**Research Methods and Professional Practices (RMPP) Units Module Reflective Piece**

The below write-up shows how my learnings and knowledge acquisition progressed per units throughout the module.

**Unit 1: Introduction to Research method and science investigation and Ethics in computing:**

I was able to understand the types of reasonings used in scientific method of research to include Deductive and Inductive reasons, the basic characteristics and differences between them. According to Dawson (2015), one of the differences is that inductive reasoning starts with observation to conclusion while deductive reasonings starts with individual knowledge and understanding and predicts the likely observation. The inductive approach contributes to the emergence of new theories and generalizations while deductive approaches test the validity of assumptions.

The lesson is that i need to be specific of the logical approach to adopt for the research and this can be achieved through breaking down of several arguments into specific points.

The ethics and professional code of conducts were detailed in this unit. This covered both research ethics, ethics in computing environments and unit discussions collaborative and reflective piece on ethic in AI were used to emphasise the understanding.

**Unit 2: Research Questions, the Literature Review and the Research Proposal**.

This unit focused on understanding the structure and purpose of the research proposal, engaged the considerable research question that will aid picking of literature review topic. The outlined topics were reviewed and i picked ‘Role of Cybersecurity threats in Internet of Thing (IoT) in a healthcare sector.

**Unit 3: Methodology and Research Methods**

The unit introduced the overview of research methods, some of underlying assumptions as that influence the research process which could be research questions, methods and interpretation mechanism for the research findings. it is beneficial to understand Research Design which comprises of plans to answer the research question (Saunders et al., 2023).

**Unit 4: Case Studies, Focus Groups and Observations:**

We handle data collection methods use in both qualitative and quantitative research method. It was clearly stated that focus group are mainly used in data collection for qualitative research methods while numerical values like volumes , weight are used in quantitative research month**.**

**Unit 5: Interviews, Survey Methods, and Questionnaire Design:**

I had to learn how to design questionnaires and interviews questions to get an effective response. According to the UK.Survey Monkey ,the length of the questionnaires determines the response rate .Also, the type questions , the structure and even the survey distribution mechanism determines how successful the survey data collection is going to be. The ethical principle guideline the data collection was studied and a reflective piece on inappropriate use of survey date using 2018 Cambridge Analytica and Facebook was used to illustrates this point (Rehma,2019).

**Unit 6: Quantitative Methods - Descriptive and Inferential Statistics:**

The unit commenced thequantitative methods of data analysis, and this determines the relationships between variables, the numeric measurement of the variables and the analysis of the result using range of statistical and graphical techniques (Berenson, et.al.2020).

The data are organised into sets and in a tabular format, each columns represent the different variables while rows represent individual observations. To extract useful information from the data, it is important that the methodology to be employed is valid for the variable. meaning that the level of measurement of each variable is important and produce measures of location and spread.

**Unit 7: Inferential Statistics and Hypothesis Testing**

This unit continued educating the quantitative methods with emphasis of on inferential statistics and hypothesis testing. The pattern of grouping the population to get result that will be generalized to the group population (Purdue, 2023) and the reason for the inference is due to making inferences about a population from a sample of data. Purdue (2023) states that Inference is the process of extracting meaningful and useful business information from raw data. This statistical variable identifies correct probability distributions and will be used to perform appropriate hypothesis tests.

The literature review paper on the role of cybersecurity threat of IoT in healthcare sector was detailed studied and produced for review and assessment and the research opened my eye to a new field of studies that enriched my knowledge on vulnerabilities and threats of cybersecurity of medial devices.

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