# ENHANCING MANAGEMENT COMPETENCIES OF ELECTRONICS CRAFTSMEN IN THE INFORMAL SECTOR OF THE ECONOMY OF ENUGU STATE NIGERIA

**BY**

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**Abstract**

*The study was designed to identify strategies for improving the management competencies of electronics craftsmen in the informal sector of the economy of Enugu state. Two research questions and a null hypothesis guided the study. The population of the study consisted of 850 electronics craftsmen operating in the informal sector of the economy of Enugu state. Fifty per cent of the population was sampled. Forty-six items questionnaire was the instrument for data collection. Instrument was validated by experts and Cronbach Alpha Reliability Coefficient was used to determine the internal consistency of the instrument. The instrument yielded a reliability coefficient of 0.86. Mean statistic, standard deviation were used to answer the research questions while Analysis of Variance (ANOVA) was used to test the lone null hypothesis at 0.05 level of significance. Strategies identified for increasing the management competencies of electronics craftsmen among others include retraining the craftsmen to demonstrate good knowledge of grammar, providing professional courses for master craftsmen; organizing workshops/seminars for craftsmen on good oral communication and on how to exercise loyalty etc. Some recommendations were also made.*

## Introduction

The National Policy on Education (2004) defined craftsmen as those who have been trained in technical education at secondary school level and who have acquired necessary knowledge and skills that would enable the individuals to be enterprising and self-reliant. The level of training of craftsmen comes after the junior secondary school level of education. The entry for training is based on the evidence of aptitude shown in technical subjects and reasonably good performance in mathematics and science. The students who have proved exceptionally able in the artisan training centres are also trained as craftsmen in the technical colleges.

The craftsmen who successfully complete their programmes from technical colleges may find jobs in industries or employ themselves by establishing their own businesses. Electronics craft is one of the programmes offered in technical colleges. Electronics programme in technical colleges is titled "radio, television and electronics works". The goal of the programme according to National Board on Technical Education (NBTE) (1987) is to provide the trainee with the knowledge and skills to enable him maintain, repair and construct various type of radio receivers and amplifiers as well as install, maintain and repair television sets.

The bulk of craftsmen operating in the informal sector of economy of Nigeria received their training through apprenticeship. Apprentice system produces craftsmen in automobile, carpentry, electronics, bricklaying etc. Adeyemi (1994) noted that from a survey carried out in Akure Local Government Area of Ondo state in Nigeria that 92 per cent of all the "freed"

craftsmen (that is those already qualified) received their training through apprenticeship. In his study, Anyanwu (1979) found that only a few of the roadside mechanics operating in the informal sector of the economy of Enugu State possessed a recognized qualifications in their respect trades. Alio (2004) noted that that entrepreneurship development in the informal sector of the economy is currently regarded as one of the most promising strategies for enhancing human capital development. An important feature in any successful training arrangement is a well-designed scheme for training. The method of instruction adapted by the master craftsmen is usually not sequential. The "masters" that is the owners of the workshops where the apprentices are trained usually start their apprentices with work at hand. This makes it difficult for apprentices to develop any unit of purpose in what they do. Ezeji (2001) observed that more often, the apprentices are taught how to solve problem without knowing what led to the problem.

Competency is a combination of knowledge, skills and attitudes that can be developed through training and which are adequate for accomplishing some specific tasks (Ugwu 1998). Observations show that roadside craftsmen are poorly trained to perform their tasks efficiently. Olatunji (1992) pointed out that the training programme of roadside craftsmen have little knowledge of costing, bookkeeping, job planning and job control. They seem to keep little or no records of their transactions. Ezeji (2001) pointed out that the craftsmen have very low level of honesty, they are always disposed to cheating the customers through inflation of fees, tampering with goods and equipment left with them and deliberately showing low productivity in cases where wages depend on the time taken for the performance of jobs.

The accelerating pace of technological development has made a large number of jobs and skills obsolete. Development in the field of electronics has resulted in the development of new electronics products, thus creating a gap, which will need the enhancement of craftsmen's competencies. Three major aspects in which the craftsmen would need to update their competencies in order to cope with current developments are in the area of theoretical, technical and management skills. Hornby (2004) defined theoretical skill as the general principles of an art or science. Theoretical skill is always the base for technical skill. Schermerhon (1989) asserted that technical skill is an ability to apply special expertise relating to a method, process or procedures. This implies that for an electronics craftsman to be efficient, he must have certain abilities regarded as technical skill. These, according to Cyallesu (2000) are basic language ability, reading ability, computational knowledge, sufficient background in circuit theory, ability to use hand tools, test instruments and soldering / disoldering equipment.

The basic language ability would enable the craftsman to effectively communicate with customers, distributors and manufacturers. Reading ability on the other hand would make him acquire information from textbooks, service manuals and bulletins whereas a good background in computational skill would offer him opportunity to carry out calculations necessary to interpret readings from measuring equipment like meters oscilloscopes etc.

However, theoretical and technical competencies alone are not adequate for effective professional practice. The electronics craftsmen also perform a lot of managerial functions in order to succeed. The managerial functions required of a craftsman among others include effective management of materials, effective utilization of materials, adequate supply and storage of materials, time management, effective management of records and appropriate management of servicing environment. Godey (1993) cautioned that effective managerial skill is not "by guess and by wish" but the electronics craftsman must understand to apply positive methods, uncover ways to improve his work and discover inherent weaknesses so as to take positive steps for making accurate forecasts. Furthermore, the technological changes, which are occurring in all occupations, call for a review and re-evaluation of training efforts. The time is

most appropriate when all workers should need some kind of special re-training for a successful working life.

In Nigeria setting, two sectors of economy existed, the formal sector of economy and informal sector of economy. The formal sector of economy consists of the large organized private and public enterprises like former National Electric Power Authority (NEPA), now Power Holding Company of Nigeria (PHCN), former Nigeria Telecommunication Limited (NITEL) then various government ministries etc. The formal sector of economy, according Oparaugo (1993) is officially recognized by all arms of government of the country, fostered and regulated through tariff protection, trade licenses and quotas, minimum wage laws etc.

The International Labour Organization (ILO) (1972) defined informal sector of economy as the residual economic sector. Informal means not formal, irregular without ceremony or formality. People operating in the informal sector establish their businesses without formality. For example, an electronics craftsman does not require any kind of registration in order to open up his own shop. He only needs to rent a shop and begins to operate within his locality. Voh and Yunusa (1993) explained the concept, informal sector as a productive relation, which is unregulated by the formal institution where activities are so regulated. Informal sector is seen as an important sphere of production not only for its contribution to employment but also because it aids in skill formation and ultimately formation of human capital.

Informal sector of economy forms a linkage with the formal sector especially now that the depressed nature of the economy in the nation is also affecting the job placement opportunities of youths as it concerns the formal sector. Alio (2006) observed that a large number of youths who are 'retrenched' from formal system are forced by their circumstances to drift into the labour market without appropriate skills, it is also known that many of those youths do not secure the employment they seek because they lack the necessary skills. Most of such youths end up attaching themselves to master craftsman in the electronics, mechanics, tailoring, welding workshops to acquire suitable skills. These workers and their skills represent the 'roadside' training or apprenticeship of the informal sector of the economy (Oparaugo, 1993).

The absence of government's policies on the operation of craftsmen in the informal sector of the economy implies that electronics craftsmen in the informal sector may have problems coping with the present and future challenges in their workshops. Low competency levels according to Alio (2004) of these craftsmen often seem to be contributing to the craftsmen having the feeling of rejection by the society and consequently joining bad gangs. Uzoagulu and Okoh-Isu (1997) attributed this inadequacy in educational background on the part of the training personnel, non availability of training facilities for the apprentices and lack of effective organization due to limited experience of trainers.

The concern of this study therefore is to determine strategies for enhancing management competencies of electronics craftsmen in the informal sector of economy of Enugu State. The study is designed to answer the following questions:

1. What are the levels of the perceived management competencies possessed by the electronics craftsmen in the informal sector of economy?
2. How can the management competencies of electronics craftsmen in the informal sector of economy be enhanced?

**Hypothesis**

$Ho_1$ There is no significant difference in the mean ratings of the sampled electronics craftsmen with respect to their educational qualifications and their perceived level of acquisition of management competencies.

## Research Method

### Design of the Study

The design of the study is a survey research. This is because the study collected data from a sample of craftsmen in the informal sector of economy of Enugu state. Alio (2008) defined survey research design as one in which a group of people or items are studied by collecting and analyzing data from only a few people or items considered to be representative of the entire group: or by collecting and analyzing data from the entire people or items.

### Instrument for Data Collection

Questionnaire was the instrument used for data collection. The questionnaire was also used as an interview guide for the low literate respondents. It was designed after an extensive literature review. The necessary text/manuals relevant to the study were also consulted. A 46-item questionnaire was based on the two research questions that guided the study, research question one which contained 28 items sought information on the level of management competencies possessed by electronics craftsman in the informal sector. Research question two with 19 items was to elicit information on strategies for enhancing the management competencies of electronics craftsmen in the informal sector of the economy.

### Validity and Reliability of the Instrument

The instrument was subjected to face validation by two experts in the Department of Electrical/Electronics option of Industrial Technical Education in the Department of Vocational Teacher Education, University of Nigeria Nsukka, and an expert from the Department of Electrical/Electronics Engineering, Enugu State University of Science and Technology (ESUT) Enugu. The comments of the validators guided the modification of the instrument.

Twenty copies of the questionnaire were administered to electronics craftsmen in the informal sector of the economy of Awka North and South Local Government Area of Anambra State to establish the reliability of the instrument. The reliability of the instrument was established using Cronbach Alpha ($\alpha$). The reliability index arising from this method achieves a degree of internal consistency of the instrument. The data yielded a reliability coefficient of 0.86.

### Data Collection

The instrument for data collection was administered by hand to the electronics craftsmen. In order to successfully administer the questionnaire and for it to be properly completed, the researcher trained seven research assistants on how to complete the questionnaire. The researcher and the assistants administered the questionnaire to the respondents and collected them back by hand after completion. Out of 426 copies of questionnaire distributed 346 were correctly completed and returned. The return rate was 81.20 per cent.

### Data Analysis

The data collected were analyzed using mean, standard deviation and analysis of variance (ANOVA). Mean and standard deviation were used to answer the two research questions while ANOVA was used to test the lone hypothesis at 0.05 level of significance.

The decision in respect to determine the level of perceived management competencies possessed by the craftsmen in the informal sector of the economy – (answering research question 1 and 2), the mean statistic was used. The calculated mean ($\bar{x}c$) of the responses were categorized as indices of level of perceived management competencies possessed by the electronics craftsmen.

**Range of (x̄c) Decision**

3.50 – 4.00 - Very High Level (VHL)
250 – 3.49 - High Level (HL)
1.50 – 2.49 - Low Level (LL)
1.00 – 1.49 - Very Low Level (VLL)

In determining strategies for enhancing the management competencies of electronics craftsmen in the informal sector of economy, the mean statistic was also the deciding statistic. The mean of 2.50 and above was regarded as agree for the items from research question two.

The lone null hypothesis that guided the study was tested using analysis of variance (ANOVA). For hypothesis testing, where F – obtained/calculated was equal or greater than the F – table (F-critical) value at 0.05 level of significance, the null hypothesis was rejected otherwise, the null hypothesis was not rejected.

## Results

### Research Question 1

What are the levels of perceived management competencies possessed by the electronics craftsmen in the informal sector of the economy of Enugu state?

In order to determine the level of management competencies possessed by the electronics craftsmen in the informal sector of the economy, the craftsmen were provided with 27 questionnaire items on a four point scale to respond to each item. The computed mean and standard deviation for each item are presented in table 2.

**Table 2: Mean ratings and standard deviation on the level of management competencies possessed by the electronics craftsmen in the informal sector of Enugu state**

| S/N | Management Competencies | N = 346 $\bar{X}$ | SD | Remark |
|---|---|---|---|---|
| 1 | Effective use of feed back from the customers | 3.42 | 0.67 | High Level |
| 2 | Conducting effective meeting with the apprentices | 3.30 | 0.74 | High Level |
| 3 | Ability to repair equipment brought to the workshop before the collecting date | 3.40 | 0.69 | High Level |
| 4 | Skill in maintaining tidy and well ventilated workshop | 3.37 | 0.68 | High Level |
| 5 | Regular inspection of tools, materials and equipment in the shop | 3.39 | 0.69 | High Level |
| 6 | Ability in determining the correct service charge on customers' equipment | 3.47 | 0.66 | High Level |
| 7 | Skill in planning ahead the activities to be carried out for a day's work | 3.42 | 0.69 | High Level |
| 8 | Skill in purchasing tools, equipment and materials | 3.46 | 0.67 | High Level |
| 9 | Ability to self-evaluate personal skills knowledge and abilities | 3.43 | 0.67 | High Level |

| S/N | Management Competencies | N = 346 $\bar{X}$ | SD | Remark |
|---|---|---|---|---|
| 10 | Skill in determining the apprentices' training needs and development | 3.41 | 0.72 | High Level |
| 11 | Ability to appraise the apprentices' performance | 3.39 | 0.78 | High Level |
| 12 | Exhibit knowledge of account receivable and account payable | 3.14 | 0.78 | High Level |
| 13 | Ability to calculate trade and cash discount | 3.04 | 0.78 | High Level |
| 14 | Ability to use banking facilities | 2.83 | 0.94 | High Level |
| 15 | Ability to record correctly the equipment brought to the shop for repair | 3.29 | 0.69 | High Level |
| 16 | Skill in recording prices of purchased parts/components | 3.25 | 0.69 | High Level |
| 17 | Skill in keeping appropriate records of purchased parts/components | 3.16 | 0.67 | High Level |
| 18 | Competency in keeping inventory of available tools, materials and components in the workshop | 3.31 | 0.69 | High Level |
| 19 | Ability to keep record of account deposited by customer and the remaining balance | 3.35 | 0.65 | High Level |
| 20 | Proficient in recording the technique by which an equipment is repaired | 3.32 | 0.68 | High Level |
| 21 | Ability to determine current and future trends in the market | 3.32 | 0.76 | High Level |
| 22 | Ability to inspire other craftsmen and apprentices in the market | 3.30 | 0.72 | High Level |
| 23 | Sensitive to the feeling of other people in the workshop | 3.36 | 0.70 | High Level |
| 24 | Ability to communicate with the customers effectively | 3.45 | 0.67 | High Level |
| 25 | Competency in handling difficult customers | 3.40 | 0.70 | High Level |
| 26 | Skills to realistically evaluate personal strength and weakness | 3.30 | 0.66 | High Level |
| 27 | Skill in sustaining long hours of work and flexibility to adapt to changes | 3.37 | 0.65 | High Level |
| | **Grand Mean** | **3.35** | **0.16** | **High Level** |

Table 2 shows that electronics craftsmen in the informal sector of the economy possess all the 27 management competencies contained in table 2 at high level. Electronics craftsmen did not possess any of the competencies at very high level. The grand mean of the respondents' responses for all the items is 3.35 and the grand standard deviation is 0.16. the low grand SD shows that the responses are close. Item number 6 has the highest mean score 3.47 while item number 14 has the lowest mean score of 2.83 (ability to use banking facilities). The standard deviation for every item in the table is low. This denotes the homogeneity of the craftsmen's responses to the items.

**Research Question 2**

How can the management competencies of electronics craftsmen in the informal sector of the economy of Enugu state be enhanced?

The answer to this research question was supplied by the electronics craftsmen in the informal sector of the economy. The mean and the standard deviation of their responses on the 19 items provided were computed and presented in table 3.

**Table 3: Mean ratings and standard deviation on the strategies for enhancing the management competencies of electronics craftsmen in the informal sector of economy of Enugu State**

| S/N | Strategies for Enhancing Management Competencies | $\overline{X}$ | SD | Remark |
|---|---|---|---|---|
| 1 | Organizing workshops/seminars on electronics crafts/skills upgrading for the craftsmen | 3.32 | 0.80 | Agree |
| 2 | Organizing workshop/seminars on book keeping | 3.00 | 0.98 | Agree |
| 3 | Provision of complementary goals oriented improving the productivity of electronics craftsmen through creativity | 3.19 | 0.87 | Agree |
| 4 | Provision of extension education aimed at developing technical and management skills | 3.33 | 0.79 | Agree |
| 5 | Provision of retraining programmes for the craftsmen, which should encourage craftsmen to cope with pressure from their workshops and their customers | 3.32 | 0.81 | Agree |
| 6 | Provision of retraining programme for the craftsmen which should encourage them to tolerate routine work | 3.16 | 0.89 | Agree |
| 7 | Provision of retraining programmes for the craftsmen which should encourage them to accept criticism from others and their customers | 3.28 | 0.71 | Agree |
| 8 | Organizing workshops for the craftsmen on how to cooperate with others | 3.36 | 0.73 | Agree |
| 9 | Organizing workshops for the craftsmen on how to supervise one's electronics workshop | 3.35 | 0.77 | Agree |
| 10 | Organizing workshops for the craftsmen on how to possess skills to realistically evaluate person strength and weakness | 3.34 | 0.73 | Agree |
| 11 | Organizing seminars for the craftsmen on how to possess skills in sustaining long hours of work and flexibility to adapt to changes | 3.31 | 0.78 | Agree |
| 12 | Organizing workshops for the craftsmen on how to set high standard of job performance | 3.34 | 0.73 | Agree |
| 13 | Organizing seminars for the craftsmen exposing them to the need for accomplishing work even under stressful condition | 3.32 | 0.81 | Agree |
| 14 | Organizing seminars/workshops emphasizing the importance of having ability to take appropriate decision | 3.29 | 0.79 | Agree |

| S/N | Strategies for Enhancing Management Competencies | $\overline{X}$ | SD | Remark |
|---|---|---|---|---|
| 15 | Organizing workshop for the craftsmen relating to them the importance of taking risks | 3.29 | 0.78 | Agree |
| 16 | Organizing workshop for the craftsmen on how to develop self-confidence | 3.30 | 0.76 | Agree |
| 17 | Organizing seminars for the craftsmen on the need to be truthful, honest, sincere and trustworthy | 3.34 | 0.83 | Agree |
| 18 | Organizing workshops for the craftsmen on effective time management | 3.32 | 0.77 | Agree |
| 19 | Organizing workshops/seminars for the craftsmen on skills in keeping appropriate records/inventories | 3.29 | 0.86 | Agree |
| | **Grand Mean** | **3.35** | **0.10** | **Agree** |

In table 3, the analysis of the result for items 1 – 19 shows mean responses above cut-off point for agreement. This is an indication that the electronics craftsmen in the informal sector of the economy of Enugu State agreed on the 19 strategies identified for enhancing the management competencies of craftsmen. The mean range for the table 3 is 3.00 – 3.35 and the SD range is 0.71 – 0.98. The grand mean for all the items in the table is 3.35 and the grand standard deviation for all the items is 0.10. Low SD implied that all the respondents have consensus opinion.

Each of the items 1 – 19 has mean response above 2.50. Item number 9 has highest mean score of 3.35 while number 2 has the lowest mean score of 3.00.

**Hypothesis**

There is no significant difference in the mean ratings of the sampled electronics craftsmen with respect to their educational qualifications and their perceived level of acquisition of management competencies.

The above hypothesis was tested with reference to items 1 – 27 with Analysis of Variance (ANOVA) statistic. The summary of the ANOVA is also presented. Tables 4 and 5 show the analysis.

**Table 4: Item by item Analysis of Variance (ANOVA) of electronic craftsmen's mean ratings with respect to their educational qualifications and their perceived level of acquisition of management competencies**

| S/No | Management Competencies | $\overline{X}_1$ | $\overline{X}_2$ | $\overline{X}_3$ | $\overline{X}_4$ | F-Ratio Cal | Remark/ Decision |
|---|---|---|---|---|---|---|---|
| 1 | Effective use of feedback from the customers | 3.51 | 3.34 | 3.42 | 3.40 | 1.04 | N.S |
| 2 | Conducting effective meeting with the apprentices | 3.42 | 3.18 | 3.31 | 3.31 | 1.66 | N.S |
| 3 | Ability to repair equipment brought to the workshop before the collecting date | 3.49 | 3.29 | 3.42 | 3.45 | 1.35 | N.S |
| 4 | Skill in maintaining tidy and well ventilated workshop | 3.52 | 3.23 | 3.38 | 3.36 | 2.48 | N.S |
| 5 | Regular inspection of tools, materials and equipment in the shop | 3.44 | 3.34 | 3.36 | 3.47 | 0.72 | N.S |
| 6 | Ability in determining the correct service charge on customers' equipment | 3.63 | 3.40 | 3.38 | 3.47 | 2.37 | N.S |
| 7 | Skill in planning ahead the activities to be carried out for a day's work | 3.42 | 3.42 | 3.34 | 3.52 | 0.66 | N.S |

| S/No | Management Competencies | $\overline{X_1}$ | $\overline{X_2}$ | $\overline{X_3}$ | $\overline{X_4}$ | F-Ratio Cal | Remark/ Decision |
|---|---|---|---|---|---|---|---|
| 8 | Skill in purchasing tools, equipment and materials | 3.56 | 3.38 | 3.46 | 3.45 | 100 | N.S |
| 9 | Ability to self-evaluate personal skills knowle... ...abilities | 3.52 | 3.40 | 3.34 | 3.45 | 1.12 | N.S |
| 10 | Skill in determining the apprentices' training needs and development | 3.50 | 3.28 | 3.46 | 3.45 | 1.57 | N.S |
| 11 | Ability to appraise the apprentices' perforr | 3.49 | 3.15 | 3.39 | 3.70 | 5.97 | N.S |
| 12 | Exhibit knowledge of account receivable and account payable | 3.09 | 3.09 | 3.20 | 3.29 | 0.76 | N.S |
| 13 | Abili to calculate trade and cash discount | 3.09 | 2.93 | 3.05 | 3.23 | 1.72 | N.S |
| 14 | Ability to use banking facilities | 2.67 | 267 | 3.03 | 3.23 | 5.17 | N.S |
| 15 | Ability to record correctly the equipment brought to the shop for repair | 3.40 | 3.16 | 3.27 | 3.41 | 2.19 | N.S |
| 16 | Skill in recording prices of purchased parts/co... ...s | 3.21 | 3.26 | 3.22 | 3.36 | 0.67 | N.S |
| 17 | Skill in keeping appropriate records of purchased parts/components | 3.09 | 3.20 | 3.16 | 3.25 | 0.56 | N.S |
| 18 | Competency in keeping inventory of available tools, materials and components in the workshop | 3.29 | 3.30 | 3.33 | 3.34 | 0.11 | N.S |
| 19 | Ability to keep record of account deposited by customer and the remaining balance | 3.43 | 3.32 | 3.29 | 3.34 | 0.88 | N.S |
| 20 | Profici... ...scribing the technique by which an equipment is repaired | 3.36 | 3.29 | 3.29 | 3.38 | 0.33 | N.S |
| 21 | Ability to determine current and future trends in the market | 2.95 | 2.78 | 2.78 | 3.16 | 1.67 | N.S |
| 22 | Ability to inspire other craftsmen and apprentices in the market | 3.43 | 3.25 | 3.25 | 3.31 | 1.24 | N.S |
| 23 | Sensitive to the feeling of other people in the workshop | 3.42 | 3.32 | 3.22 | 3.54 | 1.94 | N.S |
| 24 | Ability to communicate with the customers effectively | 3.43 | 3.50 | 3.39 | 3.47 | 0.69 | N.S |
| 25 | Competency in handling difficult customers | 3.42 | 3.43 | 3.32 | 3.41 | 0.46 | N.S |
| 26 | Skills to realistically evaluate personal strength and weakness | 3.36 | 3.27 | 3.23 | 3.50 | 0.57 | N.S |
| 27 | Skill in sustaining long hours of work and flexibility to adapt to changes | 3.47 | 3.35 | 3.21 | 3.43 | 2.51 | N.S |

Note: *S = Significant Difference
*NS = No Significant Difference

The calculated F-values are compared against the F-table critical value of 2.60 at 342 degree of freedom (df) at 0.05 level of significance.

Mean of Electronics craftsmen with FSLC or lower number of years of schooling ($X_1$), $N_1 = 108$.

Means of Electronics Craftsmen with GCE/WA[illegible]
Mean of Electronics C[illegible] with O&G/WAEC/TECH/NAB[illegible]
Mean of Electronics Craftsmen with HND/B.Sc/M.Sc/M.Ed/etc. ($\bar{X}_4$), $N_4 = 44$.
The total number of the electronics craftsmen used for the $N_1 = 346$.

**Table 5: Summary of Analysis of Variance (ANOVA) of electronics craftsmen's mean ratings with respect of their educational qualifications and their perceived level of acquisition of management competencies**

| Sources of Variance | Sum of Squares | df | Mean Square | F-Ratio | F-Ratio | Remark |
|---|---|---|---|---|---|---|
| Between Groups | 1336.87 | 3 | 334.21 | | | (N.S) |
| Within Groups | 48885.12 | 342 | 143.35 | 2.33 | 2.60 | Not rejected |
| **Total** | **50221.98** | **345** | | | | |

Note: *S = Significant Difference
*NS = No Significant Difference

*The calculated F-values are compared against the F-table critical value of 2.60 at 342 degree of freedom (df) at 0.05 level of significance.

Table 4 shows that the calculated F-values for items 1 – 27 with the exception of items numbers 11 and 14 are less than F-critical of 2.60 at 0.05 level of significance. The F-calculated for items 11 and 14 are greater than the table F-value of 2.60 at 0.05 level of significance.

Table 5 shows the summary of all items in Table 4. F-calculated (2.33) is less than the table value of 2.60 at 0.05 level of significance. Therefore, the null hypothesis of no significant difference is upheld, hence educational qualification is not a significant factor on the level of management competencies possessed by the electronics craftsmen.

**Major Findings**

**Electronics craftsmen operating in the informal sector of the economy of Enugu State possessed the following management competencies at a high level:**

- Effective use of feedback from the customers;
- Ability to repair equipment brought to the workshop before the collecting date;
- Skill in maintaining tidy and well ventilated workshop;
- Regular inspection of tools, materials and equipment in the shop;
- Skill in planning ahead the activities to be carried out for a day's work;
- Skill in purchasing tools, equipment and materials;
- Ability to self-evaluate personal skills knowledge and abilities;
- Skill in determining the apprentices' training needs and development;
- Ability to appraise the apprentices' performance;
- Exhibit knowledge of account receivable and account payable;
- Ability to calculate trade and cash discount;
- Ability to record correctly the equipment brought to the shop for repair;
- Skill in recording prices of purchased parts/components;
- Skill in keeping appropriate records / inventories;
- Ability to keep record of account deposited by customer and the remaining balance;
- Proficient in recording the technique by which an equipment is rep
- Ability to use advertising effectively;
- Ability to determine current and future trends in the market;
- Ability to inspire other craftsmen and apprentices in the market;

- Sensitive to the feeling of other people in the workshop;
- Ability to communicate with the customers effectively;
- Competency in handling difficult customers;
- Skills to realistically evaluate personal strength and weakness
- Skill in sustaining long hours of work and flexibility to adapt to changes.

**The following are the strategies identified by the study to enhance the management competencies of electronics craftsmen in the informal sector of the economy of Enugu State:**

- Organizing workshops/seminars on electronics crafts/skills upgrading for the craftsmen;
- Organizing workshop/seminars on book keeping;
- Provision of complementary goals oriented improving the productivity of electronics
- craftsmen through creativity;
- Provision of extension education aimed at developing technical and management skills;
- Provision of retraining programme for the craftsmen which should encourage them to
- tolerate routine work;
- Provision of retraining programmes for the craftsmen which should encourage them to
- accept criticism from others and their customers;
- Provision of retraining programmes for the craftsmen which should encourages them to
- cope with pressure from their workshops and their customers;
- Organizing workshops for the craftsmen on how to cooperate with others;
- Organizing workshops for the craftsmen on how to supervise one's electronics workshop;
- Organizing workshops for the craftsmen on how to possess skills to realistically evaluate
- person strength and weakness;
- Organizing seminars for the craftsmen on how to possess skills in sustaining long hours of
- work and flexibility to adapt to changes;
- Organizing seminars for the craftsmen exposing them to the need for accomplishing work
- even under stressful condition;
- Organizing workshops for the craftsmen on how to set high standard of job performance;
- Organizing seminars/workshops emphasizing the importance of having ability to take
- appropriate decision
- Organizing workshop for the craftsmen relating to them the importance of taking risks;
- Organizing workshops for the craftsmen on how to develop self-confidence.

**Discussion**

The craftsmen indicating only high level possession of management competencies required of electronics craftsmen in the informal sector; provides an acid test for the craftsmen's performance. Obi (2001) pointed out that marketability of any product depends on good management competencies. The fact that craftsmen possess the management competencies only at a high level indicates that there is still need for improvement.

The study revealed that craftsmen's ability in determining the correct service charge on customers' equipment is highest possessed among the management competencies. This shows that customers are satisfied to some extent with the craftsmen's method of determining service charge. It could be that craftsmen are not rigid while determining service charge. May be they only consider what an individual customer could pay.

Ability to use advertising effectively was least rated in the management competencies. This is not commendable as no meaningful patronage could be achieved without effective advertising. Elobuike (1998) noted that it is through public awareness and support that

businesses thrive and some sort of active communication network must be maintained. Hence, good public relation cannot be ignored in promoting the patronage of the craftsmen' services in the informal sector of the economy.

The study also found that provision of extension education aimed at developing technical and managerial skills of craftsmen is a commendable strategy. This finding is in line with Government of Nigeria (1975), which reported that inadequate entrepreneurial and managerial ability, lack of appropriate skills and even functional literacy among craftsmen are the constraints to the operation of electronics craftsmen in the informal sector. Harwarth (1972) posited that unless one is very highly competent and skilled in his trade area, he might not be favourably considered in the present day competitive labour market. Fagbemi (1988) advised that instead of reducing chances of employment by applying automation, that the serving craftsmen should be retrained towards the needs of labour market.

The study also found that educational qualifications is not a significant factor with respect to the mean ratings of electronics craftsmen on the level of management competencies possessed. This finding shows that varied educational background of the craftsmen did not differ their opinions on the perceived level of management competencies they possess. This suggests that managerial competencies are more like personality characteristics, and education has little or no effect on one's personality trait. Shermerhon (1989) therefore asserted that managerial skills are the personality characteristics which enables the craftsmen in sustaining their electronics maintenance workshops. Elobuike (1998) explained that management competencies houses attitudes, identifies the policies and procedures for an enterprise with the public interest and executes a system of action and communication to earn public understanding and acceptance. Management skills are very important in the management of electronics shops in the informal sector of the economy. Elobuike (1998) also opined that every craftsmen should organize his shop to sustain customers' goodwill and make sure he maintains his correspondence with them in future.

## Conclusion

The electronics craftsmen operating in the informal sector of economy of Enugu are not very good in advertising their service and utilization of banking facilities. The result of this study can serve as a base line data for craftsmanship studies because there is dearth of empirical data in this area.

## Recommendations

1. Any retraining programmes to improve the craftsmen's skills should be short in terms of duration, bearing in mind that they are self-employed. The programmes should also be cost effective. It should be affordable and attractive in considering their background.
2. Non-governmental organizations interested in human resource development in the informal sector of the economy should establish suitable extension services for the craftsmen in their workshops.
3. Any government/non-government organization interested in enhancing the competencies of electronics craftsmen in the informal sector of the economy should always involve the owners of the electronics workshop in the programme planning. This is to attract the cooperation of the craftsmen to the enhancement programme being planned/designed for them.

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