

Exploratory Study:
Contributing Factors to Successful IT
Outsourcing in Information System
Functions of Financial Service Industry in
Hong Kong

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Declaration

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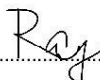
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Acknowledgments

This paper was only feasible with the motivation and assistance of several outstanding individuals. First, I am very grateful to my wife, Anne, and son Isaac for their full support throughout the journey. Second, I sincerely appreciate my supervisor, Professor HO, who encouraged and inspired me on this journey. My thinking and vision have been opened while conducting this research. As a result, I have gained creditable experience on this journey. Third, my co-workers and friends who had supported me in the data collection and advised my opinions. Finally, my classmates of MBA. I am happy to study with you in these six modules. It was a memorable and worthwhile experience with all of you on my MBA journey. Thank you!

Abstract

Information Technology (IT) outsourcing has been a crucial strategy for companies to sustain their competitive advantages in Hong Kong financial service industry (FSI), however, the failure rate of IT outsourcing has been high. Delen, G. P. A. J. et al. (2019) found that around 40% of IT outsourcing projects failed at the end. Nonetheless, the global IT outsourcing market continues to keep its significant growth. Statista (2022) projected IT outsourcing market in Hong Kong to grow by USD 3.19 - 4.12 billion from 2021 to 2026. How to improve the IT outsourcing satisfaction rate and realize its benefits? This study aims to identify the critical success factors in Hong Kong FSI IT outsourcing and propose possible satisfaction rate boosts.

This study used hybrid approaches (qualitative and quantitative) for data collection and analysis - a total of 447 (97%) valid responses from the survey. The four critical success factors were Quality of Service Provider (QSP), Contract Management (CM), Internal Contract Experience (ICE), and Regulatory Policy (RP), identified to support satisfaction of Hong Kong FSI IT outsourcing after conducting the analysis. According to the result, recommendations have been proposed to improve satisfaction in IT outsourcing. First, the company can screen out unqualified vendors during the pre-outsourcing stage. Service buyers always increase satisfaction if the service providers have sufficient capabilities to finish their duties well. Second, the knowledge of processing IT outsourcing should be identified, creating, storing, and sharing information within the company to enhance the processing of IT outsourcing and prevent repeat mistakes. Finally, vendor performance monitoring and reviews should be in place, and it provides performance insight to service buyers to take remediation actions, if necessary, on time.

Keywords: IT Outsourcing, Quality of Service Provider (QSP), Contract Management (CM), Internal Contract Experience (ICE), Regulatory Policy (RP), Information Technology Outsourcing Satisfaction (ITOS), Financial Services Industry (FSI), Technology Organization and Environment (TOE).

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List of Abbreviations

AI	Artificial Intelligence
BFSI	Banking, Financial Services, and Insurance
CAGR	Compound Annual Growth Rate
CCT	Core Competency Theory
CM	Contract Management
COM	Communication
ECT	Expectation Confirmation Theory
FSI	Financial Service Industry
HKMA	Hong Kong Monetary Authority
ICE	Internal Contract Experience
IM	Instant Messaging
IMF	International Monetary Fund
ISR	Perceived Information Security Risk
IT	Information Technology
ITO	Information Technology Outsourcing
ITOS	Information Technology Outsourcing Satisfaction
PAT	Partnership and Alliance Theory
QSP	Quality of Service Provider
RP	Regulatory Policy
SLA	Service Level Agreement
SOW	Scope of Work
TCE	Transaction Cost Economics
TCT	Transaction Cost Theory
TOE	Technology, Organization and Environment

1. Introduction

Globalization influences business operations, and cross-company interdependency was increasing. As a result, organizations had tremendous pressure to maximize profitability and increase productivity. Outsourcing was one of the crucial strategic ways in the intricate, competitive, and dynamic global supply chains. It was a long-term business strategy adopted by the companies (Adams et al., 2018; Ishizaka et al., 2019). Companies consider it an important strategy to reduce costs and increase competitiveness, productivity, and profitability (Taponen and Kauppi, 2020). Although there was disagreement on outsourcing's effects on businesses (McCarthy and Anagnostou, 2004; Kinkel, 2014; Gylling et al., 2015; Lahiri, 2016), it always comes with negative impacts because service buyers lost control of the outsourced process (Gylling et al., 2015; Lahiri, 2016). Nevertheless, it was seen as a typical competitive strategy in local and foreign markets (Mukherjee, Gaur and Datta, 2013; Adams et al., 2018; Pereira, Munjal and Ishizaka, 2019). Outsourcing is a widespread decision and one of the most strategic for companies, which helps meet financial objectives without high expertise maintenance costs (Sundquist, Hulthén and Gadde, 2015; Taponen and Kauppi, 2020).

Information technology (IT) was widely used, not just to help management but also to stand out from the competition. However, the strategic and operational importance of IT has raised a firm's expenses, now accounting for a significant share of indirect costs for businesses (Chou, Hao-Chun Chuang and Shao, 2014; Luzzini et al., 2014). Companies sustain IT competitive advantages via IT Outsourcing (ITO) to reduce business costs. ITO in the financial service industry (FSI) was especially critical due to the rapidly changing technology in the last five years. Cloud-based solutions have created new digital products and services, including mobile apps, investment platforms, and digital wallets. Artificial intelligence (AI), big data, and machine learning technologies also facilitated the FSI to predict potential risks, optimize investment decisions, and improve fraud detection (Hussain, 2023). These technologies, products, and services could be a significant investment cost if it was developed in the company. ITO has been the alternative choice for the company in FSI and focused their resource on core business. Despite ITO becoming a common arrangement in the companies, IT outsourcing satisfaction (ITOS) was not good enough in the market. Delen, G. P. A. J. et al. (2019) found that around 40% of ITO projects failed at the end, and Luu, V. (2022) also indicated that 25% – 50% of ITO failed. The elements that caused failure were insufficient scoping and unclear spelled-out service level agreement in the contract, lack of trust, and higher cost than expected

(Devos, Van Landeghem and Deschoolmeester, 2012; Cabral, Quelin and Maia, 2014; Jørgensen, 2014). On the other hand, the elements had a positive result in building a successful case in ITO, such as communication, partnership, core competencies evaluation, cost saving, management support, and contractual management (Rhodes et al., 2016; Hodosi, 2017; Cha and Kim, 2018; Blijleven et al., 2019; Erdoğan, 2020). This challenge to satisfaction and success has been a significant problem in ITO, and there is a need to determine the factors that can raise the satisfaction rate.

1.1 Definition, Importance, and Trends of IT Outsourcing

Definition

Literature listed several definitions of outsourcing (Leimeister, 2010; Dekkers, 2011; Dolgui and Proth, 2013; Schmeisser, 2013; Gunasekaran et al., 2015; Di Mauro et al., 2018; Pereira, Munjal and Ishizaka, 2019). Dolgui, A. and Proth, J.-M. (2013) defined outsourcing as purchasing semi-finished goods, finished goods, or services from a third party. Gunasekaran, A. et al. (2015) defined outsourcing as assigning a procedure or function within a company to an outside company. Pereira, V., Munjal, S. and Ishizaka, A. (2019) defined that by contracting out their core or non-core function to the competent service providers, service buyers can gain a competitive advantage by producing goods or services more efficiently. This study defined IT outsourcing below, based on reviewing existing literature and thorough research analysis.

IT outsourcing was defined as handing over a company's information system functions - including IT resources, assets, services, or processes – to the third-party service provider for management in exchange for a mutually agreed-upon financial payment and time frame (Leimeister, 2010).

The above definition was the closest to the actual ITO scenario. Outsourcing is a business relationship between buying company and one or more selling companies. The buying side was also called the client or the service buyer. The selling side was also called the service provider, the vendor, or the supplier. This study uses service buyer and service provider to align the terminologies.

Importance

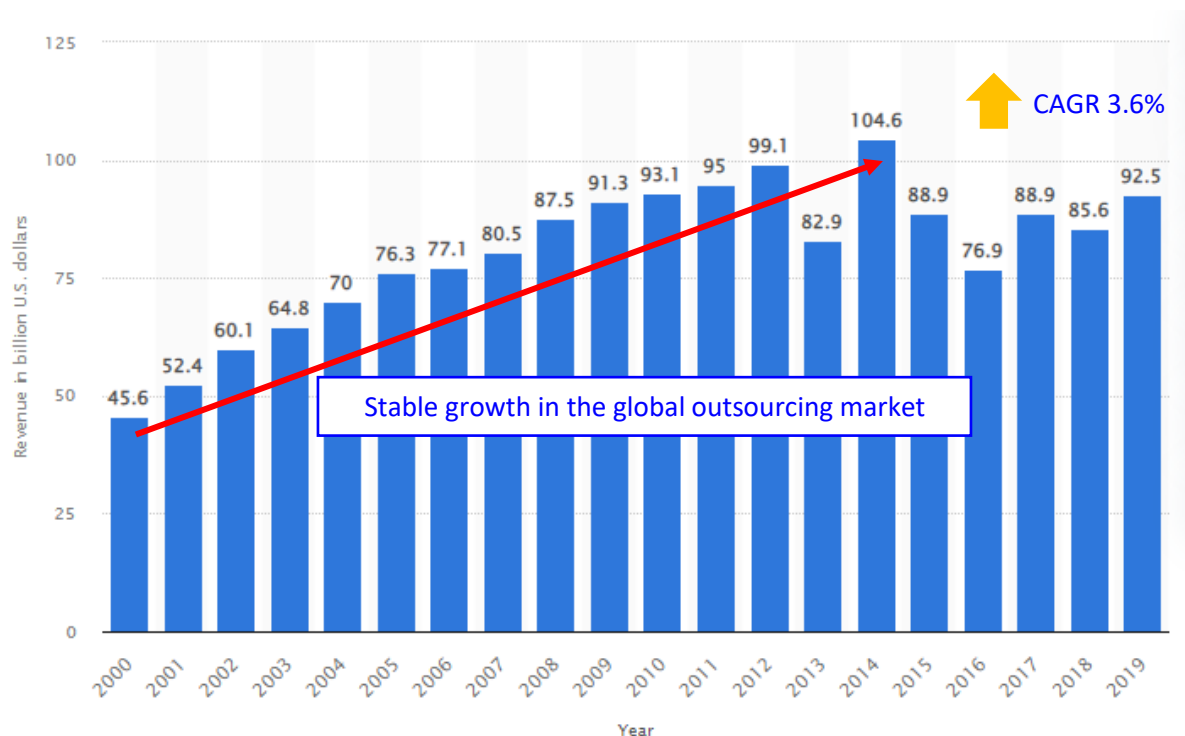
Outsourcing was a terrific approach to support company growth. Several of the biggest businesses in the world contract out portions of their labor. It would be best to balance internal staff and external resources in pursuing continuous development and productivity. From a financial point of view, outsourcing has economic advantages and benefits a growing business. The outsourcing company did not need to recruit expertise yet still enjoyed professional services from outsourcing. From the operational point of view, outsourcing non-core operations may deliver non-core activities with higher specialization, allow scaled efficiency, improve quality, and enhance processes, all leading to sector growth (Kroes and Ghosh, 2010; Taponen and Kauppi, 2020; Darwish, 2021).

From flexibility to professional representation, outsourcing offered many advantages and was crucial for organizations big and small. Extending to IT, ITO was necessary for companies to concentrate on core business functions and processes, thus improving their competitive advantages. Maintaining IT assets and services incurs high operational costs, especially IT expertise, whereas outsourcing service providers can deliver professional services with lower operational costs (Bachlechner, Thalmann and Maier, 2014; Hodosi, Kaye and Rusu, 2015; Bhatti, Mubarak and Nagalingam, 2017). All these reasons have driven the demand for ITO in the last two decades. Companies actively seek ITO because they believe it would be cheaper and they would get better services (Leimeister, 2010; Ishizaka et al., 2019; Elnakeep, Helal and Mazen, 2022).

Trends

Companies benefit from outsourcing in several ways, including increased flexibility and adaptability, lowered operational expenses, and secured the freedom to concentrate on core skills. Due to these advantages, businesses increasingly outsource some of their functions or services. As a result, the outsourcing market had stable growth from 2000 to 2012. The overall global outsourcing compound annual growth rate (CAGR) from 2000 to 2019 was 3.6% (Statista, 2020, William Kajjumba et al., 2021). The extent of the world outsourcing industry from 2000 to 2019 was shown in Figure 1.1.

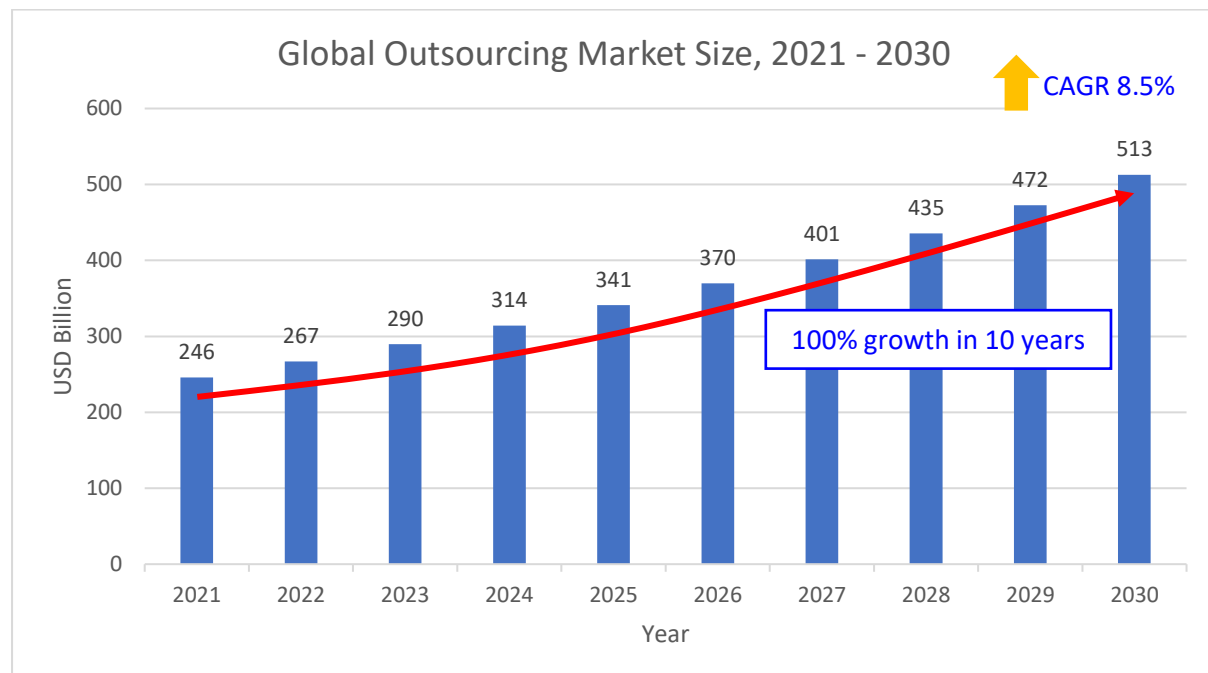
Figure 1.1: Global Outsourcing Market Size from 2000-2019 (USD Billion)



Source: Statista (2020)

The global outsourcing market hit USD 246 billion in 2021, according to a report published in April 2022 by market research and consultancy Straits Research. It was expected to rise at a CAGR of 8.5% from 2022 to 2030, with the outsourcing market size reaching 100% (Straits Research, 2022). Figure 1.2 showed the global outsourcing market size forecast by service type from 2022-2030 (Straits Research, 2022). The IT sector holds the largest share of the market. It was projected to reach USD 181 billion by 2030 at a CAGR of 8.8% (Straits Research, 2021). Companies were putting more and more effort into lowering the cost of doing business and gaining access to global resources to fulfill the expanding industry needs. In particular, technologies like artificial intelligence (AI) and cloud computing have grown rapidly in the last ten years. These considerations encouraged businesses to outsource and concentrate on technological advancements, targeting increased company efficiency.

Figure 1.2: Global Outsourcing Market Size from 2021-2030 (USD Billion)



Source: Compiled by Author (Extracted from www.globenewswire.com)

The expected worldwide increase of the outsourcing in the banking, financial services, and insurance (BFSI) sector from 2021 to 2026 is approximately USD 31.15 billion (Newswire, 2022; ReportLinker, 2022). The growing need to comply with regulations was one of the major factors affecting the expansion of the global outsourcing market in the BFSI sector (Newswire, 2022). Massive regulatory changes are experienced in the BFSI industry, increasing the need for regulatory compliance and compliance transparency. Besides minimizing the compliance impact, outsourcing made it simpler for enterprises to concentrate on their core skills and helped manage the uncertainty produced by the changing market rules. These elements are expected to drive the growth of the global outsourcing market in the BFSI industry throughout the forecasted timeframe.

The Hong Kong IT industry was anticipated to expand considerably between 2021 and 2026, with a growth of 4.89% (Fitchsolutions, 2021; Mordorintelligence, 2021; reogma, 2021; Technavio, 2022a). The presence and expansion of ITO were due to the demand of IT services in Hong Kong, such as data center management and cloud computing platforms. The Hong Kong IT market was projected around USD 6.72 billion from 2021 to 2026 (Marketresearch,

2022; Technavio, 2022a), with ITO portioned around USD 3.19 to 4.12 billion during the forecasted period (Mordorintelligence, 2021; Statista, 2022). In a 2022 survey for ITO, 44% of Chief Information Officers (CIOs) employed outsourcing service providers; 51% and 40% of responding IT executives outsourced the maintenance of applications and data centers, respectively (Mordorintelligence, 2021; morganlewis, 2022). According to the International Monetary Fund (IMF) survey in 2021, 95% of the responding banks in Hong Kong were developing to outsource technology-related processes to service providers; over 100 Authorized Institutions – institutions that provide banking, asset and wealth management, private equity business, and securities services (HKMA, 2021a) – have outsourced their business processes to service providers (IMF, 2021). In summary, IT outsourcing is becoming essential in Hong Kong organizations.

1.2 IT Outsourcing Research Background in Financial Service Industry

Research Problem

ITO will grow in the future, but it will continue to present challenges for service buyers due to the high failure rates of ITO (Lacity, Willcocks and Rottman, 2008; Amplifyre, 2022). Therefore, it must be improved to sustain the ITO for competitive advantages. The literature on outsourcing in previous studies has determined different factors that influenced ITO and impacted the result of ITO. However, there needs to be research specific to the FSI on critical success factors in ITO. It is because ITO was also a common practice in FSI in Hong Kong, especially in banking services. IT assets, systems, and infrastructure were needed to support their business operations. Therefore, the trend of ITO remained and was forecasted to increase as a business strategy. The researchers' study focused on identifying critical success factors and intending to reduce unsuccessful ITO (Kim and Chung, 2003; Fjermestad and Saitta, 2005; Gonzalez, Gasco and Llopis, 2005; Kronawitter et al., 2009; Hodosi et al., 2013; Bianchi and Junior, 2015; Shaheen, 2016; Bashir et al., 2020), but the result of ITO was still not good enough. There probably is a gap between the success factors that have not yet been identified. These review results motivated this study to examine the Hong Kong ITO satisfaction.

Research Goals

This study aimed to determine the critical success factors in Hong Kong FSI ITO satisfaction and to find the deficit in critical success factors that impacted the ITO satisfaction. The below research question (RQ) is designed to address these goals.

RQ1: What critical success factors impact the satisfaction of Hong Kong FSI ITO?

RQ1 aims to determine the critical success factors in Hong Kong FSI ITO and verify whether those factors significantly affect ITO satisfaction.

2. Literature Review

The ITO literature review of previous studies provided insight for this study. This helped discover the ITO benefits. The major benefits are scalability, flexibility, expense reductions, exposure to new technologies, better upkeep and update, and ability to focus on key competencies (Lee, Chae and Cho, 2013; Hanafizadeh and Zararavasan, 2020). The ITO studies were organized mainly based on ITO decisions and implementation phases. Both of them were reviewed in this study because implementation of success criteria was based on ITO decision.

2.1 Theoretical Framework

ITO involved different disciplines in the whole outsourcing process. Therefore, multiple theories covered different ITO processes, such as ITO strategy, resource, contract, relationship, and monitoring. Systematic review and empirical study summarized the major theories of ITO in 2005 and 2020, respectively (Gottschalk and Solli-Sæther, 2005; Hanafizadeh and Zararavasan, 2020). The common frameworks used for ITO research included Technology, Organization, and Environment (TOE), Transaction Cost Economics (TCE), Core Competency Theory (CCT), Partnership and Alliance Theory, Contractual Theory, and Expectation-Confirmation Theory (ECT). The above theoretical frameworks were briefly described below, and their focus areas followed.

2.1.1 Technology, Organization, and Environment (TOE)

The TOE paradigm, developed by Tornatzky and Fleischer, has been used to define the creative process within a company (Tornatzky and Fleischer, 1990). It considered three dimensions (technology, organization, and environment) that affected the adoption of innovation. Technologies here refer to all business-related technology. The organization was related to the firm's descriptors, including its management structure, organizational structure, size, resources, and method of employee communication. Finally, the environment comprised the market components, the competitors, and the regulatory framework (Hanafizadeh and Zare Ravasan, 2018a). The TOE Framework is a general theory that cites these three dimensions determining adoption compared to several theories and models in information systems research. Since researchers may choose the components of each dimension base on the features of innovation

and the organization itself, the TOE framework is broadly relevant to many disciplines and circumstances (Dewi et al., 2018). Table 2.1 listed the dimensions of the TOE framework. Numerous researches in IT outsourcing have adopted this approach, such as decision, success factors, and information security risk (Fjermestad and Saitta, 2005; Baker, 2012; Patil and Wongsurawat, 2015; Hanafizadeh and Zare Ravasan, 2018a; Hanafizadeh and Zareravasan, 2020; Bhatti, Mubarak and Nagalingam, 2021).

Table 2.1: TOE Framework Dimensions

Dimension	Definition
Technology	The technology dimension focuses on how technology's design, functionality, and traits affect how an invention is adopted.
Organization	Organizational dimensions comprise several characteristics that might help or impede the adoption of an invention, including company structure, culture, goals, size, resource quality, communication, and decision-making processes.
Environment	Regulations, rivalries, communities, governments, customers, suppliers, and other external parties to the organization are all represented by the environmental dimension. These parties also determine the requirements for a specific innovation, the capacity to provide resources and support innovation, and the capacity to implement the innovation.

Source: Dewi et al. (2018)

2.1.2 Transaction Cost Economics (TCE)

Transaction Cost Economics (TCE) was another theoretical framework commonly used to research ITO. TCE has gained recognition as a reliable theoretical foundation for studying ITO choices, since it addressed make-or-buy decisions on governing frameworks, expenses, and transaction characteristics (Lacity, Willcocks and Khan, 2011; Hanafizadeh and Zareravasan, 2020). For example, the cost of producing goods or service in-house is the production cost, while the cost of buying goods or service is the transaction cost. A corporation will produce goods or service in-house when it is economically more advantageous than buying the identical goods or services off the shelf. On the other hand, carrying out the transaction was an extra

expense for buying the goods or service. Three variables affect transaction costs: asset specialization, transaction frequency, and unpredictability (Thouin, Hoffman and Ford, 2009).

2.1.3 Core Competency Theory (CCT)

According to the Core Competencies Theory, tasks were handled either internally or by service providers. Outsourcing with service providers should be considered for tasks that are not core strengths. However, if the tasks are used to preserve a competitive edge, certain non-core operations may need to be kept in-house (Gottschalk and Solli-Sæther, 2005).

Businesses could consider IT to be a key competency. Most successful businesses were aware of the possibilities of IT. However, contracting out IT may prove to be a complicated endeavor due to its inherent complexity and complications when applied to business processes. Any firm looking to effectively outsource IT should retain its essential IT capabilities on specifying IT needs and overseeing their delivery by service providers (Hancox and Hackney, 2000).

2.1.4 Partnership and Alliance Theory (PAT)

The partnership in IT outsourcing was commonly cited as a critical element. The partnership could reduce the risk of inadequate contractual terms, giving service buyers confidence before delegating a challenging and pricey task like IT. However, in the connection between service buyers and service providers, the latter may become too reliant on the former, and their objectives may differ (Iyer, 2003). Despite claims in service provider marketing materials, most service buyers were dubious about collaboration. If a partnership did exist, it often consisted of several intangibles (e.g., credibility and communications) rather than a legal agreement. On top of just IT system maintenance and operations, deeper knowledge is required to maintain the partnership (Hancox and Hackney, 2000).

2.1.5 Contractual Theory

The goals, rules, and strategies that would govern the agreement are detailed in an outsourcing contract, which provides a legally enforceable institutional framework in which each party's rights, duties, and liabilities were also specified. The contractual agreement aims to promote communication and thwart opportunism, where an appropriate one could restrict the space for opportunism, prohibit moral hazards in a cooperative relationship, and safeguard both sides'

confidential information. A comprehensive contract lessens the risk associated with opportunism on the side of one or more contractual parties. On the other hand, uncertainty may result from a gap in a contract, which makes it easier for parties to avoid accountability and transfer blame, increases the risk of conflict, and makes it more challenging to plan, make the most use of available resources, and carry out plans (Luo, 2002). The common ITO contractual issues arise around service level, service scope, payment terms, liability, exit plan, information security, intellectual property, dispute resolution mechanisms, termination terms, etc.

2.1.6 Expectation-Confirmation Theory (ECT)

In the literatures on service buyer behaviors, the Expectation-Confirmation Theory (ECT) was frequently used to research service marketing, customer satisfaction, and post-purchase behaviors, such as repurchasing and complaining (Oliver, 1980). The measurement of ITO satisfaction can be represented as service buyer's repurchase decision: the service buyer examined the initial decision and the reasons for conducting ITO, which were used to evaluate the outcome to determine whether the ITO met the expectation. Under ECT ITO is the continuous or ex-post reversal of the initial decision (Bhattacharjee, 2001).

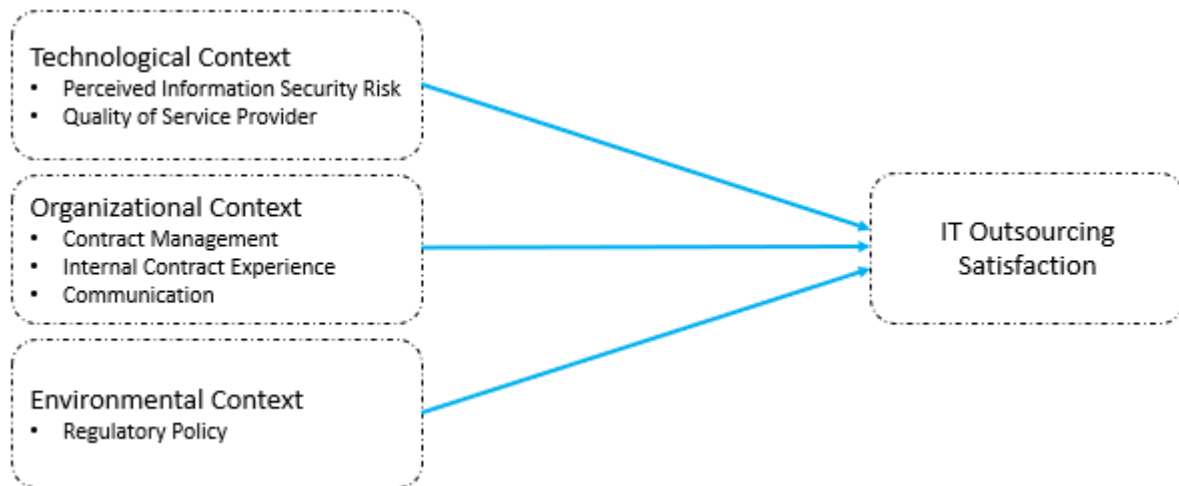
2.1.7 Summary of Theoretical Framework

ITO processes involved multiple disciplines discussed in the previous section. The literature review has shown that each theoretical framework can only cover some factors in ITO. TOE and TCE were the most popular to use as a base framework in ITO researches. TOE was extensively applicable to a variety of situations, including decision-making, success criteria, and information security risk (Fjermestad and Saitta, 2005; Baker, 2012; Patil and Wongsurawat, 2015; Hanafizadeh and Zare Ravasan, 2018a; Hanafizadeh and Zareravasan, 2020; Bhatti, Mubarak and Nagalingam, 2021). Even though the TOE framework is usually used to prove the relationship between ITO adoption, continuous ITO adoptions indicate ITO satisfaction. This study aimed to identify the critical success factors and explore FSI regulations and whether they significantly affect ITO satisfaction. Therefore, Technology, Organization, and Environment (TOE) theory is more suitable for analyzing internal and external factors in ITO satisfaction and was adopted in this study as the base theoretical framework.

2.2 Factors in IT Outsourcing

Several theoretical frameworks were reviewed in section 2.1, concluding that a TOE framework was to be adopted in the following study. Figure 2.1 shows a model illustrating attributes of the TOE theoretical framework.

Figure 2.1: Research Theoretical Framework



Source: Hanafizadeh and Zare Ravasan (2018a)

Technological, Organizational, and Environmental are the three independent variables that affected IT outsourcing satisfaction. A follow-up study would examine these independent variables to identify any discrepancies further.

2.2.1 Technological Context

The technological context relates to all the company's technologies, including those presently in use there and others that are marketed but not yet used. In addition, the company's existing technologies influence the adaptation process because they limit the quantity and rate of technological change they can implement (Baker, 2012). Additionally, the technological context included Perceived Information Security Risk and Quality of Service Provider factors. The detail is discussed in the following.

2.2.1.1 Perceived Information Security Risk (ISR)

Technology, such as smartphone, mobile applications, and cloud computing, has rapidly developed in recent years. These did facilitate business operations efficiency, but they introduced IT security risks at the same time. Businesses that chose ITO for its significant benefits must also understand the risks involved (Delen et al., 2019; Al Hadwer et al., 2021). A risk is a potential for an event that might negatively affect the company. For example, each ITO service provider has their area of expertise, such as helpdesk service, systems, infrastructure, software development, and cybersecurity. If the service provider lacks the exact expertise required, performance issue or extra cost may arise, causing ITO project failure. The other most serious hazard to ITO was information security issue. Since perceived IT security risk is considered highly important for ITO in FSI, there was a need to identify whether it affected the success of ITO (Hanafizadeh and Zare Ravasan, 2018a; Ahmed, 2020). As service provider managed the outsourced functions for the service buyer, the services provider's resources for responding to incidents and data protection against data leakage are essential for FSI.

Although, the researchers believe that the perceived information security risks are involved in ITO (Delen et al., 2019; Al Hadwer et al., 2021) and emphasize its importance (Hanafizadeh and Zare Ravasan, 2018a; Ahmed, 2020), they did not treat it as a critical success factor. Furthermore, in recent years cybersecurity and information security have become more and more essential in business operations. For example, the Island Shangri-la hotels in Hong Kong faced a cyber-attack between May and July 2022, where 290,000 Hong Kong residents were affected by a data leak (The Standard, 2022). Furthermore, FSDC (2021) indicated that Hong Kong accounted for 3% of the total worldwide cyber-attacks on FSI, with a potential economic loss of USD 32 billion. Therefore, it is necessary to determine the relationship between the risk and ITO satisfaction. The Perceived Information Security Risk is added to the model and is defined as operational, information security, and financial risks in ITO. Thus, the below hypothesis is made:

H1: Perceived information security risk significantly affects ITO satisfaction in FSI.

2.2.1.2 Quality of Service Provider (QSP)

A partnership is a strategic alliance of independent businesses that depend on one another while working toward common objectives (Morgan and Hunt, 1994; Wibisono et al., 2019). The

partnership as a working arrangement between companies that demonstrates dedication through time, a spirit of collaboration, and shared risks and rewards (Grover, Cheon and Teng, 1996; Wibisono et al., 2019). The strength of a relationship determines its ability to succeed (Lee and Kim, 1999; Lee, 2001; Lahiri and Kedia, 2009; Ren, Ngai and Cho, 2010; Swar et al., 2012; Gupta, 2014). The service provider's quality was defined as the level to which the results met the service buyers' expectations (Wibisono et al., 2019). Goles, T. and Chin, W. W. (2002) have defined service providers' quality as innate qualities that support the efficiency of relational interaction. Wibisono, Y. Y. et al. (2019) has determined the service provider's quality significantly impact in ITO, and found the similar research result of Lane, M. and van der Vyver, G. (2005). However, other researchers failed to prove the service provider's quality impact ITO success (Rhodes et al., 2016; Cha and Kim, 2018; Blijleven et al., 2019; Hodosi and Rusu, 2019). Therefore, this inconsistent result should be identified in the Hong Kong environment. In this study, the service provider quality is defined as the level to which the results meet the service buyer's expectations.

Sharing the expertise and knowledge from service providers is one of the benefits of ITO (Lane and van der Vyver, 2005; Wibisono et al., 2019). The service buyer chose to outsource not only to save the cost of training for employees and to shorten the period to pick up the tasks, but also to transfer the skill to their employees through the service providers. So, the service provider's capabilities affected their credibility from the service buyer's point of view. A service buyer's confidence in a service provider was reflected in that service's ITO satisfaction. A portion of each party's resources were brought together, faced, and merged (Hakansson and Snehota, 1994; Mutebi et al., 2022). The resources required by the partnership should be committed to by both of the two connected firms. Relationship success correlates with a high degree of partnership dedication because dedicated partners try to combine immediate concerns with long-term goals (Mohr and Spekman, 1994; Sutthiparinyanon and Villegas Puyod, 2022). When trade parties feel that maintaining their connection will require putting up their best effort, that is when commitment is evident (Morgan and Hunt, 1994; Johny and Gurtu, 2022; Muhammad Nooruddin et al., 2022). The commitment has reflected the service provider's quality in their working relationships.

People in each company may form relationships thanks to inter-firm interactions. This relationship is impacted by what the parties know about each other and what they may share. An essential component of a long-term connection is credibility. Credibility between the parties is necessary for a long-term inter-organizational partnership. From the service provider's

perspective, building up of or lack thereof the service buyer's credibility may influence whether the connection will continue. Credibility came from work history, ability, benevolence, and integrity (Alwahdani, 2019). The competencies and capabilities of the service provider are referred to as ability. Benevolence is the term used to describe the service provider's lawful actions that safeguard the service buyer's interests. Integrity is the term used to describe a service provider's dedication to being truthful and adhering to the anticipated ethical standards (Alwahdani, 2019).

According to the above discussion, the service provider's quality is essential for service buyers to consider whether they would continue the outsourcing their functions or change to other service providers. Thus, the service provider's quality needs to be examined for whether it affects ITO satisfaction. Another hypothesis is made:

H2: The quality of service provider significantly affects ITO satisfaction in FSI.

2.2.2 Organizational Context

The organizational context describes the structure, culture, goals, size, resource quality, communication, decision-making processes, features, and company assets. This setting affects ITO satisfaction and implementation choices (Baker, 2012). The organizational context relates to internal processes or capabilities, including Contract Management, Internal Contract Experience, and Communication factors.

2.2.2.1 Contract Management (CM)

Written contracts serve several purposes in managing an ITO relationship since they are the most crucial component (Erdoğan, 2020). Traditionally, once both parties signed a contract, it is thought that a relationship has been created and formally established between the parties (Solli-Sæther and Gottschalk, 2010). In the setting of ITO, a contract specifies the provision of services and costs that must be finished within a contractual period between the two signing partners. After a contract has been signed and is in force, contract management takes place (Willcocks and Craig, 2009). The quality of contract management is to ensure that the contract's terms and conditions are followed and that each party satisfactorily fulfills its contractual duties. Qi, C. and Chau, P. Y. K. (2012) identified that the quality of contract management was essential at the contract and post-contract stages and significantly affected ITO. The researchers

also had positive findings on contract management factors (Hodosi, Kaye and Rusu, 2015; Delen et al., 2016; Fehrenbacher and Wiener, 2019; Erdoğan, 2020), but not others (Bachlechner, Thalmann and Maier, 2014; Moon et al., 2016; Karimi-Alagheband and Rivard, 2020). Not all contracts are comprehensive, and incomplete contracts might lead to lawsuit proceedings and implementation challenges (Hanafizadeh and Zare Ravasan, 2018a). This study defined contract management as the governed contract fulfillment that achieves the most benefits for the company and reduces the extra charge generation during the service period.

Since the contract is a binding agreement between two organizations, if the organization manages the activities and content of the contract poorly, opportunism may arise and generate extra cost during the service duration, potentially affect the result of IT. Therefore, it is crucial to understand how contract management and ITO are related. Thus, the following hypothesis is made:

H3: The quality of contract management significantly affects ITO satisfaction in FSI.

2.2.2.2 Internal Contract Experience (ICE)

The contract is potentially affecting the satisfaction of IT outsourcing, as described in the previous paragraph. Apart from post-signing contract management, pre-signing contract administration is also important. Creating a comprehensive contract might reduce the uncertainty, risk of opportunistic conduct, and misunderstanding between two contractual parties (Gantman, 2011; Jain Palvia and Palvia, 2017). The ability of formal governance to establish a shared knowledge of roles and expectations between parties, as well as to address misunderstandings and issues with the expectations of parties, is one of its most significant features (Alborz, Seddon and Scheepers, 2003). Pre-signing contract administration is content preparation that includes price, the scope of work (SOW), service level, information exchange and security, handover, clauses, terms & conditions, liabilities, penalty, payment arrangements, and exit policy (Gunduz and Elsherbeny, 2020). If participants with no outsourcing experience prepare the contract, the quality and coverage of the contract may not protect the service buyer enough (Yadav and Metri, 2010; Patil and Patil, 2014). Thus, an employee's contract experience is also essential in an ITO contract. For example, if employee lacks contracting expertise, drafted SOW might miss tasks. Such incomplete SOW might allow for opportunistic behavior and ambiguity, requiring extra resources to fill the gap, potentially result in extra service costs. Even though this factor has not been found in the literature review, it is vital in

ITO. So, internal contract experience is added to this study to identify the relationship and is defined as the capabilities of the service buyer to formulate contract. The following hypothesis is made:

H4: The contract administration experience significantly affects ITO satisfaction in FSI.

2.2.2.3 Communication (COM)

Communication has eight crucial components: the message, interference, source, receiver, channel, environment, feedback, and context. In addition, communication includes understanding, sharing, and meaning (University of Minnesota, 2015). Finally, communication includes open talks about expectations, future directions, skills, strengths, shortcomings, and daily interchange of project-related information (Klepper, 1995; Schmidt and Menth, 2016; Zhong and Myers, 2016; Hodosi et al., 2020). Communication is an effective way to share information and a key for a healthy partnership.

Communication quality, information sharing between service providers and service buyers, and participation were three dimensions of communication behavior (Mohr and Spekman, 1994; Ali et al., 2022; Jatobá, Franco and Rodrigues, 2022; Sutthiparinyanon and Villegas Puyod, 2022). A crucial component of information transmission was effective communication. The correctness, timeliness, sufficiency, and reliability of the information conveyed were all examples of quality (Daft and Lengel, 1986; Mardatillah et al., 2019; Ried et al., 2022). Any potential cooperation success depends on how well it was communicated. If the objectives of the partnership were to be met, timely, accurate, and relevant information must be provided. Information sharing describes how much important, often confidential information is shared with a partner. Higher-performing partners communicate information more often and with more relevance due to deeper relationships (Morris and Snell, 2011; Pai and Yeh, 2015). People may work more efficiently with enough knowledge (Schuler, 1979; Tsai and Hung, 2016). It was also linked to higher levels of pleasure and was a key predictor of successful partnerships (Devlin and Bleackley, 1988; Nguyen, Mai and Nguyen, 2021). Participation refers to the degree to which partners collaborate while creating goals and making plans. The need for involvement in defining roles, obligations, and expectations grows as one partner's activities affect the other's capacity to compete successfully. Participating in decision-making and establishing the objectives were crucial for partnerships to flourish (Anderson, Lodish and Weitz, 1987; Liu et al., 2017). More effective partnerships were anticipated to have a better

quality of communication, more information exchange between both parties, and greater partner involvement in planning and goal formulation.

The researchers found that communication factors significantly affect IT outsourcing satisfaction (Kumar and Palvia, 2002; Alexandrova, 2012; Ishizaka and Blakiston, 2012; Bachlechner, Thalmann and Maier, 2014; Cha and Kim, 2018), even though other studies could not prove that communication factors as significant (Gorla and Somers, 2014; Karimi-Alagheband and Rivard, 2020). Communication is crucial for different types of projects and interpersonal collaborations since poor communication causes misunderstandings with wrong expectations. Therefore, it has a high probability of causing project failure (McManus and Wood-Harper, 2007; Attarzadeh and Ow, 2008). So, this factor needs to be examined in this study and is defined as communication quality and information sharing. The hypothesis is made:

H5: The quality of communication significantly affects ITO satisfaction in FSI.

2.2.3 Environmental Context

The environmental context involves external pressure, the structure of the industry, the regulatory landscape, and the availability of technical service providers (Hanafizadeh and Zareravasan, 2020). There are three ways to approach the topic of external pressure: pressure from trading partners, pressure from competitors, and pressure from rules and government directives. In order to keep their competitive advantage, businesses might be compelled by competition to implement new ideas (Zhu, Kraemer and Xu, 2006; Khalifa, Abd Elghany and Abd Elghany, 2021; Zeng, 2021). Businesses will likely use new technologies to gain an advantage in highly competitive environments (Koong, Liu and Jian Wang, 2007; Hanafizadeh and Zare Ravasan, 2017; Hanafizadeh and Zare Ravasan, 2018). The Regulatory Policy factor is one of the environmental contexts as explained below.

2.2.3.1 Regulatory Policy (RP)

The external pressure and regulatory environment are highly relevant to ITO. Trading partners, market, rules, and government policies all exert pressure on FSI and could impose restrictions or support ITO (Hanafizadeh and Zare Ravasan, 2018a). To offer secure and dependable services to their customers, FSI should include stringent commercial and technical considerations. FSI must abide by the bulk of these regulations set by regulatory organizations.

FSI employs service providers to deliver service and support due to their fast service provisioning and flexibility that satisfies regulatory needs. The impact of government regulation on ITO could be positive or negative. A supplementary treatment plan is required when governments place new restrictions on FSI, such as mandating third-party risk management.

Hanafizadeh, P. and Zare Ravasan, A. (2018b) have identified that FSI has been dealing with pressure from growing and concurrent regulatory measures but have yet to make the hypothesis in the study. In the recent five years, the regulatory policy focused on third-party risk management. HKMA (2021b) emphasized third-party monitoring for adopting regulatory technology and included outsourcing requirements in the operational risk management policy in 2022 (HKMA, 2022). Meanwhile, this factor has been discussed in the focus group, and most members have agreed that it affects ITO. Moreover, they will outsource IT functions if regulatory policy requirements exist. It is because the pressure would be transferred to service providers instead of internal staff. This factor is most important to FSI and should be determined for companies in Hong Kong. Thus, the regulatory policy is added to the model, and the below hypothesis is made:

H6: Strengthening regulatory outsourcing policy significantly affects ITO satisfaction in FSI.

2.2.4 Summary of Independent Variables

The independent variables were identified to build a base for this research. Four independent variables from the TOE model were inconsistent, and consistent findings in the environmental context in the literature review were not found. Two independent variables: Perceived Information Security Risk and Regulatory policy, were proposed to add to the technological and environmental context of the model for this research. It is because information security and regulatory policy are essential areas in the financial service industry (IMF, 2021). Especially, regulatory policy is mandatory for FSI. Therefore, six independent variables: Perceived Information Security Risk, Quality of Server Provider, Contract Management, Internal Contract Experience, Communication, and Regulatory Policy, were adopted to investigate further. Besides the above independent variables, the participant demographics also be considered when analyzing the driving forces behind independent variables. The research's hypotheses are listed in Table 2.2.

Table 2.2: Summary of Research's Hypotheses

#	Hypothesis
H1	Perceived information security risk significantly affects ITO satisfaction in FSI.
H2	The quality of service provider significantly affects ITO satisfaction in FSI.
H3	The quality of contract management significantly affects ITO satisfaction in FSI.
H4	The contract administration experience significantly affects ITO satisfaction in FSI.
H5	The quality of communication significantly affects ITO satisfaction in FSI.
H6	Strengthening regulatory outsourcing policy significantly affects ITO satisfaction in FSI.

Source: Compiled by Author

3. Research Methodology

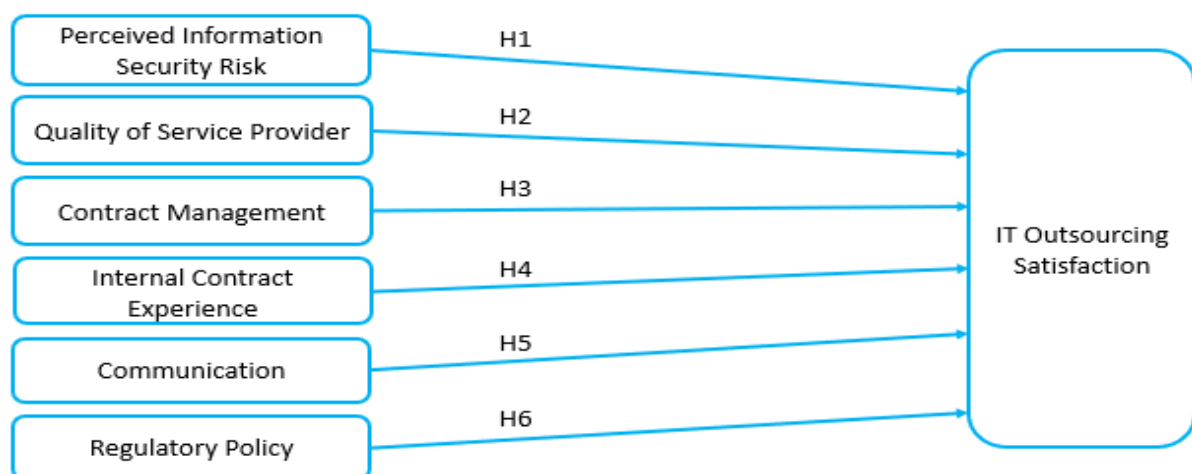
Research is described as producing new knowledge or using pre-existing information to produce novel ideas, approaches, and comprehensions. It can include synthesizing and analyzing earlier research to the point that it produces original and innovative results (Stengel, Neugebauer and Meenen, 2007; Song, 2021). The theoretical foundation for the approaches used is known as methodology. The method of the study is determined by the viewpoint from which it was seen (Howell, 2012).

This section explained the methods used to carry out the study and established a methodical way of analyzing the research actions and responding to the research queries. This section also included details about this study, methods used to collect and evaluate the data, various tools and techniques employed, and the rationale behind the method selection (Bouchrika, 2022).

3.1 Research Model

Quality of Server Provider, Contract Management, Internal Contract Experience, and Communication were defined based on the inconsistent findings in the literature review. Perceived Information Security Risk, and Regulatory Policy were further added to the research model as other beneficial factors for ITO satisfaction. These six independent variables were formulated in the research model in Figure 3.1. It was based on the theoretical framework of the TOE and modified to match the actual FSI situation for this research purpose.

Figure 3.1: Research Model

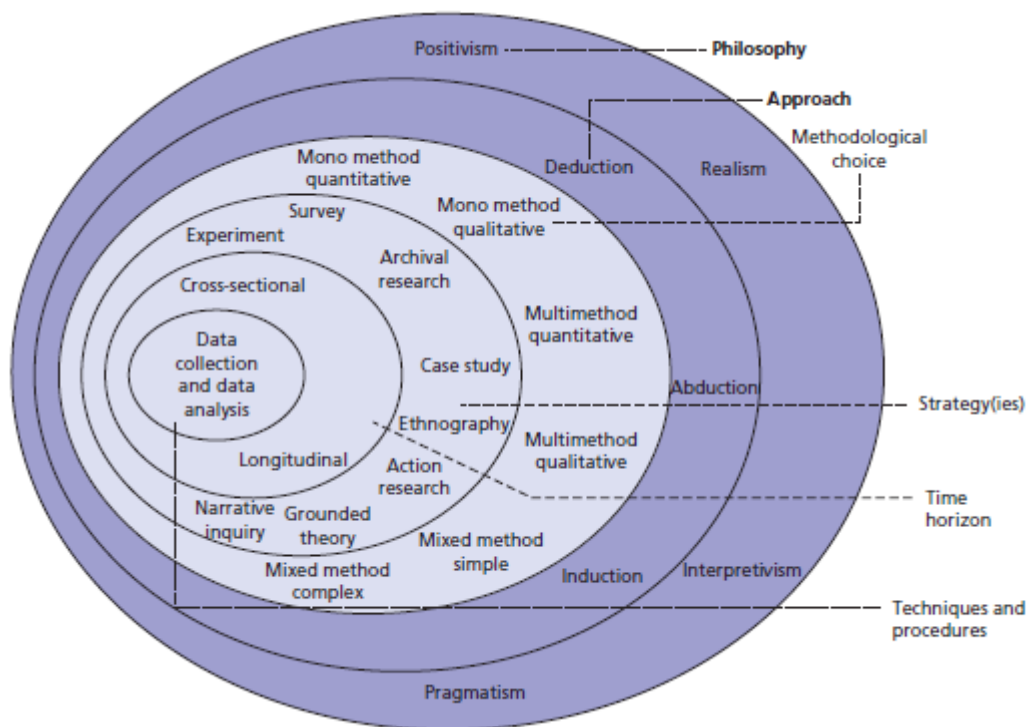


Source: Compiled by Author

3.2 Research Onion

The research onion model was used as the guiding principle to develop different stages of research. Figure 3.2 illustrated the steps to build a research from outer to inner layers, like an onion (Saunders, Lewis and Thornhill, 2019). The six primary layers are Philosophy, Approach, Methodological Choice, Strategy, Time Horizon, Technique and Procedures of the research onion.

Figure 3.2: Research Onion



Source: Saunders, M., Lewis, P. and Thornhill, A. (2019)

3.3 Research Philosophy

The four main research philosophies are pragmatism, interpretivism, positivism, and realism. Each philosophy has its focus areas and assumptions. For example, pragmatism was beginning to address the issue and seeks to solve it by examining several ideas (Saunders, Lewis and Thornhill, 2019). As this study employs theories, ideas, and results to address the research issue and provide workable answers, pragmatism was the most appropriate research philosophy.

3.4 Research Approach

The three primary methods for developing theories were induction, abduction, and deduction (Saunders, Lewis and Thornhill, 2019).

The deduction method develops a hypothesis or new collection of theories based on an established theory, before formulating a study plan for evaluation. (Dissanayake, 2015). The deduction approach is best adapted to positivism, which involves statistically evaluating expected results with an appropriate degree of likelihood (Diehl, 2010). A deduction approach with qualitative research methods is also possible, though the expectations created by prior researches will be established differently than via hypothesis testing (Saunders, Lewis and Thornhill, 2019). Through questionnaire, deduction method develops a knowledge of observation that enables the researcher to contrast various human understandings using actual evidence.

The induction method allows one to develop theories (Bryman, 2015), and is often used in qualitative researches. For example, interviews are conducted to collect data, which can be used to look for respondent trends (Flick, 2015). This strategy may also be successfully used in positivism approaches, in which findings are generated by analyzing the data first and looking for significant patterns.

The abduction method prefers the inference of explanations above the observation of evidence. Abductive reasoning begins with a hunch or guess and seeks proof to back it up. Abductive reasoning is often used in science to create hypotheses or models (Hassan, 2022).

This study aimed to determine the critical success factors for ITO satisfaction. The set of hypotheses of ITO satisfaction was made after conducting the literature review of existing theories, and pass-through the systematic analyses to test them. Considering that this study focused on the Hong Kong FSI, where its environment may provide new insight for research on this topic, some factors not included in the existing theories were examined. Taking the above into account, this study adopted deduction and induction research approaches.

3.5 Methodological Choice

The methodological choice is the selection of quantitative, qualitative, or hybrid approaches for the research. A mono method employs a single method for gathering data which is

processed by qualitative or quantitative analysis. A hybrid method uses qualitative and quantitative data collecting and analysis methodologies (Creswell, 2012).

Qualitative research is often used for collecting descriptive or factual data to answer research questions (Hammarberg, Kirkman and de Lacey, 2016). Qualitative research gathers, examines and interprets non-numerical data from the targeted population, such as focus groups and interviewees (Rosenthal, 2016). Quantitative research collects and analyzes structural data that can be represented numerically (Goertzen, 2017). It involves gathering information via surveys, polls, and other means, then utilizing the findings to create predictions and perform analyses (Kelley-Quon, 2018).

This study adopted the hybrid method utilizing both qualitative and quantitative approaches. The mixed-method approach aids in validating research results utilizing quantitative and qualitative sources, investigating quantitative results with qualitative data, and creating survey questions (Bryman, 2006; Santos et al., 2017). It used primary and secondary data for analysis to generate a more objective result. The primary data used were new real-time data originated from the researcher. The secondary data used were existing and past data collected by other researchers, agencies, and organizations (Ajayi, 2017). These secondary data for both research methods were collected from literature review and other researches.

3.5.1 Qualitative Research Method

The qualitative research method seeks participants' opinions, views, and preferences about the research topic (Hammarberg, Kirkman and de Lacey, 2016). For better data collection interactions between participants and the author, a focus group discussion was conducted for an in-depth discussion. Focus group is group interviews that use information exchange between study participants to produce data. It was a fast and practical method to get information from participants at once (Kitzinger, 1995; Abraham et al., 2022). Participants were encouraged to converse, ask questions, share tales, and comment on others' experiences and viewpoints, after the author posed questions. Exploring participants' knowledge and experiences made good use of the approach.

The primary qualitative data in this study were collected from the focus group formed by six participants working for IT in FSI or providing IT service for FSI. The group members had 5 to 25 years of IT experiences, including experiences as management, IT professionals, and service providers. The participants had provided insights and opinions about success and failure

in ITO based on their experience and situations in Hong Kong FSI. Table 3.1 listed the focus group participants' information. The six participants' opinions and views were representative for this research topic considering their positions and experiences (O.Nyumba et al., 2018).

Table 3.1: Participants of the Focus Group

#	Name	Job Position	Company	Business Nature	Role in ITO
1	Group Member A	C-Level	Technergy Solutions Limited	IT Service Provider	Service Provider
2	Group Member B	Manager	China Bohai Bank Co., Ltd.	Banking Service	Service Buyer
3	Group Member C	Individual Contributor	BOCOM International Holdings Co. Ltd.	Securities Services	Service Buyer
4	Group Member D	Senior Manager	BOCOM International Holdings Co. Ltd.	Securities Services	Service Buyer
5	Group Member E	Vice President	Chow Tai Fook Enterprises Limited	Private Investment	Service Buyer
6	Group Member F	Individual Contributor (Providing ITO service for FWD Financial Limited.)	Protiviti	Global Consulting Services in Finance, and Technology.	Service Provider

Source: Compiled by Author

3.5.2 Quantitative Research Method

The quantitative research method objectively gathers and evaluates numerical data to characterize, forecast, or regulate factors of interest (McLoughlin, 2007). This method can evaluate the hypotheses with the data collected and analyzed (Apuke, 2017). For these reasons, the quantitative method was adopted for this study. Survey was conducted to collect data, which targeted employees in IT field as participants, especially those working or worked for Hong Kong FSI.

3.6 Research Strategy

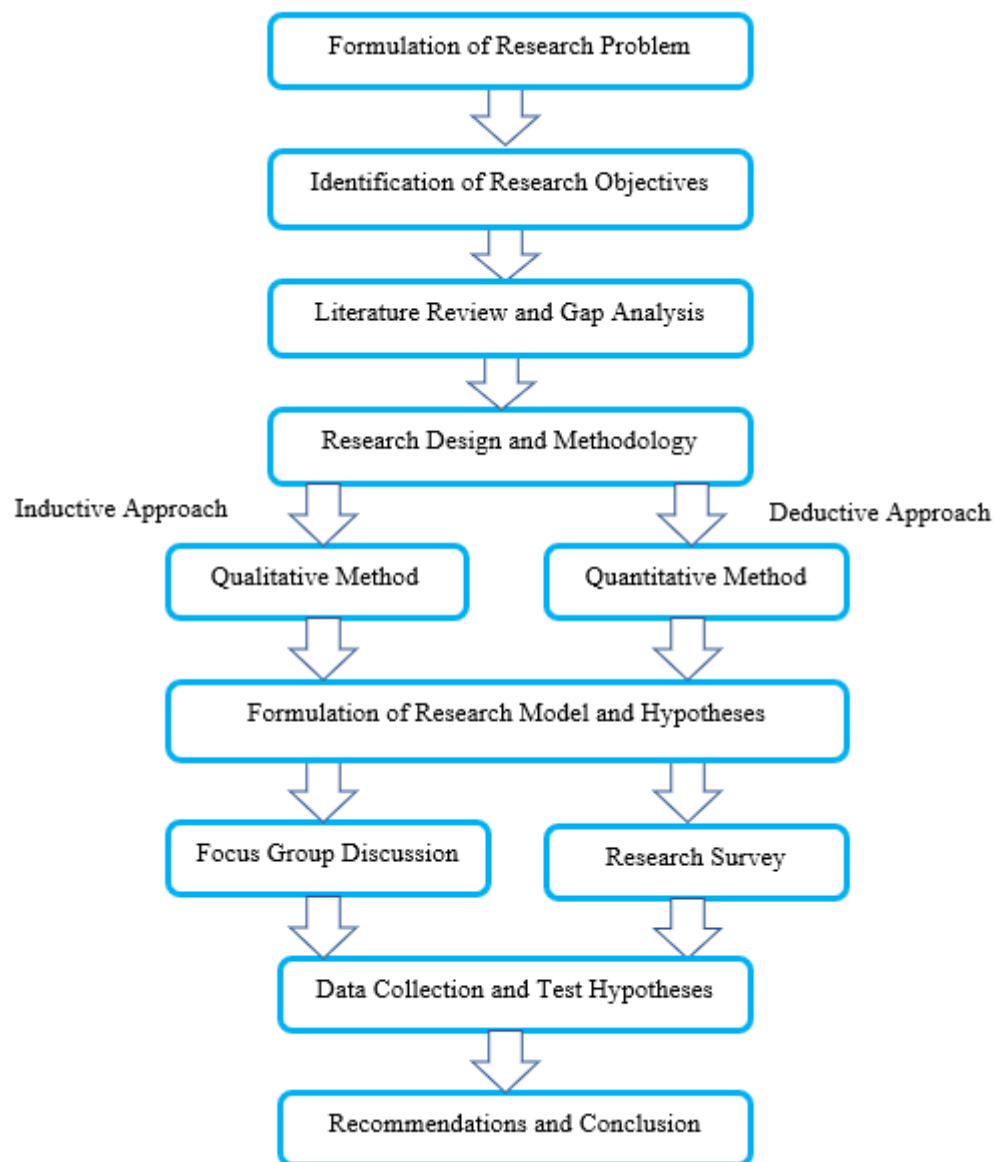
A strategy is a set of instructions for carrying out a task. A research strategy is described as a plan for how researcher will respond to their research issue. It is the theoretical connection between the researcher's mindset and subsequent technique selection for gathering and analyzing facts (Denzin and Lincoln, 2005; Lee, 2012). There are eight research strategies available: survey, experiment, case study, archival research, action research, ethnography, narrative inquiry, and grounded theory (Mardiana, 2020). Each strategy is best suited for different research philosophies and approaches.

The experiment and survey strategies were the most suitable for this study because they are exploratory for identifying critical success factors relating to ITO satisfaction. The objective of the experiment is to investigate the probability that a change in one independent variable would lead to a change in a second dependent variable (Ogwu, 2022). The hypotheses of ITO satisfaction were developed for the experiment, and the data was then evaluated to demonstrate the presence of a link between the variables, or lack thereof.

In addition, questionnaire-based surveys are well-liked because they make it possible and cost effective to obtain standardized data from a large population, simplifying comparisons (Saunders, Lewis and Thornhill, 2019). This would also allow faster data collection, beneficial for study with a short timescale, including this study. The survey approach is seen as authoritative by the public, as well as simple to explain and comprehend. Data gathered through survey can be utilized to create association models and provide potential explanations for interactions between variables.

Based on the above and applying the research onion principles, appropriate approaches and methods had been selected for each step in building this research. The research design and works were summarized and illustrated in Figure 3.3.

Figure 3.3: Research Workflow



Source: Compiled by Author

3.7 Research Time Horizon

The research time horizon is the duration of this study. The longitudinal and cross-sectional can be categorized based on time (Saunders, Lewis and Thornhill, 2019). This study was completed in six months, from November 2022 to April 2023. Considering time was of the essence for this study, a cross-sectional methodology was used. Furthermore, survey technique used allowed for quicker data collection.

3.8 Data Collection

Data collection is systematically acquiring and analyzing relevant factors so one may respond to specified research questions, test hypotheses, and assess results (Paradis et al., 2016). The hybrid method with both qualitative and quantitative approaches was used in this study. Collection was via multiple channels for both primary and secondary data. The secondary data for qualitative and quantitative methods were gathered from newspapers, current news articles, textbooks, magazines, corporate records, academic journals, and websites.

The qualitative method's primary data were collected in focus group discussions, for which the questions used were listed in Appendix A. The author developed the open-ended questions and sent them to focus group participants on advance for their preparations. The focus group discussion covered ITO matters including ITO purposes, importance of ITO, and the ITO result measurements. The quantitative method's primary data were collected from a survey. The author formulated the questionnaire based on hypotheses and data from the focus group discussions. Using the information gained from the focus group, the questionnaire was structured to understand the critical variables, and measures were taken to ensure the questions listed were fair and straightforward. The survey was discussed in detail in the below section.

3.8.1 Survey Design

Both independent and dependent factors mentioned in focus group and literature review were connected to the survey questions. The questionnaire was further organized into two sections: the first section aimed to understand the respondents' background with questions about their demographics; in the second section, the statements were formulated based on six independent variables and had four statements for each independent variable. Respondents rated their level of agreement or disagreement on each statement listed using 6-Point Likert Scales. The 6-Point Likert Scale ranged from 1 to 6, corresponding to "Strongly Disagree", "Very Disagree", "Disagree", "Agree", "Very Agree", and "Strongly Agree".

Rensis Likert developed the Likert scale to gather the views and opinions of respondents, and researchers employ a unidimensional scale (Batterton and Hale, 2017). Researchers often use this psychometric scale to learn how people feel about a brand, an item, or a target market (Fleetwood, 2018).

The Likert Scale was adopted because it was straightforward to create, and data could be collected from many respondents reasonably quickly. Moreover, it produces a highly reliable

scale, and the veracity of the inferences made from the data the Scale provides can be validated using various methods (Taherdoost, 2019). The 6-Point variant of Likert Scale was chosen because in most cases odd-numbered Likert Scales presents a “neutral” choice between positive and negative, which might persuade respondents to answer the question quickly without full consideration. A 6-Point variant encourages participants to think about the subject more thoroughly and choose favorably or negatively (Thompson, 2018). Additionally, the 6-point scale increase measurement precision and help eliminate the “neutral” option (Nemoto and Beglar, 2014).

3.8.2 Sample Population

In statistics, the population refers to the collection of data points used to create statistical research. It alludes to information on the relevant research (Levy and Lemeshow, 2008). A sample is an individual among the researched population. Samples were an accurate representation of this study's population. The population members were asked to participate in the survey and make up the samples. As a result, the samples were subsets or subgroups of the population. In addition, these samples may be examined to learn more about the traits or actions of the total population (Bhat, 2019), both essential for the representable results in this study.

The target populations in this study were IT workers in Hong Kong. According to the information from the Census and Statistics Department of Hong Kong Special Administrative Region, approximately 108,500 IT workers in 2021 (Census and Statistics Department, 2022). It included the current FSI IT workers or have worked for FSI. It would be the most representative population, and this study calculated the sample size based on this population figure.

3.8.3 Sampling Size

The number of finished questionnaires was the sample size. Because it only reflected a portion of the intended population, they were samples (Taherdoost, 2017). Three criteria need to be understood and specified before determining a representable sample size for the research: the margin of error, population proportion, and confidence level (Ahmad and Halim, 2017).

Margin of error: How many errors could be accepted in the survey's sampling? A lower margin of error requires a high sample size but is closer to the facts (Taherdoost, 2017). In

research, a 5% margin of error is acceptable (Taherdoost, 2017; Kosar, Bohra and Mernik, 2018). Thus, this study adopted a 5% margin of error.

Confidence level: When the average value of the character derived from the samples is equivalent to the value of the actual population, that population is said to be sampled (Singh and Masuku, 2014). The data is more representative of the population with a higher confidence level. Researchers commonly used a 95% confidence level (Simundic, 2008; Taherdoost, 2016; Hazra, 2017). This study set a confidence level at 95% and considered it created a fair representative data. The z value for a 95% confidence level is 1.96. (Hazra, 2017). The z values for different confidence levels are listed in Table 3.2.

Table 3.2: Z values for various confidence levels

Confidence Level	Z Value
90%	1.64
95%	1.96
97%	2.17
99%	2.58

A 95% confidence level was adopted for sample size calculation.

Source: Hazra, A. (2017)

Population proportion: The sample size may be more significant than if the real variability of the population were used. The most crucial diversity in a community is represented by a proportion of 50%, which is used to determine a more cautious sample size (Israel, 1992; Frey and Zhang, 2021). Therefore, this study adopted a population proportion of 50% for sampling size calculation, to achieve a more accurate result.

Using the above criteria, the appropriate values had been selected to calculate the sample size, using the formula below:

$$\text{Sample size} = \frac{\frac{z^2 \times p(1-p)}{e^2}}{1 + \left(\frac{z^2 \times p(1-p)}{e^2 N} \right)}$$

where N = population size; z = z value; e = margin of error; p = population proportion.

Source: Kallio, S. (2022)

The value adopted for calculating the sample size in this research were N = 108,500; z = 1.96; e = 0.05; p = 0.5. Using the above formula, the sample size was 382.8046. Thus, 383 questionnaires were required to be completed for this study.

3.8.4 Data Collection Channel

Literature review was conducted during the research period to collect data for qualitative and quantitative approaches. A week of preparation was given to the focus group members, and the total duration of primary data collection for the qualitative approach was around two weeks. The primary data collection for the quantitative approach was planned to take around 1.5 months, counting from formulation of question to completion of data collection.

The survey was created using digital Google and WeChat form and distributed over electronic channels including social media, WhatsApp, WeChat, and Signal. The questionnaire included both English and Chinese versions, considering that Chinese is the main language in Hong Kong and can facilitate easier comprehension by the respondents, ensured precise answers were received. These samples were gathered through snowball sampling (Taherdoost, 2016): the questionnaire was sent to IT respondents' friends, coworkers, former coworkers, and IT service providers, where these new respondents were then asked to distribute it further to increase the number of respondents.

3.9 Ethics

The author completed the ethical form of the university and was approved by the research supervisor before commencement of this study. The author declared in the form that the research processes were legal and ethical. Moreover, the author ensured data privacy and confidentiality from participants. All data would be stored in a secure manner and used for research purposes only. The author would destroy all data after the research result had been issued.

For the focus group, the author informed all focus group members the research and data collection purposes before focus group discussion. Group member who felt uncomfortable with the discussion could leave anytime. For the survey, the essential information was described on the initial page of the digital form, before respondent clicked to start the survey:

1. The purpose of this study.
2. The survey was conducted anonymously.
3. Respondent who felt uncomfortable with the survey could withdraw anytime.
4. All data would be deleted six months upon conclusion of the study.
5. The analytic tool is copyrighted and was entitled to use for analyzing the research data.

4. Results

This section analyzed the primary data for the quantitative approach, which were collected from the survey using digital form. Descriptive and inferential statistics were used to analyze and compute the data for the informative presentations. Descriptive statistics define the relationship between factors in a sample or population to arrange data and offer a succinct overview (Kaur, Stoltzfus and Yellapu, 2018). Descriptive statistics include metrics of dispersion and center trend. Measures of central tendency include the mean, median, and mode, while diversity measures include the standard deviation, variance, minimum and maximum factors, kurtosis, and skewness (Hayes, 2022). Predictions about a sizable data collection using inferential statistics are based on a typical population sample. As opposed to this, random data selection is thought to be the best way to describe and make inferences about a population (Simplilearn, 2021). Estimating population and testing hypotheses were the two primary goals.

In total, 447 surveys were completed and returned during the planned data collection period. The response rate was 97%. All data were exported in digital form and analyzed by the SPSS statistics software. A detailed discussion of the analysis result follows.

4.1 Data Classification

Nominal and ordinal data were the two types of data collected from the survey. These two data types should be further understood before choosing an appropriate data analysis method. Nominal data refers to information whose values cannot be expressed numerically but may be grouped into sets based on the features that identify or characterize the variable (Brown and Saunders, 2007). Ordinal data is classified within a variable that has a natural rank order. In such instances, the relative position of each case is known in the data set. However, the intervals between the categories are uneven or unknown (Saunders, Lewis and Thornhill, 2019).

The demographic data collected belonged to the nominal data type, whereas the data collected through the Likert Scale belonged to the ordinal data type. The demographic data were presented using descriptive statistics, but the Likert Scale data needed further investigation on the statistical tests to use. Since researchers have various perspectives on the measurement level of the Likert Scale data: ordinal or interval (Murray, 2013), there has been debate about parametric vs. non-parametric approaches for many years (Mircioiu and Atkinson, 2017). Parametric tests are used for continuous or interval data with a normal distribution (Treleaven

and Barrett, 2007). Non-parametric tests are used when dealing with discrete variables or continuous data that is not normally distributed (Hill, 2006). The Likert Scale of this study was a continuous and interval data going from “strongly disagree” to “strongly agree”, although the intervals may not be equal. Therefore, this study adopted parametric tests for Likert Scale data analysis. The parametric tests include reliability, regression, and correlation to determine the relationship and significance (Norman, 2010).

4.2 Data Demographics

The demographic data were analyzed and summarized in Table 4.1. The detail of the analysis result was shown in Appendix C. Since respondents were working in both FSI and non-FSI, it assisted in analyzing this study from a different point of view—especially on information security and regulatory policy factors. Among the respondents, 53.9% had FSI experience, and 46.1% had no FSI experience.

Around 72% of respondents had ITO experience. The most common respondents had “1-5” times of ITO experiences, representing 43.8% of respondents. On the other hand, “6-10” and “11-20” times of ITO experiences were among 18.3% and 6.5% of respondents, respectively. Over half of the respondents worked in accountancy, banking, finance, finance and computing or IT. 46.3% of respondents were in the IT sector, whereas 16.3% were in accountancy, banking, or finance.

For the companies the respondents worked in, the top 3 ranges of number of employees in Hong Kong were “1-50”, “51-100”, and “101-250”. These three ranges represented 68% of the respondents. 11.7% of respondents’ company had over 1,000 employees in Hong Kong. For the team size of the IT department, 74.7% had a team under 50 members. 44.7% respondents had “1-20” IT team members, whereas 30% had “21-50” members. There were also 13.9% of respondents who had over 100 members in the IT department.

As for the nature of work, the majority of respondents were IT professionals, representing 90.4%. On the other hand, 22.8% were of management nature, 16.1% were IT consultants, and around half of the respondents’ work was of technical nature. On the job position in IT, 27.5% of the respondents’ grading were senior managers or above, whereas 18.1% were individual contributors. For the number of subordinate staff, 45.9% of respondents had “1-10” subordinate staff, near around half of the respondents in sampling populations.

Table 4.1: Demographic of Data

	Respondents (%)	
Total Number	447 (100%)	
FSI Working Experience		
- Yes	241 (53.9%)	FSI and non-FSI experience.
- No	206 (46.1%)	
Number of ITO Experience		
- 0	124 (27.7%)	Around 72% of respondents had ITO experience.
- 1 - 5	196 (43.8%)	
- 6 - 10	82 (18.3%)	
- 11 - 20	29 (6.5%)	
- 21 or above	16 (3.6%)	
Current Working Sector		
- Accountancy, Banking or Finance	73 (16.3%)	
- Computing or IT	207 (46.3%)	
- Healthcare	32 (7.2%)	
- Marketing	41 (9.2%)	
- Property or Construction	19 (4.3%)	
- Retail	10 (2.2%)	
- Transport or Logistics	7 (1.6%)	
- Other	58 (13%)	
Total Number of Employees In Company In Hong Kong		
- 1 - 50	154 (34.5%)	The top 3 ranges represented 68%.
- 51 - 100	89 (19.9%)	
- 101 - 250	61 (13.6%)	
- 251 - 500	50 (11.2%)	
- 501 - 1,000	41 (9.2%)	
- 1,001 - 1,500	16 (3.6%)	
- 1,501 - 2,500	15 (3.4%)	
- 2,501 or above	21 (4.7%)	
Total Number of Employees In the IT Department In Hong Kong		
- 1 - 20	200 (44.7%)	74.7% of the IT department had under 50 members.
- 21 - 50	134 (30.0%)	
- 51 - 100	51 (11.4%)	
- 101 - 200	36 (8.1%)	
- 201 or above	26 (5.8%)	
Work Nature		
- IT Management	102 (22.8%)	90.4% being IT professionals.
- IT Consultant	72 (16.1%)	
- IT Operation Services	82 (18.3%)	
- IT Software Development	93 (20.8%)	
- IT Technical Services	55 (12.3%)	
- Non IT Professional	43 (9.6%)	
Job Position		
- Individual Contributor	81 (18.1%)	27.5% were senior manager or above.
- Supervisor	77 (17.2%)	
- Manager	98 (21.9%)	
- Senior Manager	60 (13.4%)	
- Vice President	39 (8.7%)	
- Management / C-Level	24 (5.4%)	
- Others	68 (15.2%)	
Number of Direct and Indirect Staff		
- 0	110 (24.6%)	
- 1 - 10	205 (45.9%)	
- 11 - 20	69 (15.4%)	
- 21 - 50	42 (9.4%)	
- 51 - 100	8 (1.8%)	
- 101 - 200	4 (0.9%)	
- 201 - 500	5 (1.1%)	
- 501 or above	4 (0.9%)	

Source: Compiled by Author

Table 4.2 listed the respondents' ranking on the reasons for considering ITO. The most important reason was "Cost Saving" at 38.9%, followed by "Improve Productivity and Efficiency" at 26%.

Table 4.2: Summary of Ranking of Reasons for Considering ITO

	Cost Saving	Improve Productivity and Efficiency	Transfer Business or IT Operations Risk	Transitioning to New Systems or New Technology	Other
Most Important Reason	38.9%	26.0%	17.4%	14.3%	3.4%
2nd Reason	23.0%	34.7%	19.5%	21.0%	1.8%
3rd Reason	17.4%	23.5%	34.7%	21.0%	3.4%
4th Reason	18.3%	12.1%	23.7%	36.9%	8.9%
Least Important Reason	2.2%	3.8%	4.7%	6.7%	82.6%

Source: Compiled by Author

To further provide a different insight, Table 4.3 listed the result of cross-tabulation of the most important reason and the respondents' job positions. From a senior position (senior manager to C-level) perspective, the most important reason was "Transitioning to New Systems or new technology" at 39.1%. However, "Transfer Business or IT operations Risk" was selected by 64.1% of respondents below senior position (manager to individual contributor). According to the result, the respondents who worked at an operational level considered ITO for transferring their risk, whereas the management level respondents had different considerations. The detail of the ranking result was shown in Appendix C.

Table 4.3: Cross-tabulation between ITO's Most Important Reason and Job Positions

The Most Important Reason For Considering IT Outsourcing					
Job Position	Cost Saving	Improve Productivity and Efficiency	Transfer Business or IT Operations Risk	Transitioning to New Systems or New Technology	Other
Individual Contributor	23.0%	19.8%	10.3%	12.5%	13.3%
Supervisor	15.5%	21.6%	19.2%	10.9%	20.0%
Manager	16.1%	22.4%	34.6%	21.9%	20.0%
Senior Manager	12.1%	11.2%	16.7%	18.8%	6.7%
Vice President	6.9%	9.5%	9.0%	10.9%	13.3%
Management / C-Level	5.7%	2.6%	3.8%	9.4%	13.3%
Others	20.7%	12.9%	6.4%	15.6%	13.3%

Source: Compiled by Author

64.1% - The operational level respondents considered risk transfer by ITO.

39.1% - Senior position respondents considered the transition of systems or technology as the most important reason.

4.3 Statistical Analysis

Statistical analysis uses quantitative data to investigate patterns, correlations, and trends (Festing and Altman, 2002). According to the discussion in the above section, parametric tests were used to test the data.

4.3.1 Independent Sample T-Test

The independent sample t-test determines whether two unconnected groups' averages significantly differ on the same dependent variable (Allen, 2017). The group means are statistically significant if the p-value is less than 0.05. Conversely, the result is insignificant if the p-value is larger than 0.05 (Loughin, 2004).

The independent sample t-test was used to understand whether IT outsourcing satisfaction differed based on FSI experience. "IT outsourcing satisfaction" was the dependent variable, and "FSI experience" was the independent variable, which the latter had two groups: "FSI" and "non-FSI". Figure 4.1 displayed the test result in tabular format. According to the result, both groups had a similar mean and standard deviation in descriptive statistics. The table "Independent Samples Test" in Figure 4.1 provided the full result. In this analysis, the significance (Sig.) value of Levene's Test was greater than 0.05. Therefore, the null hypothesis was not rejected. The data on row "Equal variances assumed" should thus be read. In the "Significance" column of the table, the p-value of one-sided and two-sided were both lower than 0.05. It represented that the group means were statistically significantly different. Hence, the respondents who had FSI experience (Mean 4.56) had higher IT outsourcing satisfaction (ITOS) levels than the respondents who had non-FSI experience (mean 4.29).

Figure 4.1: Result of Independent Sample T-Test between ITOS and Respondent Groups (FSI and non-FSI)

Group Statistics					
	FSI Experience	N	Mean	Std. Deviation	Std. Error Mean
Average of ITOS	Yes	241	4.5643	.84811	.05463
	No	206	4.2852	.84661	.05899

FSI experience: 4.56
Non-FSI experience: 4.29

Independent Samples Test									
Levene's Test for Equality of Variances					t-test for Equality of Means				
	F	Sig.	t	df	Significance One-Sided p	Two-Sided p	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference Lower Upper
Average of ITOS	.294	.588	3.471	445	<.001	<.001	.27912	.08041	.12109 .43715
			3.472	434.471	<.001	<.001	.27912	.08040	.12110 .43714

Sig > 0.05, "Equal variances assumed" row should be used for the result.
p < 0.05, statistically significantly different.

Source: Compiled by Author

In addition, it was interesting to examine whether the regulatory awareness was impacted by FSI experience, that is, whether the regulatory awareness showed a significant difference between the FSI and non-FSI groups. Figure 4.2 listed the independent t-test result between regulatory factors and respondent groups. In the column “significance” of the independent samples test table in Figure 4.2, the p-value of one-sided and two-sided was lower than 0.05. It represented that the group means are statistically significantly different. Thus, the participants who had FSI experienced higher ITOS, with a mean value of 4.55.

Figure 4.2: Result of Independent Sample T-Test between RP and Respondent Groups (FSI and non-FSI)

Group Statistics					
	FSI Experience	N	Mean	Std. Deviation	Std. Error Mean
Average of RP	Yes	241	4.5519	.82847	.05337
	No	206	4.2743	.88243	.06148

FSI experience: 4.55
Non-FSI experience: 4.27

Independent Samples Test									
Levene's Test for Equality of Variances					t-test for Equality of Means				
	F	Sig.	t	df	Significance One-Sided p	Two-Sided p	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference Lower Upper
Average of RP	.243	.622	3.427	445	<.001	<.001	.27760	.08101	.11838 .43681
			3.410	424.465	<.001	<.001	.27760	.08141	.11757 .43762

p < 0.05, statistically significantly different.

Source: Compiled by Author

The above independent t-test results concluded that FSI experience significantly influences regulatory policy awareness and IT outsourcing satisfaction. This result was used in formulating the recommendations.

4.3.2 One-way ANOVA Analysis

One-way ANOVA determines any statistically significant variations between the averages of three or more separate, unconnected groups (Kim, 2017). It was used in this study to identify a statistically significant difference in the number of ITO experience and ITOS. The analysis result was listed in Table 4.4 (the detailed result was shown in Appendix G). The highest mean was the group “11 – 20” at 5, followed by “21 or above” at 4.7656. The Sig. (p) value was less than 0.05, meaning that there was a statistically significant difference between the mean of the different groups and the number of ITO experience variables. In the Multiple Comparisons table, further information was provided to understand which group differed. There was a statistically significant difference in ITOS between groups of number of ITO experience that Sig. (p) value was less than 0.05 in Multiple Comparisons. The pair of groups were marked in red color fonts on the table. It concluded that the ITOS was statistically significantly higher for respondents in the group “1-5”, “6-10”, and “11-20”, compared to “0”, as well as group “11-20” compared to “1-5”. The rest of the pairs were not statistically significant.

Table 4.4: Result of One-Way ANOVA between No. of ITO Experience and ITOS

Descriptives		
No. of ITO Experience	Mean	Std. Deviation
0	4.1633	0.88405
1 - 5	4.4401	0.81919
6 - 10	4.5732	0.87090
11 - 20	5.0000	0.64780
21 or above	4.7656	0.64852

ANOVA		
	F	Sig.
Between Groups	7.835	<.001

Multiple Comparisons		
No. of ITO Experience	No. of ITO Experience	Sig.
0	1 - 5	0.032
	6 - 10	0.005
	11 - 20	<.001
	21 or above	0.052
1 - 5	0	0.032
	6 - 10	0.742
	11 - 20	0.007
	21 or above	0.561
6 - 10	0	0.005
	1 - 5	0.742
	11 - 20	0.125
	21 or above	0.916
11 - 20	0	<.001
	1 - 5	0.007
	6 - 10	0.125
	21 or above	0.895
21 or above	0	0.052
	1 - 5	0.561
	6 - 10	0.916
	11 - 20	0.895

Statistically significantly different between the groups were presented in red color fonts.

Source: Compiled by Author

4.3.3 Reliability Analysis

Reliability analysis refers to how consistent a technique is in assessing something. The measurement is regarded as trustworthy if the same result can be consistently obtained using the same techniques under the same conditions (Taan and Hajjar, 2018). The internal consistency of the questions according to their constructs is tested by reliability analysis. The most used dependability metric is Cronbach's Alpha. It serves as a gauge for the accuracy of the measurement tools and range from 0 to 1. Cronbach's Alpha, a measure of acceptable internal consistency, should be higher than 0.7. (Tavakol and Dennick, 2011).

After the data were gathered, all the survey questions (Appendix B) including the independent and dependent variables were subjected to a reliability test for validation. Figure 4.5 provided an overview of the reliability test, and Appendix F provided more information about the reliability study.

Table 4.5: Summary of Reliability Test

Variables	Label	No. of Questions	Overall Cronbach's Alpha
Perceived Information Security Risk Factors	ISR	4	0.825
Quality of Service Provider	QSP	4	0.823
Contract Management	CM	4	0.804
Internal Contract Experience	ICE	4	0.824
Communication	COM	4	0.801
Regulatory Policy	RP	4	0.809
IT Outsourcing Satisfaction	ITOS	4	0.839

Source: Compiled by Author

4.3.4 Correlation and Regression Analysis

The Pearson Correlation Coefficient determines the strength and direction of the relationship between two variables that are at least assessed on an interval scale (Komaroff, 2020). Pearson correlation can be used to determine whether the independent and dependent factors have a significant relationship. A line of greatest fit is attempted via the data of two variables. The letter r indicates the connection between the two variables; a value between -1 and +1 is used to quantify it (Akoglu, 2018). There is a strong positive association if the r is close to 1.

Conversely, a strong negative association is indicated if the r value is near -1 (Akoglu, 2018). Besides correlation, the statistical concept of regression describes models that predict the value between variables (Bangdiwala, 2018). For example, it can predict the dependent variable's value based on the independent variable's specific value.

The correlation and linear regression between the independent and dependent variables in this study were contrasted separately to determine whether there was a significant relationship between them. The data collected under the same variable were averaged, and the average value used to determine the relationship between two variables. In addition, the relationship was plotted in a graphical representation. The detail of the analysis result was shown in Appendix H.

4.3.4.1 Perceived Information Security Risk and IT outsourcing satisfaction

The Perceived Information Security Risk (ISR) is IT operational, information security, and financial risks in ITO. The result of the correlation test between ISR and IT outsourcing satisfaction (ITOS) was listed in Table 4.6. The result's significance (Sig.) value was less than 0.05, indicating a relationship between ISR and ITOS. After the relationship was proven, the Pearson correlation coefficient (r) could be assessed to interpret the strength of the relationship. The r value was 0.715, close to 1, and indicated a strong positive relationship since $r > 0.7$ (Akoglu, 2018).

Table 4.6: Pearson Correlation for ISR and ITSO

		Average of ISR	Average of ITOS
Average of ISR	Pearson Correlation	1	.715**
	Sig. (1-tailed)		<.001
	N	447	447
Average of ITOS	Pearson Correlation	.715**	1
	Sig. (1-tailed)	<.001	
	N	447	447
**. Correlation is significant at the 0.01 level (1-tailed).			

Source: Compiled by Author

The graph of simple linear regression between ISR and ITOS was shown in Figure 4.3. A straight line that relates the independent variable X (ISR) and dependent variable Y (ITOS) was based on the mathematical formula for a straight line as below.

The formula for simple linear regression:

$$Y = B_0 + B_1X_1$$

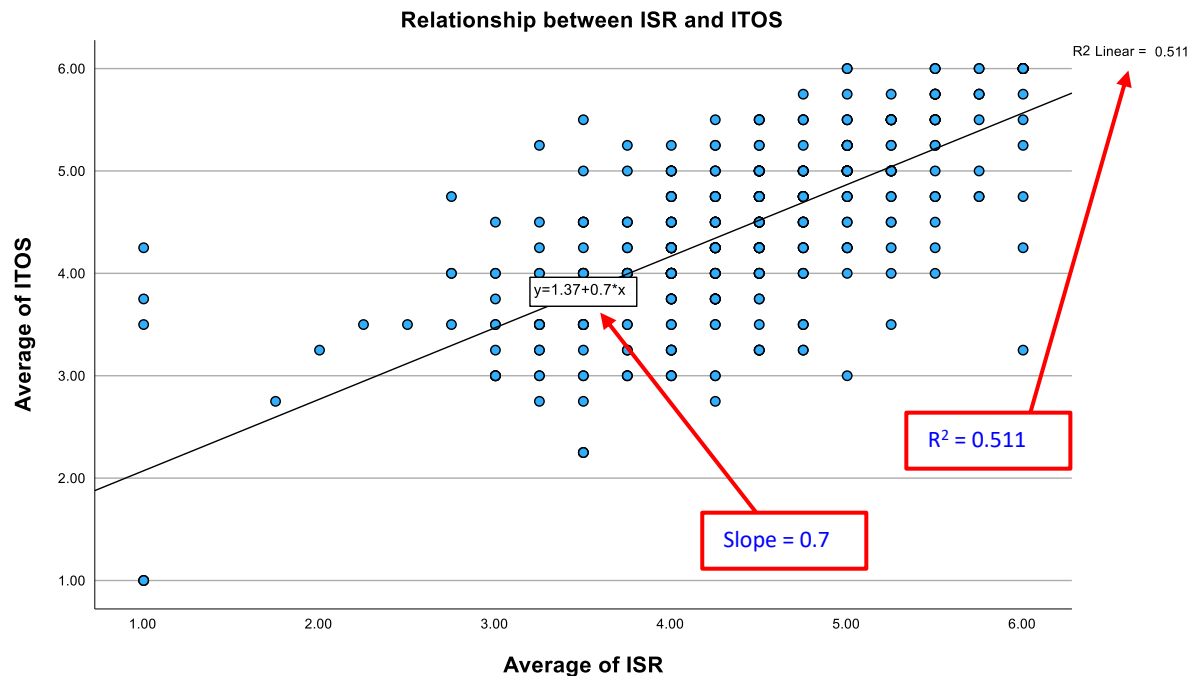
where B_0 is called the intercept and B_1 is called the slope.

Source: Bangdiwala, S. I. (2018)

The graph showed a positive relationship with R^2 of 0.511, implying that this model's independent variable (ISR) could explain 51.1% of the total variation in the dependent variable

(ITOS). The 0.7 slope of the equation for the straight line meant the ITOS was increased by 0.7 for a 1-unit change in the ISR.

Figure 4.3: Graph of the Linear Regression between ISR and ITSO



Source: Compiled by Author

4.3.4.2 Quality of Service Provider and IT outsourcing satisfaction

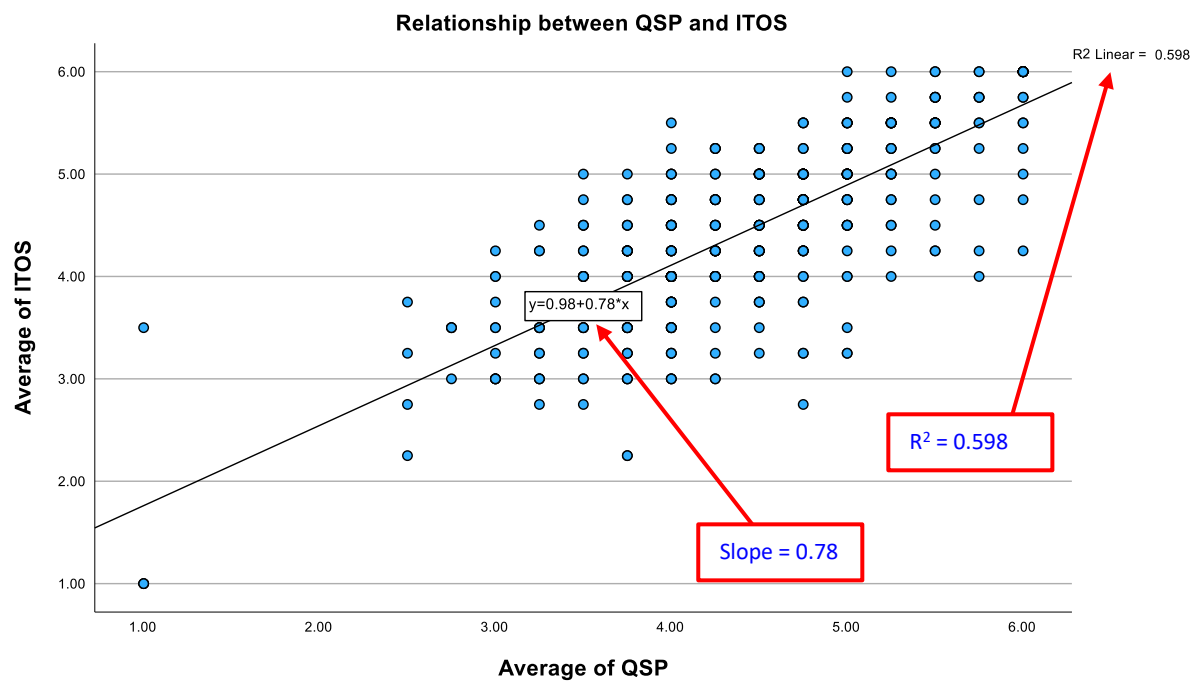
Table 4.7 showed the significance (Sig.) value was less than 0.05 in the correlation test between Quality of Service Provider (QSP) and ITOS. It indicated a positive correlation between QSP and ITOS, and 0.773 of the r value showed a strong relationship. Figure 4.4 showed a positive relationship with R^2 of 0.598, implying that the QSP could explain 59.8% of the total variation in ITOS in this model. The 0.78 slope of the equation for the straight line meant that the ITOS is increased by 0.78 for a 1-unit change in the QSP.

Table 4.7: Pearson Correlation for QSP and ITSO

		Average of QSP	Average of ITOS
Average of QSP	Pearson Correlation	1	.773**
	Sig. (1-tailed)		<.001
	N	447	447
Average of ITOS	Pearson Correlation	.773**	1
	Sig. (1-tailed)	<.001	
	N	447	447
**. Correlation is significant at the 0.01 level (1-tailed).			

Source: Compiled by Author

Figure 4.4: Graph of the Linear Regression between QSP and ITSO



Source: Compiled by Author

4.3.4.3 Contract Management and IT outsourcing satisfaction

For the correlation test result between Contract Management (CM) and ITOS, a significance (Sig.) < 0.05 and $r = 0.747$ was listed in Table 4.8. It demonstrated that CM and ITOS had a strong positive association.

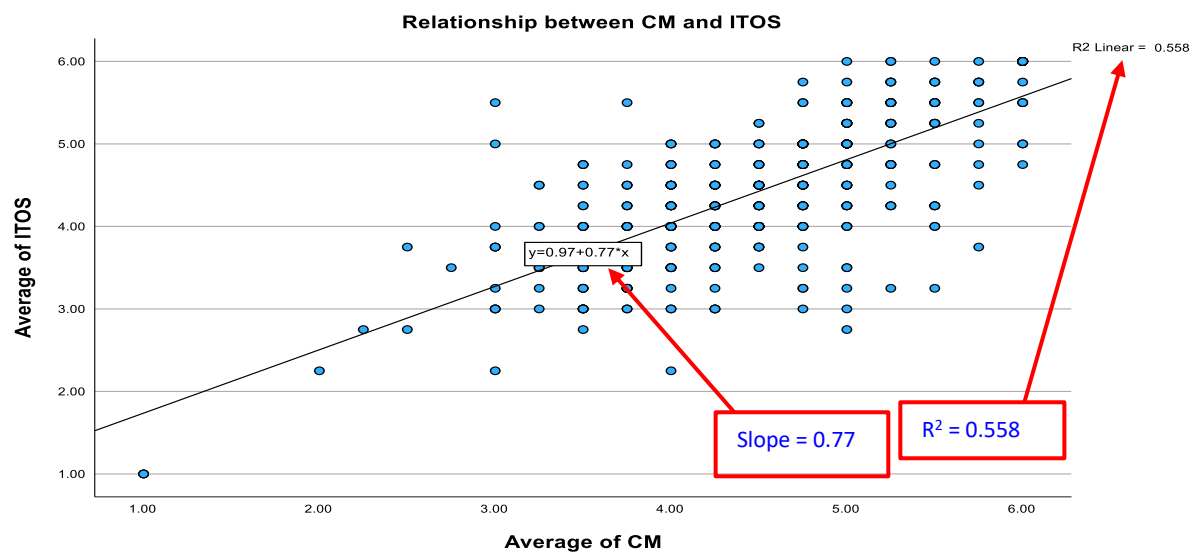
Table 4.8: Pearson Correlation for CM and ITSO

		Average of CM	Average of ITOS
Average of CM	Pearson Correlation	1	.747**
	Sig. (1-tailed)		<.001
	N	447	447
Average of ITOS	Pearson Correlation	.747**	1
	Sig. (1-tailed)	<.001	
	N	447	447
**. Correlation is significant at the 0.01 level (1-tailed).			

Source: Compiled by Author

Figure 4.5 showed a positive relationship with R^2 of 0.558, implying that this model's CM could explain 55.8% of the total variation in ITOS. The 0.77 slope of the equation for the straight line meant that the ITOS is increased by 0.77 for a 1-unit change in the CM.

Figure 4.5: Graph of the Linear Regression between CM and ITSO



Source: Compiled by Author

4.3.4.4 Internal Contract Experience and IT outsourcing satisfaction

Table 4.9 showed the significance (Sig.) value that was less than 0.05 in the correlation test between Internal Contract Experience (ICE) and ITOS. It indicated a positive correlation between ICE and ITOS, and the 0.785 r value was close to 1, showing a strong relationship. In Figure 4.6, a positive relationship with R^2 of 0.616 implied that this model's ICE could explain

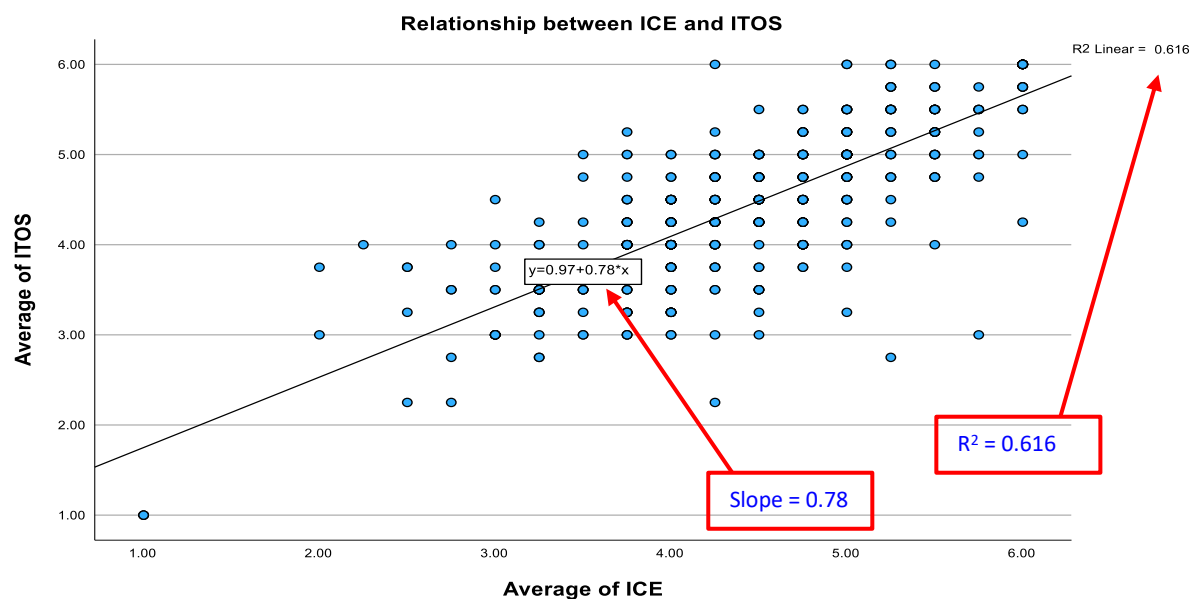
61.6% of the total variation in ITOS. The 0.78 slope of the equation for the straight line meant the ITOS increases by 0.78 for a 1-unit change in the ICE.

Table 4.9: Pearson Correlation for ICE and ITSO

		Average of ICE	Average of ITOS
Average of ICE	Pearson Correlation	1	.785**
	Sig. (1-tailed)		<.001
	N	447	447
Average of ITOS	Pearson Correlation	.785**	1
	Sig. (1-tailed)	<.001	
	N	447	447
**. Correlation is significant at the 0.01 level (1-tailed).			

Source: Compiled by Author

Figure 4.6: Graph of the Linear Regression between ICE and ITSO



Source: Compiled by Author

4.3.4.5 Communication and IT outsourcing satisfaction

Table 4.10 showed the significance (Sig.) value that was less than 0.05 in the correlation test between Communication (COM) and ITOS. It indicated a positive correlation between COM and ITOS, and the 0.733 r value was close to 1 showing a strong relationship. In Figure 4.7, a positive relationship with R² of 0.538 implied that this model's COM could explain 53.8% of

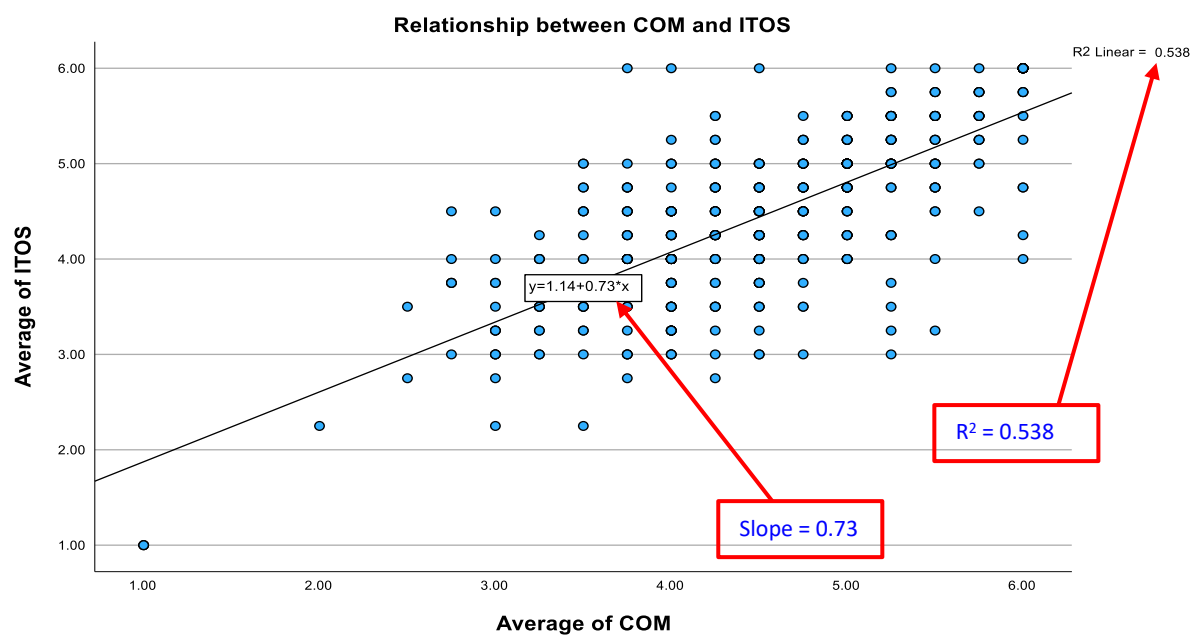
the total variation in ITOS. The 0.73 slope of the equation for the straight line meant the ITOS is increased by 0.73 for a 1-unit change in the COM.

Table 4.10: Pearson Correlation for COM and ITSO

		Average of COM	Average of ITOS
Average of COM	Pearson Correlation	1	.733**
	Sig. (1-tailed)		<.001
	N	447	447
Average of ITOS	Pearson Correlation	.733**	1
	Sig. (1-tailed)	<.001	
	N	447	447
**. Correlation is significant at the 0.01 level (1-tailed).			

Source: Compiled by Author

Figure 4.7: Graph of the Linear Regression between COM and ITSO



Source: Compiled by Author

4.3.4.6 Regulatory Policy and IT outsourcing satisfaction

Regulatory Policy (RP) is government regulation in ITO. For the correlation test result between RP and ITOS, significance (Sig.) < 0.05 and $r = 0.751$ as shown in Table 4.11. It demonstrated that RP and ITOS had a strong positive association. The graph in Figure 4.8 showed a positive relationship with R^2 of 0.564, which implied that this model's RP could explain 56.4% of the

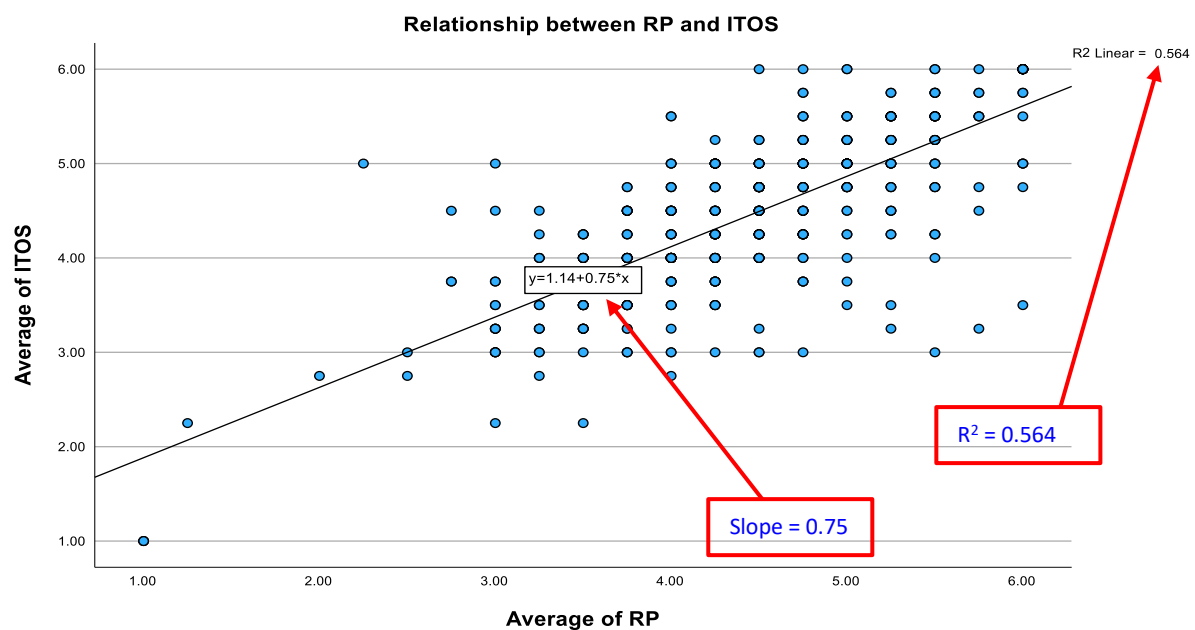
total variation in the ITOS. The 0.75 slope of the equation for the straight line meant that the ITOS is increased by 0.75 for a 1-unit change in the RP.

Table 4.11: Pearson Correlation for RP and ITSO

		Average of RP	Average of ITOS
Average of RP	Pearson Correlation	1	.751**
	Sig. (1-tailed)		<.001
	N	447	447
Average of ITOS	Pearson Correlation	.751**	1
	Sig. (1-tailed)	<.001	
	N	447	447
**. Correlation is significant at the 0.01 level (1-tailed).			

Source: Compiled by Author

Figure 4.8: Graph of the Linear Regression between RP and ITSO



Source: Compiled by Author

4.3.5 Multiple Regression Analysis

Multiple regression analysis can determine the relationship between one dependent variable and two or more independent variables (Moore et al., 2006). It is similar to simple linear regression as it predicts the value of dependent variables but uses more than one dependent variable to formulate the equation.

The formula for multiple regression:

$$Y = B_0 + B_1X_1 + B_2X_2 + \dots + B_nX_n$$

where $X_1, X_2, \dots, X_n$ are the n independent variables (Moore et al., 2006).

In simple linear regression, the six factors were determined to have a positive relationship with ITOS individually. The multiple linear regression test must be carried out to consider the multiple factors involved, as the research model in this study should be viewed as a whole. The independent variable (ITOS) was predicted as the value based on six independent variables (ISR, QSP, CM, ICE, COM, and RP). Finally, two factors (ISR and CM) were removed due to $\text{Sig.} > 0.05$ during the analysis process, and only QSP, ICE, COM, and RP factors were significant independent variables. Figure 4.9 displayed the results of multiple linear regression, and Appendix I provided the detailed analytic results.

In the model summary table in Figure 4.9, the 0.854 R-value (multiple correlation coefficient) was a very strong correlation. The R square (R^2) was 0.730, which implied that 73% of data variation could be explained by this model, which was a very large amount. The group of independent variables reliably predicted the ITOS because the Sig. (p) value in the ANOVA table was less than 0.05. It meant that the variables were generally numerically substantially predicted by the regression model. The Sig. (p) values of the four independent variables were less than 0.05 in the Coefficients table. The QSP, ICE, COM, and RP contributed statistically significantly to the model. Column “B” of the Unstandardized Coefficients were the values of increment in ITOS for a 1-unit change in the corresponding independent variables. After the multiple regression test was conducted, the final formula was shown below.

$$Y = 0.224 + 0.337*QSP + 0.332*ICE + 0.089*COM + 0.193*RP$$

Figure 4.9: Multiple Linear Regression Test Result

Model Summary ^b		
Model	R	R Square
1	0.854 ^a	0.730
a. Predictors: (Constant), Average of ICE, Average of QSP, Average of RP, Average of COM		
b. Dependent Variable: Average of ITOS		

ANOVA ^a		
	F	Sig.
Regression	298.248	<.001 ^b
a. Dependent Variable: Average of ITOS		
b. Predictors: (Constant), Average of ICE, Average of QSP, Average of RP, Average of COM		

Coefficients ^a		
Model	Unstandardized Coefficients (B)	Sig.
(Constant)	0.224	0.073
Average of QSP	0.337	<.001
Average of RP	0.193	<.001
Average of COM	0.089	0.047
Average of ICE	0.332	<.001
a. Dependent Variable: Average of ITOS		

Source: Compiled by Author

4.3.6 Summary of Statistical Analysis

Several relationships had been determined in the above analyses. Table 4.12 summarized the statistical test results for further discussion. The outcome demonstrated that each independent variable in this study was an important factor to ITO in FSI. However, only QSP, ICE, COM, and RP were critical success factors in this study.

Table 4.12: Summary of Statistical Analysis Results

Statistically Significant Difference		
Statistically Significant Difference	Significance level	Support / Reject
IT outsourcing satisfaction was higher based on respondents who had FSI experience.	$p < 0.001$	Supported
FSI experience significantly influenced regulatory policy and IT outsourcing satisfaction.	$p < 0.001$	Supported
IT outsourcing satisfaction was higher based on number of ITO experience:		
"1 - 5" compared to "0"	$p = 0.032$	Supported
"6 - 10" compared to "0"	$p = 0.005$	Supported
"11 - 20" compared to "0"	$p < 0.001$	Supported
"11 - 20" compared to "1 - 5"	$p = 0.007$	Supported

Simple Linear Regression Test		
Hypothesis	Significance level	Support / Reject
H1. Perceived information security risk significantly affects ITO satisfaction in FSI.	$p < 0.001$	Supported
H2. The quality of service provider significantly affects ITO satisfaction in FSI.	$p < 0.001$	Supported
H3. The quality of contract management significantly affects ITO satisfaction in FSI.	$p < 0.001$	Supported
H4. The contract administration experience significantly affects ITO satisfaction in FSI.	$p < 0.001$	Supported
H5. The quality of communication significantly affects ITO satisfaction in FSI.	$p < 0.001$	Supported
H6. Strengthening regulatory outsourcing policy significantly affects ITO satisfaction in FSI.	$p < 0.001$	Supported

Multiple Regression Test		
Research Model	Significance level	Support / Reject
Perceived Information Security Risk (ISR)	$p = 0.180$	Rejected
Quality of Service Provider (QSP)	$p < 0.001$	Supported
Contract Management (CM)	$p = 0.525$	Rejected
Internal Contract Experience (ICE)	$p < 0.001$	Supported
Communication (COM)	$p = 0.047$	Supported
Regulatory Policy (RP)	$p < 0.001$	Supported

Source: Compiled by Author

5. Discussion

The analyses showed that part of the independent variables significantly affected ITO satisfaction in this research model. The satisfaction was affected by the Quality of Service Provider (QSP), Internal Contract Experience (ICE), Communication (COM), and Regulatory Policy (RP). The Perceived Information Security Risk (ISR) and Contract Management (CM) variables had been rejected in statistical tests, meaning an insignificant relationship with IT outsourcing satisfaction (ITOS). The results of each variable were discussed in the following.

5.1 Hypothesis 1 (H1): Perceived information security risk significantly affects ITO satisfaction in FSI - Rejected

This factor was significant in IT outsourcing satisfaction in the simple linear regression test but not in the multiple regression test. The simple linear regression test result reflected that the participants agreed that this factor was significant for IT outsourcing satisfaction. In the literature review, Al Hadwer, A. et al. (2021) claimed that security factors significantly influence organizations to outsource IT services. Hanafizadeh, P. and Zare Ravasan, A. (2018a) emphasized that security and privacy risks are one of the most significant ITO risks in FSI. However, researchers have not put the information security risk factors into their research model to prove the relationship.

According to the importance of information security risk and the result of a simple linear regression test insights, there was potentially significant finding on the population demographic. Therefore, a further examination was done by splitting the demographic groups of the number of IT outsourcing experience (refer to Table 4.1). A significant relationship was found with specific demographic groups that had ITO experiences more than 10 times (Appendix I). 10% of the respondents had more than ten ITO experiences. These respondents probably had higher information security risk awareness after accumulating experiences in ITO projects. However, since approximately 90% of respondents had ITO experiences less than 10 times, the information security risk factors in ITO could be explained with an insignificant relationship in this study.

5.2 Hypothesis 2 (H2): The quality of service provider significantly affects ITO satisfaction in FSI - Supported

The service provider's quality is critical in ITO. According to the analysis results for H2, this factor significantly affected the ITO satisfaction from the respondents' perspective. 84.2% respondents selected "Improve Productivity and Efficiency" and 71.6% respondents selected "Transfer Business or IT operations Risk" as their top 3 most important reason (Refer to Table 4.2). It reflected that the respondents believed the quality was necessary for ITO and affected the result of ITO. In Table 4.3, both "Improve Productivity and Efficiency" and "Transfer Business or IT operations Risk" were respectively ranked the most important by 60% of respondents with job positions below senior manager. These job positions had been impacted by ITO directly in terms of performance and responsibility, if the service provider's quality was not good enough or could not meet the expectation.

This factor's result was consistent with other researches (Lee, 2001; Lane and van der Vyver, 2005; Wibisono et al., 2019). Lee, J.-N. (2001) found significant results in the impact of knowledge sharing from service provider on IT outsourcing satisfaction. The outsourcing partnership also highlighted the significance of organizational capabilities in information exchange. The capacity of service buyer to acquire, use, and integrate knowledge is crucial. Wibisono, Y. Y. et al. (2019) had a similar result in influence of this factor on satisfaction with ITO projects. 46% of IT technical participants usually provided clear and complete task requirements and expectations compared to non-IT technical participants (Wibisono et al., 2019). This study involved 51.4% of IT technical participants (IT operation services, IT software developments, and IT technical services). A similar percentage of respondents compared to Wibisono's study found the same significant result in this study. Accordingly, a correlation between service buyer's IT technical knowledge and service provider quality in ITO might exist. The QSP was found in this study to not only include knowledge sharing but also the capabilities of service providers, which the latter was not included in the other researches.

The other data collected in QSP for importance of the capabilities of service providers was that over 73% (Appendix D) of the respondents responded with "Agree" or above. With this high percentage of positive responses, the positive relationship was identified in H2. Moreover, the service provider's capabilities impacted the impression from the service buyer and affected the service provider's creditability. Lane, M. and van der Vyver, G. (2005) identified that credibility affected the partnership in ITO in their research. It was also mentioned by focus

group member E in the discussion that the service provider's quality was based on their performance and project result. Therefore, the credibility accumulated and affected the service buyer's confidence in the ITO service providers. Accordingly, service provider quality was an essential factor in deciding the continuation of outsourced IT.

5.3 Hypothesis 3 (H3): The quality of contract management significantly affects ITO satisfaction in FSI - Rejected

Similar results were found for Contract management compared to the Perceived Information Security Risk factor. Contract management passed the simple linear regression test but not the multiple regression test. This result was inconsistent with the other researches (Hodosi, Kaye and Rusu, 2015; Erdoğan, 2020). However, Hodosi, G., Kaye, R. and Rusu, L. (2015) found contract management was a critical success factor in ITO based on the opinions of six senior management from different companies. This study collected 447 samples, which reflected a more precise result. Nevertheless, the result was consistent with another previous study conducted by Qi, C. and Chau, P. Y. K. (2015). Qi, C. and Chau, P. Y. K. (2015) had 17.3% participants being IT executives. Such demographic figure was similar to this study, which had 15.1% respondents being vice presidents or above. Other non-management respondent groups dominated the sampled population, who likely focused on work results but had insufficient awareness on the contract management quality in ITO.

This study identified significant finding in multiple regression tests when demographic groups were split using the “Total number of employees in company in Hong Kong” (refer to table 4.1). IT outsourcing satisfaction was significant related to CM if the total number of employees exceeded 500. Regarding company size, companies with more than 500 employees were medium or large scaled. For these company sizes, the standard outsourcing contracts have been well-defined in advance. Moreover, procurement and legal teams formally governed and reviewed the procurement processes, where comprehensive governing during the contract period could reduce problems and risks. As a result, the satisfaction rate probably increased in IT outsourcing in such a demographic group. Hence, a significant relationship was found when analyzing the demographic group of the company with more than 500 employees. Nonetheless, the majority was that around 79% of respondents were with total number of employees lower than 500, and the final result of this relationship is overall insignificant.

5.4 Hypothesis 4 (H4): The contract administration experience significantly affects ITO satisfaction in FSI - Supported

Internal Contract Experience was another factor significantly related to IT outsourcing satisfaction in the research model (H4). This factor was related to the capabilities of respondents to prepare the contract details for ITO. The result aligned with the finding related to contract experience from Yadav, V. and Metri, B. A. (2010), which identified that high-quality contract formulation can mitigate risks associated with outsourcing, including capabilities to identify the roles and responsibilities, coverage, SLA, and awareness of the risks.

The one-way ANOVA test in section 4.3.2 also found a significant difference on the number of ITO experiences and the effect on ITO satisfaction. The groups “1 – 5”, “6 – 10”, and “11 – 20” had a significant difference compared to “0”, with these 3 groups representing 68.6% of the respondents. Moreover, the ANOVA mean for “11 – 20” ITO experiences (5.0) was higher than for “0” (4.16), for “1 – 5” (4.44), and for “6 – 10” (4.57), with Significant differences. This meant that the group with “11 – 20” ITO experiences had a higher rate of satisfaction in ITO. As a result, Internal Contract Experience had been significantly associated with ITO satisfaction. On the other hand, there was an interesting result for the “21 or above” group compared to the other groups, where for the former group with more ITO experiences did not produce a significant difference. Generally, more ITO experiences should have an increase in ITO satisfaction rate. This was probably due to two reasons: First, the ITO experience level of these respondents might had been mature already, so “21 or above” produced no further significant increase in ITO satisfaction rate, compared to the other groups; alternatively, the outsourcing scale for these respondents might be large and more complicated, so the ITO objectives were not as easily achieved. The effect of outsourcing scale can be identified in future research.

5.5 Hypothesis 5 (H5): The quality of communication significantly affects ITO satisfaction in FSI - Supported

The communication factor was the messages exchanged between the stakeholders in the ITO process. It was a significant factor affecting IT outsourcing satisfaction (H5). This result aligned with researches (Kumar and Palvia, 2002; Alexandrova, 2012; Ishizaka and Blakiston, 2012; Cha and Kim, 2018). Ishizaka, A. and Blakiston, R. (2012) identified this factor and emphasized that proper communication was needed to ensure the outsourcing project success.

The right person with the proper authority should be involved in the communication loop. The result aligned with the study conducted by Alexandrova, M. (2012). Both studies had a similar respondent demographic regarding their companies' total number of employees - 34% with over 250 employees in the Alexandrova, M. (2012) study and 32% in this study. The small to medium sized companies probably worked closely with each other and in communication with service providers.

On the other hand, the employees of larger companies could be separated into several small teams, and communication with service providers might not be essential for all. Moreover, larger companies followed group standards or communicated with service providers centrally. Still, since 68% of respondents from small to medium sized company were the majority, a positive result was found for this significant relationship.

The respondents were asked about their preference on the service provider's working region. 83.6% (Appendix D, COM1) of respondents preferred service provider working in the same region with the same time zone. This result reflected that respondents wanted to reduce the communication barrier in IT outsourcing. For example, under the same time zone the respondents could quickly contact the service provider for any urgent issue.

Additionally, language barrier was also a problem in ITO projects. 83.3% (Appendix D, COM2) of respondents preferred service provider with the same first language. Service provider and service buyer could not communicate effectively with a language barrier, which would cause misunderstandings during the service period, potentially results in failure at the end. Both of these responses reflected that communication was a crucial element in ITO with a significant relationship.

5.6 Hypothesis 6 (H6): Strengthening regulatory outsourcing policy significantly affects ITO satisfaction in FSI - Supported

The regulatory policy was the set of rules or policies from government regulation. The result had shown that this factor is significantly related to IT outsourcing satisfaction in the research model (H6). Hong Kong Monetary Authority (HKMA) had a comprehensive policy on FSI because the FSI held massive amount of customer assets, where severe financial loss or service interruption would affect a large group of people in Hong Kong and tarnish Hong Kong's

reputation as the international financial center. These HKMA guidelines must be complied with when FSI companies consider outsourcing services for their business operations.

In the independent T-test (section 4.3.1), two unrelated groups (FSI and non-FSI respondents) were compared to determine the existence of significant difference in regulatory policy factors. The non-FSI respondents usually did not need to consider the regulatory policy requirement in their industry. On the contrary, the regulatory policy was an essential element for FSI respondents to consider during business operation. Hence, FSI respondents' regulatory policy awareness was higher than non-FSI respondents. This regulatory policy factor was also reflected in the mean value, which a 4.55 mean for FSI respondents was higher than the 4.27 mean for non-FSI respondents.

5.7 Summary of Discussion

All independent variables of this study were discussed above, and the critical factors affecting the satisfaction of IT outsourcing in FSI were determined by interpreting the different test results. Now, the research question in section 1 can be answered.

RQ1: What critical success factors impact satisfaction of Hong Kong FSI ITO?

FSI ITO satisfaction was based on the "Quality of Service Provider", "Internal Contract Experience", "Communication", and "Regulatory Policy" factors.

6. Recommendations

According to the analyses in section 4, a final formula was determined as outcome of this research model. The unstandardized coefficient (B) values reflected the incremental ITOS for a 1-unit change in the corresponding independent variables. The B values of QSP, ICE, RP, and COM factors were 0.337, 0.332, 0.193, and 0.089, respectively. Thus, the IT outsourcing satisfaction rate will significantly increase if QSP and ICE can be improved effectively. The recommendations are proposed below based on the above result of each factor unstandardized coefficients (B) value.

1. A Build-up of Vendor Evaluation Framework

The service buyers may assess certain criteria to identify which service providers can most effectively assist in achieving the business objectives, since the service providers will manage the outsourced IT activities for the service buyers. A thorough vendor assessment should be created to assess possible service providers in an orderly manner, and assessment should cover their appropriateness plus any hazard they can bring to the service buyers. The evaluation criteria should include competency, reputation and position in the industry, performance history, professionalism, attitude, risk factors, price, and geographical location (Taherdoost and Brard, 2019). This is a framework to assist service buyers in objectively selecting their service providers. The vendor evaluation mitigates the uncertainty and risk associated with service provider performance (Talluri, Narasimhan and Nair, 2006). The service providers' capabilities can be determined directly or indirectly in the evaluation. For example, as part of the evaluation service buyers can directly determine the service providers' competency and attitude through face-to-face interviews, as well as indirectly assess their reputation and position in the industry.

Moreover, the information in the evaluation and the final evaluation result can be used as references to formulate the corresponding clauses, terms, and conditions of the IT outsourcing contracts. This ensures that the evaluated aspects will be realized as part of the contract, safeguarding the expected service provider's performance during the contract period. The evaluation also addresses the due diligence regulatory requirements on third-party risk management from the Hong Kong FSI regulators. Hence, the vendor evaluation improves the four factors that are "Quality of Service Provider", "Internal Contract Experience", "Communication", and "Regulatory Policy".

2. Enhancement for Knowledge Management

IT outsourcing experience can be accumulated from different outsourcing projects, regardless of if they were successful. Issues or aspects that were not catered to in previous outsourcing projects can be experience for the next. These valuable experiences can help service buyers to improve their next project, and can be transformed into knowledge that should be formally recorded and filed for successor training or as used as reference by other staff, to enhance knowledge management and facilitate knowledge sharing and exchange among the staff (Rahimli, 2012). These assets will be kept in the company even after the staff left the company. For example, the non-FSI respondents needed higher awareness of regulatory policy, as determined in the previous statistical test. In this case when new staff without FSI experience gets involved in FSI ITO project, the knowledge pool can be referred to. This new staff can take note of the knowledge on what needs attention relating to IT outsourcing regulations, as well as using this knowledge pool as reference for proper contract preparation. Hence, this recommendation not only improves the “Internal Contract Experience” factor, but also the “Regulatory Policy” factor.

3. Enhance Performance Monitoring

If vendor evaluation is used as a preventive action against IT outsourcing failure, performance monitoring is a detective action to reduce the failure rate. While service providers may have passed the vendor evaluation and was awarded the outsourcing contract, the outsourced project may still fail due to lack of sustainability in service performance – a continuous delivery of high-quality services over time (Plugge, Bouwman and Molina-Castillo, 2013). Therefore, performance monitoring is necessary for measuring the performance of service providers regularly. It will also positively affect the service quality in outsourcing (Mat et al., 2011). If the performance over time trended to breach a pre-defined SLA alert threshold, the service buyers can be made aware of the performance issue. Service buyers can then discuss with the service providers for remediation actions. Key areas should be monitored during the service period, such as response and reporting time, problem-solving lead-time, staff turnover, and on time delivery rate. Performance review sessions can also offer opportunities for both parties to share information and solve the issues in daily operations. This recommendation improves the “Quality of Service Provider” and “Communication” factors.

7. Limitation & Future Research

This research methodology had some limitations that might have affected the results.

1. The snowball sampling method might have introduced biased information due to the characteristics of this sampling method. For instance, respondents in the snowball structure might be current or former coworkers. The respondents most likely had similar ITO experiences or results. Thus, the representation of these samples might be biased toward a particular population group and could not reflect the whole demographic population of the industry. The stratified sampling would be a more representable method, dividing FSI companies into subgroups, and selecting a sample from each subgroup.

In future research, a more extensive research scale would be required to understand the whole population, which would be more appropriate for the industry to understand the need and construct any policy.

2. In the multiple regression test, the factors interacted with each other and had different results from simple linear regression. The interacting factors probably could not be determined as significant in this research model because of insufficient samples of IT respondents with FSI experience. The results would be more accurate with more samples for critical success factors in IT outsourcing in FSI.

In future research, a large-scale study is needed to collect more samples of IT respondents with FSI experience, to determine the critical success factors in the model.

3. The critical success factors had been identified for future research, but the reasons for ITO failure were not identified in this study. It would be exciting to research the relationship between critical success factors and the reasons for failure in ITO.

The future research will focus on the service buyers and whether they are aware of the critical success factors. The research can investigate if the service buyers are unaware of the failure causes, or if they were aware but failed to take remediation action in the ITO. It can be explored to improve the satisfaction rate in ITO.

8. Conclusion

The critical success factors for IT outsourcing relationships had been determined based on the interpretation of relevant theories and were empirically analyzed. This study had addressed the question on what critical success factors impact Hong Kong FSI ITO. A well-established theoretical framework and the result of statistical analysis were used to support the findings. The IT outsourcing satisfaction was based on the “Quality of Service Provider”, “Internal Contract Experience”, “Communication”, and “Regulatory Policy” factors.

Three recommendations have been suggested based on the findings. First, build up a vendor evaluation framework for screening qualified service provider vendors. Outcome of previous jobs affected the creditability of service providers. Second, internal contract experience was important for formulating a comprehensive outsourcing contract, thus knowledge management is necessary for building a pool to share experiences within a company. Finally, performance monitoring should be established to supervise the service provider’s performance and help prepare for issue remediation actions in advance.

This research had three limitations that should be addressed in future research. Large-scale research in FSI should be conducted to collect more samples of IT participants with FSI experience. Moreover, an examination should be done on why IT outsourcing fails, and investigate how critical success factors in this study can be used to address the problems and maximize success.

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Appendix A – Focus Group Questions

1. Why do you choose to outsource? Any benefits are other than cost reduction.
 - a. In what ways do you believe outsourcing is positive for the FSI?
 - b. In what ways do you believe outsourcing is negative for the FSI?
2. Have you experienced the hidden cost of the outsourcing project after handing it over to the vendor?
3. From your perspective, what are the critical success factors for IT Outsourcing in Financial Service Industry (FSI) in Hong Kong?
4. Why do you consider the factors in question 1 critical?
5. If the top 5 factors need to be ranked, which 5 factors will you be chosen with the ranking?
6. How do you evaluate the outsourcing was a successful result?
7. Is increasing regulation in the FSI having an impact on outsourcing? How does it impact outsourcing?
8. What will information security items be considered in IT outsourcing?
9. What is a good quality of a partner relationship?
10. Does technical and environmental impact IT outsourcing? How does it impact it?

Appendix B – Survey Questions

Survey Questions of Independent and Dependent Variables	Reference
Perceived Information Security Risk Factors	
ISR1: IT outsourcing service providers have specialized functions and services. 資訊科技外判服務商具有專長的領域和服務。	(Hanafizadeh and Zare Ravasan, 2018)
ISR2: IT outsourcing can reduce IT operations' impact due to staff turnover. 外判資訊科技可以減少公司人員流失而對資訊科技運維的影響。	(Hanafizadeh and Zare Ravasan, 2018)
ISR3: IT outsourcing service providers have more resources (expertise and tools) for responding if any incidents occur. 資訊科技外判服務商擁有較多資源(專家及工具)，當事故發生時能快速應對。	(Bhatti, Mubarak and Nagalingam, 2017)
ISR4: We have controls to protect the company's data from being disclosed and abused by service providers during the service period. 我們有控制措施來保護公司的數據，在服務期間不會被外判服務商洩露和濫用。	(Bhatti, Mubarak and Nagalingam, 2017)
Quality of Service Provider	
QSP1: IT outsourcing service providers have professional certificates for assessing their capabilities objectively. 資訊科技外判服務商擁有專業的證書，能客觀地評估他們的能力。	New Create for this Study
QSP2: The client base of service providers is one of the selection criteria to consider their capabilities and relevant experience in the industry to serve our company. 外判服務商的客戶群是公司衡量其能力及相關行業經驗的依據之一。	(Han et al., 2013)
QSP3: The experience of service providers can assist us in implementing a new computer system and in-house training staff. 外判服務商的經驗可協助我們實施新電腦系統及內部培訓員工。	(Han et al., 2013)
QSP4: Service providers share the knowledge of systems and the potential risks, reducing the failure rate in IT operations. 外判服務商分享對系統的操作經驗及潛在風險，可降低資訊科技運維中的故障率。	(Han et al., 2013)
Contract Management	
CM1: The number of subject matter experts of service providers is specified in the contracts to ensure a reasonable level of service during the contract period. 合同中訂明外判服務商的專家數量，確保在合同期內獲得合理的服務水平。	New Create for this Study
CM2: The arrangement of out-of-scope work is defined in the contract to reduce disputation during the contract period. 合同中訂明了工作範圍以外的安排，以減少合同期內的爭議。	(Karimi-Alagheband and Rivard, 2020)
CM3: Service providers must bear the primary responsibility and liabilities for outsourced IT systems or services during the contract period. 外判服務商在合同期內對外包的系統或服務須承擔主體責任和義務。	(Karimi-Alagheband and Rivard, 2020)
CM4: The service level agreement (SLA) of IT outsourcing aligns with the SLA of company to secure the benefit to the company, and avoid extra expense by unnecessary service levels in contracts. 外判的服務水平協議 (SLA) 與公司的SLA保持一致，可確保公司的利益，並避免因過高的服務水平而產生不必要的費用。	(Karimi-Alagheband and Rivard, 2020)
Internal Contract Experience	
ICE1: We have the capability to determine the scope of work in detail for IT outsourcing. 我們能列出外判中所有需要的工作範圍。	(Karimi-Alagheband and Rivard, 2020)
ICE2: We know how to write service level agreements (SLAs) for contracts to outsource IT work. 我們懂編寫外判合同中的服務水平協議 (SLAs)。	(Karimi-Alagheband and Rivard, 2020)
ICE3: We consider the nursing period in IT outsourcing contracts to prevent additional costs due to the uncertainties in the transition stages of IT outsourcing. 我們在外判合同中加入過渡期，保障期間因不確定的因素而產生額外成本。	(Gewald and Dibbern, 2009)
ICE4: We have the capability to negotiate with determine the scope of work in detail for IT outsourcing. 我們懂與外判服務商協商條款和條件，為公司獲得最大利益。	(Hsu, Ray and Li-Hsieh, 2014)
Communication	
COM1: IT outsourcing service providers and we are working in the same time zone region that can contact each other easier. 外判服務商和我們在同一時區的地域工作，可以容易與對方聯繫。	(Hsu, Ray and Li-Hsieh, 2014)
COM2: I prefer service providers that speak the same first language as me. 我喜歡聘用說母語的外判服務商。	New Create for this Study
COM3: The communication between the service providers and us is timely. 外判服務商與我們之間的溝通是及時的。	(Han, Lee and Seo, 2008)
COM4: The communication between the service providers and us is accurate. 外判服務商與我們之間的溝通是準確的。	(Han, Lee and Seo, 2008)
Regulatory Policy	
RP1: Company facing compliance requirements, outsourcing IT can reduce the stress on in-house staff and handing over the responsibility to service providers. 公司面對合規要求，外判可以減輕內部員工的壓力，並將責任轉移給外判服務商。	(Hsu, Ray and Li-Hsieh, 2014)
RP2: Service providers' experience serving companies in the Financial Services Industry and knowledge of regulation to avoid regulation policies violation during the service period. 外判服務商有金融業服務的經驗及了解監管政策，可避免在服務期間違反監管條例。	New Create for this Study
RP3: Global or listed service providers certified by international data privacy, information security, and IT service management standards. It facilitates my company to fulfill the regulatory requirements during the service period. 國際性或規模較大的外判服務商已獲取各類安全及數據保護認證，有利於公司在服務期內滿足監管要求。	New Create for this Study
RP4: Service providers reduce subcontracting to other service providers. It facilitates the company to manage third-party risk in regulation policy. 外判服務商減少分判給其他服務商，有利公司處理監管條例下對第三方風險的管理。	New Create for this Study
IT Outsourcing Satisfaction	
ITOS1: Our service provider often completes tasks that meet our expectations. 外判服務商能完成任務，並達到我們預期。	(Han et al., 2013)
ITOS2: We acquired expert services from service providers and transferred risks to them. 我們從外判服務商獲得專業的服務，並將風險轉移給他們。	(Han et al., 2013)
ITOS3: We are satisfied with our overall benefits from IT outsourcing. 我們對資訊科技外判所獲得的好處感到滿意。	(Han et al., 2013)
ITOS4: In general, We are satisfied with IT outsourcing service. 整體來說，我們對資訊科技外判服務感到滿意。	(Han et al., 2013)

Appendix C – Frequencies Analysis Result - Demographic

C.1 Demographic Data

FSI Working Experience

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	A.Yes	241	53.9	53.9	53.9
	B.No	206	46.1	46.1	100.0
	Total	447	100.0	100.0	

Number of ITO Experience

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	A.0	124	27.7	27.7	27.7
	B.1 - 5	196	43.8	43.8	71.6
	C.6 - 10	82	18.3	18.3	89.9
	D.11 - 20	29	6.5	6.5	96.4
	E.21 or above	16	3.6	3.6	100.0
	Total	447	100.0	100.0	

Current Working Sector

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	A.Accountancy, Banking, Finance, or Insurance	73	16.3	16.3	16.3
	B.Computing or IT	207	46.3	46.3	62.6
	C.Healthcare	32	7.2	7.2	69.8
	D.Marketing	41	9.2	9.2	79.0
	E.Property or Construction	19	4.3	4.3	83.2
	F.Retail	10	2.2	2.2	85.5
	G.Transport or Logistics	7	1.6	1.6	87.0
	H.Other	58	13.0	13.0	100.0
	Total	447	100.0	100.0	

Total Number of Employees in Company in Hong Kong

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	A.1 - 50	154	34.5	34.5	34.5
	B.51 - 100	89	19.9	19.9	54.4
	C.101 - 250	61	13.6	13.6	68.0
	D.251 - 500	50	11.2	11.2	79.2
	E.501 - 1,000	41	9.2	9.2	88.4
	F.1,001 - 1,500	16	3.6	3.6	91.9
	G.1,501 - 2,500	15	3.4	3.4	95.3
	H.2,501 or above	21	4.7	4.7	100.0
	Total	447	100.0	100.0	

Total Number of Employees in the IT Department in Hong Kong

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	A.1 - 20	200	44.7	44.7	44.7
	B.21 - 50	134	30.0	30.0	74.7
	C.51 - 100	51	11.4	11.4	86.1
	D.101 - 200	36	8.1	8.1	94.2
	E.201 or above	26	5.8	5.8	100.0
	Total	447	100.0	100.0	

Work Nature

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	A.IT Management	102	22.8	22.8	22.8
	B.IT Consultant	72	16.1	16.1	38.9
	C.IT Operation Services	82	18.3	18.3	57.3
	D.IT Software Development	93	20.8	20.8	78.1
	E.IT Technical Services	55	12.3	12.3	90.4
	F.Non IT Professional	43	9.6	9.6	100.0
	Total	447	100.0	100.0	

Job Position

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	A.Individual Contributor	81	18.1	18.1	18.1
	B.Supervisor	77	17.2	17.2	35.3
	C.Manager	98	21.9	21.9	57.3
	D.Senior Manager	60	13.4	13.4	70.7
	E.Vice President / Director	39	8.7	8.7	79.4
	F.Management / C-Level	24	5.4	5.4	84.8
	G.Other	68	15.2	15.2	100.0
	Total	447	100.0	100.0	

Number of Direct and Indirect Staff

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	A.0	110	24.6	24.6	24.6
	B.1 - 10	205	45.9	45.9	70.5
	C.11 - 20	69	15.4	15.4	85.9
	D.21 - 50	42	9.4	9.4	95.3
	E.51 - 100	8	1.8	1.8	97.1
	F.101 - 200	4	.9	.9	98.0
	G.201 - 500	5	1.1	1.1	99.1
	H.501 or above	4	.9	.9	100.0
	Total	447	100.0	100.0	

C.2 Reason for Considering ITO

Summary of Reason for considering ITO

	Cost Saving	Improve Productivity and Efficiency	Transfer Business or IT Operations Risk	Transitioning to New System or New Technology	Other
Most Important Reason	38.9%	26.0%	17.4%	14.3%	3.4%
2nd Reason	23.0%	34.7%	19.5%	21.0%	1.8%
3rd Reason	17.4%	23.5%	34.7%	21.0%	3.4%
4th Reason	18.3%	12.1%	23.7%	36.9%	8.9%
Least Important Reason	2.2%	3.8%	4.7%	6.7%	82.6%

Reason for considering ITO - Cost Saving

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Most Important Reason	174	38.9	38.9	38.9
	2nd Reason	103	23.0	23.0	62.0
	3rd Reason	78	17.4	17.4	79.4
	4th Reason	82	18.3	18.3	97.8
	Least Important Reason	10	2.2	2.2	100.0
	Total	447	100.0	100.0	

Reason for considering ITO - Improve Productivity and Efficiency

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Most Important Reason	116	26.0	26.0	26.0
	2nd Reason	155	34.7	34.7	60.6
	3rd Reason	105	23.5	23.5	84.1
	4th Reason	54	12.1	12.1	96.2
	Least Important Reason	17	3.8	3.8	100.0
	Total	447	100.0	100.0	

Reason for considering ITO - Transfer Business or IT Operations Risk

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Most Important Reason	78	17.4	17.4	17.4
	2nd Reason	87	19.5	19.5	36.9
	3rd Reason	155	34.7	34.7	71.6
	4th Reason	106	23.7	23.7	95.3
	Least Important Reason	21	4.7	4.7	100.0
	Total	447	100.0	100.0	

Reason for considering ITO - Transitioning to New System or New Technology

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Most Important Reason	64	14.3	14.3	14.3
	2nd Reason	94	21.0	21.0	35.3
	3rd Reason	94	21.0	21.0	56.4
	4th Reason	165	36.9	36.9	93.3
	Least Important Reason	30	6.7	6.7	100.0
	Total	447	100.0	100.0	

Reason for considering ITO - Other

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Most Important Reason	15	3.4	3.4	3.4
	2nd Reason	8	1.8	1.8	5.1
	3rd Reason	15	3.4	3.4	8.5
	4th Reason	40	8.9	8.9	17.4
	Least Important Reason	369	82.6	82.6	100.0
	Total	447	100.0	100.0	

Appendix D – Frequencies Analysis Result -Independent Variables

Frequencies Analyze – Independent Variables

		ISR1			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	7	1.6	1.6	1.6
	Very Disagree	10	2.2	2.2	3.8
	Disagree	42	9.4	9.4	13.2
	Agree	164	36.7	36.7	49.9
	Very Agree	150	33.6	33.6	83.4
	Strongly Agree	74	16.6	16.6	100.0
	Total	447	100.0	100.0	

		ISR2			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	12	2.7	2.7	2.7
	Very Disagree	11	2.5	2.5	5.1
	Disagree	77	17.2	17.2	22.4
	Agree	166	37.1	37.1	59.5
	Very Agree	127	28.4	28.4	87.9
	Strongly Agree	54	12.1	12.1	100.0
	Total	447	100.0	100.0	

		ISR3			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	8	1.8	1.8	1.8
	Very Disagree	8	1.8	1.8	3.6
	Disagree	69	15.4	15.4	19.0
	Agree	140	31.3	31.3	50.3
	Very Agree	155	34.7	34.7	85.0
	Strongly Agree	67	15.0	15.0	100.0
	Total	447	100.0	100.0	

		ISR4			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	8	1.8	1.8	1.8
	Very Disagree	8	1.8	1.8	3.6
	Disagree	65	14.5	14.5	18.1
	Agree	148	33.1	33.1	51.2
	Very Agree	143	32.0	32.0	83.2
	Strongly Agree	75	16.8	16.8	100.0
	Total	447	100.0	100.0	

QSP1

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	6	1.3	1.3	1.3
	Very Disagree	17	3.8	3.8	5.1
	Disagree	69	15.4	15.4	20.6
	Agree	141	31.5	31.5	52.1
	Very Agree	158	35.3	35.3	87.5
	Strongly Agree	56	12.5	12.5	100.0
	Total	447	100.0	100.0	

QSP2

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	5	1.1	1.1	1.1
	Very Disagree	6	1.3	1.3	2.5
	Disagree	43	9.6	9.6	12.1
	Agree	149	33.3	33.3	45.4
	Very Agree	171	38.3	38.3	83.7
	Strongly Agree	73	16.3	16.3	100.0
	Total	447	100.0	100.0	

QSP3

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	6	1.3	1.3	1.3
	Very Disagree	15	3.4	3.4	4.7
	Disagree	49	11.0	11.0	15.7
	Agree	165	36.9	36.9	52.6
	Very Agree	141	31.5	31.5	84.1
	Strongly Agree	71	15.9	15.9	100.0
	Total	447	100.0	100.0	

QSP4

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	5	1.1	1.1	1.1
	Very Disagree	11	2.5	2.5	3.6
	Disagree	66	14.8	14.8	18.3
	Agree	165	36.9	36.9	55.3
	Very Agree	137	30.6	30.6	85.9
	Strongly Agree	63	14.1	14.1	100.0
	Total	447	100.0	100.0	

CM1

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	3	.7	.7	.7
	Very Disagree	13	2.9	2.9	3.6
	Disagree	59	13.2	13.2	16.8
	Agree	142	31.8	31.8	48.5
	Very Agree	156	34.9	34.9	83.4
	Strongly Agree	74	16.6	16.6	100.0
	Total	447	100.0	100.0	

CM2

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	3	.7	.7	.7
	Very Disagree	14	3.1	3.1	3.8
	Disagree	49	11.0	11.0	14.8
	Agree	136	30.4	30.4	45.2
	Very Agree	160	35.8	35.8	81.0
	Strongly Agree	85	19.0	19.0	100.0
	Total	447	100.0	100.0	

CM3

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	4	.9	.9	.9
	Very Disagree	9	2.0	2.0	2.9
	Disagree	60	13.4	13.4	16.3
	Agree	138	30.9	30.9	47.2
	Very Agree	151	33.8	33.8	81.0
	Strongly Agree	85	19.0	19.0	100.0
	Total	447	100.0	100.0	

CM4

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	5	1.1	1.1	1.1
	Very Disagree	6	1.3	1.3	2.5
	Disagree	59	13.2	13.2	15.7
	Agree	135	30.2	30.2	45.9
	Very Agree	167	37.4	37.4	83.2
	Strongly Agree	75	16.8	16.8	100.0
	Total	447	100.0	100.0	

ICE1

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	5	1.1	1.1	1.1
	Very Disagree	12	2.7	2.7	3.8
	Disagree	59	13.2	13.2	17.0
	Agree	157	35.1	35.1	52.1
	Very Agree	146	32.7	32.7	84.8
	Strongly Agree	68	15.2	15.2	100.0
	Total	447	100.0	100.0	

ICE2

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	5	1.1	1.1	1.1
	Very Disagree	12	2.7	2.7	3.8
	Disagree	58	13.0	13.0	16.8
	Agree	154	34.5	34.5	51.2
	Very Agree	154	34.5	34.5	85.7
	Strongly Agree	64	14.3	14.3	100.0
	Total	447	100.0	100.0	

ICE3

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	5	1.1	1.1	1.1
	Very Disagree	16	3.6	3.6	4.7
	Disagree	59	13.2	13.2	17.9
	Agree	136	30.4	30.4	48.3
	Very Agree	161	36.0	36.0	84.3
	Strongly Agree	70	15.7	15.7	100.0
	Total	447	100.0	100.0	

ICE4

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	8	1.8	1.8	1.8
	Very Disagree	9	2.0	2.0	3.8
	Disagree	53	11.9	11.9	15.7
	Agree	140	31.3	31.3	47.0
	Very Agree	160	35.8	35.8	82.8
	Strongly Agree	77	17.2	17.2	100.0
	Total	447	100.0	100.0	

COM1

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	6	1.3	1.3	1.3
	Very Disagree	7	1.6	1.6	2.9
	Disagree	60	13.4	13.4	16.3
	Agree	127	28.4	28.4	44.7
	Very Agree	165	36.9	36.9	81.7
	Strongly Agree	82	18.3	18.3	100.0
	Total	447	100.0	100.0	

COM2

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	6	1.3	1.3	1.3
	Very Disagree	14	3.1	3.1	4.5
	Disagree	55	12.3	12.3	16.8
	Agree	139	31.1	31.1	47.9
	Very Agree	133	29.8	29.8	77.6
	Strongly Agree	100	22.4	22.4	100.0
	Total	447	100.0	100.0	

COM3

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	3	.7	.7	.7
	Very Disagree	16	3.6	3.6	4.3
	Disagree	59	13.2	13.2	17.4
	Agree	134	30.0	30.0	47.4
	Very Agree	158	35.3	35.3	82.8
	Strongly Agree	77	17.2	17.2	100.0
	Total	447	100.0	100.0	

COM4

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	3	.7	.7	.7
	Very Disagree	12	2.7	2.7	3.4
	Disagree	61	13.6	13.6	17.0
	Agree	151	33.8	33.8	50.8
	Very Agree	142	31.8	31.8	82.6
	Strongly Agree	78	17.4	17.4	100.0
	Total	447	100.0	100.0	

RP1

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	6	1.3	1.3	1.3
	Very Disagree	19	4.3	4.3	5.6
	Disagree	67	15.0	15.0	20.6
	Agree	136	30.4	30.4	51.0
	Very Agree	153	34.2	34.2	85.2
	Strongly Agree	66	14.8	14.8	100.0
	Total	447	100.0	100.0	

RP2

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	5	1.1	1.1	1.1
	Very Disagree	13	2.9	2.9	4.0
	Disagree	58	13.0	13.0	17.0
	Agree	142	31.8	31.8	48.8
	Very Agree	156	34.9	34.9	83.7
	Strongly Agree	73	16.3	16.3	100.0
	Total	447	100.0	100.0	

RP3

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	6	1.3	1.3	1.3
	Very Disagree	16	3.6	3.6	4.9
	Disagree	61	13.6	13.6	18.6
	Agree	148	33.1	33.1	51.7
	Very Agree	142	31.8	31.8	83.4
	Strongly Agree	74	16.6	16.6	100.0
	Total	447	100.0	100.0	

RP4

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	4	.9	.9	.9
	Very Disagree	11	2.5	2.5	3.4
	Disagree	56	12.5	12.5	15.9
	Agree	144	32.2	32.2	48.1
	Very Agree	160	35.8	35.8	83.9
	Strongly Agree	72	16.1	16.1	100.0
	Total	447	100.0	100.0	

ITOS1

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	3	.7	.7	.7
	Very Disagree	15	3.4	3.4	4.0
	Disagree	63	14.1	14.1	18.1
	Agree	158	35.3	35.3	53.5
	Very Agree	141	31.5	31.5	85.0
	Strongly Agree	67	15.0	15.0	100.0
	Total	447	100.0	100.0	

ITOS2

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	8	1.8	1.8	1.8
	Very Disagree	17	3.8	3.8	5.6
	Disagree	59	13.2	13.2	18.8
	Agree	138	30.9	30.9	49.7
	Very Agree	167	37.4	37.4	87.0
	Strongly Agree	58	13.0	13.0	100.0
	Total	447	100.0	100.0	

ITOS3

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	5	1.1	1.1	1.1
	Very Disagree	12	2.7	2.7	3.8
	Disagree	55	12.3	12.3	16.1
	Agree	152	34.0	34.0	50.1
	Very Agree	161	36.0	36.0	86.1
	Strongly Agree	62	13.9	13.9	100.0
	Total	447	100.0	100.0	

ITOS4

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	4	.9	.9	.9
	Very Disagree	7	1.6	1.6	2.5
	Disagree	44	9.8	9.8	12.3
	Agree	151	33.8	33.8	46.1
	Very Agree	163	36.5	36.5	82.6
	Strongly Agree	78	17.4	17.4	100.0
	Total	447	100.0	100.0	

Appendix E – Cross-Tabulation Analysis Result

Cross-tabulation

Case Processing Summary

	Valid		Cases Missing		Total	
	N	Percent	N	Percent	N	Percent
DG8 * DG2a:Cost Saving	447	100.0%	0	0.0%	447	100.0%
DG8 * DG2b:Improve Productivity and Efficiency	447	100.0%	0	0.0%	447	100.0%
DG8 * DG2c:Transfer Business or IT Operations Risk	447	100.0%	0	0.0%	447	100.0%
DG8 * DG2d:Transitioning to New System or New Technology	447	100.0%	0	0.0%	447	100.0%
DG8 * DG2e:Other	447	100.0%	0	0.0%	447	100.0%

DG8 * DG2a:Cost Saving Crosstabulation

			DG2a:Cost Saving					Total
			Most Important Reason	2nd Reason	3rd Reason	4th Reason	Least Important Reason	
DG8	A.Individual Contributor	Count	40	16	11	13	1	81
		% within DG2a:Cost Saving	23.0%	15.5%	14.1%	15.9%	10.0%	18.1%
	B.Supervisor	Count	27	20	11	14	5	77
		% within DG2a:Cost Saving	15.5%	19.4%	14.1%	17.1%	50.0%	17.2%
	C.Manager	Count	28	33	27	10	0	98
		% within DG2a:Cost Saving	16.1%	32.0%	34.6%	12.2%	0.0%	21.9%
	D.Senior Manager	Count	21	14	9	16	0	60
		% within DG2a:Cost Saving	12.1%	13.6%	11.5%	19.5%	0.0%	13.4%
	E.Vice President / Director	Count	12	5	10	9	3	39
		% within DG2a:Cost Saving	6.9%	4.9%	12.8%	11.0%	30.0%	8.7%
	F.Management / C-Level	Count	10	6	3	5	0	24
		% within DG2a:Cost Saving	5.7%	5.8%	3.8%	6.1%	0.0%	5.4%
	G.Other	Count	36	9	7	15	1	68
		% within DG2a:Cost Saving	20.7%	8.7%	9.0%	18.3%	10.0%	15.2%
Total		Count	174	103	78	82	10	447
		% within DG2a:Cost Saving	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

DG8 * DG2b:Improve Productivity and Efficiency Crosstabulation

			DG2b:Improve Productivity and Efficiency					Total
			Most Important Reason	2nd Reason	3rd Reason	4th Reason	Least Important Reason	
DG8	A.Individual Contributor	Count	23	36	17	5	0	81
		% within DG2b:Improve Productivity and Efficiency	19.8%	23.2%	16.2%	9.3%	0.0%	18.1%
	B.Supervisor	Count	25	21	14	14	3	77

	% within DG2b:Improve Productivity and Efficiency	21.6%	13.5%	13.3%	25.9%	17.6%	17.2%
C.Manager	Count	26	28	26	17	1	98
	% within DG2b:Improve Productivity and Efficiency	22.4%	18.1%	24.8%	31.5%	5.9%	21.9%
D.Senior Manager	Count	13	20	16	7	4	60
	% within DG2b:Improve Productivity and Efficiency	11.2%	12.9%	15.2%	13.0%	23.5%	13.4%
E.Vice President / Director	Count	11	7	13	5	3	39
	% within DG2b:Improve Productivity and Efficiency	9.5%	4.5%	12.4%	9.3%	17.6%	8.7%
F.Management / C-Level	Count	3	11	4	3	3	24
	% within DG2b:Improve Productivity and Efficiency	2.6%	7.1%	3.8%	5.6%	17.6%	5.4%
G.Other	Count	15	32	15	3	3	68
	% within DG2b:Improve Productivity and Efficiency	12.9%	20.6%	14.3%	5.6%	17.6%	15.2%
Total	Count	116	155	105	54	17	447
	% within DG2b:Improve Productivity and Efficiency	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

DG8 * DG2c:Transfer Business or IT Operations Risk Crosstabulation

			DG2c:Transfer Business or IT Operations Risk					Total
			Most Important Reason	2nd Reason	3rd Reason	4th Reason	Least Important Reason	
DG8	A.Individual Contributor	Count	8	11	33	26	3	81
		% within DG2c:Transfer Business or IT Operations Risk	10.3%	12.6%	21.3%	24.5%	14.3%	18.1%
	B.Supervisor	Count	15	16	24	17	5	77
		% within DG2c:Transfer Business or IT Operations Risk	19.2%	18.4%	15.5%	16.0%	23.8%	17.2%
	C.Manager	Count	27	15	26	25	5	98
		% within DG2c:Transfer Business or IT Operations Risk	34.6%	17.2%	16.8%	23.6%	23.8%	21.9%
	D.Senior Manager	Count	13	12	21	13	1	60
		% within DG2c:Transfer Business or IT Operations Risk	16.7%	13.8%	13.5%	12.3%	4.8%	13.4%
	E.Vice President / Director	Count	7	13	8	9	2	39
		% within DG2c:Transfer Business or IT Operations Risk	9.0%	14.9%	5.2%	8.5%	9.5%	8.7%
	F.Management / C-Level	Count	3	2	9	7	3	24
		% within DG2c:Transfer Business or IT Operations Risk	3.8%	2.3%	5.8%	6.6%	14.3%	5.4%
	G.Other	Count	5	18	34	9	2	68
		% within DG2c:Transfer Business or IT Operations Risk	6.4%	20.7%	21.9%	8.5%	9.5%	15.2%
Total		Count	78	87	155	106	21	447
		% within DG2c:Transfer Business or IT Operations Risk	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

DG8 * DG2d:Transitioning to New System or New Technology Crosstabulation

			DG2d:Transitioning to New System or New Technology					Total
			Most Important Reason	2nd Reason	3rd Reason	4th Reason	Least Important Reason	

DG8	A.Individual Contributor	Count	8	16	19	31	7	81
		% within DG2d:Transitioning to New System or New Technology	12.5%	17.0%	20.2%	18.8%	23.3%	18.1%
	B.Supervisor	Count	7	18	24	25	3	77
		% within DG2d:Transitioning to New System or New Technology	10.9%	19.1%	25.5%	15.2%	10.0%	17.2%
	C.Manager	Count	14	20	19	34	11	98
		% within DG2d:Transitioning to New System or New Technology	21.9%	21.3%	20.2%	20.6%	36.7%	21.9%
	D.Senior Manager	Count	12	13	12	18	5	60
		% within DG2d:Transitioning to New System or New Technology	18.8%	13.8%	12.8%	10.9%	16.7%	13.4%
	E.Vice President / Director	Count	7	14	6	9	3	39
		% within DG2d:Transitioning to New System or New Technology	10.9%	14.9%	6.4%	5.5%	10.0%	8.7%
	F.Management / C-Level	Count	6	5	4	9	0	24
		% within DG2d:Transitioning to New System or New Technology	9.4%	5.3%	4.3%	5.5%	0.0%	5.4%
	G.Other	Count	10	8	10	39	1	68
		% within DG2d:Transitioning to New System or New Technology	15.6%	8.5%	10.6%	23.6%	3.3%	15.2%
Total		Count	64	94	94	165	30	447
		% within DG2d:Transitioning to New System or New Technology	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

DG8 * DG2e:Other Crosstabulation

			DG2e:Other					Total
			Most Important Reason	2nd Reason	3rd Reason	4th Reason	Least Important Reason	
DG8	A.Individual Contributor	Count	2	2	1	6	70	81
		% within DG2e:Other	13.3%	25.0%	6.7%	15.0%	19.0%	18.1%
	B.Supervisor	Count	3	2	4	7	61	77
		% within DG2e:Other	20.0%	25.0%	26.7%	17.5%	16.5%	17.2%
	C.Manager	Count	3	2	0	12	81	98
		% within DG2e:Other	20.0%	25.0%	0.0%	30.0%	22.0%	21.9%
	D.Senior Manager	Count	1	1	2	6	50	60
		% within DG2e:Other	6.7%	12.5%	13.3%	15.0%	13.6%	13.4%
	E.Vice President / Director	Count	2	0	2	7	28	39
		% within DG2e:Other	13.3%	0.0%	13.3%	17.5%	7.6%	8.7%
	F.Management / C-Level	Count	2	0	4	0	18	24
		% within DG2e:Other	13.3%	0.0%	26.7%	0.0%	4.9%	5.4%
	G.Other	Count	2	1	2	2	61	68
		% within DG2e:Other	13.3%	12.5%	13.3%	5.0%	16.5%	15.2%
Total		Count	15	8	15	40	369	447
		% within DG2e:Other	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Appendix F – Reliability Analysis Result

All Variables

Reliability Statistics

Cronbach's Alpha	N of Items
.964	28

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
ISR1	119.93	419.589	.683	.962
ISR2	120.18	418.536	.664	.963
ISR3	120.00	418.359	.686	.962
ISR4	119.99	419.453	.654	.963
QSP1	120.07	418.660	.679	.962
QSP2	119.85	420.116	.709	.962
QSP3	119.99	418.148	.700	.962
QSP4	120.05	418.850	.701	.962
CM1	119.94	419.592	.680	.962
CM2	119.86	418.985	.689	.962
CM3	119.89	418.622	.694	.962
CM4	119.89	418.892	.709	.962
RP1	120.04	417.819	.676	.962
RP2	119.95	419.480	.668	.963
RP3	120.01	417.482	.691	.962
RP4	119.93	420.242	.671	.963
COM1	119.88	419.987	.657	.963
COM2	119.89	422.884	.550	.964
COM3	119.93	418.139	.697	.962
COM4	119.95	416.787	.743	.962
ICE1	120.00	420.022	.667	.963
ICE2	119.99	418.993	.699	.962
ICE3	119.97	417.903	.696	.962
ICE4	119.92	417.610	.704	.962
ITOS1	120.02	418.096	.715	.962
ITOS2	120.04	419.281	.655	.963
ITOS3	119.98	418.612	.716	.962
ITOS4	119.85	418.567	.743	.962

Perceived Information Security Risk Factors (ISR)

Reliability Statistics

Cronbach's Alpha	N of Items
.825	4

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
ISR1	13.05	7.354	.682	.766
ISR2	13.30	7.253	.640	.784
ISR3	13.13	7.195	.679	.766
ISR4	13.11	7.518	.601	.802

Quality of Service Provider (QSP)

Reliability Statistics

Cronbach's Alpha	N of Items
.823	4

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
QSP1	13.33	6.678	.647	.777
QSP2	13.11	7.208	.617	.790
QSP3	13.24	6.718	.651	.775
QSP4	13.30	6.740	.672	.765

Contract Management (CM)

Reliability Statistics

Cronbach's Alpha	N of Items
.804	4

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
CM1	13.58	6.702	.613	.758
CM2	13.50	6.555	.639	.746
CM3	13.53	6.559	.633	.748
CM4	13.53	6.864	.592	.768

Internal Contract Experience (ICE)

Reliability Statistics

Cronbach's Alpha	N of Items
.824	4

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
ICE1	13.34	7.440	.581	.808
ICE2	13.34	7.117	.662	.772
ICE3	13.32	6.903	.668	.769
ICE4	13.26	6.844	.684	.762

Communication (COM)

Reliability Statistics

Cronbach's Alpha	N of Items
.801	4

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
COM1	13.45	7.194	.602	.757
COM2	13.46	7.128	.554	.782
COM3	13.51	6.932	.653	.732
COM4	13.52	7.026	.652	.733

Regulatory Policy (RP)

Reliability Statistics

Cronbach's Alpha	N of Items
.809	4

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
RP1	13.33	7.084	.609	.770
RP2	13.24	7.054	.659	.746
RP3	13.30	6.872	.664	.743
RP4	13.22	7.569	.576	.784

IT Outsourcing Satisfaction (ITOS)

Reliability Statistics

Cronbach's Alpha	N of Items
.839	4

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
ITOS1	13.36	7.014	.657	.802
ITOS2	13.37	6.934	.630	.815
ITOS3	13.32	6.929	.695	.785
ITOS4	13.19	7.039	.706	.782

Appendix G – One-Way ANOVA Analysis Result

Descriptives

Average of ITOS

No. of ITO Experience	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
0	124	4.1633	.88405	.07939	4.0062	4.3205	1.00	6.00
1 - 5	196	4.4401	.81919	.05851	4.3247	4.5555	2.25	6.00
6 - 10	82	4.5732	.87090	.09617	4.3818	4.7645	2.25	6.00
11 - 20	29	5.0000	.64780	.12029	4.7536	5.2464	3.50	6.00
21 or above	16	4.7656	.64852	.16213	4.4201	5.1112	3.25	5.75
Total	447	4.4357	.85785	.04057	4.3559	4.5154	1.00	6.00

Tests of Homogeneity of Variances

		Levene Statistic	df1	df2	Sig.
Average of ITOS	Based on Mean	1.628	4	442	.166
	Based on Median	1.811	4	442	.126
	Based on Median and with adjusted df	1.811	4	417.559	.126
	Based on trimmed mean	1.636	4	442	.164

ANOVA

Average of ITOS

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	21.730	4	5.433	7.835	<.001
Within Groups	306.483	442	.693		
Total	328.213	446			

ANOVA Effect Sizes^a

		Point Estimate	95% Confidence Interval	
			Lower	Upper
Average of ITOS	Eta-squared	.066	.023	.108
	Epsilon-squared	.058	.014	.100
	Omega-squared Fixed-effect	.058	.014	.100
	Omega-squared Random-effect	.015	.004	.027

a. Eta-squared and Epsilon-squared are estimated based on the fixed-effect model.

Post Hoc Tests

Multiple Comparisons

Dependent Variable: Average of ITOS

Tukey HSD

(I) No. of ITO Experience	(J) No. of ITO Experience	Mean		Sig.	95% Confidence Interval	
		Difference (I-J)	Std. Error		Lower Bound	Upper Bound
0	1 - 5	-.27674*	.09555	.032	-.5385	-.0150
	6 - 10	-.40986*	.11852	.005	-.7345	-.0852
	11 - 20	-.83669*	.17176	<.001	-1.3072	-.3662
	21 or above	-.60232	.22120	.052	-1.2082	.0036
1 - 5	0	.27674*	.09555	.032	.0150	.5385
	6 - 10	-.13312	.10952	.742	-.4331	.1669
	11 - 20	-.55995*	.16567	.007	-1.0137	-.1062
	21 or above	-.32557	.21651	.561	-.9186	.2675
6 - 10	0	.40986*	.11852	.005	.0852	.7345
	1 - 5	.13312	.10952	.742	-.1669	.4331
	11 - 20	-.42683	.17991	.125	-.9196	.0659
	21 or above	-.19245	.22758	.916	-.8158	.4309
11 - 20	0	.83669*	.17176	<.001	.3662	1.3072
	1 - 5	.55995*	.16567	.007	.1062	1.0137
	6 - 10	.42683	.17991	.125	-.0659	.9196
	21 or above	.23438	.25932	.895	-.4759	.9447
21 or above	0	.60232	.22120	.052	-.0036	1.2082
	1 - 5	.32557	.21651	.561	-.2675	.9186
	6 - 10	.19245	.22758	.916	-.4309	.8158
	11 - 20	-.23437	.25932	.895	-.9447	.4759

*. The mean difference is significant at the 0.05 level.

Homogeneous Subsets

Average of ITOS

Tukey HSD^{a,b}

No. of ITO Experience	N	Subset for alpha = 0.05		
		1	2	3
0	124	4.1633		
1 - 5	196	4.4401	4.4401	
6 - 10	82	4.5732	4.5732	4.5732
21 or above	16		4.7656	4.7656
11 - 20	29			5.0000
Sig.		.172	.394	.141

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 40.868.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

Appendix H – Simple Linear Regression Analysis Result

H.1 Analysis

ISR

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	Average of ISR ^b		. Enter

a. Dependent Variable: Average of ITOS

b. All requested variables entered.

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.715 ^a	.511	.510	.60072

a. Predictors: (Constant), Average of ISR

b. Dependent Variable: Average of ITOS

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	167.626	1	167.626	464.507	<.001 ^b
	Residual	160.587	445	.361		
	Total	328.213	446			

a. Dependent Variable: Average of ITOS

b. Predictors: (Constant), Average of ISR

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	1.373	.145		9.477	<.001		
	Average of ISR	.699	.032	.715	21.552	<.001	1.000	1.000

a. Dependent Variable: Average of ITOS

Collinearity Diagnostics^a

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions	
				(Constant)	Average of ISR
1	1	1.981	1.000	.01	.01
	2	.019	10.101	.99	.99

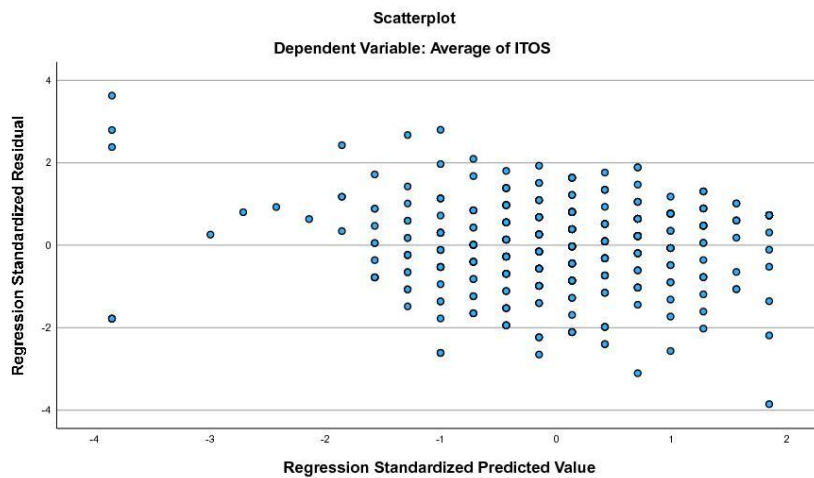
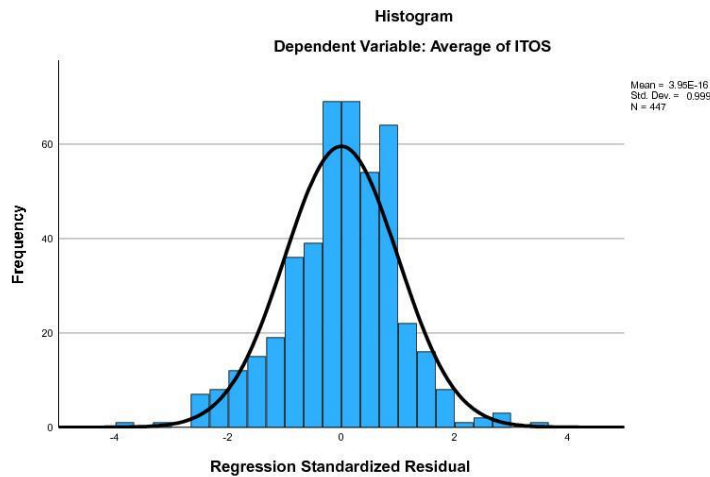
a. Dependent Variable: Average of ITOS

Residuals Statistics^a

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	2.0721	5.5664	4.4357	.61306	447
Residual	-2.31644	2.17785	.00000	.60005	447
Std. Predicted Value	-3.855	1.844	.000	1.000	447
Std. Residual	-3.856	3.625	.000	.999	447

a. Dependent Variable: Average of ITOS

Charts



QSP

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	Average of QSP ^b		. Enter

a. Dependent Variable: Average of ITOS

b. All requested variables entered.

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.773 ^a	.598	.597	.54477

a. Predictors: (Constant), Average of QSP

b. Dependent Variable: Average of ITOS

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	196.149	1	196.149	660.936	<.001 ^b
	Residual	132.065	445	.297		
	Total	328.213	446			

a. Dependent Variable: Average of ITOS

b. Predictors: (Constant), Average of QSP

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	.979	.137		7.147	<.001		
	Average of QSP	.783	.030	.773	25.709	<.001	1.000	1.000

a. Dependent Variable: Average of ITOS

Collinearity Diagnostics^a

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions	
				(Constant)	Average of QSP
1	1	1.982	1.000	.01	.01
	2	.018	10.533	.99	.99

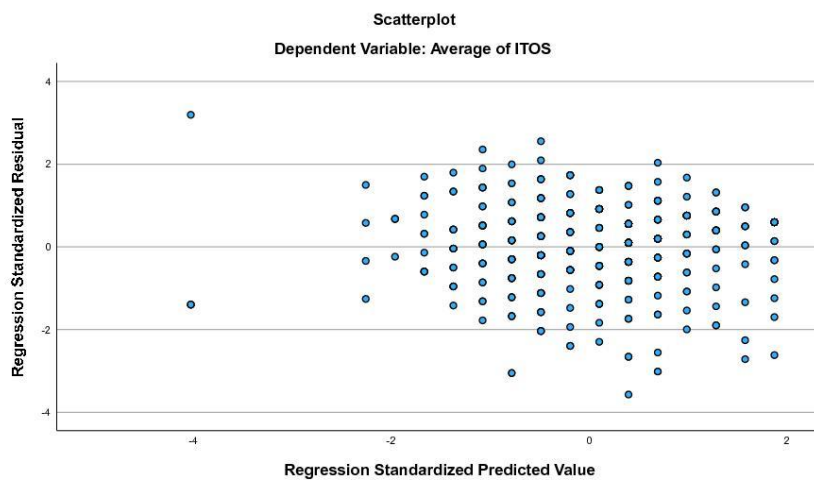
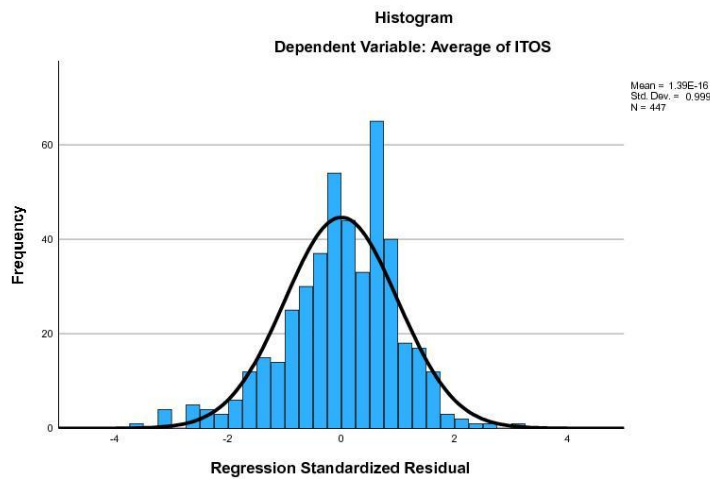
a. Dependent Variable: Average of ITOS

Residuals Statistics^a

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	1.7616	5.6768	4.4357	.66317	447
Residual	-1.94801	1.73842	.00000	.54416	447
Std. Predicted Value	-4.032	1.872	.000	1.000	447
Std. Residual	-3.576	3.191	.000	.999	447

a. Dependent Variable: Average of ITOS

Charts



CM

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	Average of CM ^b		. Enter

a. Dependent Variable: Average of ITOS

b. All requested variables entered.

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.747 ^a	.558	.557	.57089

a. Predictors: (Constant), Average of CM

b. Dependent Variable: Average of ITOS

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	183.181	1	183.181	562.048	<.001 ^b
	Residual	145.033	445	.326		
	Total	328.213	446			

a. Dependent Variable: Average of ITOS

b. Predictors: (Constant), Average of CM

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	.969	.149		6.515	<.001		
	Average of CM	.768	.032	.747	23.708	<.001	1.000	1.000

a. Dependent Variable: Average of ITOS

Collinearity Diagnostics^a

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions	
				(Constant)	Average of CM
1	1	1.983	1.000	.01	.01
	2	.017	10.923	.99	.99

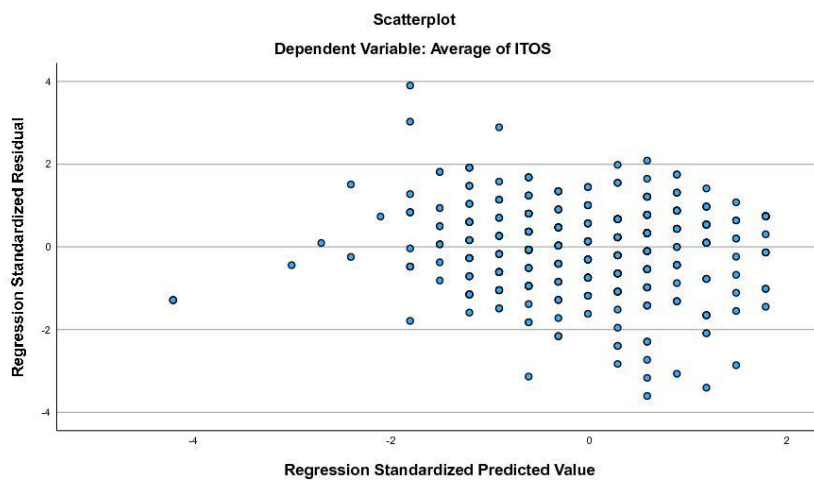
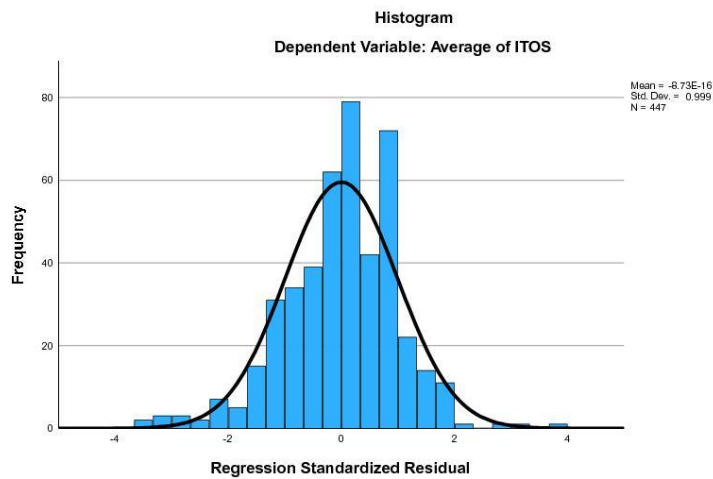
a. Dependent Variable: Average of ITOS

Residuals Statistics^a

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	1.7371	5.5787	4.4357	.64087	447
Residual	-2.06039	2.22626	.00000	.57025	447
Std. Predicted Value	-4.211	1.784	.000	1.000	447
Std. Residual	-3.609	3.900	.000	.999	447

a. Dependent Variable: Average of ITOS

Charts



ICE

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	Average of ICE ^b		. Enter

a. Dependent Variable: Average of ITOS

b. All requested variables entered.

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.785 ^a	.616	.615	.53218

a. Predictors: (Constant), Average of ICE

b. Dependent Variable: Average of ITOS

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	202.183	1	202.183	713.884	<.001 ^b
	Residual	126.031	445	.283		
	Total	328.213	446			

a. Dependent Variable: Average of ITOS

b. Predictors: (Constant), Average of ICE

Coefficients^a

Model		Unstandardized Coefficients	Std. Error	Standardized Coefficients	t	Sig.	Collinearity Statistics	
1	(Constant)	.968	.132		7.325	<.001		
	Average of ICE	.781	.029	.785	26.719	<.001	1.000	1.000

a. Dependent Variable: Average of ITOS

Collinearity Diagnostics^a

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions	Average of ICE
1	1	1.982	1.000	.01	.01
	2	.018	10.407	.99	.99

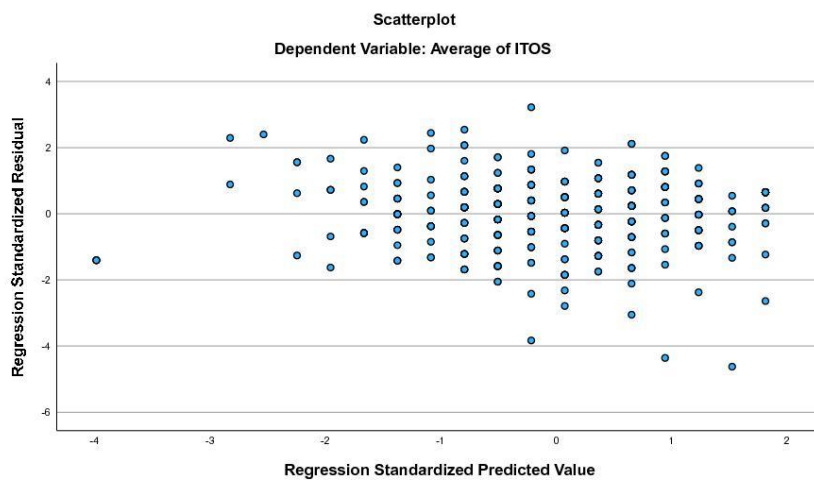
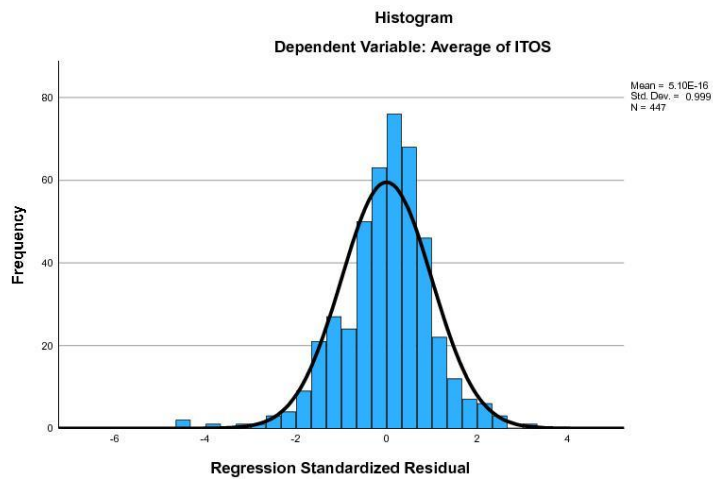
a. Dependent Variable: Average of ITOS

Residuals Statistics^a

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	1.7496	5.6561	4.4357	.67329	447
Residual	-2.46081	1.71114	.00000	.53158	447
Std. Predicted Value	-3.989	1.813	.000	1.000	447
Std. Residual	-4.624	3.215	.000	.999	447

a. Dependent Variable: Average of ITOS

Charts



COM

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	Average of COM ^b		. Enter

a. Dependent Variable: Average of ITOS

b. All requested variables entered.

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.733 ^a	.538	.537	.58394

a. Predictors: (Constant), Average of COM

b. Dependent Variable: Average of ITOS

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	176.475	1	176.475	517.546	<.001 ^b
	Residual	151.738	445	.341		
	Total	328.213	446			

a. Dependent Variable: Average of ITOS

b. Predictors: (Constant), Average of COM

Coefficients^a

Model		Unstandardized Coefficients	Standardized Coefficients	t	Sig.	Collinearity Statistics
		B	Std. Error	Beta		Tolerance
1	(Constant)	1.141	.147		7.742	<.001
	Average of COM	.733	.032	.733	22.750	<.001
						1.000
						1.000

a. Dependent Variable: Average of ITOS

Collinearity Diagnostics^a

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions
				Average of COM
1	1	1.982	1.000	.01
	2	.018	10.580	.99

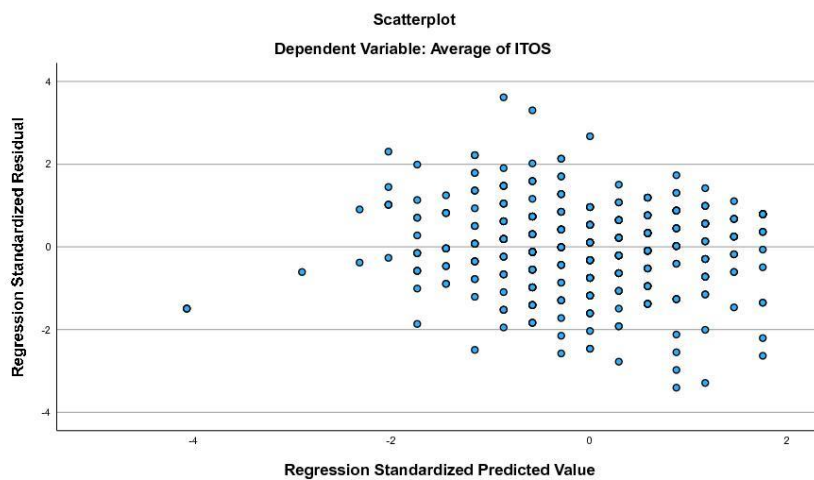
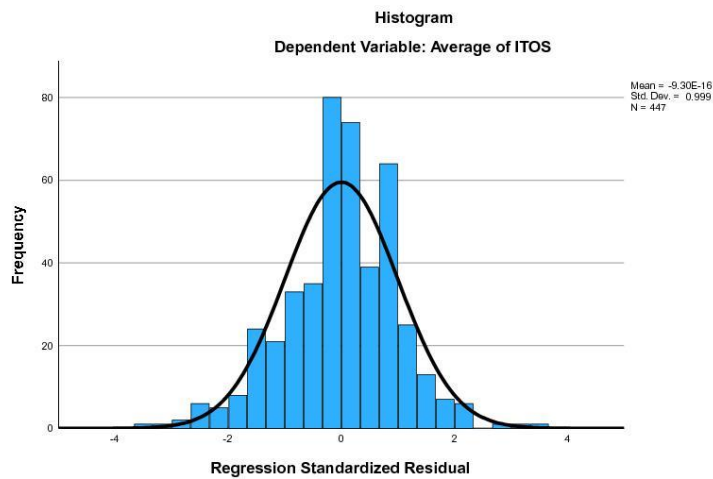
a. Dependent Variable: Average of ITOS

Residuals Statistics^a

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	1.8742	5.5387	4.4357	.62903	447
Residual	-1.98904	2.11030	.00000	.58328	447
Std. Predicted Value	-4.072	1.754	.000	1.000	447
Std. Residual	-3.406	3.614	.000	.999	447

a. Dependent Variable: Average of ITOS

Charts



RP

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	Average of RP ^b		. Enter

a. Dependent Variable: Average of ITOS

b. All requested variables entered.

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.751 ^a	.564	.563	.56725

a. Predictors: (Constant), Average of RP

b. Dependent Variable: Average of ITOS

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	185.025	1	185.025	575.020	<.001 ^b
	Residual	143.188	445	.322		
	Total	328.213	446			

a. Dependent Variable: Average of ITOS

b. Predictors: (Constant), Average of RP

Coefficients^a

Model		Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.	Collinearity Statistics Tolerance	VIF
1	(Constant)	1.138	.140		8.118	<.001		
	Average of RP	.746	.031	.751	23.980	<.001	1.000	1.000

a. Dependent Variable: Average of ITOS

Collinearity Diagnostics^a

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions (Constant)	Average of RP
1	1	1.981	1.000	.01	.01
	2	.019	10.349	.99	.99

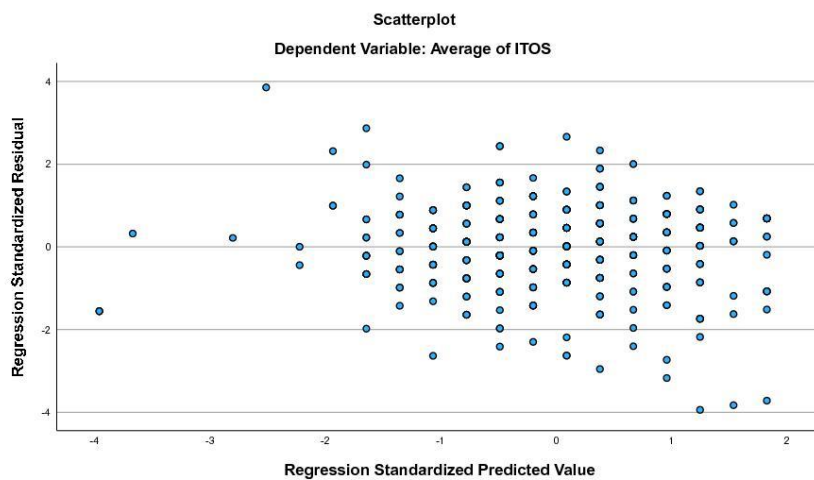
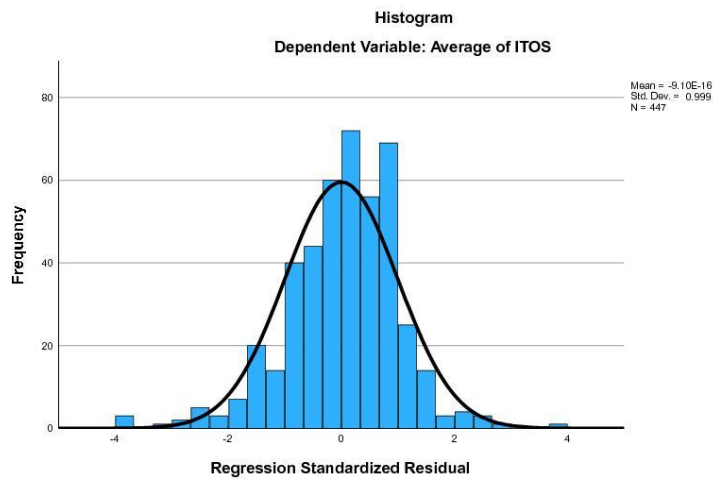
a. Dependent Variable: Average of ITOS

Residuals Statistics^a

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	1.8831	5.6106	4.4357	.64409	447
Residual	-2.23789	2.18499	.00000	.56661	447
Std. Predicted Value	-3.963	1.824	.000	1.000	447
Std. Residual	-3.945	3.852	.000	.999	447

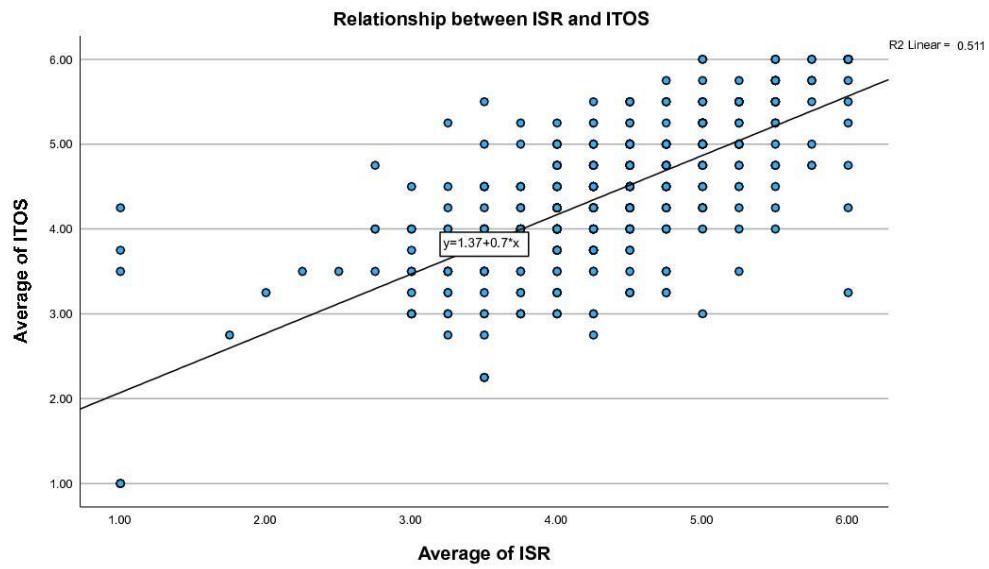
a. Dependent Variable: Average of ITOS

Charts

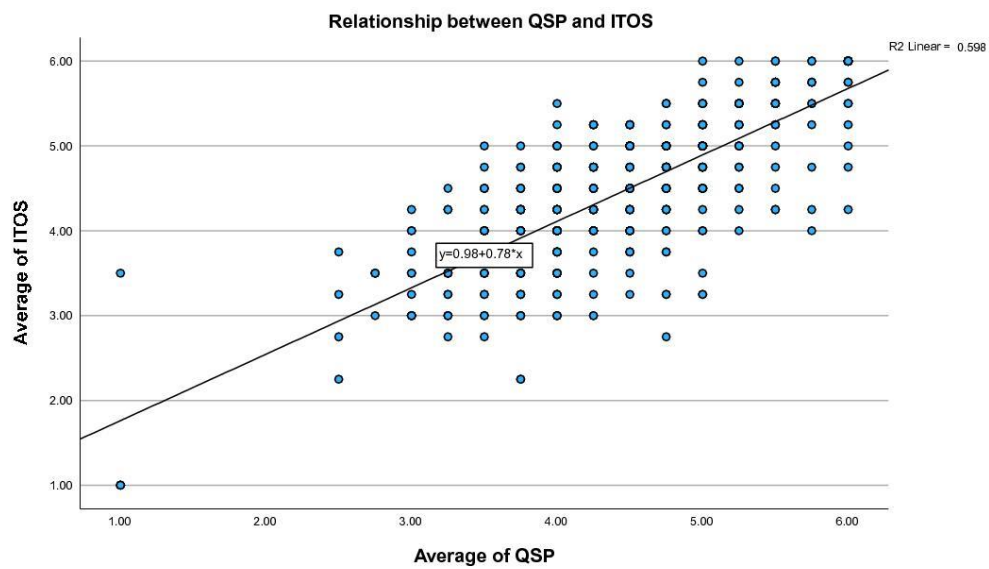


H.2 Graph

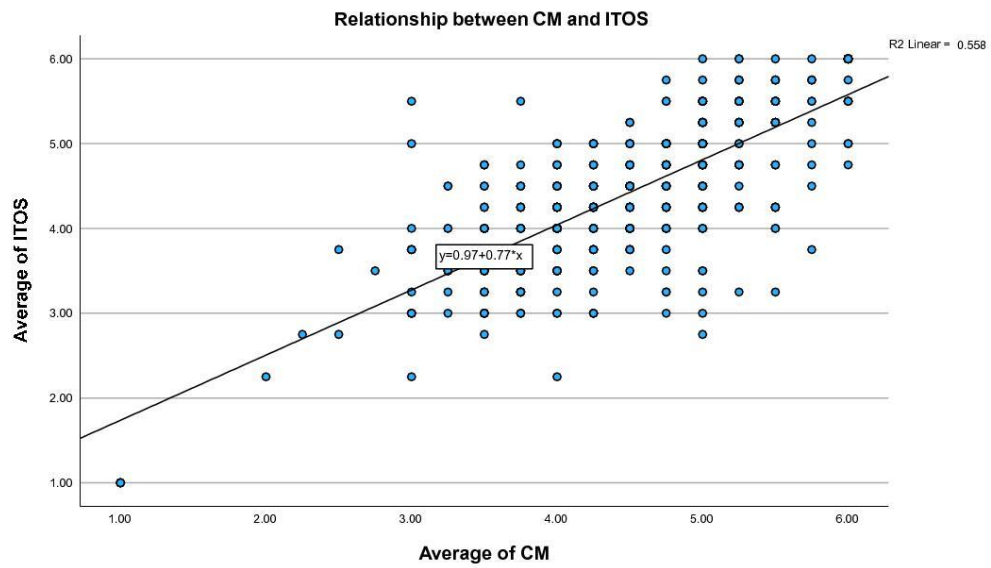
ISR



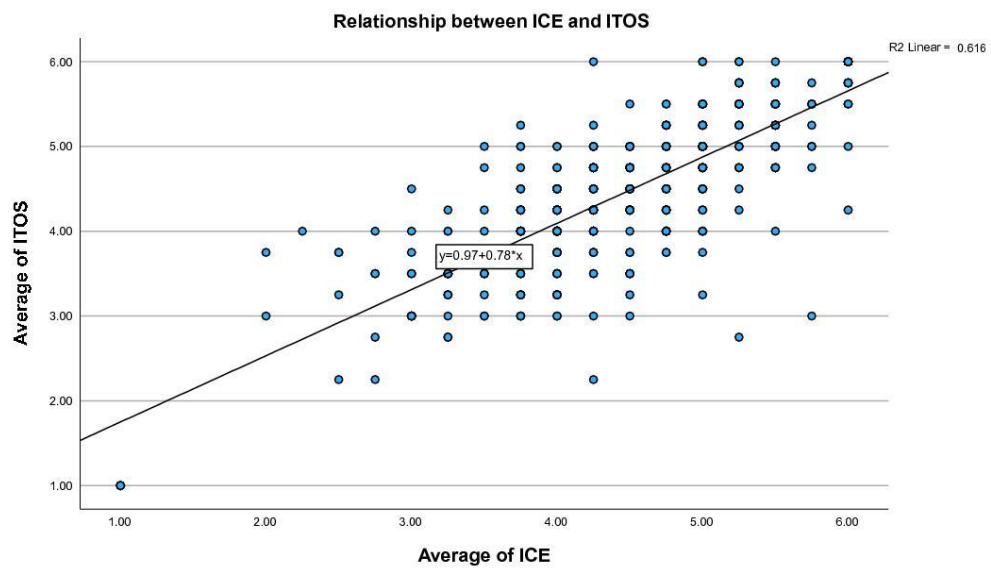
QSP



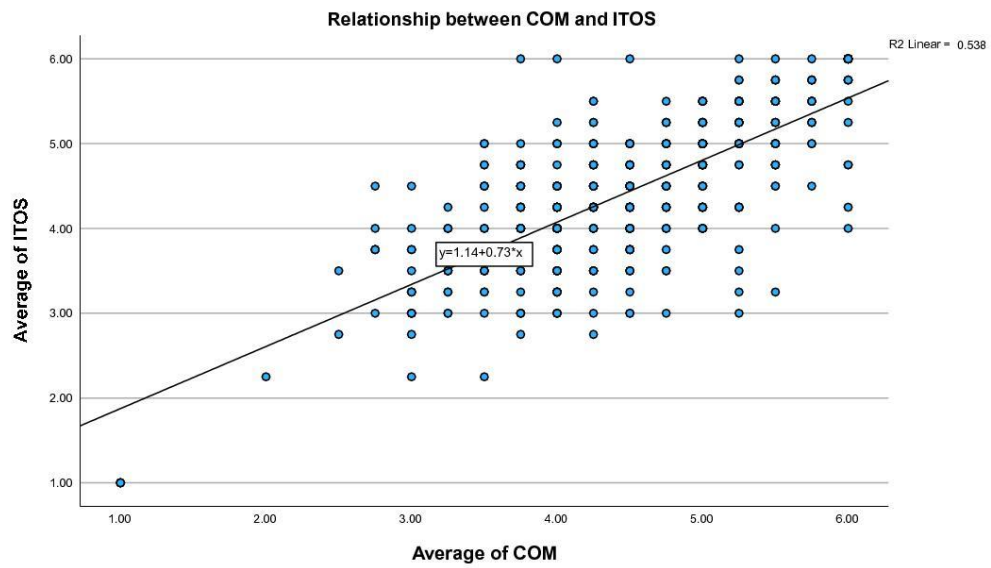
CM



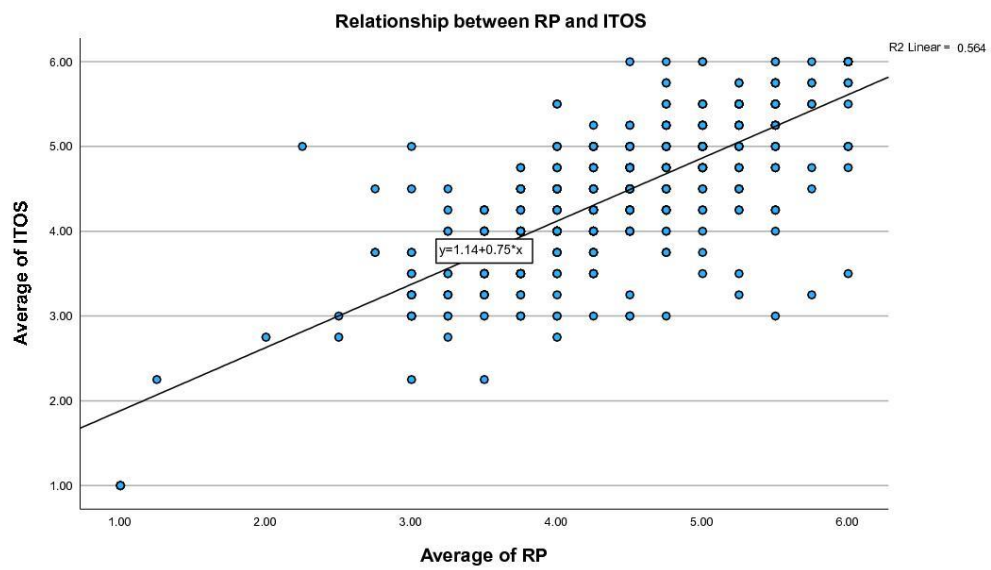
ICE



COM



RP



Appendix I – Multiple Regression Analysis Result

Round 1 Analysis

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	Average of ICE, Average of ISR, Average of RP, Average of COM, Average of QSP, Average of CM ^b		. Enter

a. Dependent Variable: Average of ITOS

b. All requested variables entered.

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.855 ^a	.731	.727	.44794

a. Predictors: (Constant), Average of ICE, Average of ISR, Average of RP, Average of COM, Average of QSP, Average of CM

b. Dependent Variable: Average of ITOS

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	239.928	6	39.988	199.292	<.001 ^b
	Residual	88.286	440	.201		
	Total	328.213	446			

a. Dependent Variable: Average of ITOS

b. Predictors: (Constant), Average of ICE, Average of ISR, Average of RP, Average of COM, Average of QSP, Average of CM

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients		t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta				Tolerance	VIF
1	(Constant)	.197	.126			1.558	.120		
	Average of ISR	.054	.046	.055		1.176	.240	.281	3.559
	Average of QSP	.292	.050	.288		5.786	<.001	.247	4.051
	Average of CM	.033	.052	.032		.636	.525	.238	4.201
	Average of RP	.175	.045	.176		3.865	<.001	.295	3.392
	Average of COM	.087	.045	.087		1.938	.053	.300	3.330
	Average of ICE	.316	.046	.317		6.912	<.001	.290	3.443

a. Dependent Variable: Average of ITOS

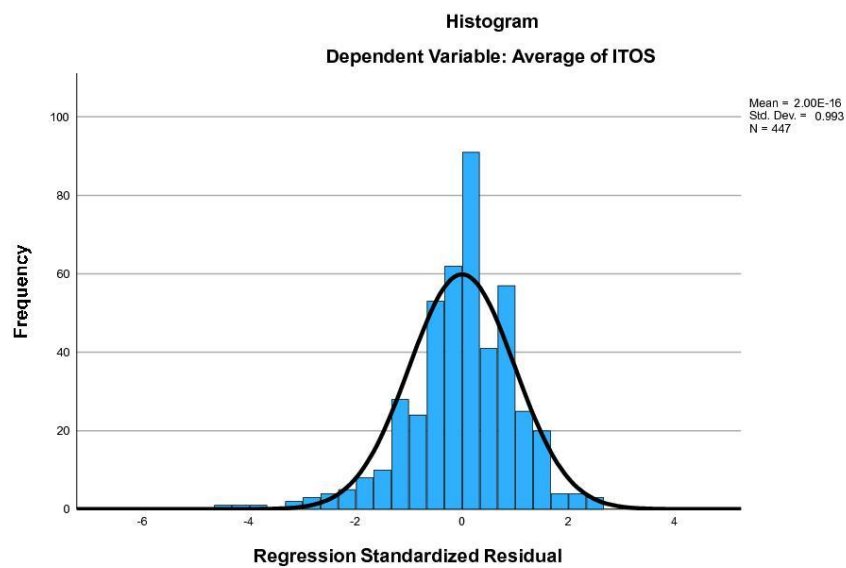
Collinearity Diagnostics ^a										
Model	Dimension	Eigenvalue	Condition	(Constant)	Variance Proportions					
			Index		Average of ISR	Average of QSP	Average of CM	Average of RP	Average of COM	Average of ICE
1	1	6.929	1,000	.00	.00	.00	.00	.00	.00	.00
	2	.024	16,852	.99	.02	.01	.01	.01	.00	.01
	3	.016	20,883	.01	.27	.09	.00	.05	.14	.09
	4	.010	26,755	.00	.01	.03	.05	.67	.18	.14
	5	.008	29,017	.00	.08	.15	.00	.00	.39	.63
	6	.006	32,709	.00	.11	.00	.92	.26	.03	.00
	7	.006	34,211	.00	.51	.71	.03	.01	.25	.12

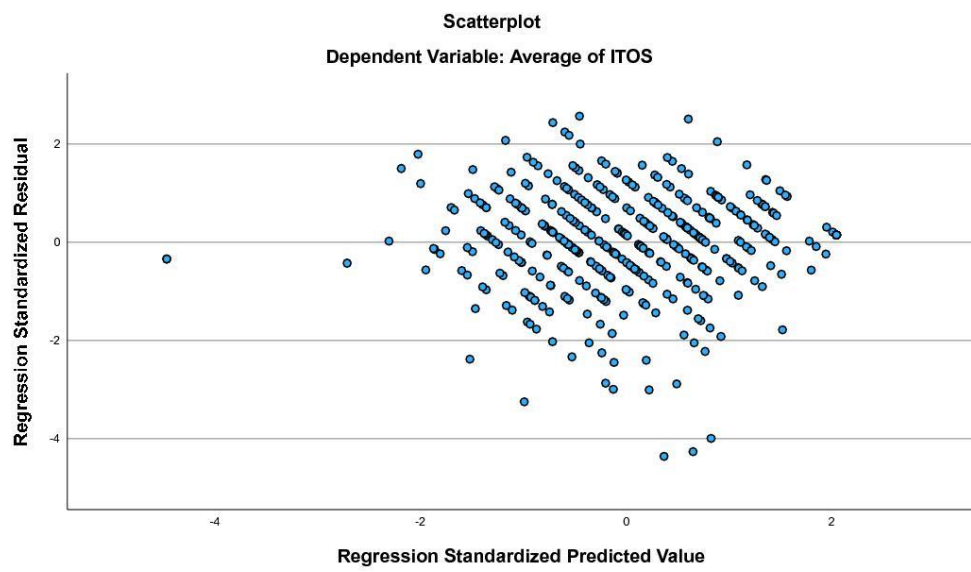
a. Dependent Variable: Average of ITOS

Residuals Statistics ^a					
	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	1.1529	5.9341	4.4357	.73345	447
Residual	-1.95333	1.14972	.00000	.44492	447
Std. Predicted Value	-4.476	2.043	.000	1.000	447
Std. Residual	-4.361	2.567	.000	.993	447

a. Dependent Variable: Average of ITOS

Charts





Round 2 Analysis

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	Average of ICE, Average of ISR, Average of RP, Average of COM, Average of QSP ^b		. Enter

a. Dependent Variable: Average of ITOS

b. All requested variables entered.

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.855 ^a	.731	.728	.44764

a. Predictors: (Constant), Average of ICE, Average of ISR, Average of RP, Average of COM, Average of QSP

b. Dependent Variable: Average of ITOS

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	239.846	5	47.969	239.393	<.001 ^b
	Residual	88.367	441	.200		
	Total	328.213	446			

a. Dependent Variable: Average of ITOS

b. Predictors: (Constant), Average of ICE, Average of ISR, Average of RP, Average of COM, Average of QSP

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	.206	.125		1.649	.100		
	Average of ISR	.060	.045	.061	1.343	.180	.294	3.398
	Average of QSP	.298	.049	.294	6.042	<.001	.257	3.887
	Average of RP	.184	.043	.185	4.290	<.001	.328	3.051
	Average of COM	.092	.044	.092	2.070	.039	.309	3.241
	Average of ICE	.321	.045	.322	7.143	<.001	.300	3.334

a. Dependent Variable: Average of ITOS

Collinearity Diagnostics^a

Model	Dimension	Eigenvalue	Condition Index	(Constant)	Variance Proportions				
					Average of ISR	Average of QSP	Average of RP	Average of COM	Average of ICE
1	1	5.936	1.000	.00	.00	.00	.00	.00	.00
	2	.024	15.717	.99	.02	.01	.02	.01	.01
	3	.016	19.329	.01	.29	.10	.05	.15	.10
	4	.009	25.068	.00	.00	.02	.93	.17	.12
	5	.008	26.861	.00	.08	.16	.00	.40	.65
	6	.006	31.625	.00	.61	.71	.00	.28	.12

a. Dependent Variable: Average of ITOS

Residuals Statistics^a

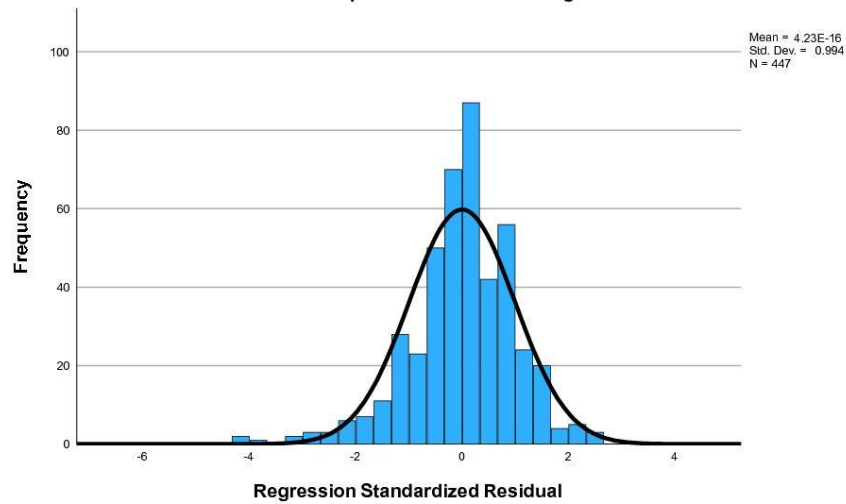
	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	1.1611	5.9345	4.4357	.73333	447
Residual	-1.93771	1.15335	.00000	.44512	447
Std. Predicted Value	-4.465	2.044	.000	1.000	447
Std. Residual	-4.329	2.577	.000	.994	447

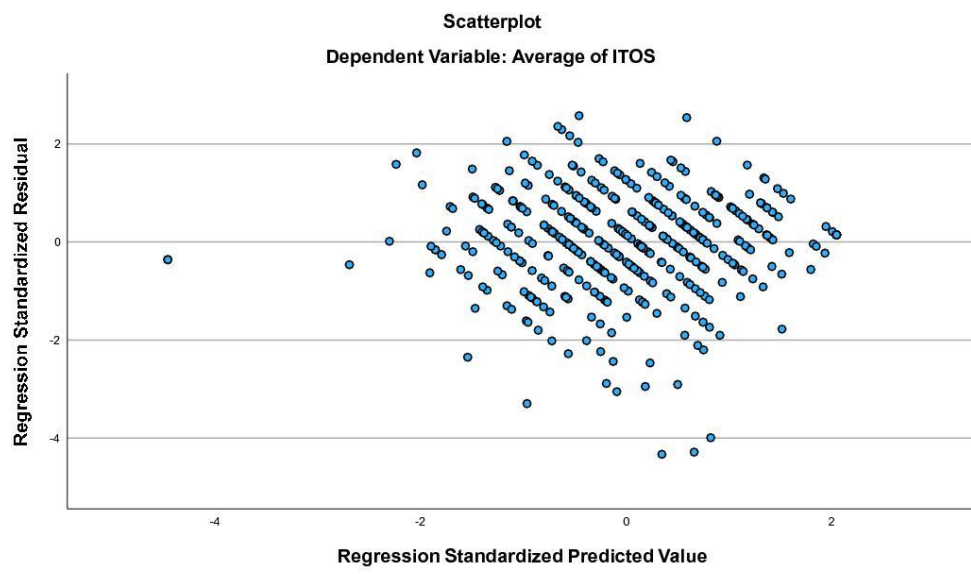
a. Dependent Variable: Average of ITOS

Charts

Histogram

Dependent Variable: Average of ITOS





Round 3 Analysis

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	Average of ICE, Average of QSP, Average of RP, Average of COM ^b		. Enter

a. Dependent Variable: Average of ITOS

b. All requested variables entered.

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.854 ^a	.730	.727	.44804

a. Predictors: (Constant), Average of ICE, Average of QSP, Average of RP, Average of COM

b. Dependent Variable: Average of ITOS

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	239.485	4	59.871	298.248	<.001 ^b
	Residual	88.728	442	.201		
	Total	328.213	446			

a. Dependent Variable: Average of ITOS

b. Predictors: (Constant), Average of ICE, Average of QSP, Average of RP, Average of COM

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	.224	.125		1.796	.073		
	Average of QSP	.337	.040	.332	8.361	<.001	.387	2.582
	Average of RP	.193	.042	.195	4.571	<.001	.337	2.968
	Average of COM	.089	.044	.089	1.996	.047	.310	3.231
	Average of ICE	.332	.044	.333	7.503	<.001	.310	3.225

a. Dependent Variable: Average of ITOS

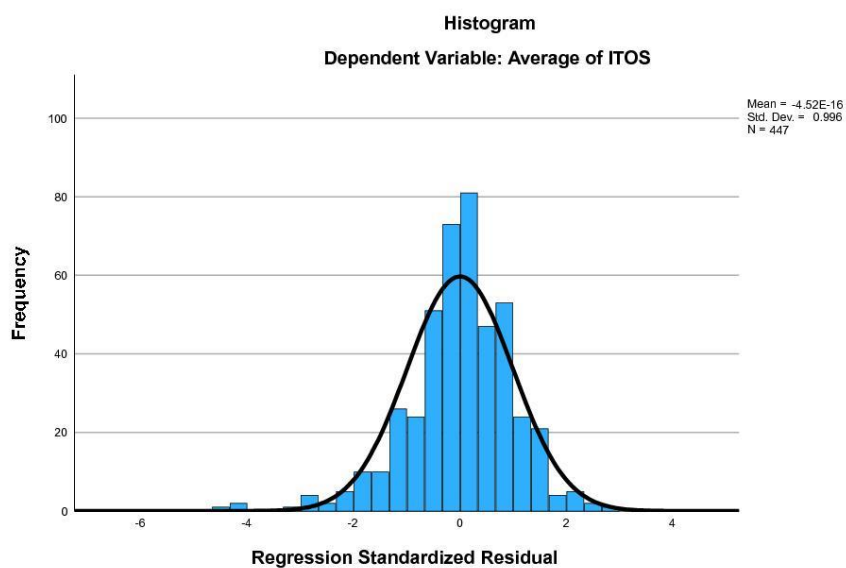
Collinearity Diagnostics ^a								
Model	Dimension	Eigenvalue	Condition Index	(Constant)	Variance Proportions			
					Average of QSP	Average of RP	Average of COM	Average of ICE
1	1	4.949	1.000	.00	.00	.00	.00	.00
	2	.023	14.558	.99	.02	.03	.02	.03
	3	.011	21.289	.01	.90	.00	.09	.19
	4	.009	22.896	.00	.07	.96	.17	.09
	5	.008	25.253	.00	.01	.01	.72	.69

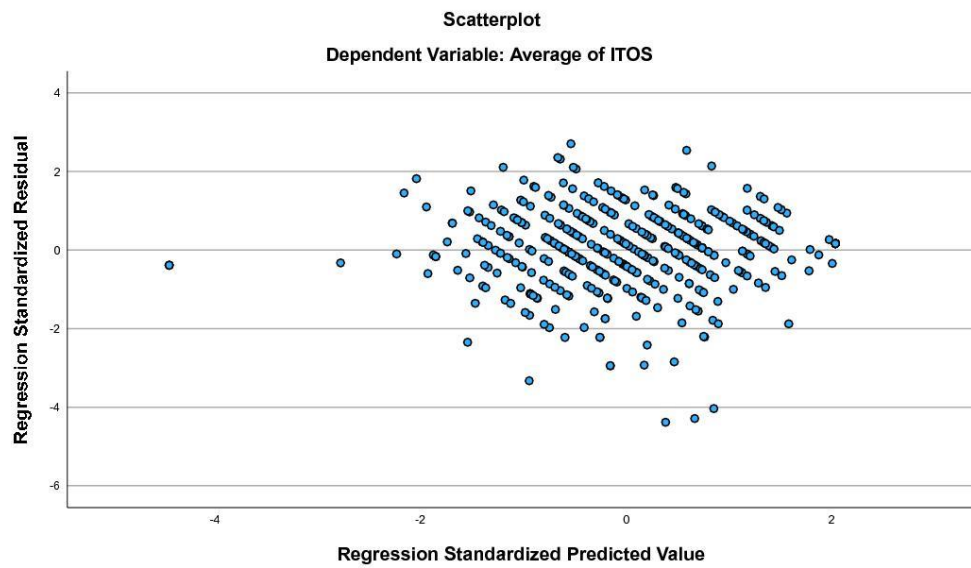
a. Dependent Variable: Average of ITOS

Residuals Statistics ^a					
	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	1.1740	5.9255	4.4357	.73278	447
Residual	-1.96412	1.21136	.00000	.44603	447
Std. Predicted Value	-4.451	2.033	.000	1.000	447
Std. Residual	-4.384	2.704	.000	.996	447

a. Dependent Variable: Average of ITOS

Charts





Filtered Demographic Group

1. Filtered "No. of ITO Experience" > 10 times or above

		Coefficients ^{a,b}					Collinearity Statistics	
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Tolerance	VIF
		B	Std. Error	Beta				
1	(Constant)	-.679	.848		-.800	.437		
	Average of ISR	1.131	.175	.865	6.449	<.001	1.000	1.000
2	(Constant)	-.656	.692		-.947	.361		
	Average of ISR	.757	.195	.578	3.886	.002	.540	1.852
	Average of RP	.364	.128	.422	2.837	.014	.540	1.852

a. Dependent Variable: Average of ITOS

b. Selecting only cases for which DG3 > 11 - 20

2. Filtered "Job Position" >= Vice President or above

		Coefficients ^{a, b}					Collinearity Statistics	
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Tolerance	VIF
		B	Std. Error	Beta				
1	(Constant)	.627	.238		2.638	.009		
	Average of CM	.836	.052	.817	16.097	<.001	1.000	1.000
2	(Constant)	.406	.220		1.843	.068		
	Average of CM	.535	.074	.523	7.223	<.001	.407	2.459
	Average of QSP	.362	.069	.381	5.262	<.001	.407	2.459
3	(Constant)	.309	.212		1.454	.148		
	Average of CM	.331	.090	.324	3.660	<.001	.249	4.011
	Average of QSP	.307	.067	.324	4.558	<.001	.386	2.588
	Average of RP	.282	.078	.294	3.632	<.001	.297	3.369

a. Dependent Variable: Average of ITOS

b. Selecting only cases for which DG8 >= Vice President