



Audience

Research Methods *for* Campus Radio Stations

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FOREWORD

The radio broadcasting sector in Nigeria has expanded in recent years. Among the indicators of this expansion is the licensing of radio stations on campuses of tertiary educational institutions in various parts of the country.

Many of these stations are already on air, others are preparing to start. There are also reports that many other institutions have submitted licence applications to the broadcasting regulatory agency.

As the vision for ownership and management of broadcasting grows in educational institutions and licenced stations prepare to service their owner-communities, the challenge of producing quality and relevant content takes centre-stage. Whatever reasons might have informed the establishment of campus a radio station, one thing is clear: it must deliver content which satisfies the tastes and meets the needs of the community. The way to find out these tastes and needs is to conduct audience research.

This book presents various scientific methods available to campus stations in conducting audience research. The presentation is lucid and enhances easy application of each of the methods.

The book is a great resource not only to operators of campus broadcasting stations but also their colleagues in other broadcasting sub-sectors as well as students of communication research methods within and outside educational institutions.

It is our hope that, ultimately, the book will contribute to achieving stronger health for the broadcasting sector, improved service delivery to audiences and richer pluralism in the media industry in Nigeria.

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Section I

OVERVIEW OF **COMMUNICATION RESEARCH**

As a term, 'research' conjures a picture of complication in the minds of most people. Research is usually thought of as the business of investigators wearing heavy goggles in their hallowed laboratories and looking endlessly into their microscopes. Words most commonly used by our undergraduate and postgraduate students in describing research include the following: in-depth, scientific, organised, concentrated, complex and difficult. These are not incorrect attributes of research; the awe and disgust with which such words are uttered in relation to research are however 'incorrect'. In this chapter, we try to explain that research, in a sense, is what nearly everyone does, and then go ahead to provide an overview of communication research.

Who is a researcher?

In its simplest and broadest sense, research is the process of finding out the truth or, as Wimmer and Dominick (2000:4) put it, it is 'an attempt to discover something'. How we define truth may differ and even be incompatible, the methods we employ in searching it out may vary, the depth and detail of the process we adopt may vary, and the product we arrive at may differ, but all researchers are interested in finding out the truth.

Research is therefore not limited to a particular academic field such as the sciences; in fact, it is not limited to academic fields. Research is conducted by individuals for personal use, government, businesses

and non-profit organisations. When a student computes her cumulative grade point in order to know where she stands in terms of likely class of degree, she is conducting a form of research; a housewife who goes round a retinue of sellers comparing prices of similar items before determining from whom to buy is conducting some research. And if we stick to our definition, that housewife is not inferior to the public health researcher hired by UNICEF to compare maternal mortality rates across the geo-political zones in Nigeria. When we rack our brain over whether to walk to school or work, join a bus, hitchhike or take okada, we are trying to discover what is best for us in the given context. In Nigeria, we would like to take into consideration the cost, pleasure and danger involved in each of the options before choosing one. This process, though informal and probably unorganised, qualify to be described as research. It is a process of discovering something, of finding out the truth. Since research is what we do all the time, when next one is asked: 'When last did you conduct a research?' The right response should be a question: 'You mean how many seconds ago?'

In view of the above, it is clear that finding out the truth or attempting to discover something cannot be a new practice. Frey, Botan, Friedman and Kreps (1991) identified several methods of finding out. First of these is appeal to authority. People believe as truth what is said by a person in position of authority. In ancient times, priests, diviners and mystics were considered as people who had authority and whatever they said was considered as the truth. Finding out the truth meant consulting these people and listening to them. Appeal to authority is not a dead or antiquated practice. Today, we all appeal to authorities. Dictionary definitions of words are taken as final, in most cases; literature review and particular citation of known theorists and researchers are compulsory in all academic research. We all believe what someone supposed to be an authority says.

The second method of knowing mentioned by Frey et al (1991) is personal experience and introspection. Our opinions are influenced by our personal experiences. The subjects we believe are most difficult are the ones in which we got the lowest grades in secondary school. To most Nigerians, every one of the nearly 500 Nigerian

languages, except theirs, is difficult. Most stereotypical statements we make about others are based on unpleasant personal experiences we had with those with whom they share some qualities.

We also know through intuition (Frey et al, 1991). We believe something is true or false just because it makes sense. More often than not, we are not able to prove this in any defensible way. Yet we would say, 'It must be that...' or even 'I am sure...'. Intuition also refers to leaps of insight which we have occasionally.

Tenacity and custom constitute another method of knowing. People hold fast whatever they have believed to be true. We all say such things as "that's how things are". It is amazing that most research students in the social and behavioural sciences do not bother to ask why their project should be in five chapters and not four, or six. It would be amazing the kind of answers that teachers of research methods will proffer to that question. We all have assumed that projects should be in five chapters. Why? That is how it has always been.

Though these common ways of knowing are not scientific, they are not completely useless. Sometimes, they can help us come up with good ideas. Not only this, many of the things we know now and which have been scientifically established started out as products of appeal to authority, intuition or tenacity.

The difference between these informal ways of knowing and scientific research will become obvious as our discussion progresses. For now, we want to conclude this section by stating that research is everyone's business and practice. It is not far from us as we often think it is.

Communication Research

We like to define communication as the process by which people share or exchange messages, a sharing that is usually through a mutually understood set of codes and is influenced by context. The sheer breadth of the scope of communication as a field of study is as breath-taking as the practice of communication among humans is

pervasive. Therefore the number of possible research options in communication is large and the number of research topics is simply inestimable. Frey et al (1991) liken communication research to a large pie to which every researcher goes with a knife. She slices out a little piece and, precisely defining it, goes on to conduct her research on it. Communication covers such wide and divergent areas as intrapersonal communication, interpersonal communication, group communication, organisational communication, governmental communication, public relations, advertising and marketing, speech communication, mass communication and indigenous communication.

This broad base often confuses research students. Many often think that communication is not just broad, it is also boundless. Research proposals focusing on HIV/AIDS, child labour and the menace of vesico-vagina fistulae have been submitted to communication departments, some at an advanced stage. When these are turned down and the candidate is advised to try either the department of sociology or public health, the crestfallen candidate often finds such advice inconsistent with her understanding of the breadth of communication.

To determine whether or not a topic is a communication one, the researcher may ask two questions. First, to which element or component of communication is my topic related? Our definition of communication given at the beginning of this section suggests that communication is made up of at least four components: people, message, code and context. Frey et al (1991:37) reduce this to only the message. According to them, "the key term is messages only the study of message behaviour constitutes communication research per se". All other components, they affirm, become relevant to communication research when studied in relation to message behaviour. We agree with Frey et al that, in the final analysis, communication research is about what people, context, code, noise or channel do to the message, or about the message, or what the message does to them.

The second question is: which theory of, or literature in, communication does my topic seek to advance or challenge

(Olorunnisola, 2007)? Research is cumulative: every act is a response to an ongoing conversation (Olorunnisola, 2007) and to a growing body of knowledge.

Communication research is a tradition. It has established both a boundary for itself a boundary that is at once definite and growing and a set of methods of inquiry. In table 1, we present a summary of the various methods used in communication research, their uses and

Table 1: Communication research methods and their uses

S/N	Method	Issue/Target	Instruments
1.	Survey	People's opinion, attitude, knowledge	Questionnaire, Interview guide, FGD guide
2	Content Analysis	Content issues, direction and proportion of coverage	Content categories
3	Experiments	Effect'/influence	Tests, observation guide, gadgets
4	Observation	Conduct, communal behavior, cultural practice	Observation guide, interview guide, gadgets

If a researcher is interested in studying the attitude of young smoker to the anti-smoking messages of the Federal Ministry of Health, the best option for her is to conduct a survey. Her instruments will be a questionnaire or an interview guide or a focus group discussion (FGD) guide. There is a lively disagreement among communication researchers about what constitute survey. The disagreement occasionally assumes a magnitude that outweighs its significance. Some researchers hold that survey begins and stops with the use of a questionnaire. Anything outside the use of questionnaire, they claim, is not survey. Others state that any and every self-report method that gives the researcher an insight into the thoughts, opinions and attitudes of people is survey whether that method uses a questionnaire, interviews or FGD. There is an emerging third group that thinks that if the interview is structured and is administered on a large group of respondents and consequently analysed by qualitative means, that is survey. In-depth interviews which are almost invariably

analysed through qualitative methods, this third group maintains, are not survey.

Content analysis focuses on the content, the message, and is useful for studying the direction, pattern and prominence of coverage or treatment of an issue especially in the media. If a researcher wants to determine if her campus radio plays more foreign than Nigerian music, it is more rewarding to examine the content of music played on the station than to ask listeners for their opinions on the issue. 'Content categories' is to content analysis what the questionnaire is to survey.

Communication researchers try to determine the effect or influence of messages on the audience. Both survey and content analysis can provide useful insight into this. Through survey, respondents can report how the given media message influences them and by content-analysing feedback, such as letters to the editor and rejoinders, researchers can get a glimpse of the effects of the original messages. These are however insufficient for even tentative conclusions about effect of messages. Researchers have gained firm views of effect by conducting experiments meant for that purposes. This does not mean that experimental designs are faultless. The whole practice of removing people from their natural environment and caging them in laboratories make it impossible for researchers to conclusively declare the all-time applicability of their findings. Experimenters often need gadgetssuch as a television set or projector. Participants may also be required to fill in a questionnaire before and/or after the exercise. Experimenters may use guides and other sophisticated tools for measuring effects. For experiment, the list of instruments is long.

Field observation as a method provides the researcher the opportunity to study people in their natural environment and in the conduct of their day-to-day affairs. This may be overtly or unobtrusively done. Depending on her choice, the researcher may use tape recorders and cameras or may depend on written or mental notes. Field observation is flexible and may employ some of the techniques of other methods of inquiry.

Case study approach focuses on a particular communication problem in a given social setting. The researcher first describes the key events

that led to the case (problem) and then analyses the case in the light of current theories and research. In communication research, the aim is to identify the communication strategies that were used or that could have been used to solve the problems (Frey et al, 1991). A researcher may pick on a breakdown of negotiations between government and a labour union and examine what went wrong in terms of communication. Case studies involve a combination of multiple sources of data. In the example suggested, the researcher will have to study notices of meetings between government and labour; minutes of such meetings; the nature of discussions at such meetings among others. She will have to interview the people involved, and may even administer a questionnaire. Many research students are fascinated by the term 'case study' and use it to describe nearly any type of research they conduct.

Communication research is often eclectic: different methods are combined to examine a particular phenomenon. Egbokhare (2008) combined content analysis and survey (questionnaire, interviews and FGD) in her investigation of advertising and culture in Nigeria; Ojebode and Adegbola (2007) combined content analysis and survey in their study of the environment and content of radio broadcasting in Nigeria, while Ekpecham (2006) conducted field observation in addition to survey and content analysis to determine management listening practice in a Nigerian civil service setting. When researchers combine different research techniques in order to gain a deeper understanding of a research problem, they are said to have employed what is known as triangulation.

In this section, we have attempted to explain that research is what we all do formally but more often informally. We have also explained that communication is broad but not boundless therefore, a communication researcher must ensure that her seemingly fascinating topic is indeed a communication topic. Message is central just as theory is. Communication researchers employ survey, content analysis, experiments, field observation and case studies. The problem being investigated determines the method chosen though triangulating provides more rounded results. In the next section, we turn to audience research which is the central concern of this work.

Section 2

IMPORTANCE OF AND JUSTIFICATION FOR AUDIENCE RESEARCH

In Section One we defined research rather simply as the process of finding out the truth or of discovering something. Our definition was not that of scientific research. In this section, we begin with a description of scientific research. We then move on to a description and justification of audience research and discuss why audience research is such a rarity in Nigeria.

Nature of scientific research

Kerlinger's (1986) is one of the most often quoted definitions of scientific research. Scientific research is, according to him, "a systematic, controlled, empirical and critical investigation of hypothetical propositions about presumed relations among observed phenomena".

Elaborating on Kerlinger's definition, Wimmer and Dominick (2000) discuss 5 characteristics of scientific research method. According to them, the method is public. The scientific method is not a private ownership of one person¹. As a result, the method and findings must be freely communicated publicly among researchers. Researchers must take great care to include in their publications details of the 'what' 'why' and 'how' of their work where 'what' stands for the problem of investigation, 'why' for significance and 'how' for the methodology of the research. Nunally and Berstein, as Wimmer and

¹An exception to this is proprietary or private sector research discussed in the next section.

Dominick (2000:19) cite them, say “a key principle of science is that any statement of fact made by one scientist should be independently verifiable by other scientists”.

Scientific method is objective. The scientific method tries to eliminate bias. The researcher's own preferences, creed and prejudice are ideally fenced off from interfering with the process and product of research. The scientific method achieves this by setting explicit rules to be followed by the researcher which reduce the possibility of her interference. An outcome of objectivity is that two or more researchers working with the same instruments, subjects and in similar environment will come up with similar findings. This explains why research results often turn out to be contrary to what the researcher expected or even wished. We know that in real life, this is at times not completely so. For instance, most researchers have freedom in choosing their subject and theme of inquiry. That a researcher chooses to investigate this and not that is evidence of subjectivity. Not only this, ideological leanings often influence researchers' choice of subject and method, and possibly findings. That explains why counter-intuitive findings are quite few.

The scientific method is also empirical. Scientists are concerned with a world that is knowable (not esoteric) and not with superstition. Empiricism derives from experience. Scientists must be able to perceive, classify and measure what they deal with. If a scientist deals with abstract notions and ideas, she must strictly define such ideas and notions. Whatever cannot be observed or perceived by any of the five senses fall outside the scope of science.

The fourth characteristic of scientific research is that it is systematic and cumulative. A good researcher always builds upon previous studies. This requires doing a good literature review in the area of concern. In addition, scientists attempt to search for order and consistency among their findings. Added to this is the fact that a research work is made up of many parts operating together as a system.

Finally, science is predictive. It is concerned with relating the present to the future. This is why scientists seek to develop theories because

they are useful for predicting future.

Audience research: justification and importance

Simply put, audience research is the scientific process of understanding and articulating the needs, tastes, judgement and preferences of listeners, viewers or readers with a view to influencing programmes, programming and programme philosophy towards addressing those needs. It is not just a means of carrying the audience along but a way of ensuring that programming is relevant to the needs and tastes of the audience.

Research can be academic or proprietary. Academic research is conducted by researchers in academic institutions, whereas proprietary research is commissioned by private organisations and may generate data considered sole property or patent of the commissioning organisation. Audience research can be academic: in fact nearly all of the audience research conducted in Nigeria so far is academic. Audience research should be proprietary, commissioned or preferably conducted by the stations concerned for their use. Staff of the programmes department of a station should be able to conduct basic audience research. The newly approved campus radio stations, most of which are already experiencing funding constraints, are not likely to be able to hire consultants to conduct audience research for them².

The concept of the audience has gone through a change that is theoretical but with remarkable implications for research focus, structure and process. The oldest and antiquated view of the audience as the passive receivers lapping up information without any filtering is such that made audience research unnecessary, in fact, unreasonable. This view, popularly known as the hypodermic needle or the magic bullet theory, conceived of a completely vulnerable and choice-less audience who were at the mercy of and were overwhelmingly influenced by whatever the media had to offer. Studying such an

² For four days in February 2008, the Institute of Media and Society (IMS), Nigeria, supported by the Open Society Initiative of West Africa (OSIWA) organised a training programme on audience research for staff of campus radio stations in Nigeria. Most of the stations had just been approved then.

audience in order to understand their tastes and preferences could not be justified.

This view has received a thorough beating for portraying societies as homogenous and the audience as totally helpless and incapable of screening out or criticizing messages. The assumption was also criticized for lacking scientific or empirical foundations (Severin and Tankard, 2001; Folarin, 2002; Baran and Davis, 2003). Media theorising witnessed a paradigm shift with the works of Paul Lazarsfeld and his colleagues who proved that the media indeed had limited effects on the audience, that the audience indeed made choices and that a nexus of social and personal factors made the audience much less vulnerable than had been assumed. Employing thorough scientific and empirical approaches, Lazarsfeld and others were able to prove that a network of interpersonal relations, group commitment and other intervening variables mitigates any unbridled power of the media (Lazarsfeld, Berelson and Gaudet, 1944). To them, rather than rushing at people like a wild gale and overpowering them, media messages pass through opinion leaders who screen information and pass on items that would help others share their views. This, they called the two-step flow theory: the idea that messages pass from the media through opinion leaders to opinion followers (Baran and Davis, 2003).

From the works of Lazarsfeld and his colleagues, other theoretical positions such as the individual differences theory and the social categories theory directly or indirectly sprang (DeFleur, 1970). The former stated that individuals are so different that media influence will vary from person to person, while the latter argued that membership of certain social groups political party, religious groups, age, income level predisposes people to being influenced in the same way by media messages (DeFleur, 1970).

Still on the factors that might mitigate the effects of the media, Leon Festinger articulated the theory of cognitive consistency which holds that "people consciously or unconsciously work to preserve their existing views" (Baran & Davis, 2003:145). When people receive such information as is contrary to their beliefs and views, they experience cognitive dissonance, a kind of psychological discomfort. To

minimise dissonance, people embark on a number of processes called the selective processes. First is selective exposure which argues that people tend to expose themselves to messages that are consistent with existing beliefs and attitudes (Baran and Davis, 2003; Griffin, 2003). Next is selective retention which states that people tend to remember best and longest those messages that are most meaningful to them. Third is selective perception which states that people alter the meaning of messages so that they become consistent with pre-existing beliefs and attitudes.

In all of these, an active audience commanding the respect, in fact, awe of the media began to emerge. More than ideology or philosophy, technology has aided the change in the position and power of the audience. With access to broadcast messages now limitless, today's audience has indeed become a force to reckon with in the communication process. Any station, campus, commercial or government, which ignores the audience is not likely to remain on the radar of their attention for long.

Audience research is important for ethical, practical and professional reasons. Communication is an interaction among people. It is unethical for one party to ignore the other in an ongoing interaction. Audience research is a station's avenue for listening to its audience in a scientific manner. It is also the audience way of exerting some form of control on, and making some input into, the station.

One of the shortcomings of broadcasting is its lack of immediate feedback. This limitation has been greatly reduced by technology which makes feedback through phone-ins and text messages possible. But these do not take the place of a systematic and objective investigation into audience preferences, which is what audience research offers.

Audience research makes programming more targeted, more result-oriented and, in the final analysis, easier. Without a clear understanding of the audience, producing a programme is, at best, a leap in the dark.

Campus radio stations are in a peculiar situation and probably need audience research for a more peculiar reason. Their primary

audience, members of the academic community, are those schooled in the art and practice of critical thinking and discrimination. They are also likely to have wider access to foreign and domestic, satellite and terrestrial stations than does the audience of most other stations. Serving such an audience cannot be based on conjectures no matter how experienced the guesser is or how accurate the guesses are. Thorough audience analysis and research will be needed to serve and keep the audience.

There are organisations that specialise in producing audience ratings of stations. Audience ratings cannot take the place of audience research. The former is narrower, focusing only on how many people watch or listen to which stations or networks. These can give only inferences about the preferences, tastes and judgement of the audience. Audience ratings serve mainly the advertiser's purpose but audience research is primarily for the radio station's use. There are no audience rating organisations in Nigeria. This again underscores the need for stations to embark on audience research on their own.

Proprietary audience research has been slow to evolve in Nigeria for a number of reasons. First of these is lack of competition among broadcast stations. Until 1992, the government monopolised broadcasting in Nigeria and stations served as the authoritative voices of government. There was no scrambling for audience share and really, there was little urge to please the audience. A station's income did not depend on that; it did on pleasing the government. So, a culture of audience research did not develop, not to talk of it being nurtured. With the deregulation of the broadcast sector and the increasing approval of new commercial and non-commercial stations, market share has become an object to struggle for, and audience is needed in this struggle.

In concluding this section, we want to restate our conviction that audience research is what each broadcast station should do. All stations need it; campus radio stations need it the most. In the next section, we shift our attention to the steps involved in conducting audience research.

Section 3

STEPS IN CONDUCTING AUDIENCE RESEARCH

Much importance is attached to procedures and measures in scientific research. According to Wimmer & Dominick (2000:13), the purpose of conducting a scientific research is to “provide an objective, unbiased evaluation of data”. Such an evaluation must follow a prescribed sequence of steps. Failure to follow these steps increases the chances of error present in a study. In this section, attention is given to eight basic steps, appropriate to all areas of scientific research. Since audience research is a scientific process, these steps apply to it as well.

Step I: Identification of the Problem/Selection of a Research Topic

Generally speaking, research is an attempt to discover something, to fill a gap or to solve a problem. At this stage, the researcher tries to identify the gap or the problem, or an area of interest. When it becomes clear what the researcher wants to investigate, she develops this into what we call a research topic. Although choosing a topic is a concern for many researchers, the audience researcher may not have to face this difficulty, as the management for which she works may determine areas in which studies should be conducted.

There are a number of sources from where researchers can get ideas for a topic. These include: academic/professional journals, professional trade publications, newsletters, magazines, periodicals, the internet, archive data, research abstracts, and everyday situations. The campus-radio audience researcher, if she needs to search for a

topic, may search, in addition to the above, previous audience research conducted in other radio stations. Hybels and Weaver (2001) also identify taking of personal inventory, that is, making a list of things that interest you, as well as brainstorming as sources of research topic.

Once a research topic is selected, the next thing to do is to ensure that the topic has some merit and is relevant. To achieve this, the following guidelines are suggested. The research topic:

(i) Should not be too broad: Sometimes researchers choose topics that are too broad to be covered in a single study, constituting a problem for investigation and analysis. If campus-radio audience researchers limit the geographical scope of their topics to their campus, they are likely to have manageable topics with regard to geographical scope.

(ii) Should be managed within your time and resources: The cost of a study is important and will determine whether the study is feasible or not. This means that a cost analysis should be conducted early so that the project is not abandoned owing to lack of funds. This involves itemizing all materials, equipment and other facilities required, at the very beginning of the project. Campus radio stations should make funds available for audience research but funds are usually not inexhaustible. Time is essential, so the topic should be such that can be completed in the amount of time available.

(lii) Should be significant enough for you to take all the risk, and expend time and resources: Ask yourself whether the research will help further the understanding of the problems and questions in area being investigated. Ask if it will indeed enhance the performance of your station.

(iv) Should be one that can truly be investigated: The variables being studied should be observable. This point suggests that all the terms used in the proposed study should be definable (that is, have operational definitions). This means defining terms in a way the researcher wants them understood in a particular context. It specifies how the variables are to be measured.

(vi) Should be one whose data can be analyzed: The method of

data analysis chosen should be one that is appropriate for the study and one that the researcher understands. The researcher should consider, in choosing the topic, whether the information about the subjects' behaviour will be adequate and reliable, whether the subjects will answer truthfully, what value the data will have, once gathered.

(vii) Must not be a source of potential harm to the respondents, physically or psychologically.

(viii) Is a summary of the entire study and should subsume everything in the study.

Step II: Reviewing the Literature

For a study conducted by a campus radio staff for her station, literature review is optional and, when included, should dwell less on theories. For academic research, researchers should consult relevant literature on the topic to learn:

- (i) What has been done
- (ii) How it was done and
- (iii) What results were generated

From the review, a researcher is able to identify gaps which the proposed study will address. Literature review also enables the researcher to identify areas for further study/investigation. Literature review could be broken down into subheadings. It could be anchored onto some particular theories, depending on the nature of research. The researcher should be able to determine when a review has provided enough insight into the study. At the end of the review, a kind of summary should be provided, a kind of synthesis of the review. It is also important to note that the review should be guided by the problem being addressed. The literature should therefore, be relevant to the research questions.

The following questions, suggested by Wimmer and Dominick (2000), may serve as guidelines for reviewing literature:

- (a) What issues does the writer regard as pertinent?
- (b) What seems to be the purpose of the articles?
- (c) What assumptions about the topic or theory seem to underlie the articles?
- (d) What assumptions about the target audience seem to underlie the articles?
- (e) How do these assumptions compare with the assumptions of others who study the same topic from other perspectives?
- (f) What is the value of this approach, i.e. in what context might this approach be useful?
- (g) What sort of methodology did the scholar use?
- (h) What is your assessment of the articles?

Step III: Stating a hypothesis or research question.

A hypothesis is a formal statement regarding the relationship between variables and is tested directly. The predicted relationship between variables is usually either true or false. The research question on the other hand, is a formal question intended to provide indications about something.

Step IV: Determination of Appropriate Methodology and Research Design.

This entails the method(s) used in the investigation. Methodology is a broad area and covers sampling technique, sample size, description of the population under study, data analysis and so on. The most brilliant research idea amounts to nothing if the method or approach is poor. The choice of a method depends on the purpose of the research. If your research involves a small sample, for example, qualitative research may be better. It is usually safer and more profitable using the simplest research approach. Mass media researchers have a number of research methods from which to make their choices. Some of these

methods include: qualitative research methods such as field observations, focus groups, intensive interviews and case studies. Qualitative research is a description of a phenomenon that does not depend on the measurement of variables. Qualitative analysis relies mainly on a visual data (observations) and verbal data (words) that reflect everyday experience rather than on quantification. Other methods are content analysis, survey, longitudinal research, and experimental research.

Step V: Data Collection

This varies depending on the research method used. Some of the instruments used for collection of data include: the questionnaire, interview guide, focus group discussion guide, content categories, and observation guide. For a survey research, for instance, once the questionnaire has been developed and pre-tested, the methods of gathering data will include mail survey, telephone survey and personal interview. In the case of campus radio stations in Nigeria, we can think of lecture-hall intercepts, a lecture-hall equivalent of shopping mall interviews. In this case, students are approached as come out of the hall and are interviewed or given questionnaire to respond to. The type chosen will depend on the purpose of the study, the amount of time available to the researcher, and funds available for the study.

In content analysis in which media products such as reports, adverts, speeches, stories are analyzed, coders (those who place units of analysis into content categories) must be carefully trained to gather accurate data.

Step VI: Analysis and interpretation of Data

Analysis and interpretation of data depend on the study's purpose and the approach used. Every analysis should be carefully planned and performed according to specific guidelines. Results should be analyzed with reference to their validity and likelihood of their accuracy. Analysis of data could be highly technical and the

researcher may need to consult a statistician for help.

Step VII: Presentation of Results

The format used to present results, again depends on the purpose of the study. While some researches are presented in a more complex manner, others are reported in simpler terms. Your target audience matters. All results, however, should be presented in a clear and concise manner appropriate to both the research question and the people who will read the report. Nonlinear information such as charts, graphs and tables are common features in the presentation of results. They are useful for clarifying complicated information and helping a reader visualize certain types of information. However, they should not be used for the sole purpose of adding to the number of pages or for improving appearance of your work.

Step VIII: Replication

Like step two, this step is optional for private sector research. This is the investigation of a research hypothesis or question from different perspectives. Usually, one study or one source can provide only an indication of what may or may not be true. This means that one study is not enough basis for establishing a “truth”. The “truth” can only be found through a series of analysis. Also, methods and designs must be altered in order to eliminate design-specific result.

In the same way, subjects with a variety of characteristics need to be studied from many angles to eliminate sample-specific results. One can conclude that scientific research is self-correcting because changes can be effected if errors are detected in previous research. A good example is the discovery, in the field of communication, that early perceptions about the power of the media were incorrect after several studies. In summary, every effort must be made to ensure that the results of any single study are not dependent on a methodological factor.

An Example

Imagine you are on staff of Wise FM, the newly-approved radio station of Amoye University of Technology. Your station management has asked you to study the listening patterns of your immediate audience. The result of your research will serve as basis for deciding programme types and scheduling.

Step I: Choose a topic: "Patterns of radio listening among regular students of Amoye University".

Step II: Review Literature: Search for information on listening patterns of regular students, students or even staff of any college or university.

Step III: Raise research questions:

1. What time of the day do regular students of Amoye University listen to radio?
2. In whose company do they listen to radio?
3. While performing which tasks do they listen to radio?
4. What are their programme preferences?

Step IV: Determine appropriate methodology: Survey is the most likely choice for this study. A questionnaire will have to be designed for the purpose. However, observation methods can also be employed to corroborate or challenge the results of the survey. It should be possible, for instance, for you to walk round the accommodation areas or lobbies and observe people listen to radio. Notes taken during such 'purposeful wandering' constitute field notes. To make the 'wandering' fruitful, it may be useful to have a written observation guide which directs your attention to what matters.

Step V: Data Collection: The questionnaire can be administered by the researcher: it is less expensive. Your sampling method (we will return to this later) will determine the spots to which you take the questionnaire and to whom it is given. Telephone interviews are not feasible yet in Nigeria owing to the frequent malfunction of the

mobile telephone system and cost. 'Purposeful wandering' at different times of the day and in different places, as noted above, may also be part of the data collection process.

Step VI: Analyse and interpret data: In this context, simple frequency count and percentage description should serve the purpose. Tables, graphs and charts can be used.

Step VII: Present results: write out your research in the appropriate format with the right sub-headings. Our suggestions on this are presented later.

Step VIII: Replication: At a later date, maybe six months after your station has hit the airwaves, it is advised that you replicate the study in order to see what has changed, and what reception the students are giving you.

Section 4

SURVEY

Much of audience research is through survey. As we explained earlier, survey is handy in examining people's opinions, attitudes and practice. In most cases therefore, as campus-radio audience researcher, your research will be survey research. As a result, we have devoted more attention to survey in this material. In this section, we lay a general background to survey as we discuss its uses, strengths and weaknesses.

Babbie (1979) describes survey as a method used in studying a segment of a population for the purpose of making estimated assertions about the nature of the total population from which the sample has been selected. As said earlier, survey research has to do with finding out the attitudes, ideas and disposition of a particular population. Everyone in a population cannot be studied: even if this is possible, it is hardly desirable. That is why the researcher must sample from (select a portion of) the population.

Advantages of Survey Research

1. Unlike in experimental research, survey can be used to investigate problems in realistic settings. When you are engaged in experimental research, you are not dealing with a real setting; rather you simulate or create an artificial laboratory environment. This has tremendous influence on the responses you get from your participants. In the example we gave in the previous section, the investigator is engaged in examining radio listening behaviour in the

setting in which it is carried out.

2. Survey is inexpensive compared to the amount of data it can generate. It costs nothing to get people respond to your questionnaire in Nigeria. Even in the countries where questionnaires are mailed, it costs quite little to do that. If you are to keep people in your laboratory or studio for a three-hour experiment, you must cater for their transportation, and factor refreshments. Today, questionnaires are forwarded as attachments to e-mails; this makes their costs pale into insignificance.

3. The survey technique allows the researcher to examine many variables demographic, lifestyle information, attitudes, motives, intention etc and to use multi variant statistics.

4. Data helpful to survey research already exist in some cases. So the researcher can go and collect the data where they exist or go and collect the data in research centres. It is important to clearly acknowledge the source of data whenever existing data are used (Wimmer & Dominick, 2000).

Disadvantages of Survey Research

Survey research is not a perfect research methodology. When you are conducting an experiment in a laboratory, you eliminate variables capable of altering the result but in a survey research you carry out the research in a natural environment.

1. The first (most) severe disadvantage is that independent variables cannot be manipulated as in laboratory. Without control of independent variables, the researcher cannot be certain whether the relationship between independent and dependent variables is causal or not. Survey may establish that A and B are related but it is impossible to determine that A solely causes B. In other words, in survey research, causality is difficult to establish because many intervening extraneous variables are often involved.

2. The wording (framing) and placement of items within a questionnaire can have a wrong effect on survey result.

3. If the sample is largely unrepresentative the result will have little relevance to other situations even though the sample size is fairly large. Surveys based on representative samples however produce reliable (useful) information.

4. There is also the problem of respondent reactivity, a situation in which respondents economise with the truth because the information being solicited is personal or because telling the whole truth can paint them in an unpleasant picture. Many in Nigeria do not want to declare their age or their income. Many people in rural Nigeria do not want to declare the number of children they have. Not many ladies will say 'Yes' to the question: 'Have you had abortions before?' And, it is easier to squeeze perfume from garlic than to squeeze from a Fulani woman the name of her husband.

Applied uses of survey

Survey is extensively used in applied research. There are four major applied uses of survey research: audience research, opinion polls, evaluation research and market research.

In the western world, audience research and audience ratings are sophisticated large-scale business ventures. Ratings identify the size and composition of the audience of different programmes and stations. Media management are greatly influenced by the results of audience ratings. But as we pointed out earlier and as we can see, audience research is more comprehensive than audience rating.

Surveys are also applied in conducting opinion polls. Nigerian newspapers now conduct opinion polls on selected political issues. On their websites, a dialogue box displays a question and options (usually bi-polar). Occasionally, the papers publish the outcome of the polls in their print versions. The problem with the website type of opinion polls is the possibility of multiple voting. It is believed that opinion polls will attain in Nigeria the kind of sophistication it has attained elsewhere.

As Frey et al (19991) observe, another applied use of survey is in evaluation research. Evaluation often forms a part of communication

programmes especially in communication campaigns. Target audience of the programmes are usually asked to offer their ideas or opinions about the effectiveness of the programmes. Programme evaluation can be formative coming at a point in the course of programme execution or summative coming at the end of the programme. Needs analysis is another type of evaluation research: it aims at identifying the specific problems experienced by the target group. The result is often used to plan intervention programmes. Needs analysis therefore is often summative.

Survey is used in market research to identify consumer preferences, interests and reactions. Market research and sales research aims at identifying markets, analysing buyer behaviour and attitudes and gathering sales information. It is also used to predict the potentials of a firm or product (Asika, 2004).

Survey instruments

The questionnaire is unarguably the commonest instrument of survey though we argued earlier, there are other instruments. Questionnaires may be posted by snail or email; it can also be applied on telephone. In most cases, the questionnaire is handed out to potential respondents who either respond on the spot or ask the researcher to return later for it. Often, it is not expedient to let the respondent handle the questionnaire especially if there are cheater items on it. In that case, the researcher or her field officer holds the questionnaire and reads out the items and the options to the respondent. Whatever method we may choose to adopt, it matters a lot how we construct the questionnaire. The next section is devoted to how to construct the questionnaire.

Like Asika (2004), we argue that the interview is also a survey technique and that the interview guide is also a survey instrument. We also maintain that interviewing people is different from reading out items on a structured questionnaire. It is asking questions, mostly open-ended ones, which are relevant to the problem of the study because they directly emanate from the research questions and problem. The interviewer feeds in relevant supportive questions as

the conversation progresses.

We find it difficult to regard focus group discussions (FGD) as anything other than a survey technique. Of course, the FGD yields qualitative data in most cases, it is nonetheless an avenue for gaining insight into people's opinions, attitudes and practice in a detail greater and deeper than the questionnaire can offer. On that basis, we regard it as a survey technique.

Section 5

CONSTRUCTING THE QUESTIONNAIRE

A questionnaire is a series of questions or statements through which we operationalise research concepts. The researcher, through the questionnaire, is interested in determining the attitude of respondents towards certain issues. The researcher summarizes the issues briefly either as questions or statements and asks the respondents for an appropriate reaction.

As Wimmer and Dominick (2000) observe, the design of the questionnaire generally depends on the choice of data collection technique. For example, questions written for a mail survey must be easy to read and understand because respondents are unable to obtain explanations. Similarly, telephone surveys cannot use questions with a long list of options, because the respondents may forget the first few options by the time the caller is through with the list. The design of a questionnaire should also depend on the purpose of the research. A complex research topic naturally calls for more detailed questions than a less complex one. For example, “Media Use During the 2007 political campaign in Nigeria” will generate more questions than “A Survey of Listeners' Choice of Radio Stations in Nigeria”.

Suggestions on constructing a good questionnaire

Constructing a good questionnaire involves time and effort but it pays off. It is therefore, imperative for researchers to understand the

peculiarities of questionnaire design. These are discussed in the following sections. For the rest of this section, we have borrowed heavily from Wimmer and Dominick (2000:169-175)

Introduction

The introduction to the questionnaire should be persuasive so as to enhance return rate. A well constructed introduction will generate higher response rate. A good introduction to a questionnaire should be short, non-threatening, serious and pleasant, but firm. If your questionnaire is a telephone survey, you will need to get into the interview as quickly as possible for obvious reasons. It is important not to give, in the introduction, such information as may influence the response of your respondents. Usually, the problem or purpose of the research is not to be disclosed in the introduction.

Instructions

All instructions for completing the questionnaire should be clearly stated for respondents and interviewers. The instructions should be as specific as possible as respondents may not be in a position to ask questions about the survey. This is particularly so for mail surveys and self administered questionnaires. Respondents should be able to understand whether the correct response involves ticking, circling, placing items in specific order or even skipping an item. Change in typeface, capital letters or some other graphic device may enhance understanding of instructions, particularly procedural instructions e.g.

Do you have a favourite radio station that you listen to most of the time?

Yes No

If yes, please briefly explain why on the lines below

.....

.....
The instruction could be written in upper, as an alternative to boxing.

Questions which require ranking a list of items must clearly describe which response represents the highest value. For example: Please rank the following in terms of their ability to persuade you to adhere to your drugs. Place a 1 next to the item that persuades you the most, a 2 next to the item in second place and so on.

Friends

Relatives

Peers

Health Service Providers

Television

Radio

A questionnaire should have easy-to-follow instructions. This may involve specifying the number of responses particularly for an open-ended question. In a telephone questionnaire, everything must be spelt out, including introductions, explanations, definitions, transitions and pronunciations.

Question Order

Careful attention should be given to the order of the items in the questionnaire. Questions that come at the beginning of the questionnaire should be simple and easy to answer. Age and gender information, however, could be included in the early part of the questionnaire for easy identification.

If the questionnaire is self-administered (without aid) then the most interesting question should come first. Early questions can serve as motivation to create interest in the questionnaire. Questions about demographic data, sensitive and personal items should be placed at the end of the questionnaire to allay any fears. Age and gender information, however, may be included in the early part of the

questionnaire for easy identification. If the respondent is helped (for interview questionnaires) it is often better to start with less threatening demographic questions. This gives the interviewer time and opportunity to establish a rapport with the person being interviewed.

Questions generally should be arranged in a logical order, starting from the general to the specific and grouping questions of similar topics together.

Layout

Layout of the questionnaire also matters in survey research. Aspects of the physical design of a questionnaire to look out for include:

- Typing and reproduction
- Spacing.

A poorly reproduced questionnaire will negatively affect response rate, especially in mail surveys. Too many questions should not be crammed into one page as this might discourage respondents from answering the questions. Response categories should be spaced adequately and presented in a non-confusing manner. Enough space should be created for responses and response form should generally be consistent.

Questionnaire Length

This is also important in any survey. Although there are no strict guidelines to help in deciding how long a questionnaire should be, a number of factors determine this. Some of these are:

Purpose of research

Type of problem to be investigated

Type of and complexity of questions in the questionnaire

Amount of money in the research budget

Generally, a questionnaire should not take longer than 45 minutes for the respondent to complete.

General guidelines for constructing a good questionnaire

(i) Make the items clear and unambiguous

- Do not assume that your respondents know already certain things
- Do not use specialized words, acronyms, etc., questions should be phrased in everyday speech
- Avoid questions with double or hidden meaning. E.g. how many TV shows do you think are too violent?

(ii) Keep the questionnaire short. A very long questionnaire may become burdensome to respondents, who often are in a hurry to complete a questionnaire. Your questionnaire should be respondent friendly. Short, concise sentences that will not be misunderstood should be used.

(iii) Make the questions relevant to your research objectives or the purpose of the study. It's no use asking questions for the fun of it. For example, do not ask about occupation if it has nothing to do with the study.

(iv) Do not ask double-barrelled questions. These are questions that ask two or more questions in same sentence. Check your questions to be sure not more than one question is being asked. E.g. Should Federal Government increase tax and make education free? Yes [] No []

(v) Avoid using words that introduce bias into the questions. Consider the following: "In your free time, would you rather read a book or just watch television?" "Just" introduces bias into the question. It is obvious the investigator is pro-book. It also implies that watching television is less desirable. Bias encourages the respondent to answer in a particular way or support a particular point of view.

Whenever a specific person or source is mentioned in a question, it almost, always introduces bias, which could be positive or negative. E.g. do you agree with the Vice Chancellor's proposal to demolish the old structures?

(vi) Avoid leading questions. Leading questions suggest certain response or contain a hidden premise. For example, "Like most students, do you listen to Wise FM?" The question suggests that the respondent should answer in the affirmative or else run the risk of being unlike most people.

(vii) Don't ask questions that require highly detailed information. E.g. "In the last 5 years, how many times have you listened to a health talk on radio?" Make the question more realistic: "How many times did you listen to a health talk on radio in the last two days?"

(viii) Avoid embarrassing questions unless they are absolutely necessary. Although information gathered from a survey may be confidential, an overly personal question may cause embarrassment and distort respondents' answers. E.g. "What is your annual income?" Categorize income and ask your respondents to choose the appropriate one.

Types of Questionnaire Items

Open- versus closed-ended items

There are two basic types of questions: Open-ended and close-ended. The open ended item requires respondents to generate their own answers. For instance, what would you want your favourite radio station to include in their programme so that you could listen more often?

.....
.....

Open-ended items provide freedom in answering questions as well as opportunity for in-depth responses.

Advantages

Whether for interview guides or the questionnaire, through the use of open-ended questions, researchers can gather information about respondents' feelings and motives behind an answer. All the researcher needs to do is to include follow-up questions, such as “why did you say that?” “Please could you give a more detailed explanation?”

Open-ended questions are useful in pilot studies. They are used to allow subjects answer questions in any way they wish, and from the list of responses, researchers may select the often mentioned items and include in multiple choice questions.

Disadvantages

Open-ended responses require much time for collection and analysis of data. Because, naturally, there would be a variety of responses, a content analysis of each question must be completed to produce data that can be tabulated. Common responses are grouped into categories and results used to produce a code book for open-ended responses.

Open-ended questions often cause a lot of frustration. In many cases, the answers may be bizarre and sometimes respondents do not really understand the question and may provide answers that are not relevant. At other times, the interviewer may not really understand a respondent and so just write whatever they choose as an interpretation of the response.

In the case of closed-ended items, respondents are able to select an answer from a list provided by the researcher. Closed-ended questions make responding easier for the respondents and analysis easier for the researcher. Their major weakness is that they limit the variety and depth of response to only the extent anticipated by the researcher.

Dichotomous Items

The simplest type of closed-ended question is one that provides a dichotomous response which could be “yes/no” or “agree/disagree”.

For example:

“Campus radio stations should focus more on academic issues”

Agree

Disagree

No option

Dichotomous questions do not specify the degree of conviction, but they are easy to tabulate.

The multiple-choice item

A multiple-choice item provides opportunity for respondents to select an answer from a list of options. For example:

How sufficient would you rate the information offered by Wise FM on the physical environment of the campus

Very sufficient

Just sufficient

Insufficient

Very insufficient

Questions that belong to this group should include all possible responses, or at least provide an 'other' option. Multiple choice options should be mutually exclusive. That is, options should not overlap. The following options are not mutually exclusive:

Age: 18-25

25-30

30-35

If a respondent is 25, which option should she choose?

The following are exclusive;

For how long have you been in possession of your radio set?

Less than 1 year

Between 1 and 5 years

More than 5 years.

Rating scales

These are popular with media research. Some of them may be adaptations of Likert type. For example,

The University authorities have undue control over the campus station.

Strongly agree (coded as a 5 for analysis)

Agree (code as a 4)

Neutral (code as a 3)

Disagree (code as a 2)

Strongly disagree (coded as a 1)

Rank Ordering

When researchers are interested in the relative perception of several items or concepts, the rank order is used. For example:

Please rank the following media in terms of their news credibility. Put a 1 next to the medium that is most credible, a 2 next to the second, and so on.

Radio

Television

Newspaper

Magazine

News Agencies

It is not advisable to do a rank ordering of too many items as this is tedious and the dividing line becomes very thin.

Check list Question

A list is provided and the respondents are asked to check as many items as apply to the question. Answers to checklist questions are often used in pilot studies to refine questions, for the final study. While the most frequently checked items are used for further questioning, the unchecked answers may be dropped.

Fill-in-the-blank items

These are not very popular but they are suitable for some particular studies. For example, advertising copy testing. They are used to test subjects' recall of a commercial. After exposure to a commercial, respondents receive a script of the commercial in which a number of words have been omitted. They are required to supply the missing words to complete the commercial. Fill-in-the-blank questions also can be used in information test. E.g. "the Headline story was about"

Advantages of closed-ended questions

- (i) They are popular
- (ii) They provide greater uniformity of response and
- (iii) Their answers can easily be quantified.

Disadvantages

Researchers often fail to include some important response options. This means that the respondent's answer may not have been supplied in the list. One way to avoid this is to include the option "other" in the

list provided, followed by a blank space, where respondents can put down their own answer. The 'other' option, however, is treated like the open-ended question.

Pre-testing

To determine whether your research instrument is adequately designed, pre-test it. This involves conducting a mini-survey with a small sample. This helps to correct areas of confusion. Once the questionnaire is completed, it should be pre-tested with the type of respondent who will participate in the actual study. Respondents involved in a pre-test are not to participate in actual study. The researcher should discuss the items with respondents in a pre-test, after the questionnaire has been completed so that problems can be noted and addressed immediately.

Section 6

ENSURING THAT YOUR INSTRUMENT IS VALID AND RELIABLE

Reliability and validity are very crucial to scientific research. A measurement must possess these related qualities to be useful. If a study must be objective, its measures and procedure must be reliable. Reliability and validity help the reader determine how much confidence can be placed in the results of the study and whether the researcher's conclusions are worth believing. As Lindlof (1995:235) puts it, “basically, we want to inspire confidence in readers (and ourselves) that we have achieved right interpretations”.

What is reliability?

Reliability in research is basically the same as reliability in any other context. For example, reliability is often equated with dependability, stability and consistency over time. A research whose result is consistent over time is therefore reliable. A study is reliable when repeated measurement of the same material results in similar conclusions and decisions.

If on the other hand, a measure is repeatedly given to individuals and there is no relationship between earlier responses and later responses, that measure is unreliable. Unreliable measures cannot be used to detect relationships between variables.

Components of Reliability

Reliability has three general components:

Stability: This refers to consistency of a report or a measure at different points in time.

Internal Consistency: Consistency of performance among items that compose a scale. If separate items on a scale assign the same values to the concept being measured, the scale possesses internal consistency.

Equivalence: This assesses the relative correlation between two parallel forms of a test. Two instruments with two different measurement techniques are developed to measure the same concept. The instruments are administered to same group of people during a single time period, and the relationship between the scores is taken as a measure of the reliability.

Sometimes two or more observers judge the same phenomenon, as is the case with inter-coder reliability, which is used to assess the degree to which a result can be achieved or reproduced by other observers. It is expected that two individuals using the same operational measure and same measuring instrument should end up with the same result.

Ensuring Reliability

Ensuring reliability in research has a lot to do with experience. Your instrument must be tested. This is to ensure that there is no ambiguity. At least one pilot study should be conducted for any newly developed skill or index, to ensure its reliability or validity.

The way the items in your instrument are constructed also matters in ensuring reliability. Items or instruments that are complicated may give rise to different answers. There must be certainty about the question we want to ask and answers expected for them.

A third way we can ensure reliability is to use measures that have proven reliability in previous research.

Sometimes interviewers/research assistants could become a source of unreliability. They could become lazy, showing interest only in the monetary aspect of the project. We can guard against this by having a supervisor verify selected pieces of information from a sub-sample of information. In general, training, practice, clarity and specificity

would help us avoid a great deal of unreliability.

Validity

External Validity: An externally valid study is one whose results can be generalized to the population. When a study lacks external validity, it cannot be projected to other situations; it is valid only for the sample tested.

The external validity of a study can be affected by such factors as the interactions in analysis of variables such as subject selection, instrumentation and experimental condition. Answers to the following questions may help the researcher in ensuring that the study achieves validity:

How rigorous is my sampling technique?

What type of instrument should I use for the collection of data?

How valid is the instrument?

How should I ask my questions?

Under what condition(s) should I collect my answers?

Internal Validity

An internally valid study is one that measures what it sets out to measure; one that investigates its hypothesis or proposed research question. This is important because the possibility of intervening variable creating a rival explanation of results exists. The researcher must be in a position to rule out any rival explanation of results all factors that may affect the result of our research. Determine if y is a function of x ($y = f(x)$) and not ($y = f(b)$).

The variable that creates a rival explanation of result is known as artifact. The presence of an artifact in research indicates a lack of internal validity. To ensure internal validity therefore, there must be strict control of variables.

Ways of ensuring that a study is externally valid

Use random samples. Random samples allow researchers to gather information from a variety of subjects rather than from those who may share similar attitudes, opinions and lifestyles. In this type of sample, everyone is given an equal chance of being selected for the study. In audience research for a campus radio, choosing random samples will, for instance, ensure that your samples cut across the different faculties and departments. If you want to study students music preferences, if choose only students from the humanities, your findings may not be applicable to those in the sciences. Many of the people in the humanities study the works and lives of other people and may, for instance, prefer music with classical tilt than people in the sciences.

Select a sample that is representative of the group to which the results will be generalized. For instance, the results of a study of a group of students in a boarding house cannot be generalized to a group of non-boarding students. In most cases, if samples are randomly chosen that is if the researcher adopts simple or systematic random sampling and follows the necessary procedure for applying these sampling techniques the sample is most likely to be representative. The next section discusses techniques for sampling.

Section 7

METHODS OF SAMPLE SELECTION

Selecting an appropriate sample for a study is a crucial issue in survey. External reliability of the findings depends on it. And for an audience research, management decisions based on such findings have a great proclivity to fail. In this section, our attention is on those methods of sampling that the audience researcher, especially for a campus radio station, might find useful. Put differently, we have not attempted to present an exhaustive discussion of sampling techniques in behavioural research.

Population

The population of a study refers to the entire group of people or objects that the researcher is studying. Population, in audience research, is usually human beings but as we discuss later, it can also be texts of your station's broadcasts. As we mentioned while discussing the strengths of survey, in research, you do not make use of the entire population; rather you carefully and scientifically select sample for the research.

Members of a population must share at least one characteristic that differentiates them from non-members. If you are studying the radio listening patterns of regular students, regular students are your population. No matter how regularly a part-time student visits the campus, even if he lives there, he does not form a part of your population. Care then must be taken to separate who does and who does not belong in the population.

Sample and sample size

A sample is a small subset of your population. A sample, in the case of audience research, is a group of human beings chosen from the entire population. A well drawn sample is a good representation of the entire population. In order to select a sample to be studied the researcher should follow the basic steps.

1. Identify the population.
2. Determine the required sample size.
3. Select the sample using a definite sampling technique or a combination of sampling techniques.

The appropriate size of sample varies from one situation to another. It is often difficult to determine the sample size which is to be a good representation of the population. Generally it is accepted that the larger the sample size, the smaller the sampling error. If the sample is too small, the result may not be generalisable. There is no hard and fast rule on the percentage of the population that the sample represents: some research books recommend that the sample should be at least 10% of the entire population while others recommend 20%. If you have 15,000 students on your campus and you are interested in a survey among them, your sample should therefore not be less than 1,500 if you take the first counsel, or 3000 if you take the second.

The most important point to stress about sample size is that what matters most is not the size of the sample. The size matters a lot. What matters more than the size is the representativeness of the sample. A researcher working with a carefully chosen and representative sample of 250 is more likely to have findings that are more externally valid than another researcher working with a size of 520 that is unrepresentative.

Sampling methods and techniques

The skill in sampling depends to a considerable extent on the degree to which accurate statement about a total population can confidently

be made. Sample selection is an important step in any research work. There are several valid techniques of selecting a sample from a population. The sampling may be different but the basic steps in sampling are mainly the same.

They are:

1. Identification of the population.
2. Determination of the required sample size.
3. Selection of the sample.

Probability and non-probability sampling

There are two major approaches to sampling: probability and non-probability approaches. Probability sampling makes use of strict mathematical guidelines. Probability sampling generally incorporates some type of systematic selection procedure such as a table of random numbers to ensure that each unit has an equal chance of being selected. The approach is considered the more scientific of the two in that it gives every member of the population an equal chance of being selected as part of the sample.

The non-probability sample does not involve mathematical methods. Those to constitute the sample are selected based on specified criteria; the selection is not open.

There are 4 basic sampling techniques or methods that a campus-radio audience researcher will find useful. These are discussed below. The first three are probability sampling techniques; the fourth is a non-probability sampling technique.

1. Simple random sampling
2. Stratified sampling
3. Systematic sampling
4. Purposive sampling

Simple random sampling: Simple random sampling is the most often

misunderstood sampling technique. Very often, a student carries her questionnaire to a community and gives them to whoever is willing and able to fill it in. Then when asked to state how she selected her respondents, she says she selected them randomly or through simple random sampling. Simple random sampling is a complex and scientific process.

To apply simple random sampling, a researcher must obtain a sampling frame. This is a complete list of all the elements that made up the entire population. To conduct the research on radio listening pattern of regular students in Amoye University, you need a register, a list of all regular students. To get a sampling frame is not difficult if you are studying a small and definite sample such as a university community. But if your population is Oyo State, to get a definite list of all who live in the State becomes a problem. Simple random sampling becomes difficult, if not impossible, to apply. To help randomize the process, you may list out the local government areas that constitute the state. That makes your sampling frame. This is not satisfactory but at least it adds some touch of randomness to the process.

From the sampling frame, the researcher uses a table of random numbers to select the sample. Other methods used to pick sample from frame include coin toss, die casting or a computer-generated set of numbers. We demonstrate this by further using our Amoye University example. Again, you are to study the patterns of radio listening patterns of regular students of the university.

Step I: Compile a list of all regular students in the university. Let us assume there are 7,000 of them.

Step II: Assign each student a four-digit number. It must be four-digit because the size of the population is four-digit. This means you have people with number 0001 to 7000.

Step III: Turn to your table of random numbers. Begin at any point in the table any point you choose. Each number in the table has five digits. Decide whether you will go by the first four digits of each number, the middle four digits or the last four digits. Decide the direction to move: left, right, up or down. Move consistently in that direction. If you go by the first four digit of each number, you choose

the first four digits of each number. If you, for instance, touch number 10237, it means you will take digits 1023.

Step IV: Turn to your sampling frame, and mark the person whose name is written against serial number 1023. She is one of your respondents.

Step V: Continue till you have chosen the number of respondents you determined to be your sample size with a few extras. If you have decided to have a sample size of 350, choose about 380. You have 30 to fall back on if some of the chosen are not available, or are unwilling to be involved in your study.

See Appendix for a copy of table of random numbers. Coin toss and die casting are faster means than use of table of random numbers. Those using these techniques merely touch a serial number on their sampling frame and flip a coin. If it is head, the number is chosen and the person whose name is against the number is selected as a respondent. If it is tail the number is rejected. A more recent way of generating random numbers is by using a software that generates random number. These random number generators can be accessed free on the internet. A good search engine can lead the user to several random number generator websites. Simple random sampling is anything but simple.

Stratified sampling

This is used when a researcher is interested in a particular characteristic segment or stratum of the population e.g. classification according to age, sex, education, level of income i.e. high/low level of income. Thus instead of selecting a sample from the population at large the researcher identifies a significant variable, selects subject who have these traits and chooses a subset from the group. The variable of interest might be age, sex, religion, education, income, or political affiliation. However, the more variables are added to the stratification list the harder it becomes to identify subject meeting the criteria.

Let us return to the Amoye University (Wise FM) example. If you adopt

the stratified random sampling technique, you first stratify the whole campus into faculties. Each faculty represents your stratum, and from each stratum you choose respondents. The case we use here involves only regular students. If your study involves comparing the opinions or practice of regular with part-time students, then you can divide students into two strata: regular and part-time and then choose from each of these.

Stratified sampling is usually combined with other sampling techniques. The technique we have described takes you to the faculty; it does not take you to the individual respondent. Students always wonder: what do I do after stratifying them into faculties? How do I choose? Researchers who use stratified sampling have always combined it with other methods. For instance, they may adopt the convenience technique on getting to each stratum. Convenience sampling techniques, in this case, involves giving your questionnaire to whoever is a student of the chosen faculty who is willing and able to respond to the questionnaire. More thorough researchers adopt simple random sampling on getting to each stratum. This is what is called stratified random sampling.

In a sense, with stratification, stretching selection across relevant divisions is not left entirely to chance, unlike in the case of simple random sampling. It is on that note that some consider it a stronger option, especially when users adopt random sampling on getting to each stratum.

Systematic sampling

This is similar in some ways to simple random sampling. A sampling frame is needed here also. But a table of random numbers, a coin or a die is not. After compiling the sampling frame, the researcher decides on the interval between each selection act and another. She may decide on every 3rd or 5th person on the sampling frame. She needs to consider her proposed sample size vis-à-vis the entire sampling frame before deciding on the interval. If she has a population of 500, and she wants to select a sample of 100, then she is to choose every 5th person.

After this, she starts randomly from any unpremeditated point in the sampling frame. She keeps choosing every n th person (5th person in the example given above) until she has chosen the 100 people. Again, it is better to choose a few extra people for the reason earlier given.

Researchers have used systematic sampling without sampling frame. Some have chosen every 4th person that entered the banking hall of the bank they are studying, or every 3rd patient that visited a particular clinic. This they did without any sampling frame. To many methodologists, this is unacceptable; to others, it is.

Purposive sampling

This is a non-probability sampling approach. In purposive sampling, respondents are chosen because they possess particular characteristics. The choice is non-random. In studying the public relations strategies of selected multinational companies, it may be important to choose public relations officers of these organisations. In this case, you cannot use any of the three methods earlier discussed. You choose the officers simply because they occupy a peculiar position in the organisation. On a wider scale, if you want to find out if the use of a certain deodorant by housewives was influenced by its advertisement, you cannot adopt any of the three methods we discussed above. You have to go after housewives that use the deodorant. The campus-radio audience researcher may want to study listeners to a specific programme or a programme genre. Selection of respondents for such study must be purposive.

In this chapter, we have discussed sampling methods and techniques. We examined the four techniques we believe the campus radio researcher will need most. As we can see, we have focused attention of survey research methods. It is time we turned to two other methods of research that will be useful to the campus-radio audience researcher.

Section 8

FIELD OBSERVATION

Very often, survey does not show everything for reasons discussed under the weaknesses of survey. At times, conducting survey is impossible because of the nature of the research context and problem. For the audience researcher, survey may be applicable most times. There however may be times that she needs to do more than survey. Field observation or field studies or observation is a method that allows the researcher to see things for herself.

There are 2 major types of observation method: The Observer Participant and the Participant Observer methods.

The Observer participant goes round the community or the group being studied. She observes them in their natural environment and in the normal course of their daily living. She also participates in their activities eating, drinking, hall week celebrations. As she does this, she takes roles that are relevant to his research problem. She is a stranger, and everyone who sees her knows that she is one.

The Participant Observer is the opposite. She participates fully in the life and living of the group and no one is likely to know that she is there to observe. Her research interest is concealed greatly.

The participant observer can discover deeper truths and get more authentic data than the observer participant but participant observation throws up many ethical and safety concerns. Is it fair to pretend to be a member of a group while you are not? Is it safe to enter and be a member of a cult so you can understand the communication

dynamics of the group? But does sitting on the fringes and taking notes of activities that everyone sees enough research? These are questions that have bothered researchers for ages.

Steps in conducting field observation

Field observation techniques involve several steps. We have borrowed from Wimmer and Dominick (2000) in discussing these steps.

Choosing a Research Site

The nature of the research problem or topic usually suggests a behaviour or phenomenon. The site to be chosen must be one in which the behaviour to be studied occurs fairly frequently. Let us assume you are interested in the radio listening preferences of female undergraduate students in your university. You first determine the behaviour (radio listening) and find the site where this is carried out regularly (hostel most probably). The chosen site for observation must be stable enough to permit extended observation.

Design an observation guide

An observation guide is a set of questions and statements whose design is based on the research problem and whose aim is to direct the researcher's data collection efforts towards gathering such data as will address the research problem. For the example, in addressing the research purpose which we suggested under "choosing a site" above,

Question/issue	Comments
Is radio on?	
What station?	
What programme?	
If musical or chit-chat, one DJ or several?	
Listening alone or in group?	
Just listening or listening and doing something else?	
If else, what?	
Sing along with station?	
If yes, confidently or haltingly?	
Appear to borrow radio or radio hers?	

your observation guide may look like this:

The observation guide is not rigid piece carved on a stone tablet. It is a mere guide. For the participant observer, the observation guide must be concealed ethics until such a time that the researcher can make notes.

Gaining access

Once the site is selected, the next task is how to gain access to the site in an unobtrusive way, especially if you are a participant observer. The difficulty faced in gaining access depends on how public the setting is and the willingness of the people in the setting to be observed. Where entry is restricted, gaining access becomes a difficult task. If you were studying communication patterns among members of a secret cult, you would have access problems. You would not if you were interested in the communication patterns among campus cab drivers. Gaining access requires persistence and skills. It may also involve some risk.

Sampling

In Field Observation, sampling is quite difficult. There is the problem of how many individuals or groups to observe. If you are observing radio listening pattern among female students and you visit and spend all evenings in the female hall, at what point would you think you have observed enough? Another problem is deciding what behaviour episodes or segments to sample.

Commonly used sampling techniques for Field Observation are:

Purposive sampling: This requires selecting the most relevant person(s) or behaviour(s) to observe. We discussed this in Section Seven.

Snowball sampling: Here, a member of the group being studied provides information to the researcher, and after that refers the researcher to another member of the group. He, after providing the information, in turn, mentions another member and so forth. This is useful in studying hidden populations.

Maximum variation sampling: Settings, activities, events and participants are selected on a wide variety so as to yield as many different and varied situations as possible.

Collecting field observation data

The traditional data collection tools pencil and paper have been supplemented by tapes. Though tapes and cameras are used, they do not always offer the best information. In participant observation, cameras and tapes are not easy to hide/use. As Wimmer and Dominick (2000) observe, they take away time and gather less data (a person's field of view is about 1800 whereas a camera is 600).

Note taking during observation can create suspicion especially if you are a participant observer. Researchers should make notes in a way that is not easily noticed. A field researcher should take mental notes, which will be transferred into written notes as soon as possible. In these notes, the observer records what happened and what was said as well as his personal impressions, feelings and interpretations.

Data can also be collected by unobtrusive measures such as observing accretion and erosion (Wimmer and Dominick, 2000). Accretion is the quantity of deposits that has built up over time such as the amount of dust or grease on an object. Erosion deals with the wear and tear on a specific object. Accretion most often suggests disuse; erosion, use. But occasionally, accretion can suggest use. The accumulation of grease on a baluster suggests use rather than disuse.

Data analysis in field observation

Data are usually sorted into files and then content analysed. In studying communication techniques of Kegites, for example, after collecting data, you may open files with labels like: (a) verbal techniques; (b) non-verbal techniques gestures; (c) non-verbal techniques colours; (d) non-verbal techniques facial, etc. The data in each file are then studied to observe consistency and discern principles. Perhaps, you may discover that examples of non-verbal outweighs verbal; that Kegites use more gestures than facial expressions.

Exiting

An observer must exit the field without upsetting the system. For participant observers, exiting can be difficult because the group may have come to regard him as one of them; or even depend on him.

Section 9

CONTENT ANALYSIS

As the name suggests, content analysis is a content research method; not an audience research method. We all the same, decided to include it because the campus-radio audience researcher may have the need to analyse the content of the campus radio programme or the content of other stations. We have also decided to be brief in discussing it since it is not likely to be in the frontline of use for the campus-radio researcher.

Content Analysis is a research design used in communication and media studies alone. It is the study of the corpus or contents of newspapers, radio/TV programmes, VCD/DVD, in fact, all media products. This is in order to discern patterns and order in the content. Kerlinger, as cited by Wimmer and Dominick (2000:135), defines content analysis as “a method of studying and analyzing communication in a systematic, objective and quantitative manner for the purpose of measuring variables”. Wimmer and Dominick (2000) emphasise the three qualities of content analysis in Kerlinger's definition quite extensively. We summarise their explanations below:

Content analysis is systematic. This means that the content to be analysed is selected according to explicit and consistent rules and the evaluation process is systematic.

Content analysis is objective meaning that the researcher's personal idiosyncrasies and biases should not enter into the research process or product.

Content analysis is quantitative meaning that the description of the content involves stating numerical values (numbers, percentages, etc.).

Content analysis is what we all do, as will soon become obvious. When we say things such as “Nigerian films are fetish”, “American films are violent”, we are making comments based on unofficial, unsystematic and obviously un-objective content analysis. What we advocate here is the need to do the content analysis more objectively, more systematically and more quantitatively.

Uses of content analysis

Content analysis is used for a variety of purposes. Three of the most common uses are discussed here.

Describing communication content: Content analysis is used to explore and state the characteristics of a given body of content. If you set out to study the portrayal of women in soft-sell magazines, such is a content analysis work in which you are simply trying to detect what exists in the magazine. If you discover that a musical of Freeze FM attracts more listeners than those on your own campus radio, the Wise FM, you may want to study the characteristics of the Freeze musical in order to learn what is in it.

Testing hypotheses of message characteristics: This has to do with examining messages from sources to see if there are elements of source characteristics manifest in the content. You may have as your hypothesis: female reporters use more female sources than male reporters do. So you compare reports by female with those by male reporters. At the end you should be able to confirm or refute the hypothesis.

Comparing media content to the “real world”: A content analyst may look at how the media portray certain issues and compare the portrayal to what the issues are in real life. For instance, a researcher observed the portrayal of women in agriculture and discovered that they were portrayed as playing a minority role in agriculture. He then compared this with real-life statistics which showed that women

occupy leading roles in agriculture. This shows that the (selected) newspapers were unreflective of reality.

Steps in content analysis

Define the problem to be investigated: The content analyst must be clear about the problem he is conducting research into and the specific objectives of the study. In research, a problem is a gap that needs to be filled, an unanswered question that needs to be addressed. If the problem is not properly defined, the study will be an aimless drifting.

Formulate research questions or hypotheses: If you do not have clearly stated research questions, you would be doing counting for counting sake.

Typical content analysis questions look like the following:

Which genres of music are played in the musicals preferred by students?

Is there any difference in the foreign-local programme ratio of radio stations preferred by students and those not preferred?

Define the population: You need to specify what the population of your study is. A researcher who is interested in studying the content of Lagos music must define what Lagos music means. He should also define the time frame for the study.

Select a sample: Sampling in content analysis is always multi-stage. If a content analyst is interested in comparing the portrayal of Obasanjo's first term as President by Southern and Northern Newspapers, he starts sampling by selecting which paper in the South and North to analyse. After this, he selects which editions. The first stage he may use stratified random sampling. The second is the selection of dates/issues. This may be done through simple random sampling of the calendar dates. Sampling needs to be carefully done so that the outcome will be useful and representative. If your aim is to see the impact of the Beijing Conference on the amount of coverage devoted to women issues in newspapers, you need to select issues of

newspapers before and after the conference.

Select a unit of analysis: The unit of analysis in content analysis is the actual “thing” that is counted. Your unit of analysis can be a word or symbol, a theme, characters, scenes, actions or story. It all depends on the research question and the problem. If you are interested in comparing the incidence of violence in Nigerian videos to those in foreign videos, your unit of analysis will be acts/actions or scenes.

Construct content categories (categorization): This is the system used to categorise media content. The precise make up of the system varies from topic to topic. Your categories are the 'things' you will look for when you get into the content. If you want to study the direction of coverage given ANPP campaigns in the last elections, your unit of analysis may be news stories. Your categories will be: POSITIVE, NEGATIVE AND NEUTRAL. If you are interested in examining the degree of prominence given to the Liberian war in Nigerian Newspapers, your categories will be front page news, back page news, inside stories, features, opinions and editorials.

Categories must be mutually exclusive i.e. they should be such that a unit of analysis can fit into only one of them. They should also be exhaustive i.e. there must be an existing slot into which every possible unit of analysis fits. Categories should be reliable i.e. different coders using the same categories should make similar coding decisions. This is why categories should be precisely defined or operationalised.

Code the content: Before coding the content, you should establish a counting system. You may choose to simply count the frequency of occurrence (e.g. how many positive write-ups) and find the percentages. However, more rigorous quantification can be employed. You may choose to score a front page story 5; back page 4; inside story 3; features 2 and opinion 1. You may also train coders and do a pilot study.

Coding the content requires using a coding sheet already prepared. The coding sheet lists all the categories and the coder places a tally in front of a category each time she discovers a unit that belongs to the category.

Analyse the data: The descriptive statistics frequency count, percentages mean, mode, median, etc. can be used. More complex methods such as chi-square, t-test, Pearson's correlation test and ANOVA may be used.

Interpret the data: Figures are useless on their own. Meaning must be ascribed to them. The analyst does not simply stop at finding out what is, she goes ahead to say what that means. Imagine you find out that the percentage of teenage criminals in Nigerian films is higher than the percentage in real life. You go ahead to say, for instance, that the film writers fall short of representing reality in their art.

Content analysis is not an audience study, as we said earlier. In audience research, it may be useful in complementing survey data. In concluding this section, we want to state that content analysis thrives on a large body of data. It is possible to do a rhetorical analysis of a speech or two; it is not acceptable to content analyse a body of data that slim. Secondly, we do not content analyse media coverage of an on-going event. How can we judge newspaper coverage of a political campaign, for instance, when it is still on? Positions may swing: a paper covering Party A negatively may change its position and that may be just after we have concluded our content analysis. It is better to wait till a matter is concluded. Third, in pure content analysis, it is not acceptable to consult the sources of the data being analysed. Pure content analysis deals with the content. If you begin to interview sources, you are mixing content analysis with survey. That is not wrong - in fact triangulation is encouraged - only that it is not pure content analysis.

Section 10

CONDUCTING FOCUS GROUP DISCUSSIONS

The FGD or group interviewing is a technique for understanding audience attitudes and behaviour. It is used mostly when the research audience are illiterate or when the topic is such that insight into the research problem can only be got through group interaction or brainstorming.

The aim of FGD's, as Wimmer and Dominick (2000) point out, can be one or some of the following.

1. to gather information for a research topic.
2. to understand the reason behind a particular phenomenon.
3. to see how a group of people understand a particular phenomenon.
4. to test preliminary ideas or plans.
5. to help develop questionnaire items for survey research.

In conducting an FGD, between 8 and 12 people are invited for a group chat. The researcher must have converted his research questions into simpler prompter questions. With these, he assumes the role of a moderator, asks the questions and notes responses. A tape recorder may be used and the responses will be analysed later.

Assembling the group

An FGD requires a great deal of planning to anticipate any condition

or situation that might complicate its completion. Two important considerations in assembling participants for FGDs are date and time.

The date of an FGD must not conflict with any special holiday or religious day. The FGD organizer must first study the lifestyles of the respondents and know which holidays they keep. People are not likely to be available for a 1- to 2-hour discussion on Salah Day. Same goes for May Day, Easter, Christmas Day.

The time chosen for an FGD depends on the type of discussants you are recruiting. If housewives are needed, late mornings or after-lunch hours are good. If it is men and women who work, your best bet is between 6 and 8 pm. In rural areas in Nigeria, late evenings (7 pm on) are good for FGD for at such a time people have returned from the farms and are in the mood for a chat.

Choosing an FGD venue

Where a meeting is held affects the quality of such a meeting. In Nigeria, FGD's should not be held in a church or mosque EXCEPT the focus is on only members of the same religion. The best place for FGD is in the homes of a field contact person. A school after school hours and a town hall are good venues. A drinking joint, if not too noisy, is also useful.

Recruiting

The researcher must decide beforehand who and who are qualified to take part in the FGD. To do this, he must go back to his research problem or objectives. Not only this, every desired characteristic (age, gender, race, location) must be covered. For a single project you may organize more than 10 focus groups. You need to decide whether it is desirable to have both men and women in the same group or to have male groups separate from female.

Before recruiting it is necessary to have a screener i.e. a list of characteristics that one must possess in order to be part of the group; and the list of various segments of the society that must participate in

the FGD's. In addition, coop money for each participant must be made available.

Finally, arrange for a way of reminding participants just before the hour.

Preparing to conduct the FGD

In preparing to conduct the FGD;

Prepare the moderator's guide: The guide is to ensure that all the necessary questions are covered. However, the guide must be flexible because the moderator may need to pursue an idea a discussant has mentioned during the discussion.

Make arrangement for tape recorders: Test-run the tapes. Get extra batteries, a little quantity of mentholated spirit to clean the audio tape head may be needed. Video coverage of FGD is not common but also not forbidden.

Be ready to take written notes: That is, get a sheet of paper and pen.

Snacks: If you are offering snacks (and you should), get them ready before starting.

Conducting the FGD

Some preliminary information is needed as introductory remarks. The moderator should greet the participants and then introduce the issue to be discussed. Some researchers introduce "ghost issues" as the issue because disclosing the real issue might upset the FGD. It is important to declare at the beginning that: there are no right or wrong answers; that responses are being taped if they are, and that the group is informal and so no need to raise hand before you talk.

After these, the respondents are asked to introduce themselves. In moderating, the moderator should be flexible. There is no need to stick to the moderator guide as if it were divinely revealed. There must be follow-up questions hitherto unforeseen and unwritten;

respondents may make unclear points which you should want to clarify. Nevertheless, all the important items in the FGD should be covered.

An FGD should not go beyond 1½ hours. After the discussion, play back the tape for a few seconds to be sure it recorded.

Analysing FGD data

The need of the study determines how data in FGD are analysed and presented. Oftentimes, the researcher gives a written summary of the discussion and then offers a brief interpretation of the subjects and responses. The data can be transcribed and then content analysed. Let us assume you asked your discussants to mention causes and effects of parental quarrels on the child speech behaviour. You may have categories like: Causes (under which you list all the causes mentioned) and Effects (under which you list all the effects mentioned).

However, you may also choose to compare the responses of one group with another e.g. the responses of groups in rural areas versus those in urban. For instance, if you are interested in the uses to which listeners put radio messages, you may conduct an FGD among campus drivers and another one among lecturers and then compare the responses.

Section II

DATA PRESENTATION

Facts and figures result from every study and the ultimate objective of every study is to process such data into information and present the obtained results. Studies may be conducted by gathering facts or figures or both. In quantitative studies, the figures are very critical, while in qualitative ones, facts and descriptions generally take the place of figures. In this section, we focus mainly on how to present quantitative data.

It is not enough to gather data: it is very important that the data are presented in a way that makes good sense. When facts and figures are isolated, the facts mean nothing and the figures are but a meaningless jumble. When properly presented however, figures come to life and offer valuable information. They become conceptually related and therefore begin to speak.

How data are presented depends on the type of the data: are the values in the data numerical or categorical? Numerical data communicate by representing value in numbers while categorical data represent value mainly by making distinctions between the elements of data. For example, telephone numbers are to be seen as categorical data because they do not have any numerical value other than distinguishing two different phone owners. Telephone numbers for instance do not indicate the height, weight, size of bank account nor any other numerical values attributable to their owners.

Numerical data may be ordinal; in which case the value in the data resides mainly in the order of its arrangement. For example, the

arrangement of the names of a set of students according to their position in a test or examination presents their performance as ordinal data. The only information contained in such data resides in the order of each student's performance. The marks obtained by each student and information on the intervals between the scores of any two or more students cannot be obtained from such data.

However, if the marks obtained by each student are retained, the differences between the marks obtained by various pairs of students remain available. Hence, such numerical data are regarded as interval data because they preserve the intervals between the marks obtained by any pair of students. With interval data however, it may not always be meaningful to say that one student has performed twice as well as another student because the ratios of their marks may not really carry such value. Such ratios may not be maintained if the test or examination had been marked based on a different total. For instance, the ratios between a pair of temperatures measured in Centigrade and Fahrenheit are not necessarily the same even though both pairs refer to the same set of temperatures. When the ratios between pairs of numerical data carry meaningful information such numerical data are said to be rational data.

The way numerical data are presented depends to a large extent on the type of the data. Categorical data usually take the form of summary tables. Ordinal data are best presented as an ordered array to provide information on the relative values of the data elements while interval data may be presented in such a way that shows the relationship between the data elements. Various types of numerical data can also be presented as a frequency distribution to provide information on how relatively often certain events occur.

Basic presentation tools

Tables have the capacity to show the relationship between two or more variables while Charts show these relationships graphically. Chart headers help to extract key points and colours can be used to direct viewers' attention to key facts. Graphs further illustrate important relationships, giving useful insights into trends.

An Ordered array organises data such that the position of each data element on the array reflects the relative value of each data element. For instance, the more valuable elements could appear earlier while the less valuable elements appear later in the array. Hence, in an ordered array, data are arranged in rank order and this helps to focus attention on major features of the data. The most valuable and the least valuable data elements are easily recognised by their positions on the ordered array.

As an example, compare data in raw form (as collected): 24, 26, 24, 21, 27, 27, 30, 41, 32, 38, with data in ordered array: 21, 24, 24, 26, 27, 27, 30, 32, 38, 41.

Frequency distribution table goes a step further to summarise the data. For instance the data presented as an ordered array above can be presented as a frequency table as shown below:

Class	Frequency
15 but <25	3
25-35	5
36-45	2

Such a frequency table can be constructed following the simple steps enumerated below:

Steps for constructing frequency tables

1. Determine Range of data
2. Select Number of Classes Usually Between 5 & 15 Inclusive
3. Compute Class Intervals (i.e. the width of each class)?
4. Determine Class Boundaries (i.e. the extremities of each class)?
5. Compute Class Midpoints

6. Count Observations & assign each count to the appropriate Class

Following are some example of frequency distribution table:

Raw Data: 24, 26, 24, 21, 27, 27, 30, 41, 32, 38

	Class	Midpoint	Frequency
Width {	15 but < 25	20	3
	25 but < 35	30	5
	35 but < 45	40	2

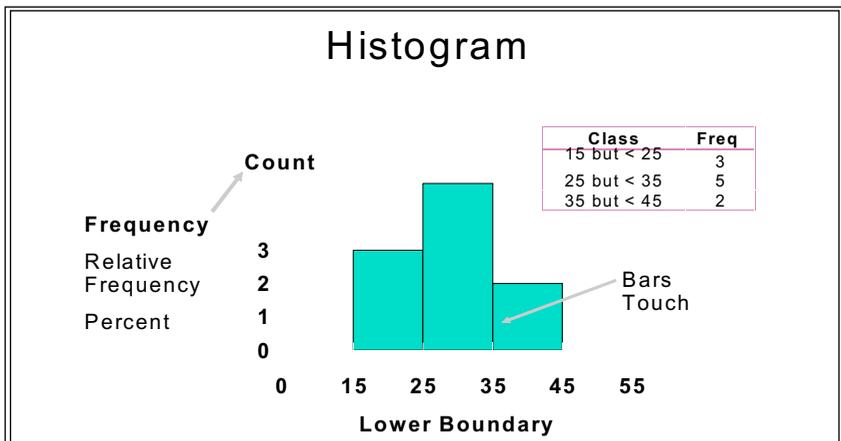
Boundaries
(Upper + Lower Boundaries) / 2

Relative frequency and distribution table

Relative Frequency Distribution		Percentage Distribution	
Class	Prop	Class	%
15 but < 25	.3	15 but < 25	30.0
25 but < 35	.5	25 but < 35	50.0
35 but < 45	.2	35 but < 45	20.0

Histogram

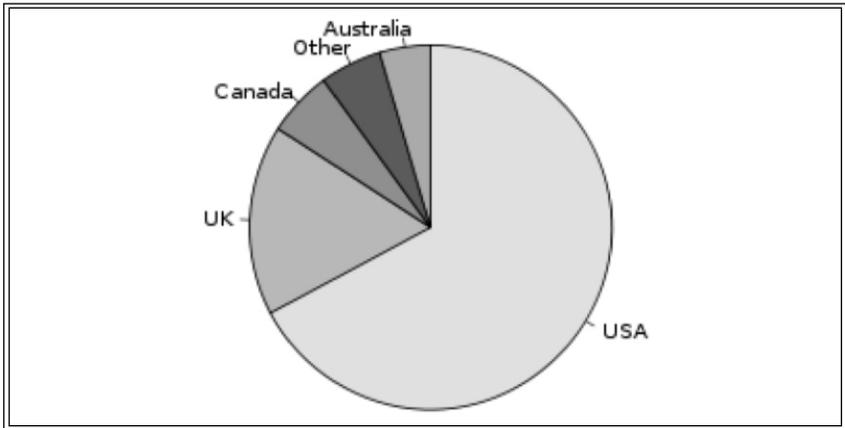
The histogram is a graphical display of frequency tabulations. It converts the frequency table to a graphical chart and thereby presents in graphical form the relationships and trends in how relatively often the events represented in the data occur. On histograms, the numeric values of relevant data elements are represented by the size of adjacent rectangles that make up the histogram.



The Pie Chart

The pie chart is a circular chart that is divided into sectors such that the size of each sector is proportional to the quantity it represents. The pie chart provides a convenient way of comparing the magnitude of a single data item to the magnitude of the whole dataset. This is easily done by comparing the size of one slice of the pie with the size of the whole pie.

The pie chart is very popular, particularly with the mass media. However it is usually criticised because it could turn out to be quite difficult to compare the sizes of two or slices.



Pie Chart

The above pie chart shows the relative population of speakers of the English language around the world. The fact that the largest population of English speakers live in the USA is obvious even to the casual observer and this is the main advantage of the pie chart.

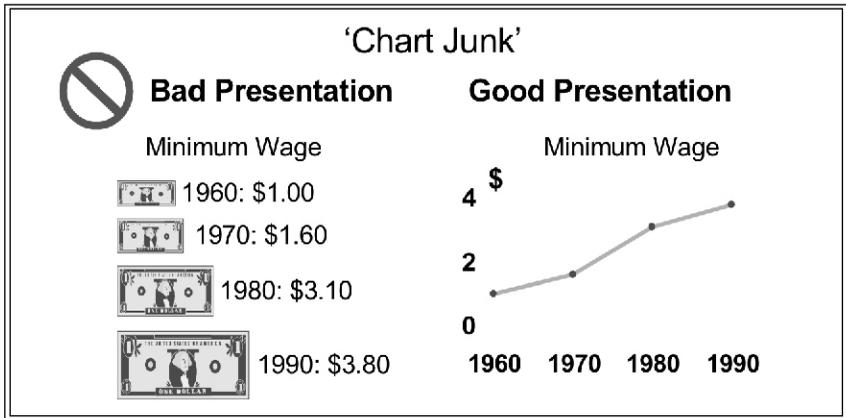
The various charts shown above can be easily created using any of many standard computer applications such as spreadsheets like Microsoft Excel.

Errors in presenting data

Appropriate presentation of data gives life to the latent information contained in the data. However, inappropriate use of data presentation tools and techniques may distract or even, worse still deceive the information consumer. The following are some of the common but easily avoidable error in data presentation.

1. Using 'Chart Junk'

A chart junk is any visual element in a chart or a graph that does not add to the information presented in the chart or graph. They direct more attention to the chart or graph at the expense of the information that the chart is supposed to present.



Hence, such visual elements more often than not tend to distract the viewer from the important pieces of information contained in the data.

In the above example, the use of the size of currency notes does not add to the information provided by the chart, whereas the line plot clearly expresses the upward trend in minimum wage over the indicated years.

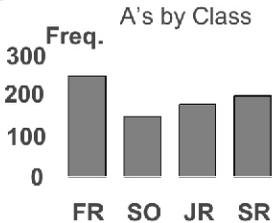
2. No Relative Basis in Comparing Data Batches

By the use of an arbitrary scale to chart frequency, the relationship between the frequencies could be exaggerated or under reported. This can be avoided by the use of a standard scale. Such a standard scale could be based on a unit of 100s, in which case each frequency is expressed as a percentage. By so doing, it would be possible to compare results obtained from a wide range of studies using the same standard scale.

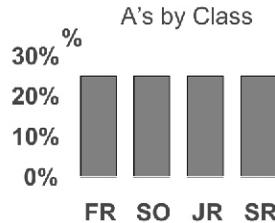
No Relative Basis



Bad Presentation



Good Presentation



In the bar charts show above, the chart on the left hand side of the page accentuated the differences between the heights of the bars due to the arbitrary choice of a scale between 0 and 300. Drawing the chart on a different scale will certainly change the levels of differences perceptible to the information consumer. This fact is eloquently demonstrated by the chart on the right hand side. However, since this right hand side chart is based on a standard scale, valid information can be obtained from the charts of any other dataset since any of such plots will be based on the standard percentage scale.

3. Compressing the Vertical Axis

A compression of the vertical axis of a graph results if the employed scale caters for measures that do not occur in the study. In the graph shown below for example, the highest value obtained is just about \$50. Catering for \$200 in the graph on the left hand side therefore produces the effect of compressing the vertical axis. The graph on the right hand side however limits the vertical axis to \$50 which is in consonance with the data obtained in the study.

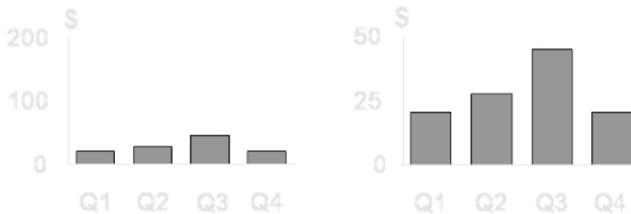
Compressing Vertical Axis



Bad Presentation



Good Presentation



Quarterly Sales

4. No Zero Point on the Vertical Axis

A chart of graph should locate the data it present in relation to the origin of the chart or graph. In the chart shown below, the plot in the left hand side starts the vertical axis with the value 36. This is not a good data presentation practice. The plot on the right hand side corrects this anomaly by starting the vertical axis with the value 0, thereby locating the values of the six months of sales in proper perspective to the origin of the plot.

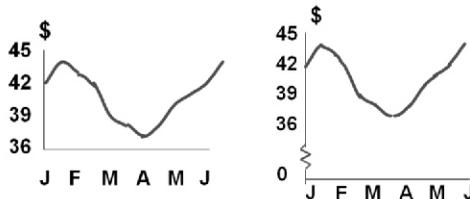
No Zero Point on Vertical Axis



Bad Presentation



Good Presentation



Graphing the first six months of sales

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Some general rules for using presentational aids

- The fewer the numbers the better. You should not use more charts than needed. Charts that do not say more than has already been said are only a waste of space.
- Provide contexts. Always provide adequate and appropriate contexts to charts. A chart without appropriate context is just a meaningless picture
- Round up as much as is reasonable. Charts are but a visual representation of data. They are meant to provide a general overview of relationships and trends rather than give details. Hence, it may not be necessary to take the pains to draw them to exacting details. Data should therefore be appropriately rounded up when plotting. However, such rounding up should not distort the presented information in any way.
- Vary the type of charts. Use of the same chart over and over again in a report may turn out to be monotonous. However, use of the most appropriate type of chart should not be sacrifices in the name of variety.
- Don't say too many things in one chart. Charts are meant to give a general overview of relationships and trends. An attempt to put too much information in one chart may make such charts difficult to read and distract from the most important information that such a chart is meant to provide.

Don't hide your data source. One of the key ingredients of the intellectual enterprise is the openness with which studies are to be conducted and reported. Any interested party should be able to replicate your analysis and get the same results. You should not require trust in getting your point across. Hence, your sources of data should be freely accessible to other prospective investigators.

Section 12

SUGGESTED COMPONENTS OF AUDIENCE RESEARCH REPORTS

The following are suggestions on the components that your research report should have. They are mere suggestions. You may add to them or remove from them.

Component	Content of component
Title page	<p>Mention title of the research, the researcher(s), who commissioned it; to whom it will be submitted and date. Example:</p> <p style="text-align: center;">RADIO LISTENING PATTERNS OF REGULAR STUDENTS IN AMOYE UNIVERSITY</p> <p style="text-align: center;">A RESEARCH WORK CARRIED OUT BY</p> <p style="text-align: center;">MISS PATIENCE EDE</p> <p style="text-align: center;">SUBMITTED TO THE MANAGEMENT</p> <p style="text-align: center;">WISE FM AMOYE UNIVERSITY</p> <p style="text-align: center;">AGILA, BENUE STATE</p> <p style="text-align: center;">JULY 12, 2007</p>

Abstract	Summarise the whole work in about 200 words. In the abstract, state the purpose of the research, the methodology adopted, the findings and the major lesson learnt. Be brief.
Table of contents	List all items and specify page numbers. Ms Word can be used to generate table of contents almost effortlessly but your work must have been properly formatted for this purpose.
Acknowledgments	You may want to thank the management for reposing enough confidence in you to ask you to do the research and for funding the research. Acknowledge help from other people who helped.
Background to the study	Give brief background information to the study. You may be a little historical.
Problem and purpose of the study	Discuss the missing gap, the unanswered question that led to the study. State the purpose/objectives of the study.
Research questions	State the research questions that guided the study. If you used hypotheses, state them here also.
Methodology	Describe your methodology in detail: explain your research method stating why that is the preferred method; describe the population; describe the sampling procedure and the sample size. Describe your research instruments and attempts made to validate them. Finally describe how data were collected and analysed.
Findings	Present your findings using appropriate presentational aids. Explain each aid after you present it but do not repeat all the data in a table or chart in words; it creates unnecessary repetition.
Conclusion	Given the findings, so what have we learnt?
Recommendations	State what should be done by whom.
References	List in alphabetical order all the sources you consulted. See the references to this work as a possible example.
Appendices	Information that is too bulky to be included in the body of the text should be located in the appendices section.

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Appendix: Table of Random Numbers

39634	62349	74088	65564	16379	19713	39153	69459	17986	24537
14595	35050	40469	27478	44526	67331	93365	54526	22356	93208
30734	71571	83722	79712	25775	65178	07763	82928	31131	30196
64628	89126	91254	24090	25752	03091	39411	73146	06089	15630
42831	95113	43511	42082	15140	34733	68076	18292	69486	80468
80583	70361	41047	26792	78466	03395	17635	09697	82447	31405
00209	90404	99457	72570	42194	49043	24330	14939	09865	45906
05409	20830	01911	60767	55248	79253	12317	84120	77772	50103
95836	22530	91785	80210	34361	52228	33869	94332	83868	61672
65358	70469	87149	89509	72176	18103	55169	79954	72002	20582
72249	04037	36192	40221	14918	53437	60571	40995	55006	10694
41692	40581	93050	48734	34652	41577	04631	49184	39295	81776
61885	50796	96822	82002	07973	52925	75467	86013	98072	91942
48917	48129	48624	48248	91465	54898	61220	18721	67387	66575
88378	84299	12193	03785	49314	39761	99132	28775	45276	91816
77800	25734	09801	92087	02955	12872	89848	48579	06028	13827
24028	03405	01178	06316	81916	40170	53665	87202	88638	47121
86558	84750	43994	01760	96205	27937	45416	71964	52261	30781
78545	49201	05329	14182	10971	90472	44682	39304	19819	55799
14969	64623	82780	35686	30941	14622	04126	25498	95452	63937
58697	31973	06303	94202	62287	56164	79157	98375	24558	99241
38449	46438	91579	01907	72146	05764	22400	94490	49833	09258
62134	87244	73348	80114	78490	64735	31010	66975	28652	36166
72749	13347	65030	26128	49067	27904	49953	74674	94617	13317
81638	36566	42709	33717	59943	12027	46547	61303	46699	76243
46574	79670	10342	89543	75030	23428	29541	32501	89422	87474
11873	57196	32209	67663	07990	12288	59245	83638	23642	61715
13862	72778	09949	23096	01791	19472	14634	31690	36602	62943
08312	27886	82321	28666	72998	22514	51054	22940	31842	54245
11071	44430	94664	91294	35163	05494	32882	23904	41340	61185
82509	11842	86963	50307	07510	32545	90717	46856	86079	13769
07426	67341	80314	58910	93948	85738	69444	09370	58194	28207
57696	25592	91221	95386	15857	84645	89659	80535	93233	82798
08074	89810	48521	90740	02687	83117	74920	25954	99629	78978
20128	53721	01518	40699	20849	04710	38989	91322	56057	58573
00190	27157	83208	79446	92987	61357	38752	55424	94518	45205
23798	55425	32454	34611	39605	39981	74691	40836	30812	38563
85306	57995	68222	39055	43890	36956	84861	63624	04961	55439
99719	36036	74274	53901	34643	06157	89500	57514	93977	42403
95970	81452	48873	00784	58347	40269	11880	43395	28249	38743
56651	91460	92462	98566	72062	18556	55052	47614	80044	60015
71499	80220	35750	67337	47556	55272	55249	79100	34014	17037
66660	78443	47545	70736	65419	77489	70831	73237	14970	23129
35483	84563	79956	88618	54619	24853	59783	47537	88822	47227
09262	25041	57862	19203	86103	02800	23198	70639	43757	52064