



Demographic Characteristics of Respondents on GSM Networks Co-location in Benue State, Nigeria

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Abstract – Telecom companies, which rushed to set up towers to cope with the explosion in the number of subscribers, have now realized that it is better to share the infrastructure. The aim of this study is to examine demographic characteristics of respondents on telecommunications infrastructure sharing and cost optimization in Nigeria: a study of GSM networks co-location in Benue State. The study respondents consists of senior technical, rollout managers, finance/accountant and administrative staff cadre of MTN and GLO working in Benue State. The population of this category of staff in GLO is 120, while MTN is 170, making a total of 290 respondents. The sample size is 168. Multiple-Regression is a multivariate statistical technique was employed to predict the established relationships between the variables. The highest duration of employment among the respondents fell between 1 – 5 years (43.9%), while 28.1% have worked for their telecommunication organizations between 6 – 10 years. The gender distribution constitutes a very high population for men (90.2%), while the women made up a small percentage of 9.8%, giving the picture that the telecommunication organizations in this region are predominantly dominated by the male counterparts. The majority of respondents were those with an HND or a B.Sc., which made up the highest distribution of 70.7%. The M.Sc. holders made up 18.3% followed by professionals (11.0%). The study did not take cognizance of both FSLC and WASC holder staff. The telecom regulatory body (NCC) should encourage infrastructure sharing trends in Benue State by ensuring that terms of agreement are adhered to by both parties and ensuring that defaulting parties are penalized in forms of fines or surcharges. This would ensure better commitments by the collocating parties

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1. Introduction

Telecom companies, which rushed to set up towers to cope with the explosion in the number of subscribers, have now realized that it is better to share the infrastructure. For large players who have a pan-Nigeria footprint, it means a new source of revenue, while for those expanding nationwide, it means lower capital expenditure (capex) and operation expenditure (opex), as well as faster rollout of services (Egan, 1996).

The two selected network operators (MTN and Glo) are the most dominant service providers in the State because of their availability in the grassroots, widespread coverage and preferred networks. Three local governments (Makurdi, Otukpo and Katsina-Ala) in each of the three senatorial districts of the State were selected for the study because they are the

centre/hub of economic activities in the State. The three senatorial districts are: i) Benue North East comprises of Katsina-Ala, Konshisha, Kwande, Logo, Ukum, Ushongo and Vandeikya. ii) Benue North West comprises of Makurdi, Gboko, Buruku, Guma, Gwer East, Gwer West and Tarka. iii) Benue South comprises of Otukpo, Ado, Agatu, Apa, Obi, Ogbadibo, Ohimini, Oju, and Okpokwu. The aim of this study is to examine demographic characteristics of respondents on telecommunications infrastructure sharing and cost optimization in Nigeria: a study of GSM networks co-location in Benue State.

2. Methodology

2.1. Population and Sampling Procedure

The mobile GSM sector is made up of four (4) operators (MTN, Glo, Airtel and Etisalat) of which the researcher considers co-location relationship mainly between two (2) dominant operators (i.e. Glo and MTN) because the operators have wider coverage and were preferred by subscribers in Benue State. In this study, the researcher developed a well-structured and standardized questionnaire on perceived aspect of co-location that affect cost efficiency of GSM firms in Benue State based on the Likert five-point ordinal scale and they were administered to senior technical, rollout managers, finance/accountant and management staff in the domain of study. The respondents possess technical skills, academic qualification and experience in co-location arrangement of GSM operations in Benue State.

Hence, this study respondents consists of senior technical, rollout managers, finance/accountant and administrative staff cadre of MTN and GLO working in Benue State. The population of this category of staff mentioned above in GLO is 120, while MTN is 170, making a total of 290 respondents.

A sample size is the number of elements selected from the population which is representative of that population (i.e. a sample must be a representative of the whole population). A representative sample size with known confidence and risk levels was selected based on the work of Yamane (1967) which gave a sample size of 168. The rationale for choosing Yamane is that the sample size is more than 100 respondents.

2.2. Data Collection Techniques

This research work was based on a well-structured method using standard empirical tools. The research design comprised of combination of descriptive, exploratory, inferential and causal approaches. This was because the concept of telecommunication infrastructure sharing needs to be clarified and existing models explored in order to investigate the causal relationships that exist among the variables under study.

The use of Likert five-point as an attitude measuring scale was well justified for this study as described below:

- i. Respondents were selected and subjected to scoring based on the judgmental assessment on the degree of how the various aspects of collocation affect cost efficiency of GSM firms in Benue State.
- ii. Favourable and unfavourable statements of how the aspects of collocation affect cost efficiency and revenue generation of GSM firms in Benue.

- iii. Collected statements in the form of questionnaire were administered to a sample deemed to be reasonably representing the population being studied.
- iv. Each respondent's score was obtained by adding up the scores of the responses to each statement.

3. Results and Discussion

3.1. Survey Response

A total of 168 copies of questionnaire were sent-out and 164 were retrieved. A successful response rate of 97.6% was achieved as 164 copies of the questionnaire were considered acceptable. Given the high percentage of acceptable number of questionnaire retrieved, this response rate was considered reasonably adequate (see Appendix I).

3.2. Demographics of Respondents

3.2.1. Duration of employment

The highest duration of employment among the respondents fell between 1 – 5 years (43.9%), while 28.1% have worked for their telecommunication organizations between 6 – 10 years. Those who have worked for a few months and up to a year make up 14.6%; this figure is close to 13.4% of the respondents who have worked for their telecommunication organizations for more than 11 years.

3.2.2. Gender distribution

The gender distribution constitutes a very high population for men (90.2%), while the women made up a small percentage of 9.8%, giving the picture that the telecommunication organizations in this region are predominantly dominated by the male counterparts. Given this information, the ratio of male to female is approximately 10:1.

3.2.3. Educational qualifications

The majority of respondents were those with an HND or a B.Sc., which made up the highest distribution of 70.7%. The M.Sc. holders made up 18.3% followed by professionals (11.0%). The study did not take cognizance of both FSLC and WASC holder staff.

Table 1: Summary of Respondents' Demographics

Duration of Employment	No. of Resp.	Percentage (%)
≤ 1 yr	24	14.6
1 – 5 yrs	72	43.9
6 – 10 yrs	46	28.1
11 ≥ yrs	22	13.4
Total	164	100.0

Gender	No. of Resp.	Percentage (%)
Male	148	90.2
Female	16	9.8
Total	164	100.0
Education	No. of Resp.	Percentage (%)
HND/B.Sc.	116	70.7
M.Sc.	30	18.3
Professionals	18	11.0
Total	164	100.0

Source: Field survey, 2014

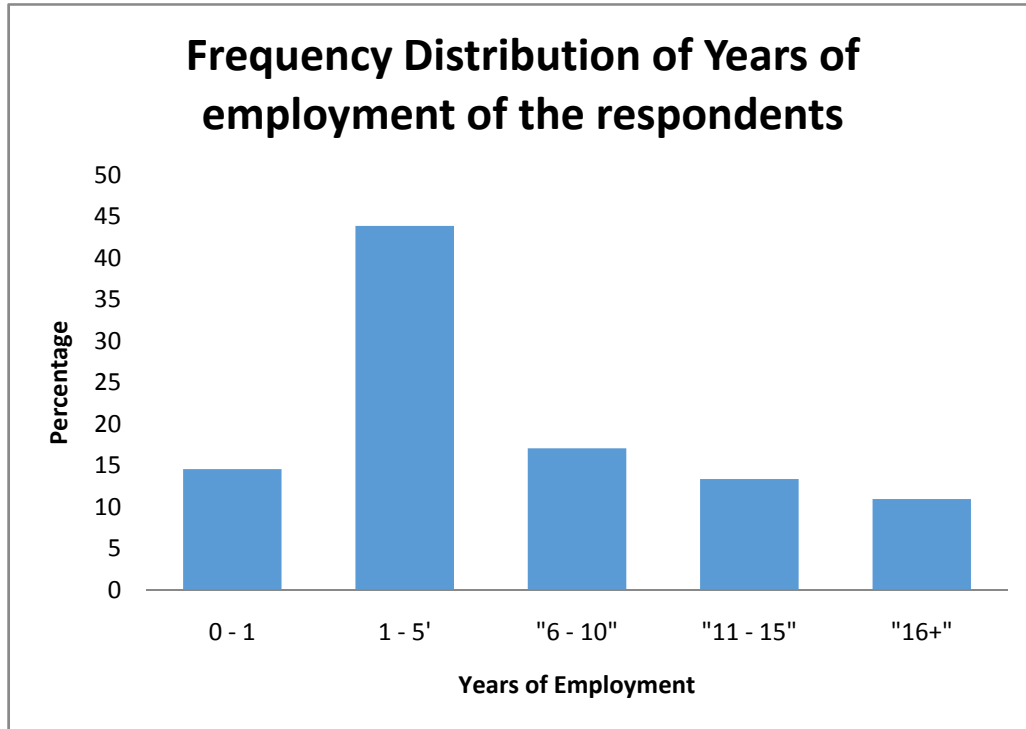


Figure 2: Frequency Distribution of Years of Employment of the Respondents

4. Conclusion and Recommendations

4.1. Conclusion

The study examined the demographic characteristics of respondents on telecommunications infrastructure sharing and cost optimization in Nigeria: a study of GSM networks co-location in Benue State. The study found out that there was a growing recognition among operators that the rise of viable competition through collocation will force each operator to give of its best in service delivery. This has been intensified by the recent introduction of mobile number portability which allows subscribers to switch from one network to another while maintaining their numbers. This calls for high service quality, and telecom operators in Benue are well poised for this competition by engaging in infrastructure sharing which allows operator to easily extend their network coverage to areas that were covered by their competitor.

4.2. Recommendations

From our conclusion, the study came to the following recommendations for stakeholders:

- iii. Rural infrastructure sharing is strongly recommended (both 2G and 3G) in Benue State because majority of the population are living in rural areas.
- iv. The main recommendation is in respect of the epilepsy power supply. It is recommended to the Federal Government to speed up its power sector reforms, as doing so will bring great relief to the infrastructure sharing in Benue State. The tariffs charged by the telecom operators for their services will be drastically reduced and quality of services provided by the operators will also improve tremendously.
- v. The telecom regulatory body (NCC) should encourage infrastructure sharing trends in Benue State by ensuring that terms of agreement are adhered to by both parties and ensuring that defaulting parties are penalized in forms of fines or surcharges. This would ensure better commitments by the colocating parties.
- vi. The NCC should eliminate the issues of non-harmonization of standards in specifications among telecom operators through issuing collocation licenses to third party companies who would be allowed to maintain or build infrastructure as separate companies desiring to share infrastructure. Hence, such issues as lack of commitment from the other party towards taking care of equipment belonging to the other will be eliminated.

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APPENDIX I: Questionnaire Distribution and Retrieval

S/N	Group	Number Administered	Number Retrieved	Acceptance Number	% of Success
	Total	168	164	164	97.6

Source: Field survey, 2014