## BN5035 MEng in Internet of Things Technologies

## MIOT H6023 Research Project (Part 1: Research Methods)

###### Assignment 4 [Knowing About Non-Probability Samples]

###### Due Date: Sunday November 25, 2018 CA Weighting: 1% of Final Grade

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#### Submission Date: 23/11/2018 Deferred Submission Date (when approved):

**[This assignment will be graded out of 100%. Subsequently the grade will be re-scaled to 1% of the Final Grade for the MEng IoT Students and to 5% for all other students registered in the course]**

(*Please read ALL instructions carefully*)

In this Assignment 4:

1. You are required to use this template for your electronic submission/upload to Moodle, and the submission MUST be in MSWord File Format. You may locate your responses after each question, or consolidate all responses with clear numbering at the end of this template.
2. Rename the electronic template file with your ITB Student Number & Assignment Name ONLY.

For example, **B0001254 Assignment 1 Part B**.

1. Response to each question should include any appropriate references (reference to any relevant credible resources, including verifiable internet are allowed).
2. For each exercise, a detailed response is required to qualify for award of the full mark.
3. An individual presentation session will be organised after the submission deadline.

**Expected Learning Outcome:**

By the end of this activity, leaners will be able to recognise, analyse and apply non-probability (or purposive) sampling methods as part of Using and Analysing Research Data.

Resources: Consider library resources in ITB/DIT/ITT and any other credible internet-based information sources.

**Instructions on Submission of Assignments:**

This Assignment will contribute to the final examination grade as specified, and it is required that the submission:

1. Should be in neat typed format in MSWord;
2. MUST be submitted on or before the specified date, except with an approved deferral date;
3. Should reflect independent work.

**Instructor:**

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**Mark Awarded**

What do you honestly consider will be a fair score for this assignment that you are handing in?

**Self assessment**

**[Mark out of 100]**

This Assignment 4 helps learners to recognize, analyse and apply non-probability sampling methods in research. Non-probability samples (also referred to as purposive samples) are used if description rather than generalization is the goal. In this type of sample it is not possible to specify the possibility of one person being included in the sample. Instead, the sample is selected on the basis of knowledge of the research problem.

*As opposed to Probability Sampling:*

In probability samples, all people within the study population have a specifiable chance of being selected. These types of sample are used if the researcher wishes to explain, predict or generalize to the whole research population. ***Since the sample serves as a model for the whole research population, it must be an accurate representation of this population***.

There are several non-probability sampling methods that are used in research and examples of these are given below. Work through these examples and, for each one:

1. Name the sampling technique;
2. Highlight possible strengths and weaknesses;
3. Give another example of a research project that could utilize this particular sampling technique.

**Non-probability Sampling Example 1**

A market researcher wants to find out what members of the public think about a new chocolate bar that has just been produced. He wants to make sure that all sections of the population are represented in the sample, so he works out what major characteristics are important (gender, age and ethnicity, for example) and then how many people from each of these categories should be sampled. He stands on a street corner and chooses people that fit into each category, until the target number within each category is reached.

* The non-probability technique on bases of the quota are usually age, gender, education, race, religion and socioeconomic status in case of quota sampling. Therefore, it is quota sampling.
* It is quicker, cost-effective and simple to manage or arrange sampling data in case of quota sampling. Researcher in this case is choosing major important characteristics for all population. So, there may be errors in this type of sampling. He is also choosing people’s responses from streets, so population selection is biased and can result in a sample that is unrepresentative of the population

* Example: Purchasing preferences of clothes by people at a local shopping centre based on gender, age, religion etc.

**[20 Marks]**

**Non-probability Sampling Example 2**

A researcher is interested in finding out about graffiti in her local city. One aspect of this research is to speak to those who produce graffiti. She realizes that she has to be trusted and establish rapport with these people before they will talk to her. Through personal contacts, she comes across a person who admits to producing graffiti at a site in the vicinity. The researcher is able to talk to this person, establish a good relationship and gain some useful information. This person then recommends a friend who is also willing to talk to the researcher. This continues, with one person recommending another and so on, until the researcher has spoken to 15 different people.

* This is clearly snowball sampling as researcher discussed about graffiti to one person who referred another friend and again recommending on to different persons. Snowball sampling is usually done when there is a very small population size like here local city in example above.
* It useful as it makes use of recommendations and suggestions existing social Connections, family, friends, friends of friends.It is useful when no information or recommendations is available about subject. Its weakness is that the first contact person should be choosed wisely otherwise it would result in irrelevant or bad, untrusted or unfaithful recommendations and connections.
* Reccomendation required for accommodation, Interview or Resume references. These are some examples of snowball sampling.

**[20 Marks]**

**Non-probability Sampling Example 3**

A researcher is interested in finding out about the learning choices of adults who decide to return to education later in life. Rather than make assumptions or develop a hypothesis, she wants to find out the issues that are important to the adults directly. Therefore, she decides to interview three participants, analyse the results and decide whom to interview next depending on the emerging themes. As these themes develop, she chooses further people to interview, and consults the background literature to help explain what she is finding. She continues with this process until no new themes are emerging and all themes are fully explained.

* This is theoretical sampling. In this sampling method the researcher chooses sample cases that help to explain an emerging theme or theory to analyse data for satisfying or desired results.
* It is creative and adaptable method. Theory’s depend upon proper data analysis and manipulation which may be complex and time consuming.
* Another example could be researchers or people’s opinion about astronomical objects or space like planets and other galaxies.

**[20 Marks]**

**Non-probability Sampling Example 4**

A researcher wants to find out what students think of the entertainment facilities on a university campus. He stands by the entrance to the university library and stops students as they pass by, asking a series of questions about the university entertainment facilities. He does this until he has asked the opinion of 100 students.

* This is convenience sampling because persons are chosen on the basis of convenience or current facilities.
* It is free, practical and informal way. A convenience sample is made up of people who are easy to reach so easy accessibility relevant to people. This sampling method depend upon people responses to queries and participation. People have different opinions and mindset so there may be possibility of wrong estimations.
* Example Organisation café asking employees for food or drinks/eatables/consumables taste and quality or any other relevant queries.

**[20 Marks]**

**Non-probability Sampling Example 5**

A researcher is interested in finding out how family bereavement can affect research activities. Having personally experienced family bereavement, and having come across others in a similar position, the researcher chooses whom to interview based on his existing knowledge of who would be suitable.

* In this case, Researcher is using its own experience and knowledge to choose persons for the sample with a goal to judge/find how family bereavement can affect research activities. Therefore, it is Judgemental Sampling.
* This is easy, convenient and cost-effective way of sampling data if you have knowledge and experience in relevant field. Biased and not much reliable as depend upon researcher’s experience and knowledge.
* For example, asking opinions about latest trends in fashion based on your knowledge.

**[20 Marks]**