Cloud Storage Service Provider Continuance Intention

# Chapter 3 Methodology

This chapter discusses the research methodology, including the research philosophy, approach to theory development, research strategies, data collection methods, data analysis methods, and ethical considerations.

## 3.1. Research Philosophy and Approach to Theory Development

The type of research of the study is a study that uses positivism with a deductive approach to theory development and a quantitative research study. First, the research philosophy of this study is positivism. Positivism means that the researcher believes that there is only one reality and one world. The role of a researcher is to understand the one world objectively (Saunders et al., 2016). Researchers tend to gather data about that world and use more objective methods to analyze them to arrive at the results. Therefore, researchers tend to use the quantitative method and a deductive approach to theory development to fulfill the need for positivism (Saunders et al., 2016).

Specifically, Positivism holds that researchers are isolated from the research subject (Comte, 2015) and exert minimal influence on it (Saunders et al., 2016). Consequently, researchers must maintain objectivity throughout the study process (Park et al., 2020). Quantitative studies based on deductive reasoning are frequently utilized by positivist researchers (Saunders et al., 2016). Deductive reasoning involves the formation of several hypotheses, the operationalization of those hypotheses, the collection of relevant quantitative data, and the use of statistical analysis to test them (Malhotra et al., 2006). Several statistical analytic techniques

were used to determine the link and relationship between and among the variables under investigation. This type of study seeks to determine the response specified in the research objective by testing the research hypotheses (see Section 2.6 for the research hypotheses).

Numerous benefits are associated with positivism, logical thinking, and quantitative research methodologies. It allows researchers to obtain data in a more organized fashion. It may be demonstrated through an effective data gathering procedure (Saunders et al., 2016). In addition, the positivist research theory limits the contact between the researcher and the topic of the study. Thus, it lowers certain biases in the outcomes analysis (Cooper and Schindler, 2014). Second, quantitative research is highly repeatable, allowing other researchers to re-evaluate the results in comparable environments. In other words, the outcome may be validated for deeper comprehension. However, there are limits to this method. Without direct observation of the research participants, the research results may lack sufficient depth to comprehend reality (Hammersley, 2019). In other words, if the researcher does not interview or personally see the conduct of the study participants, he or she may be unable to comprehend the rationale for their actions. Second, quantitative methods in social research frequently disregard characteristics of human conduct. Therefore, it presents an erroneous depiction of human behavior (Cohen et al., 2003).

Apart from positivism, there are mainly two competing research philosophies available: interpretivism and realism. Contrary to the objectivity of positivism, interpretivism subjectively interprets research results. It is subjective because various individuals experience the social environment in different ways (Potrac et al., 2014). Constructionism (or interpretivism) holds that the universe is ultimately mental or mentally created (Bougie and Sekaran, 2019). Varied individuals have different

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| | - | At the current price, cloud storage service provides a good value. |
| Continuance intention | - | I will continue to use cloud storage service in the future. |
| | - | I plan to stop using cloud storage service (r). |
| | - | I have no intention to continue using cloud storage service if it is not absolute necessary (r). |
| | - | My need for the cloud storage service will constantly increase in the future. |
| | - | In the future, I still need to use cloud storage service to support my work/tasks. |

Source: Yang and Lin (2015), Roca et al. (2009), Arpaci (2016), Venkatesh et al. (2003), Venkatesh et al. (2012).

There are some adjustments to the measurable items in the questionnaire in the construct of cloud storage service support and unstructured tasks. Originally, there were 11 and 13 measurable items in the constructs of cloud storage service support and unstructured task. Since there are too many measurable items, the number of measurable items is reduced to seven and three in the questionnaire instrument for this study. First, the seven measurable items in cloud storage service support are selected based on their relevance to the research topic. Measurable items with similar meanings are omitted to reduce the time for filling in the questionnaire. For example, the measurable items "With the folder-sharing function provided by the cloud storage service, I can share data with specific colleagues, family members and friends" and "When I need to share files or folders with others, the cloud storage service is able to provide me with the URL (Uniform Resource Locator), enabling me to send the files or folders to be shared conveniently." Both measurable items have the same meaning of sharing files and folders with others. Therefore, only the former item remains in the questionnaire instrument. In another example, the measurable items "I felt that the cloud storage service has good connection quality" and "I felt that the cloud storage service has good file upload and

download speed" have the same meaning of good connection speed of cloud storage service. Therefore, only the latter item remains in the instrument.

In the constructs of unstructured tasks, only three out of the 13 measurable items remain in the instrument because of repeated meaning and irrelevance to the research topic. There are three sub-constructs in the instrument designed by Yang and Lin (2015): flexibility in work/task, the degree to which the work/task is not clearly standardized, and mutual dependency of work/task. The sub-construct about work/task standardization is excluded since it is not relevant to the major function of cloud storage service. This sub-construct posits that the low level of standardization of tasks needs cloud storage service to make it more standardized and clearer. However, the author understands that cloud storage services mainly allow file sharing and assess of data/information at any time, any places at any applicable devices. Therefore, work/task standardization is not the major function of cloud storage services. Therefore, this sub-construct is not included in the final questionnaire. Only two sub-constructs: flexibility in work/task and mutual dependence of work/task, remains in the instrument for this study.

Originally, the sub-construct of flexibility in work/task had three measurable items about the access of data (1) at different places, (2) at different times, and (3) the way to finish work/task. The first two measurable items are combined to form a new measurable item called "the cloud storage service allows me to do tasks that often needs access to data at different places and different time" for simplicity. The third measurable item in the original questionnaire is not relevant since cloud storage service is not about using more than one way to finish work/task. It is simply about file-sharing and access at any time and any place.

Second, the sub-construct of mutual dependency of work/task is about how colleagues and people can depend on each other at work given the file-sharing, data exchange, synchronization, and co-editing capability of cloud storage service. The measurable items only include the items about file-sharing and data exchange since it is not very often for consumers to use the synchronization and co-editing capabilities of cloud storage services in their daily life instead of their work life. Therefore, the measurable items about synchronization and co-editing are not included in the instrument for this study. Therefore, there are only three measurable items remaining in this survey.

Last, the tone of the measurable items in the construct of an unstructured task is also different from Yang and Lin (2015)'s original instrument. Yang and Lin (2015) used a first-person tone such as "My work/task often needs to access data at different places" and "My work/task often needs to access data any time." However, the measurable item was changed to "The cloud storage service allows me to do tasks that often needs access to data at different places and different time," which is a third-person tone. Respondents then know that the focus of the survey is about how cloud storage service influences how they do their work/task instead of how their work/task needs the assistance of cloud storage service. Such rearrangement is consistent with the study's aim of investigating the factors affecting the continuance intention of using a cloud internet storage service provider among Hong Kong consumers.

and randomly distribute the hyperlink of the questionnaire to them through e-mail to invite them to participate. Third, even though the author invites people to join the survey by publishing it on various social media websites, there is no guarantee that all members of the population have the same probability of being selected for this survey. Therefore, since it is not feasible to conduct probability sampling for this survey, the sampling method mentioned above is used for this survey.

Excluding those who did not give consent to participate in the survey and those who indicated that they do not use cloud storage services, the final effective response of this survey was 180, contributing to a final effective sample size of 180. All respondents gave their consent to participate in the survey and have used cloud storage services. The data collected from the questionnaire survey is then analyzed through partial least square-structural equation modeling (PLS-SEM) using software called Smart PLS and IBM SPSS 26.0 for certain analyses.

## 3.5.   Data Analysis

As for the data analysis strategies, the major data analysis strategy is the use of partial least square-structural equation modeling (PLS-SEM) using software called Smart PLS. PLS-SEM is ideally suited to models with more complicated and dynamic causal relationships. As a result, second-generation procedures outperform first-generation techniques, which can only test portions of a complicated theoretical model. SEM is used because of the complicated structure of the study model. PLS-SEM is generally exploratory in nature, which means that the analyzes are conducted to look for patterns in the data when little information on the relationships between the variables exists. PLS-SEM offers the following benefits in general: it is capable of managing complicated research models with sparse data, (ii) it is capable of estimating

normatively defined measurement models, and (iii) it produces determinate latent variable scores (Hair et al., 2017). In summary, SEM must be used in this investigation since the model contains a large number of independent variables, mediators, and a dependent variable.

Path analysis is the primary data analysis approach used in PLS-SEM for accepting or rejecting hypotheses. Path analysis is a statistical technique used to investigate the relationship between two or more variables. It is a subset of which PLS-SEM is a subset. It is a more advanced method of analysis than multiple regression analysis since it enables the examination of the relationship between one or more independent variables and a single dependent variable. However, route analysis permits the investigation of the relationships between a large number of independent variables and a large number of dependent variables or mediators. As a result, researchers have a wider degree of creative license while developing the study model (Hair et al., 2017).

Prior to doing the route analysis, many tests were undertaken to determine the model's validity and dependability. They include indicator validity and exploratory factor analysis for convergent validity, Cronbach's Alpha internal consistency and composite reliability, the correlation coefficient, and multicollinearity analysis for discriminant validity (Hair et al., 2017). The next chapter discusses the nature and reason for such evaluations. Additionally, other analyzes were undertaken, including those on the respondents' demographic features, the mean and standard deviation, and one-way ANOVA. One-way ANOVA analysis is to assess whether there are significant differences in mean scores for different demographic groups such as age, gender, and highest educational attainment. IBM SPSS 26.0 was used for this part of the analysis.