



Assignment 1: Blog Posts 1-7

REFLECTIONS ON QUANTITATIVE RESEARCH

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Word count: 2828

Blog 1: Lighthouse for the Academic Expedition

At the beginning of the module or even before that point, I clearly know that what I learned and mastered in this module - Applied Quantitative Business Research - would be substantially useful and beneficial. I majored in International Business and Economics in my bachelor degree, and I have a basic understanding of data analysis and certain knowledge about the statistics and mathematics. Thus I think this module would not be a big challenge to me. What I need to do is just absorb and take in the knowledge and information from the class, and link it with what I have mastered already. Just as the sentence goes, too young too naive, the first week just make me wake up immediately.

The first week began with the comparison between the quantitative research and qualitative research, including the main feature and advantages & disadvantages of them. The topic is large and broad even when it is restricted and limited in the business field only. From the perspective of a doctoral student who urges to finish his papers or publications, one of the most obvious and possible difference I could presume would be the distinction of collected data. Pure quantitative research normally depends on the numerical data. By contrast, pure qualitative research pays more attention on the non-numerical data.¹

With the information given by the lecture, I started realize that except for the collective data, the most different point of the two distinct research methods stands at the logic of justification, the perspectives are different, the methods differ, as well as the techniques. Most importantly, the paradigms of each of them are totally different.²

Just as Guba & Lincoln noted in 1994, the four scientific paradigms are composed of Positivism, Critical theory, Constructivism, and Realism, and each of them comprising of ontology, epistemology and methodology.³ The ontology and epistemology are different between the quantitative research and qualitative research. The worldview and paradigms contained in each of them differs, too.

Through this, I know that what I leant so far is far from enough for my future research, just as what has been said in one of my favorite movies, *Me Before You*, when they referred the cheque left for Clark⁴ 'the amount in the account is not enough for you to sit on your arse for the rest of your life, but it should buy you your freedom, both from that little town we both call home, and from the kind of choices you have so far felt you had to make.' This is a great metaphor to me, just as my feeling to the quantitative research module. If I compare the whole learning process to an expedition at midnight, the research method is just like the light guiding the direction for us, but

¹ Antwi, S.K. and Hamza, K., (2015) *Qualitative and quantitative research paradigms in business research: A philosophical reflection*. European journal of business and management, 7(3), pp.217-225.

² Seale, C., Gobo, G., and Gubrium, J.F. (2004) in Silverman, D. (ed.) *Qualitative research practice*. Sage.

³ Guba, E.G. and Lincoln, Y.S., (1994) *Competing paradigms in qualitative research*. Handbook of qualitative research, 2(163-194), p.105.

⁴ *Me Before You* (2016) Directed by Sharrock, Thea. United States: Warner Bros.

the specific trials and roads leading to the final destination are still hidden in the dark. Such kind of exploration makes me feel excited, however, sometimes confused and panic as well when I feel lost. But, hopefully, I can figure out my own way in the near future with the help of this module.

Blog 2: Health Condition Puzzles

We have contacted tons of terminologies and research tools in the quantitative research module, such as hypotheses, paradigms, variance, std. deviation, P-value, parametric analysis, t Test, correlation analysis, factor analysis and so on. Understanding the definition and difference is tough already, but to me, the biggest challenge in this module would be how to select and choose suitable dimensions and proper analysis tools for the case. It was like tons of weapons are around, and which one to use and how to use is the tricky part. We could run and acquire a variety of numbers and results through SPSS software, but the essential problem is what to present and how to integrate the issue in a statistical and numerous way.

For example, if we want to figure out our health condition, what kind of considerations and steps should we take? Before collecting the relevant data, the conceptual framework should be created first. (Scribbr, 2020)⁵ The conceptual framework was described as “explains, either graphically or in narrative form, the main things to be studied—the key factors, concepts, or variables—and the presumed relationships among them”. (Miles and Huberman, 1994, p. 18)⁶ Thus, we name the health condition as the dependent variable, and name - the fat in diet, the protein in diet, the carbohydrate in diet, amount of exercise, type of exercise, sleep hours and sleep quality - the 7 items as the independent variables altogether. The study or work press is treated as the control variable. The nutrition obtained is included as the mediator variable, and physical diathesis as the moderator variable. Other variables or situations should also be included if we can figure them out.

When we have the data at hand, we need to check the data categories, and test the validity and reliability. Mean value, median value, Std. deviation, Cronbachs Alpha, correlation analysis or the factor analysis, which are more suitable? And for the specific quantitative methods- descriptive research, correlational research, experimental research- which one could be excellent in interpreting my study variables and results? I think that is what I need to figure out in the future practice and study.

⁵ Scribbr. (2020) *How to Develop a Conceptual Framework – with REAL Example* [video]. Available at: <https://www.youtube.com/watch?v=MnfRdTCUIsc> (Accessed: 13 Oct 2020).

⁶ Miles, M. B. , & Huberman, A. M. (1994). *Qualitative data analysis: An expanded source book* (2nd ed.). Newbury Park, CA: Sage.

Blog 3: Sampling Is the Anchor

We all know that sampling is so important for the quantitative research, so it is usually introduced in the very beginning of the class. We have learned that Simple Random Sampling, Systematic Sampling, Stratified Random Sampling, Cluster Sampling are included in the Probability sampling. And Convenience Sampling, Purposive Sampling, Snowball Sampling, Quota Sampling belong to the category of Nonprobability Sampling. And we are also informed that in what kind of situations should we adopt the corresponding sampling method to ensure the response rate and representativeness.⁷

But, have you ever had these questions popping in your mind such as ‘Why does the sampling so important?’ and ‘Do we have an alternative in the quantitative research?’

Kerlinger (1986) described scientific research as a process of “systematic, controlled, empirical, and critical investigation of natural phenomena guided by theory and hypotheses about the presumed relations among such phenomena.”⁸ Quantitative research, without any doubt, is also regarded as an organized and systemic way of seeking answers to the questions, revealing and interpret the results with the numerous data. And this would be the very fundamental and basic factor why we need to highlight the sampling in the quantitative research.

Field (2005) defined sampling as “a smaller (but hopefully representative) collection of units from a population used to determine truths about that population”.⁹ We have the two corresponding concepts, sampling and population. If we want to collect the data regarding one specific problem in a certain group. It is not realistic to investigate all the target population due to the limited resources. Naturally, the selected group – sampling would be ideal here.

Supposing that we want to figure out the teenagers’ affection to the matcha ice cream. Obviously we cannot interview all the young people in the whole world, which would consume tons of money, time and energy to overcome the sample size and geographical limitation. We cannot ask all the people due to the large numbers, so we just ask some of them. That is the very direct reason why we sample the population. (Greener, S, 2008, p. 47)¹⁰

⁷ Dr Nic's Maths and Stats. (2012) *Sampling: Simple Random, Convenience, systematic, cluster, stratified - Statistics Help* [video]. Available at: <https://www.youtube.com/watch?v=be9e-Q-jC-0> (Accessed: 13 Mar 2012).

⁸ Kerlinger, F. (1986). *Foundations of behavioral research* (3rd ed.). New York: Holt, Rinehart, Winston.

⁹ Field, A. (2005) *Discovering statistics using SPSS statistics*. 2nd ed. London: SAGE.

¹⁰ Greener, S. (2008). *Business Research Methods*. London: Ventus Publishing.

Blog 4: The Dilemma of Netflix in the Age of Big Data

There are some debates online about Netflix- a famous American over-the-top content platform and production company, using big data to improve its click rates and increase the users' loyalty. The Big data is quite familiar with us today, and it is definitely an advance of data civilization, as well as the innovation of the technology. However, the sensation of the term of "big data", I love the sentence from Shmueli (2017) very much, it 'evokes emotions ranging from excitement to exasperation in the statistics community.'¹¹

One of the most famous news about the big data should be the one with the world's biggest social network – Facebook. It has been involved in the 2016 US presidential election scandal, leaking the voter data and misusing the users' data for political use.¹² Someone may say, this is for political usage, but Netflix is just a business company utilizing data to improve its profit.

However, unlike the business intelligence and business analytics obtaining data from internal channels and keeping the data private,¹³ the data collected by Netflix is without consent and directly transferred into the commercial usage without paying anything. This is unfair to the users and other competitors who do not apply the big data technique.

Naturally, there are some ethical issues occurring in the process. According to Martin, K. E. (2015), the issue would be mainly about the data privacy, data biases, data quality and some illegal commercial activities like information selling.¹⁴ The privacy is quite sensitive now, we living in a time lacking the safety and security. In this way, if Netflix offends the users' privacy in a rotten way, it will reap what has sown. Furthermore, relevant laws and industrial regulations should be proposed and implicated.

¹¹ Shmueli. G. (2017) *Analyzing Behavioral Big Data: Methodological, practical, ethical, and moral issues*. Quality Engineering, 29(1), pp.57–75.

¹² Ian Sherr. (2018) *Facebook, Cambridge Analytica and data mining: What you need to know*. Available at: <https://www.cnet.com/news/facebook-cambridge-analytica-data-mining-and-trump-what-you-need-to-know/> (Accessed: 18 Apr 2018).

¹³ Mary K. Pratt and Josh Fruhlinger. (2019) *What is business intelligence? Transforming data into business insights*. Available at: <https://www.cio.com/article/2439504/business-intelligence-definition-and-solutions.html> (Accessed: 16 Oct 2019).

¹⁴ Martin, K. E. (2015) 'Ethical Issues in the Big Data Industry', MIS Quarterly Executive, 14(2), pp. 67–85. Available at: <https://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=102933797&site=ehost-live> (Accessed: 26 November 2020).

Blog 5: Meaning of Statistical Results

J. Ellenberg (2014) noted in the part 2, chapter 9 of his book *How Not to Be Wrong* that “A statistically significant finding gives you a clue, suggesting a promising place to focus your research energy. The significance test is the detective, not the judge”¹⁵ The book illustrates hidden beauty and logic of the world in the mathematic thinking. And it reminds us that we cannot purely focus on the statistical results in our study, or even totally be manipulated by the statistical results. This would lead to the deviation from the truth.

The Null Hypotheses represent the assumed truth about the population, and Alternative Hypotheses state our suspicions of the population. The significance result (usually the level of the p-value) is used to reject or not reject the Null Hypotheses, testifying our assumption.¹⁶ This is how we process the statistical analysis.

J. Ellenberg has included many examples in the chapter 9 to support his perspective. The effect of a gene is overstated even though the figure has passed the p-value test. The married women’s support for the Republican presidential candidate seems unreal because of the huge difference from the statistical results. The p-value functioning as a filter is not to blame, it works well. But, we human, as the beings owning the ability to analyze and reproduce. We just need to hold a critical attitude to the statistical results

In my opinion, what referred in the chapter is about the dispute of the data’s reliability. Probably, the final analysis or decision should also consider the representativeness of the sampling, external information of the specific situation, limitations of research option or even the description of the hypotheses, to maximumly eliminate the data errors.¹⁷

¹⁵ J. Ellenberg. (2014). *How not to be wrong: the power of mathematical thinking*. New York: The Penguin Press.

¹⁶ Khan Academy. (2018) *P-values and significance tests* [video]. Available at: <https://www.youtube.com/watch?v=KS6KEWaoOOE> (Accessed: 18 Jan 2018).

¹⁷ Oxera. (2014) *Unreliable evidence? How (not) to use statistical significance tests*. Available at: <https://www.oxera.com/agenda/unreliable-evidence-how-not-to-use-statistical-significance-tests/>

Blog 6: Being an Interviewee

When I was in my master degree, as a member of the psychology group, I had an experience of being interviewed in a regular basis as the identity of an international student. This experience just sparked my curiosity for the survey methods.

It belonged to the non-probability sampling method. According to Gordon Lynch, Non-probability sampling methods aim to obtain the most useful information to realize the researchers' specific study focus.¹⁸ The selected respondents are all campus students who are convenient to keep contact and arrange a meeting due to the research budget and time duration.

The interviewee included different age, different cultural background, various majors and so on. At the same time, the respondents would be followed by 1 year and be interviewed on the regular basis. According to S. Sreejesh, Sanjay Mohapatra, and M. R. Anusree (2014, p. 61), 'A longitudinal survey that involves collecting data from the same sample of individuals or households across time is called a panel survey.'¹⁹ Thus, the research blended Cross-Sectional and Longitudinal Studies together.

The interview mainly based on face-to-face survey and mail survey. For the personal interviewing (face-to-face survey), usually, the interview process will last 30 minutes and the questionnaire is composed of a series of questions, and the whole conversation would be recorded after the consent as the research data for the future study. Just as Jeanne (1977) said, this kind of Mixed-mode data collection not only ensure the relatively high contact rate, also burden a lower cost.²⁰

The sparkling experience just make me feel the fascination of survey. And hopefully I could also conduct the survey for my own study in the near future. That would be pretty fun!

¹⁸ Gordon Lynch. *Sampling*. Available at: <https://www.kent.ac.uk/religionmethods/topics/Sampling.html>.

¹⁹ Sreejesh. S., Mohapatra. S. and Anusree. M. R. (2014) *Business research methods: An applied orientation*. Springer.

²⁰ Herman. J. B. (1977) *Mixed-mode data collection: Telephone and personal interviewing*. Journal of Applied Psychology, Vol 62(4), pp. 399-404. Publisher: American Psychological Association.

Blog 7: Reflection about My DBA research

I'm just the year-one student of my DBA program, maybe it is a little bit early to conceive my study or paper in my DBA research. Applied Quantitative Business Research is the first module of our program. But in the first week, just at the beginning of the class, all of us have been asked a question: You applied quantitative methods or qualitative methods in your own study? At that point, the thought of constructing my own study has been triggered in my mind.

Probably I would choose the mixed methods because I am not that competent in the mathematics and statistics, and also case study and sociocultural perspectives are my interest field. At a more general level, mixed methods could balance the advantages of quantitative and qualitative research and minimize the restrictions.²¹ Luckily, we will learn both the quantitative research and qualitative research in the program.

The first stage would be the theory work, revealing the relationship between concepts and enabling the summarize as well. (Burns, 2008)²² The conceptual framework, hypotheses, paradigm and variables should be chosen first, and then followed by the survey methods, data collection.

Questionnaire would be ideal, and we are well noticed that questionnaire design is essential for achieving information from the respondent, exerting a considerable influence on the survey method as well. As S. Sreejesh, Sanjay Mohapatra, and M. R. Anusree (2014, p. 59) noted that the structured questionnaire turned the interview into a 'funnel' shape, 'wherein the interviewer consciously guides the interviewee through a sequential, pre-formulated set of tactful questions to extract the 'factual' responses without any influencing factors.'²³ Thus my questionnaire would be composed of structured questions and unstructured questions, working for the mixed method.

And the last step would be the data analysis and complete the paper writing. The technical part is to combine these quantitative data with the qualitative data, I presume this would be a challenging and fascinating at the same time.

²¹ Creswell, J.W. and Creswell, J.D. (2014) Research design: Qualitative, quantitative, and mixed methods approaches. Sage publications.

²² Burns. R.B. and Burns. R. A. (2008) *Business research methods and statistics using SPSS*. London: SAGE.

²³ Sreejesh. S., Mohapatra. S. and Anusree. M. R. (2014) *Business research methods: An applied orientation*. Springer.