

## **SAMPLING IN NIGERIA; A BATTLE BETWEEN SCIENCE AND MYTH.**



According to Wikipedia, sampling involves the estimation of characteristics from a subset of individuals constituting a larger or whole population. This process involves collecting and observing to estimate particular characteristics. It is important not only to the statisticians but also to a researcher as it helps to reduce costs. The amount dedicated to research is more reduced because sampling takes into account a fraction of the whole population. Also, in comparison to total population sampling where the whole population is sample, there is minimum reduction in the risk of error.

Sampling is a major part of any research. Getting the right sampling methods helps to enhance accuracy in the results obtained thus the reason for getting it right. While sampling in social sciences may involve survey sampling. The major tool being questionnaires, several kinds of research involved in natural and clinical sciences may employ random, opportunistic sampling from environments such as water bodies, soil, and even the air. It also cut across human subject and animals. As important as sampling is to researchers, it's rather unfortunate that many biases could be introduced to the research work at the early as the time of sampling.

As microbiologist by profession, in the brief period of personal research and interactions with colleagues in and out of this field. I have gathered different 'lies' which are ordinary myths as reasons why many human subjects dodged and avoided their involvement in research, the involvement of their animals and, or their resources. Many of such myths arose over time from a period of human existence. Some of which myths were passed down from person to person and others coined from human experiences. Many of these myths have nothing to do with the level of education, religion, and age of human contacts.

I will like to share my experiences and the associating myth from human contacts.

**The cockroach experience:** During my master's degree, I researched on the gut microbiomes of cockroaches, thus the need to get live cockroaches. You would have thought this will be easy, after all, it was after one of the major enemies of humans, but the reverse was the case. Apart from the phobia for cockroaches, many people think that roaches are 'evil' or 'possessed' and thus they must have no association with such insects. Thus, getting them alive was so difficult.

**The soil experience:** A friend of mine isolated microorganisms from the soil on dumpsites. A site without permanent ownership nor inhabited by anyone, getting soil (of about 1 kg) from such sites should not be a problem now. It will surprise you if I tell you people rose against sampling in such seemingly useless site. Folk claimed he has come to take the soil for rituals, others demanded money before such action could be. If not for appropriate wisdom application, it could have been confrontational between him and some locals.

**The fecal experience.** Two of my colleagues who isolated different microorganisms from the waste or fecal droppings of poultry and pigs told me of their experiences. The farmworkers who stopped these researchers gave similar reasons for their refusal. They claimed it was a way of ghost hunting them, a way of probing into their secret farm practices. But will you blame them, since many of them have skeletons in their cupboard? Information like the choice of antibiotics and frequencies of use, means of waste disposal, animal breed, and other farm practices were withheld from these investigators. Some animal handlers and farm owners, even at the sight of ethics approval's certificate from respected institutions denied investigators of access because they couldn't bribe their way in. Others, because they thought they intended using the animal feces for rituals practices or exchange of fortunes.

**The human-subject experience.** The most difficult sample to collect is those collected from human subjects. Samples such as urine, blood, feces, nasal swab, breast milk, semen, palm swab etc., are of interest to researchers especially those form clinical and natural sciences. These samples have been studied in detail to answer different hypotheses. A result that has contributed to the improvement of health. The biggest insult I received was when I wanted to collect nasal

swabs from pig handlers. The confrontation was fierce, the more I try to convince them the more they become aggressive. Take a deep breath, and imagined what will happen if I want to collect feces, blood or even breast milk from nursing mothers? Your guess is as right as what happened to me.

I remembered how my brother's wife and a friend were pissed when I told them of a friend who needed to compare the lactic acid bacteria profile of babies fed with baby food and those fed with breast milk by collecting feces from infants. They both said outright 'NO' even though I was well known to them. Their reactions were fiercer when I told them of another friend who needed to collect vagina swabs from menstruating women. He intended to analyze the lactic acid profile of their vagina during menstruation. As important as these research topics are to clinicians and public health, people frowned at it and swore not to be part of the 'madness'. It's important to know that the more people impede the access to these samples, the less the success in academic and scientific research and farther will be solutions to health-related challenges.

Associated myths were like those earlier listed. The difference being that, the chance of obtaining (getting) these samples was very slim. Many supposed subjects said the investigator intended to use them for rituals. Others said they won't give birth again if they give the sample. While some others say their glory will be exchange if they approve the release of such samples.

Does this mean human subjects cannot be sampled? Or should I ignore research in this area because I am from this part of the world? How then were sampling in this area successful?

## WAY OUT?

To answer the puzzles above, the following could be employed. Note that there may be other ways of tackling your challenges but over time, these have been used. They have produced outstanding results.

**Build a relationship.** Positive relationships cannot be overemphasized if success is desire. Relationships may be built directly as per person to person or maybe through referral. What is important is that you need someone who knows you in and out and can vouch for you. The fact is people tend to listen to you when they see someone they know. They tend to see these people as 'guarantor' should in case there is a problem.

**Collaborate with a professional.** A professional is someone with an authority in a particular field. Such people are much respected in their field and their words have weight. Poultry farmers, pig handlers, etc., will listen to a veterinary doctor because that is his/her area of expertise. Doctors in hospitals can easily allow samples collection from patients without them saying a word. Nurses can collect information from individuals that visit the hospital without much hesitation.

**Network with the locals.** A fish is only relevant in the water, monkeys are specialist in the bush, so are the locals in their different niche. To get data from market women, network with market leaders. Spiritual and community leaders will be helpful for worship centers and communities respectively. A friend who isolated some bacteria from ablution water used from mosques networked with some Islamic priest to achieve this. It will be important for you to recognize the

'respected' individual in each community. Then network with such individuals to have smooth sailing in such areas.

**Be ready to spend.** I am in by no means supporting bribing your way in and out for any reason. But there are times that you may need to give gifts to the concerned people, handlers, or community members of such area. The gift may not necessarily be before collection, sometimes it can be after. You can give it to appreciate their contribution to your work. Also, while giving gifts before the commencement of your sampling, be sure you give them before making your intention known. Less expensive gifts can be given out sometimes even before you present your idea to such people. Knowing fully well that receiving gift may involve reciprocity.

**Appear beneficial.** Don't in any way appear to people that you need their help. Don't let anyone know that your life, project, Masters, or Ph.D. depends on getting such samples. This will result in them thinking that you are at their mercy. Appear beneficial to the people. This is not seeing in the way you dressed, but it is obvious in the way you talk and your gesture. Convince them that you are having a solution to a prominent problem in their life, farm, and so on. Present the problems to them first. The fear of the problem could make them surrender the sample even before asking.

**Be ready to educate.** One of the most difficult sets of people to convince are people who are ignorant of what you are doing, or about to do. This does not have to do with the level of literacy. I remember when I participated in the house-to-house immunization of children in my locality. Let me keep this for the future! Educate the people of the problems you are trying to solve and the benefit(s) they stand to gain by volunteering. Do not be timid while talking to them, don't fret and don't read from the book. Exercise authority while speaking to people. They will not but respect you and dance to your tune.

**Don't give up.** Time is an important friend while trying to convince people of your intention. Don't rush, with time stony hearts can melt. If they reject you today, device another strategy, and go again. While waiting, don't be idle. Reach out these people using other means, send related journal to the literate among them to read, meet with them during the association meeting. You can also hold a town hall meeting to create awareness. The more people you speak to, the more people you will be able to convince. You can also use one or two aforementioned points. Don't give up; they won't bend easily, so don't stop hammering.

## **CONCLUSION**

Research sampling as important as it looks could be an uphill if not planned and executed in the right way. Be prepared that it may not be smooth sailing. But having this piece of information will go a long way in providing a shortcut to the stress. Introducing bias to research at the point of sampling will affect the result and the contribution to knowledge. These goals would have lost even before delivering such results. It is then important to use either singly or in combination with the other recommended way-outs.