups was identical except for 'Training' and 'Evaluation' which swapped position as the 6th and 7th. The picture was similar in the three regions for supervisors and agents. The assessment by the agents confirms the self-evaluation by the supervisors.

Table 5.1 T-tests of Differences between overall means of Supervisors and Extension Agents for the Competency Categories.

Competency Category	<u>Supervisors</u>		<u>Agents</u>		t-value	<u>Total</u>		
	Mean	SD	Mean	SD		Mean	SD	Rank
Administration	3.51	0.59	3.43	0.64	-0.98	3.45	0.63	2
Programme Planning	3.48	0.67	3.24	0.87	-2.47*	3.30	0.83	4
Programme Execution	3.70	0.59	3.52	0.69	-2.22*	3.57	0.67	1
Teaching	3.22	0.71	3.18	0.71	-0.43	3.19	0.70	6
Communication	3.04	0.70	3.02	0.66	-0.24	3.02	0.67	8
Understanding Human								
Behaviour	3.32	0.64	3.22	0.76	-1.14	3.24	0.73	5
Maintaining Professionalism	3.50	1.00	3.25	0.82	-1.92	3.31	0.87	3
Evaluation	3.27	0.72	3.13	0.74	-1.39	3.16	0.73	7

Scale: 1= Lack of competence, 2= Low competence, 3= Moderate competence, 4= High competence, 5= Very high competence.

*P ≤ 0.05

5.3.3 Competency Needs of Supervisors

The overall mean scores of the 294 respondents were used to determine the competency needs of the supervisors.

Of the 100 competencies, 83 were rated between 'Moderate' and 'High' only one was rated above 'High' level, ie. 'Completing monthly/or annual reports'. The rest (16) were rated below 'Moderate' level. In effect, 84 competencies were rated above 'Moderate' while 16 were rated below 'Moderate'.

The ideal situation is for all the supervisors to possess 'High' to 'Very High' competencies in all the 100 competencies. Therefore, all the eighty-three competencies rated between 'Moderate' and 'High' need improvement while the supervisors need urgent training in the sixteen items which were rated below moderate level.

5.3.4 When Competencies were acquired and the best time to learn them

Out of the 100 competencies, supervisors claimed that they acquired 76 on the job and 18 before the job. They were divided in perception for the remaining 6 competencies.

Regarding the best time to learn the Competencies, the results are presented in relation to eight competency categories. Sixteen were identified for 'Pre-service', 81 for 'In-service'. For three of the items, supervisors were divided in perception as to the best time to learn (table 4.32).

5.3.5 Differences on distribution on Supervisors' demographic characteristics and their self-evaluation

One-way ANOVA and t-test were used to determine the relationships between supervisors' demographic characteristics and their self-evaluation.

Age, gender, highest educational level and area of residence of the supervisors showed significant relationships with competencies. Younger supervisors (20-40 years of age) rated

significant relationships with competencies. Younger supervisors (20-40 years of age) rated themselves as having higher competencies than older supervisors (41-60 years of age) in programme planning. Female supervisors rated themselves as possessing higher competencies in Administration, Teaching, Communication, understanding Human Behaviour and Evaluation, Supervisors with M.Sc. rated themselves higher than the Diploma and B.Sc. holders. Those supervisors who resided outside their area of operation rated themselves as possessing higher competencies than those resident in their area of operation.

5.3.6 Level of Association among the various Competency Categories.

The Pearson's Correlation Coefficient (r) was used to determine the extent to which the eight (8) competency categories were related. All the competency categories were positively and significantly related. The correlation coefficient (r) ranged from 0.38 to 0.70 which indicate a weak to strong relationships.

The strongest association existed between 'Communication' and 'Teaching' competencies (0.70) and 'Evaluation' and 'Teaching' competencies (0.70). The weakest association was between 'Maintaining Professionalism' and 'Programme Planning' competencies (0.38) and 'Maintaining Professionalism' and 'Programme Execution' competencies (0.40 rounded).

5.4 CONCLUSIONS

From the findings of this study, the conclusions arrived at are that:

1. The self and independent evaluation show absolute agreement in all the Regions covered in the study and that the self-evaluation by the Supervisors was valid.
2. Under Administration, supervisors' competencies are highest in conducting staff meetings. Other areas in which supervisors are considerably competent relate to time and personnel management.

They are, however, least competent in areas relating to budget and policy issues though the ratings were above 'Moderate level'.
3. Concerning Programme Planning supervisors are moderately competent in developing calendars of activities, objectives and goals setting and preparing annual programmes of work. Their competencies are, however, low in preparing long-range programme of work and involving stake holders in planning.
4. Supervisors' competencies are moderately high in programme Execution. They are better in reporting, human relations and field visits but competencies are relatively lower in utilizing a calendar of activities/events and involving others in executing plans. It can be inferred, therefore, that supervisors are not able to follow their calendar of activities that they are good at preparing.
5. In the area of Teaching, it can be concluded that supervisors possess oratorical skills. Their competence in developing and using teaching aids including audio-visuals is very low.
6. The conclusion that can be drawn concerning Communication is that supervisors are better at verbal and written communications. Their competence in non-verbal communications, preparing and using extension publications and the use of communication equipment is lacking.

7. Supervisors' competencies, in Understanding Human Behaviour category, are higher in issues involving Gender, Age difference and the role of Power actors . When it comes to factors that influence people to become involved, applying factors affecting the behaviour of people and applying principles of motivation, their competencies are relatively low.
8. Competencies in the Maintaining Professionalism category is generally moderate.
9. Competency levels of supervisors in Evaluation are generally moderate except in the use of questionnaires, interpreting research findings and using library resources.
10. Generally, the competency levels of Supervisors are just moderate and that there is more room for improvement, since the ideal situation is for all Supervisors to attain very high competency levels.
11. Supervisors acquired 76.0 % of the competencies on the job, and 18.0 % before the job.
12. The best time to learn most (81.0%) of the competencies is on-the-job.
13. Demographic characteristics such as age, gender, highest educational level attained, and area of residence bear significant relationship with certain competencies.
 - Younger Supervisors rated themselves higher than older ones in Programme Planning competencies.
 - Females rated themselves higher than males in the Administration and Programme Planning competencies.
 - Supervisors with M.Sc. Degree rated themselves higher than those with B.Sc. Degree and Diploma.
 - Supervisors resident outside their area of operation rated themselves higher than those resident within their area of operation.

14. All the eight (8) competency categories are positively associated with each other at varying strengths. Improvement in one, therefore, will not adversely affect the others but rather enhance their improvement also.

The strongest associations exist between Communication and Teaching competencies, Evaluation and Teaching Competencies, and Administration and Programme Execution competencies in descending order. The others are Administration and Teaching competencies, Understanding Human Behaviour and Teaching competencies, and Understanding Human Behaviour and Communication competencies.

5.5 RECOMMENDATIONS

It is recommended that;

1. as a matter of urgency, in-service training or induction courses be organized to upgrade the competencies in all the competency areas.

Emphasis must be placed on certain areas in which supervisors need urgent training.

They include:

- a. Preparation of long-range programme of work and involving stake holders in planning extension programmes under Programme Planning.
- b. the development and use of teaching aids including audio-visuals under Teaching. Also planning, organizing and conducting tours and field trips.
- c. the use of non-verbal communication, extension publications and communication equipment in the area of Communication.
- d. Socio-cultural factors affecting the behaviour of people and how they affect the thinking process in the Understanding Human Behaviour category.

- e. the analysis and use of questionnaires, interpreting research findings and using library resources relating to Evaluation.

The average age of the supervisors is below forty years which means that they have about twenty years before retiring from active service. Any attempt or resources used to improve their competencies will not be a waste but will rather be beneficial to the department.

2. further research be conducted to determine the best time to learn those competencies for which respondents' opinions were divided.
3. in preparing extension training curricula, competency categories that are strongly associated must, at least, be put together.
4. the results of this study be made available to the stake holders of the Department of Agricultural Extension Services, especially, the Directorate, policy makers and curriculum developers of the Ministry of Food and Agriculture. This is necessary because the best time to learn the competencies must be considered in curricula development.

These include:

- Communication and Teaching
- Evaluation and Teaching
- Administration and Programme Execution
- Administration and Teaching
- Understanding Human Behaviour and Teaching
- Understanding Human Behaviour and Communication

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APPENDIX I. JOB DESCRIPTIONS FOR DISTRICT DIRECTORATE OF FOOD AND AGRICULTURE

1.0 STRUCTURE

- 1.1 POSITION TITLE: DISTRICT DIRECTOR OF FOOD & AGRICULTURE
- 1.2 IMMEDIATE SUPERIOR: DISTRICT CO-ORDINATING DIRECTOR & REGIONAL DIRECTOR OF MOFA
- 1.3 IMMEDIATE SUBORDINATES: DISTRICT DEVELOPMENT OFFICERS

2.0 OBJECTIVES OF THE POSITION

- 2.1 To manage and co-ordinate the District Agricultural Development Unit and represent MOFA on the District Assembly.

3.0 RESPONSIBILITIES

- 3.1 Prepare regularly and update District agricultural Development plans
- 3.2 Prepare annual District Agricultural work programmes and budget FOR submission to the District Assembly with copy to the Regional Director of Agriculture
- 3.3 Manages and co-ordinate the day to day activities of the District Agricultural Development Unit (DADU) including the analysis of participation and adoption rates of appropriate technologies of farmers
- 3.4 Ensure and participate in monthly training sessions with SMS and Extension Agents and Bi-monthly Technology Review Meetings (BMTRM) with Research and SMS
- 3.5 Design, in collaboration with the Regional Director, and implement a staff development programme FOR all categories of staff in the District
- 3.6 Liaises with all partners, (eg. Farmers, Research, SMS, NGOs, educational institutions etc) on programmes related to the development of agriculture in the District
- 3.7 Organise and participate in all meetings, workshops, etc. related to agriculture with a view to clarify MOFA to all concerned
- 3.8 Monitor the performance of all Agricultural Developments in the District and their impact

3.9 Prepare and submit regularly, monthly, quarterly and annual reports to the Regional Director of Food and Agriculture and the District Co-ordinating Director on the performance of agriculture in the district when requested and special situation reports

3.10 To undertake any other duties that may be assigned

4.0 AUTHORITY

Exercise authority derived from the District Co-ordinating Director and the Regional Director.

5.0 QUALIFICATION AND EXPERIENCE

Should be of a minimum grade of Assistant Director of Agriculture

APPENDIX II. JOB DESCRIPTION FOR DISTRICT DEVELOPMENT OFFICER

1.0 STRUCTURE

- | | |
|------------------------------|--------------------------------------------------------|
| 1.1 POSITION TITLE: | DISTRICT AGRICULTURAL OFFICER (DADO) |
| 1.2 IMMEDIATE SUPERIOR: | DISTRICT DIRECTOR OF FOOD & AGRICULTURE |
| 1.3 IMMEDIATE SUB-ORDINATES: | AGRIC. EXTENSION AGENTS |
| 1.4 ASSOCIATES: | RESEARCH, S.M.S., NGOs |
| 1.5 LOCATION: | CENTRALLY SELECTED LOCATION IN THE AREA OF SUPERVISION |

2.0 OBJECTIVES OF THE POSITION:

- 2.1 To ensure timely implementation of planned activities in the area of supervision
- 2.2 To co-ordinate activities of assigned extension agents to ensure harmonization of Sub-sector and related activities.
- 2.3 To improve supervision of extension agents.

3.0 RESPONSIBILITIES:

- 3.1 Establish reference data booklet containing the geo-climatic, socio-cultural and economic (including agriculture) information of his/her area of supervision.
- 3.2 Assist extension agents to develop their route maps, work calendar and programmes in order to obtain quantitative and verifiable results with farmers.
- 3.3 Visit each agent in the field every fortnightly to guide, advise, motivate and recognise good work.
- 3.4 Organise and participate in monthly training between extension agents and SMS.
- 3.5 Monitor and evaluate agent's work programme and activities, analyse the results achieved with individuals or contact groups.

- 3.6 Identify gaps between work targets and results, analyse reasons and causes and propose corrective measures where possible.
- 3.7 Update regularly information on market flows and prices for the guidance of extension training, research programming and the District Director of Food and Agriculture.
- 3.8 Daily-log record, Monthly and quarterly reports on agents and area of supervision.
- 3.9 Any other report which the District Director of Food and Agric. May require from Time to time.
- 3.10 To undertake any other duties that may be assigned.

4.0 AUTHORITY:

Exercise authority derived from the District Director of Food and Agriculture.

5.0 QUALIFICATION AND EXPERIENCE:

- 5.1 Should have a minimum of B.Sc Degree from a recognised university.
- 5.2 Should be of a grade of Agricultural Officer (AO), or analogous grade.

APPENDIX III. QUESTIONNAIRE FOR SUPERVISORS

Serial #.....

QUESTIONNAIRE

FOR

AGRIC. EXTENSION SUPERVISORS

(Dist. Directors, Dist. Dev't. Officers & SMSs)

SUPERVISORS' PROFESSIONAL COMPETENCIES AS PERCEIVED
BY SUPERVISORS AND EXTENSION AGENTS
UNDER THE UNIFIED AGRICULTURAL EXTENSION SYSTEM
IN GHANA.

DEPARTMENT OF AGRICULTURAL ECONOMICS AND EXTENSION
SCHOOL OF AGRICULTURE
UNIVERSITY OF CAPE COAST

NOVEMBER, 1997

AIM OF THIS STUDY

Thank you for your preparedness to take part in this study. It is aimed at examining the competency levels and also identifying the competencies needed by agric. extension supervisors in Ghana.

This assessment will be based on the perceptions of Extension Agents and Supervisors themselves. The results will be very useful in the development of curricula for training of supervisors.

You are assured that the information you provide will be confidential and all responses will be bulked together with others' for analysis.

The serial number written at the top right hand corner of the cover page is to help identify questionnaires during data processing.

GENERAL INSTRUCTIONS

Each supervisor (ie. District Director of agric., Development Officer or Subject Matter Specialists) is to rate himself/herself on the competencies listed, when they were acquired by supervisors and when they think is the best time to learn the competencies.

QUESTIONNAIRE INSTRUCTIONS

A. - If you believe you **LACK** a particular competency

in your current position..... circle 1

- If you believe your competency level in a particular

area is **LOW** in your current position..... circle 2

- If you believe your competency level in a particular

area is **MODERATE** in your current position..... circle 3

- If you believe your competency level in a particular

area is **HIGH** in your current position..... circle 4

- If you believe your competency level in a particular

area is **VERY HIGH** in your current position..... circle 5

B. Also, when do you think **YOU OBTAINED** a particular competency?

- If it is before the job (Pre-service)..... circle B

- If it is on the job (In-service) circle O

C. Finally, when do you think is the **BEST TIME** for a particular competency to be learned?

- if you think it should be before the job (pre-service) circle P

- if you think it should be on the job (In-service) circle I

Competency (skill, knowledge or attitude)	A Level of competence					B When you acquired the competency		C Best time to learn the competency	
	Lack (La)	Low (Lo)	Moderate (Mo)	High (Hi)	Very High (VH)	Before the job	On the job	Pre-service	In-service
Administration									
1. In-depth knowledge & understanding of the "Unified Agric. Extension system"	1	2	3	4	5	B	O	P	I
2. Writing realistic goals for the extension programme	1	2	3	4	5	B	O	P	I
3. Ability to manage scarce resources for optimum productivity	1	2	3	4	5	B	O	P	I
4. Coordinating the use of equipment, facilities and resources with office staff	1	2	3	4	5	B	O	P	I
5. Budget preparation	1	2	3	4	5	B	O	P	I
6. Supervising budget expenditure	1	2	3	4	5	B	O	P	I
7. Managing time effectively	1	2	3	4	5	B	O	P	I
8. Coordinating work schedules of staff	1	2	3	4	5	B	O	P	I
9. Supervising extension Personnel	1	2	3	4	5	B	O	P	I

Competency (skill, knowledge or attitude)	A Level of competence					B When you acquired the competency		C Best time to learn the competency	
	Lack (La)	Low (Lo)	Moderate (Mo)	High (Hi)	Very High (VH)	Before the job	On the job	Pre-service	In-service
12. Ability to identify policies specific to your area(s) responsibility	1	2	3	4	5	B	O	P	I
13. Conducting staff meetings	1	2	3	4	5	B	O	P	I
14. Promoting inter-office communications	1	2	3	4	5	B	O	P	I
15. Delegating responsibility and authority	1	2	3	4	5	B	O	P	I
16. Orienting new staff members	1	2	3	4	5	B	O	P	I
17. Providing recognition for staff	1	2	3	4	5	B	O	P	I
18. Maintaining staff morale	1	2	3	4	5	B	O	P	I
19. Preparing job descriptions	1	2	3	4	5	B	O	P	I
20. Dealing with complaints	1	2	3	4	5	B	O	P	I
21. Analyzing personnel record	1	2	3	4	5	B	O	P	I
Additional Competencies: List any additional competencies that you believe are important but have not been included in this section and rate them.									
.....	1	2	3	4	5	B	O	P	I
.....	1	2	3	4	5	B	O	P	I

Competency (skill, knowledge or attitude)	A Level of competence					B When you acquired the competency		C Best time to learn the competency	
	Lack (La)	Low (Lo)	Moderate (Mo)	High (Hi)	Very High (VH)	Before the job	On the job	Pre-service	In-service
Programme Planning									
1. Developing a Calendar of extension activities	1	2	3	4	5	B	O	P	I
2. Determining the needs of Clientele for extension programme	1	2	3	4	5	B	O	P	I
3. Determining objectives / goals of the extension programme	1	2	3	4	5	B	O	P	I
4. Establishing programme priorities	1	2	3	4	5	B	O	P	I
5. Preparing an annual programme of work for your area of responsibility	1	2	3	4	5	B	O	P	I
6. Preparing a long-range programme of work	1	2	3	4	5	B	O	P	I
7. Involving co-workers in programme planning	1	2	3	4	5	B	O	P	I
8. Involving extension support groups and clientele in programme planning	1	2	3	4	5	B	O	P	I
Additional Competencies:									
.....	1	2	3	4	5	B	O	P	I
.....	1	2	3	4	5	B	O	P	I

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Competency (skill, knowledge or attitude)	A Level of competence					B When you acquired the competency		C Best time to learn the competency	
	Lack (La)	Low (Lo)	Moderate (Mo)	High (Hi)	Very High (VH)	Before the job	On the job	Pre-service	In-service
<u>Programme Execution</u>									
1. Utilizing a Calendar of activities/events	1	2	3	4	5	B	O	P	I
2. Following a written programme of work	1	2	3	4	5	B	O	P	I
3. Providing leadership for programme planning and execution	1	2	3	4	5	B	O	P	I
4. Developing a working relationship with clientele	1	2	3	4	5	B	O	P	I
5. Completing monthly or annual reports	1	2	3	4	5	B	O	P	I
6. Involving others in executing plans	1	2	3	4	5	B	O	P	I
7. conducting home/farm visits.	1	2	3	4	5	B	O	P	I
<u>Additional Competencies:</u>									
.....	1	2	3	4	5	B	O	P	I
.....	1	2	3	4	5	B	O	P	I
<u>Teaching</u>									
1. Using principles (basic ideas or rules) of learning and teaching.	1	2	3	4	5	B	O	P	I
2. Developing teaching materials (eg. Folders and training guides).	1	2	3	4	5	B	O	P	I

Competency (skill, knowledge or attitude)	A Level of competence					B When you acquired the competency		C Best time to learn the competency	
	Lack (La)	Low (Lo)	Moderate (Mo)	High (Hi)	Very High (VH)	Before the job	On the job	Pre-service	In-service
3. Ability to select non-formal methods and techniques for particular situations	1	2	3	4	5	B	O	P	I
4. Presenting information in a lecture	1	2	3	4	5	B	O	P	I
5. Presenting a concept, principle, or skill through a method demonstrations	1	2	3	4	5	B	O	P	I
6. Presenting information in a meeting	1	2	3	4	5	B	O	P	I
7. Presenting information in a seminar	1	2	3	4	5	B	O	P	I
8. Presenting information at a field day	1	2	3	4	5	B	O	P	I
9. Presenting information with an overhead projector	1	2	3	4	5	B	O	P	I
10. Presenting information with slides	1	2	3	4	5	B	O	P	I
11. Presenting information with charts	1	2	3	4	5	B	O	P	I
12. Presenting information with chalk board	1	2	3	4	5	B	O	P	I
13. Conducting group discussions	1	2	3	4	5	B	O	P	I
14. Using the problem solving approach to teaching	1	2	3	4	5	B	O	P	I

Competency (skill, knowledge or attitude)	A Level of competence					B When you acquired the competency		C Best time to learn the competency	
	Lack (La)	Low (Lo)	Moderate (Mo)	High (Hi)	Very High (VH)	Before the job	On the job	Pre-service	In-service
15. Encouraging audience to ask questions.	1	2	3	4	5	B	O	P	I
16. Planning, organizing and conducting tours and field trips.	1	2	3	4	5	B	O	P	I
17. Judging exhibits at agricultural shows	1	2	3	4	5	B	O	P	I
18. Ability to recognize the importance of punctuality	1	2	3	4	5	B	O	P	I
Additional Competencies:									
.....	1	2	3	4	5	B	O	P	I
.....	1	2	3	4	5	B	O	P	I
Communication									
1. Establishing communications among extension staff	1	2	3	4	5	B	O	P	I
2. Writing letters and /or memos	1	2	3	4	5	B	O	P	I
3. Writing and/or completing special reports	1	2	3	4	5	B	O	P	I
4. Speaking to groups	1	2	3	4	5	B	O	P	I
5. Speaking to individuals	1	2	3	4	5	B	O	P	I

Competency (skill, knowledge or attitude)	A Level of competence					B When you acquired the competency		C Best time to learn the competency	
	Lack (La)	Low (Lo)	Moderate (Mo)	High (Hi)	Very High (VH)	Before the job	On the job	Pre-service	In-service
6. Using non-verbal communications	1	2	3	4	5	B	O	P	I
7. Possession of listening skills	1	2	3	4	5	B	O	P	I
8. Preparing extension publications	1	2	3	4	5	B	O	P	I
9. Act on correspondence promptly	1	2	3	4	5	B	O	P	I
10. Providing recognition for achievement	1	2	3	4	5	B	O	P	I
11. Establishing working relation-ships with other governmental organizations and agencies	1	2	3	4	5	B	O	P	I
12. Establishing working relation-ships with other governmental organizations and agencies	1	2	3	4	5	B	O	P	I
13. The use of a camera and/or other photographic equipment	1	2	3	4	5	B	O	P	I
14. The use of a tape recorder	1	2	3	4	5	B	O	P	I
15. The use of a (desk top) computer	1	2	3	4	5	B	O	P	I
Additional Competencies:									
.....	1	2	3	4	5	B	O	P	I
.....	1	2	3	4	5	B	O	P	I

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Competency (skill, knowledge or attitude)	A Level of competence					B When you acquired the competency		C Best time to learn the competency	
	Lack (La)	Low (Lo)	Moderate (Mo)	High (Hi)	Very High (VH)	Before the job	On the job	Pre-service	In-service
<u>Understanding Human Behaviour</u>									
1. Application of principles of motivation	1	2	3	4	5	B	O	P	I
2. Identification of factors that influence people to become involved	1	2	3	4	5			P	I
3. Determining the effect of pressure groups on the thinking process	1	2	3	4	5	B	O		
4. Recognizing goal settings	1	2	3	4	5	B	O	P	I
5. Applying factors affecting behaviour of people	1	2	3	4	5	B	O	P	I
6. Ability to influence people to accept change	1	2	3	4	5	B	O	P	I
7. Ability to identify the power structure within the community	1	2	3	4	5	B	O	P	I
8. Ability to identify pressure groups within the community	1	2	3	4	5	B	O	P	I
9. Utilizing knowledge of interaction of people in groups	1	2	3	4	5	B	O	P	I
10. Recognizing differences in age groups	1	2	3	4	5	B	O	P	I

Competency (skill, knowledge or attitude)	A Level of competence					B When you acquired the competency		C Best time to learn the competency	
	Lack (La)	Low (Lo)	Moderate (Mo)	High (Hi)	Very High (VH)	Before the job	On the job	Pre-service	In-service
11. Recognizing traditional culture and its effect on change	1	2	3	4	5	B	O	P	I
12. Recognizing the role of different sexes and how it influences change	1	2	3	4	5	B	O	P	I
Additional Competencies:	1	2	3	4	5	B	O	P	I
.....	1	2	3	4	5	B	O	P	I
Maintaining professionalism									
1. Identifying opportunities for professional improvement	1	2	3	4	5	B	O	P	I
2. Developing a plan for professional competencies	1	2	3	4	5	B	O	P	I
3. Maintaining professional organizations and activities	1	2	3	4	5	B	O	P	I
4. Participation in professional organizations and activities	1	2	3	4	5	B	O	P	I
Additional Competencies:	1	2	3	4	5	B	O	P	I
.....	1	2	3	4	5	B	O	P	I

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Competency (skill, knowledge or attitude)	A Level of competence					B When you acquired the competency		C Best time to learn the competency	
	Lack (La)	Low (Lo)	Moderate (Mo)	High (Hi)	Very High (VH)	Before the job	On the job	Pre-service	In-service
Evaluation									
1. Evaluating the effectiveness of a national, district, or local extension programme	1	2	3	4	5	B	O	P	I
2. Evaluating the performance of the extension staff	1	2	3	4	5	B	O	P	I
3. Interpreting the impact of change and/ or trends upon the clientele served	1	2	3	4	5	B	O	P	I
4. Using questionnaires to seek information	1	2	3	4	5	B	O	P	I
5. Using observation method to seek information	1	2	3	4	5	B	O	P	I
6. Using interviews to seek information	1	2	3	4	5	B	O	P	I
7. Interpreting results of questionnaires	1	2	3	4	5	B	O	P	I
8. Evaluating the results of an extension event/ activity	1	2	3	4	5	B	O	P	I
9. Analyzing reports	1	2	3	4	5	B	O	P	I

Competency (skill, knowledge or attitude)	A Level of competence					B When you acquired the competency		C Best time to learn the competency	
	Lack (La)	Low (Lo)	Moderate (Mo)	High (Hi)	Very High (VH)	Before the job	On the job	Pre-service	In-service
10. Interpreting research findings from research stations and universities	1	2	3	4	5	B	O	P	I
11. Applying research findings when making recommendations to clientele	1	2	3	4	5	B	O	P	I
12. Cooperating with research stations	1	2	3	4	5	B	O	P	I
13. Identifying problems requiring additional research	1	2	3	4	5	B	O	P	I
14. Keeping up-to-date with current research findings	1	2	3	4	5	B	O	P	I
15. Conducting a literature search utilizing library resources	1	2	3	4	5	B	O	P	I
Additional Competencies:									
.....	1	2	3	4	5	B	O	P	I
.....	1	2	3	4	5	B	O	P	I

SECTION II: DEMOGRAPHIC DATA

INSTRUCTIONS: Please fill in the blank or circle your choice under each item.

- (1) Region
- (2) District
- (3) Age at your last Birthdayyears
- (4) Sex () Male () Female
- (5) Marital Status () Married () Single () Divorced () Widowed
- (6) Highest Educational Level Attained () Certificate in Agric..
 - () Diploma in Agric..
 - () B.Sc. () M.Sc.
 - () Other (specify).....
- (7) Have you had any course in Agric.. Administration / Management ?
 - () Yes () No
- (8) Years of Experience in the Ministry of Food and Agric.....
- (9) Current Position () Agric.. Extension Agent () District Development Officer
 - () Subject Matter Specialist () Other (specify).....
- (10) Years of experience in your current position
- (11) Percent of Time used in (a) Administrative work
 - (b) Field or Technical
 - [Note: (a) and (b) should add up to 100%]
- (12) Major area of responsibility () General Agric..
 - () Livestock
 - () Crops
 - () Women Extension
 - () Others (specify).....

(13) Are you resident in your area of work ? () Yes () No

(14) Where did you spend your youth ? () Rural area / Village

() Urban community / City

() Semi-urban community

(15) What work experiences have you had other than Agricultural work ?

Type of work	Number of years
.....
.....

(16) How many short course have you attended in the last five (5) years ?

(a) Course that lasted less than one (1) month.....

(b) Course that lasted more than One (1) month.....

(17) Any additional comment ?.....

.....

.....

.....

APPENDIX IV. QUESTIONNAIRES FOR AGRIC. EXTENSION AGENTS

Serial #.....

QUESTIONNAIRE

FOR

AGRIC. EXTENSION AGENTS

**SUPERVISORS' PROFESSIONAL COMPETENCIES AS PERCEIVED
BY SUPERVISORS AND FRONTLINE STAFF UNDER
THE UNIFIED AGRICULTURAL EXTENSION SYSTEM IN GHANA.**

**DEPARTMENT OF AGRICULTURAL ECONOMICS AND EXTENSION
SCHOOL OF AGRICULTURE
UNIVERSITY OF CAPE COAST**

NOVEMBER, 1997.

AIM OF THIS STUDY

Thank you for your preparedness to take part in this study. It is aimed at examining the competency levels and also identifying the competencies needed by agricultural extension supervisors in Ghana. This assessment will be based on the perceptions of extension agents and supervisors themselves.

The results will be very useful in the development of curricula for training of supervisors. The serial number written at the top right hand corner of the cover page is to help identify questionnaires during data processing.

GENERAL INSTRUCTIONS

Frontline staff are expected to use this questionnaire to rate their supervisors (District Director of Agric., Development Officers and Subject Matter Specialists) as a group in terms of the competencies listed in this questionnaire and when they think is the right time for supervisors to acquire them.

QUESTIONNAIRE INSTRUCTIONS

- If you believe your supervisors **LACK** a particular competency
in their current positions circle 1
- If you believe a particular competency level is **LOW** in their
current positions circle 2
- If you believe a particular competency level is **MODERATE** in their
current positions circle 3
- If you believe a particular competency level is **HIGH** in their
current positions circle 4
- If you believe a particular competency level is **VERY HIGH** in their
current positions circle 5

Competency (skill, knowledge or attitude)	Level of competence of supervisors				
	Lack (La)	Low (Lo)	Moderate (Mo)	High (Hi)	Very High (VH)
Administration					
1. In-depth knowledge & understanding of the "Unified Agric. Extension system"	1	2	3	4	5
2. Writing realistic goals for the extension programme	1	2	3	4	5
3. Ability to manage scarce resources for optimum productivity	1	2	3	4	5
4. Coordinating the use of equipment, facilities and resources with office staff	1	2	3	4	5
5. Budget preparation	1	2	3	4	5
6. Supervising budget expenditure	1	2	3	4	5
7. Managing time effectively	1	2	3	4	5
8. Coordinating work schedules of staff	1	2	3	4	5
9. Supervising extension Personnel	1	2	3	4	5
12. Ability to identify policies specific to your area(s) responsibility	1	2	3	4	5
13. Conducting staff meetings	1	2	3	4	5
14. Promoting inter-office communications	1	2	3	4	5
15. Delegating responsibility and authority	1	2	3	4	5
16. Orienting new staff members	1	2	3	4	5
17. Providing recognition for staff	1	2	3	4	5
18. Maintaining staff morale	1	2	3	4	5
19. Preparing job descriptions	1	2	3	4	5
20. Dealing with complaints	1	2	3	4	5
21. Analyzing personnel record	1	2	3	4	5
Additional Competencies: List any additional competencies that you believe are important but have not been included in this section and rate them.					
.....	1	2	3	4	5
.....	1	2	3	4	5

Competency (skill, knowledge or attitude)	Level of competence of supervisors				
	Lack (La)	Low (Lo)	Moderate (Mo)	High (Hi)	Very High (VH)
<u>Programme Planning</u>					
1. Developing a Calendar of extension activities	1	2	3	4	5
2. Determining the needs of Clientele for extension programme	1	2	3	4	5
3. Determining objectives / goals of the extension programme	1	2	3	4	5
4. Establishing programme priorities	1	2	3	4	5
5. Preparing an annual programme of work for your area of responsibility	1	2	3	4	5
6. Preparing a long-range programme of work	1	2	3	4	5
7. Involving co-workers in programme planning	1	2	3	4	5
8. Involving extension support groups and clientele in programme planning	1	2	3	4	5
Additional Competencies:					
.....	1	2	3	4	5
.....	1	2	3	4	5
<u>Programme Execution</u>					
1. Utilizing a Calendar of activities/events	1	2	3	4	5
2. Following a written programme of work	1	2	3	4	5
3. Providing leadership for programmes planning and execution	1	2	3	4	5
4. Developing a working relationship with clientele	1	2	3	4	5
5. Completing monthly or annual reports	1	2	3	4	5
6. Involving others in executing plans	1	2	3	4	5
7. Conducting home/farm visits.	1	2	3	4	5
Additional Competencies:					
.....	1	2	3	4	5
.....	1	2	3	4	5

Competency (skill, knowledge or attitude)	Level of competence of supervisors				
	Lack (La)	Low (Lo)	Moderate (Mo)	High (Hi)	Very High (VH)
Teaching					
1. Using principles (basic ideas or rules) of learning and teaching.	1	2	3	4	5
2. Developing teaching materials (eg. Folders and training guides).	1	2	3	4	5
3. Ability to select non-formal methods and techniques for particular situations	1	2	3	4	5
4. Presenting information in a lecture	1	2	3	4	5
5. Presenting a concept, principle, or skill through a method demonstrations	1	2	3	4	5
6. Presenting information in a meeting	1	2	3	4	5
7. Presenting information in a seminar	1	2	3	4	5
8. Presenting information at a field day	1	2	3	4	5
9. Presenting information with an overhead projector	1	2	3	4	5
10. Presenting information with slides	1	2	3	4	5
11. Presenting information with charts	1	2	3	4	5
12. Presenting information with chalk board	1	2	3	4	5
13. Conducting group discussions	1	2	3	4	5
14. Using the problem solving approach to teaching	1	2	3	4	5
15. Encouraging audience to ask questions.	1	2	3	4	5
16. Planning, organizing and conducting tours and field trips.	1	2	3	4	5
17. Judging exhibits at agricultural shows	1	2	3	4	5

Competency (skill, knowledge or attitude)	Level of competence of supervisors				
	Lack (La)	Low (Lo)	Moderate (Mo)	High (Hi)	Very High (VH)
15. Encouraging audience to ask questions.	1	2	3	4	5
16. Planning, organizing and conducting tours and field trips.	1	2	3	4	5
17. Judging exhibits at agricultural shows	1	2	3	4	5
18. Ability to recognize the importance of punctuality	1	2	3	4	5
Additional Competencies:					
.....	1	2	3	4	5
.....	1	2	3	4	5
<u>Communication</u>					
1. Establishing communications among extension staff	1	2	3	4	5
2. Writing letters and /or memos	1	2	3	4	5
3. Writing and/or completing special reports	1	2	3	4	5
4. Speaking to groups	1	2	3	4	5
5. Speaking to individuals	1	2	3	4	5
6. Using non-verbal communications	1	2	3	4	5
7. Possession of listening skills	1	2	3	4	5
8. Preparing extension publications	1	2	3	4	5
9. Act on correspondence promptly	1	2	3	4	5
10. Providing recognition for achievement	1	2	3	4	5
11. Establishing working relation-ships with other governmental organizations and agencies	1	2	3	4	5
12. Establishing working relation-ships with other governmental organizations and agencies	1	2	3	4	5

Competency (skill, knowledge or attitude)	Level of competence of supervisors				
	Lack (La)	Low (Lo)	Moderate (Mo)	High (Hi)	Very High (VH)
13. The use of a camera and/or other photographic equipment	1	2	3	4	5
14. The use of a tape recorder	1	2	3	4	5
15. The use of a (desk top) computer	1	2	3	4	5
Additional Competencies:					
.....	1	2	3	4	5
.....	1	2	3	4	5
<u>Understanding Human Behaviour</u>					
1. Application of principles of motivation	1	2	3	4	5
2. Identification of factors that influence people to become involved	1	2	3	4	5
3. Determining the effect of pressure groups on the thinking process	1	2	3	4	5
4. Recognizing goal settings	1	2	3	4	5
5. Applying factors affecting behaviour of people	1	2	3	4	5
6. Ability to influence people to accept change	1	2	3	4	5
7. Ability to identify the power structure within the community	1	2	3	4	5
8. Ability to identify pressure groups within the community	1	2	3	4	5
9. Utilizing knowledge of interaction of people in groups	1	2	3	4	5
10. Recognizing differences in age groups	1	2	3	4	5
11. Recognizing traditional culture and its effect on change	1	2	3	4	5
12. Recognizing the role of different sexes and how it influences change	1	2	3	4	5
Additional Competencies:					
.....	1	2	3	4	5
.....	1	2	3	4	5

Competency (skill, knowledge or attitude)	Level of competence of supervisors				
	Lack (La)	Low (Lo)	Moderate (Mo)	High (Hi)	Very High (VH)
<u>Evaluation</u>					
1. Evaluating the effectiveness of a national, district, or local extension programme	1	2	3	4	5
2. Evaluating the performance of the extension staff	1	2	3	4	5
3. Interpreting the impact of change and/ or trends upon the clientele served	1	2	3	4	5
4. Using questionnaires to seek information	1	2	3	4	5
5. Using observation method to seek information	1	2	3	4	5
6. Using interviews to seek information	1	2	3	4	5
7. Interpreting results of questionnaires	1	2	3	4	5
8. Evaluating the results of an extension event/ activity	1	2	3	4	5
9. Analyzing reports	1	2	3	4	5
10. Interpreting research findings from research stations and universities	1	2	3	4	5
11. Applying research findings when making recommendations to clientele	1	2	3	4	5
12. Cooperating with research stations	1	2	3	4	5
13. Identifying problems requiring additional research	1	2	3	4	5
14. Keeping up-to-date with current research findings	1	2	3	4	5
15. Conducting a literature search utilizing library resources	1	2	3	4	5
Additional Competencies:					
.....	1	2	3	4	5
.....	1	2	3	4	5

(12) Are you resident in your area of work ? () Yes () No

(13) Where did you spend your youth ? () Rural area / Village

() Urban community / City

() Semi-urban community

(14) What work experiences have you had other than Agricultural work ?

Type of work	Number of years
.....
.....

(15) How many short course have you attended in the last five (5) years ?

(a) Course that lasted less than one (1) month.....

(b) Course that lasted more than One (1) month.....

(16) Any additional comment ?.....

.....
.....
.....

