**E-portfolio:** [**https://beeteckivan-chua.github.io/Portfolio/rmpp/rmpp.html**](https://beeteckivan-chua.github.io/Portfolio/rmpp/rmpp.html)

**Research Methods End of Module Reflection**

**1. Statistical Analysis Skills**

The unit deals with statistics, which makes it a challenging one. I was aware that I had studied statistics in the past, but it was more than twenty years ago. Due to this, I needed to spend more time learning and familiarizing myself with the sample exercises before I was confident enough to complete the worksheets.

Initially, I could not grasp how the statistical analysis skill would help my research proposal since all of them are from data/research and must be from secondary sources. However, as I went through the worksheet exercises, I began to understand its importance and relevance during the capstone project but as it would help me do inferential statistics based on data collected. Therefore, the survey must be well-designed.

One difficulty I faced was what should be the right sample size to use, as a small sample size prevents finding from extrapolation. In contrast, a large sample size may amplify the detection of differences, highlighting statistical differences which may not be relevant (Orthod, 2014). This is critical as in my capstone project, I need to determine how much data to collect and how many schools and students I have to reach out to, given my limited resources.

The other challenge was regarding the data quality Mirva (2015) pointed out that accuracy, credibility, consistency, and completeness are data quality's top concerns. So, I need to ensure that the participants do not provide irrelevant information during the survey, which eventually affects my data analysis.

I could relate to the Wiki activity on the importance of a well-designed questionnaire, and to prevent ambiguity, I would minimise the use of open-end questions. However, simple language is equally important, and it should be completed within 3 minutes to avoid mental fatigue and reduce user confusion and frustration (Roopa et al., 2012). In addition, I have to use a trustworthy online survey platform, which provides robust data governance and security to protect the participants' interests.

**2. Research methods process based on my learning in this module**

At first, I was concerned about not being able to use qualitative and quantitative data collection as they are primary research methods. However, I was glad that the tutor quickly pointed out that they are just terminology for data and that I could use both in my literature review and research proposal. However, collecting data from primary sources is not allowed in this module.

Also, I am mindful of the need to choose a subject with solid existing data/research. Because of this, I have changed my literature review topic as there was hardly any research on food wastage in Singapore.

In the literature review research, I have incorporated more quantitative data than qualitative data. This could be due to limited quantitative data from secondary sources or my search criteria were not well defined.

I preferred to use quantitative research data to support my research statements as it is based on hard statistics and easier to analyse as compared to qualitative data, which is subject to bias and emotion. However, I recognised that both approaches are essential to give different perspectives in research (Halcomb, 2015).

In the research proposal presentation, I had to choose a different content carefully since I used the same subject as my literature review. In addition, I wanted to have a good mix of qualitative and quantitative data. However, I did not seize the opportunity to do a well-balanced view of the data and develop criticality in my content. As a result, it was flagged as an improvement area.

3. **Impact on my personal/professional experience based on my completed professional skills matrix and any associated SWOT Analysis and Action Plan**

For the first time, I have gone through a professional skills matrix based on British Computer Society (BCS) guidelines for Masters programmes and the Essex graduate attributes. It is time-consuming to complete the matrix and the action plan as there are many competency areas to think about and tangible action items to fill up. However, while it is demanding, I can see my strengths and weaknesses through this exercise, which helps me chart my future career.

I want to improve upon several weaknesses in the technical space, but I do not think I have the time and resources to complete them all. Rather than focusing on many, I have decided to focus on python programming as there is an increase in use cases in my workplace; there is a shift to the use of Artificial Intelligence (AI) and Machine Learning (ML) learning; all these requirements need to be well versed in python programming. I plan to sign up for in-person classroom training with the ease of Covid-19 restrictions as it will be more productive than doing it virtually, and I can potentially mingle with my peers (Dent, 2013).

As for IoT technology, it remains an area of keen interest to me. I plan to continue exploring it as a hobby, and whether I can incorporate AI into it will be secondary. The primary objective is to enjoy the process and have fun with it. I intend to join an online community of IOT enthusiasts, as these communities can provide excellent information and support. Also, I may consider attending an IOT conference or workshop, as these events can be a great way to learn about the latest trends and technologies in the IOT space.

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