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THE STUDY OF LIFE INSURANCE CLAIMS APPLICATION SYSTEM-TAKING B COMPANY AS EXAMPLE

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ABSTRACT

In the era of Big Data, data obtained cannot be responded to only by traditional storage devices. Relatively low-cost and flexible cloud platforms can be used to meet the demand of insufficient database capacity. This is an important part of the current enterprise's deployment of digital transformation. However, no matter how technology evolves, huge data still needs to rely on manual processing and proofreading before it can be stored in the cloud database for future re-application and sharing. A major challenge for an enterprise is whether the information technology tools configured by the enterprise can effectively store and retrieve data quickly and correctly through the cloud data sharing platform to meet its operational needs. If the enterprise can configure a set of corresponding information technology tools to increase the processing capacity of big data, it can naturally improve the internal efficiency of the enterprise, maximize its output value and gain market competitive advantage. In order to understand whether the claims application system currently configured by life insurance companies has sufficient cloud big data processing capabilities, whether it can improve the efficiency of internal operations of the enterprise, and whether its application can meet the needs of claims adjusters, etc., this study uses task-technology fit model (TTF) is used as the theoretical basis and computer self-efficacy is introduced as a pre-factor. The questionnaire statistics "life insurance claims department personnel who have used the claims application system for more than three months" are satisfied with the currently configured information technology tools, and degree and reuse intention to explore current use issues of this technology tool. According to the research results, although there is a significant difference in the relationship between computer self-efficacy and satisfaction, only 8.4% of the explanatory power is negatively correlated. Although the explanatory power is not high and there is not much correlation with user experience, it can be seen that the usability of this system still needs to be improved; However, the results of other studies have a positive impact; However, further analysis of variance conducted by ANOVA found that individuals aged 26 to 35 were less satisfied with the claims application system than those aged 56 and above. This indicates that the claims application system tools currently configured by insurance companies have a negative impact on individuals aged 26 to 35, and the conclusion is consistent with the recent observed age group of resignations. It can be seen that unsuitable systems are also one of the factors leading to an increase in their turnover rate. It is hoped that this research result can serve as a reference for companies to improve in the future to facilitate talent retention.

Keywords: *Big data, Digital transformation, Cloud platform, Information technology.*

1. INTRODUCTION

The digital transformation of Taiwanese enterprises can be traced back to the booming development of the Internet in the 1990s. Under the government's initiative, both large and small companies followed suit, introducing extensive e-transformation setups. Today, the foundational e-transformation of Taiwanese enterprises is highly mature. In this digital age, the emphasis on data necessitates a significant workforce for archiving and database entry. Basic computer operation skills are now considered fundamental job skills for employees and the minimum hiring requirement for Taiwanese enterprises. As a result, no additional training is needed, and employees can quickly commence operations. However, it is undeniable that the rapid advancement of artificial intelligence (AI) technology has rendered many internal software, hardware, and network tools inadequate for the tasks at hand. If a company’s digital transformation is slow or if it implements low-matching efficiency tools, it will be unable to

manage the heavy workload effectively. This results in overtime becoming a common phenomenon, generating internal discontent and damaging the company's reputation by failing to deliver services on time.

At the end of 2019, the novel coronavirus spread globally, and Taiwan was not spared. The "pandemic insurance chaos" led to an overwhelming number of claims nationwide. Even with insurers increasing their workforce, they could not handle the volume in time. However, the pandemic also initiated changes in global industrial structures, accelerating the pace of digitization and digital transformation across various sectors. Consequently, Taiwan's insurance industry has also evolved and transformed its service models. The demand for "contactless" services prompted the Life Insurance Association to pilot the "Policy Service/Claim Alliance Chain" in July 2020. Following the successful trial, the "Insurance Block chain Alliance Technology Application Shared Platform" was officially launched in May 2021, providing policyholders with more convenient online application services. To understand whether the IT tools allocated by enterprises meet the current needs of users, this study will be based on the aforementioned research background and motivation, using the Task-Technology Fit (TTF) model. By exploring the satisfaction and reuse intentions of claims department personnel with the current "claims application system," we aim to determine whether the IT tools currently deployed by enterprises are sufficient to handle the current workload.

The research objectives are as follows:
(1) Analyse whether the task characteristics of claims personnel significantly affect the task-technology fit of using the claims application system.
(2) Analyze whether the technological characteristics of claims personnel significantly affect the task-technology fit of using the claims application system.
(3) Analyze whether the computer self-efficacy of claims personnel significantly affects the task-technology fit of using the claims application system.
(4) Analyze whether the computer self-efficacy of claims personnel affects their user satisfaction.
(5) Investigate whether the task-technology fit of the claims application system affects user satisfaction.
(6) Investigate whether the task-technology fit of the claims application system affects reuse intentions.
(7) Explore whether user satisfaction affects reuse.

Business Operations in the Pandemic Era
Cloud Computing: The architecture of the Internet is a complex and abstract concept that primarily explains how the client and server interact, operate, and apply technology. This concept was introduced by Professor McCarthy, the father of artificial intelligence, in 1955. The term "cloud computing" was first mentioned in an internal meeting at Compaq in 1996. Subsequently, in 1997, Professor Chellappa [1] defined it as "a computing paradigm where the boundaries are determined by economic rationality rather than technical limitations," thereby formally initiating the academic use of the term "cloud computing."

Evaluation and Advancement of Software and Hardware Information Technology Equipment: According to domestic and international literature, data is generally used only by organizational experts. However, with the evolution of time, a user-friendly interface should not be limited to organizational experts [2]. The effective presentation of digital resources requires not only basic IT hardware and maintenance skills but also corresponding software or coding knowledge

to accurately present digital files. However, the rapid changes in information technology often render current technical equipment obsolete quickly. According to a survey by the Research Libraries Group (RLG) in the United States, "The gradual obsolescence of technology is the biggest threat to the success of digital preservation. Especially the confusion presented by the development of new technologies" [3]. In the absence of standardization, the interfaces used by various user-end.

Promotion and Challenges of the Insurance Claims Alliance Chain in Taiwan's Insurance Industry: In recent years, due to the pandemic, the Financial Supervisory Commission R.O.C (Taiwan) has actively promoted insurance technology (InsurTech). In 2020, under its initiative, several insurance companies collaborated to establish the "Policy Maintenance/Claims Alliance Chain," using blockchain technology to make it more convenient for policyholders to apply for services from insurance companies. Policyholders only need to visit the online platform of one of the insurance companies within the alliance, apply online, and authorize the company to submit the application to other insurance companies on their behalf. The data will be shared and updated simultaneously. The main purpose of establishing this platform is to simplify the complexity of paper applications, eliminating the need for customers to individually submit paper documents to each insurance company.

The Application of Information Technology (IT) in Taiwan

Electronic Commerce, E-Commerce: Electronic Commerce (E-Commerce) refers to a business model that involves transactions and information transmission through electronic technology (usually the internet). E-commerce can be applied to business models like B2B, B2C, C2C, and C2B. Companies that use the internet for retail business are also known as E-trailers.

Blockchain Consortium Technology Application Sharing Platform: Blockchain is a "decentralized" system used for recording and storing data. Its principle is developed through cryptography and a "peer-to-peer" consensus architecture. Due to its decentralized nature, there is no central authority for physical control, and every member has equal rights to freely conduct peer-to-peer transactions and operations. However, because of this decentralization, no member can delete or alter the chain [4].

Research Framework Models Literature

Task-Technology Fit, TTF: Task-Technology Fit (TTF) is a theory proposed by Goodhue & Thompson (1995) as an advancement to address the deficiencies in Davis' Technology Acceptance Model [5]. The theoretical foundation is similar to TAM, using "perceived fit" as the perspective. It posits that users' attitudes positively influence their behavioral intentions, and personal cognitive perceptions (perceived usefulness and perceived ease of use) are crucial factors in determining technology adoption. Goodhue & Thompson [6] added the "fit between the information technology system and the task execution" to predict its impact on individual performance. The success of the allocated information technology tools depends on whether they meet the users' task execution needs. The theory uses two dimensions, Task Requirement and Tool Functionality, as antecedents and explains the performance impact on individuals after using the information technology tools (Actual Tool User).

User Satisfaction: User Satisfaction is a broad indicator, first proposed by Locke [7], who defined satisfaction as "a pleasurable or positive emotional state resulting from the evaluation of one's job outcomes." It mainly explores the relationship between personal job performance and job satisfaction. Bhattacherjee [8] defined user satisfaction as "the user's experience after

using the system can be used to measure the degree of satisfaction," while Adeyinka & Mutula [9] explained it as "the user's overall satisfaction with the use of the system."

Information Systems Success Model, ISSM: Delone & McLean [10] updated their Information Systems Success Model (ISSM), initially proposed in 1992, by adding a new variable indicator - "Service Quality." The six interrelated dimensions are information quality, system quality, service quality, usage (intention to use or system use), user satisfaction, and net benefits. The model explains that a successful system uses information quality, system quality, and service quality as indicators, which affect subsequent usage intentions (or system use) and user satisfaction. A successfully used system can also increase net benefits, which positively impact user satisfaction and further usage intentions for the information system.

Computer Self-Efficacy: Computer Self-Efficacy (CSE) is a theory extended by Hill et al. [11] from Bandura's [12] "self-efficacy theory," focusing on users' computer usage behavior. It is a subjective judgment of one's capability. According to the literature, Compeau & Higgins [13] and Marakas et al. [14] defined computer self-efficacy as "an individual's judgment of their ability to use computers to accomplish a task," implying confidence in their computer skills to complete a specific task. Computer self-efficacy influences personal willingness to use computers, intentions to use computers, and personal computer learning performance [15]. The higher an individual's computer self-efficacy, the stronger their intention to learn and use computers, thereby achieving their expected goals [11].

2. RESEARCH METHOD

Research Framework

According to Goodhue & Thompson [6], from the perspective of "usage," using the information technology tool is not a voluntary choice by the user; it is adopted due to the necessity of the work tasks. Therefore, this study does not explore the adoption rate of individuals but instead uses satisfaction with the information technology tool as a dimension. To obtain more accurate data, the study focuses on personnel with a certain level of proficiency in the configured information system tools, specifically those who have used the claims application system for more than three months in the life insurance claims department. Although the main tasks of claims work focus on fast and accurate claim approvals, avoiding interest from delayed payments, and preventing negative customer satisfaction impacts, these tasks must still be processed according to laws, policy terms, and claim handling guidelines and procedures. This causes performance variability among claims personnel due to the nature of the cases handled, and since there are no standard performance evaluation indicators, it is difficult to measure objectively. Thus, this study does not explore the impact on performance but instead examines the willingness to reuse the information technology tool as a dimension. Additionally, "computer self-efficacy" is introduced as a factor in the original TTF model's antecedents to investigate the fit, satisfaction, and reuse intention of the insurance company claims personnel with the currently configured information technology tools. This aims to understand whether the personnel support and approve of the information technology tools provided by the company, providing feedback for company improvements.

Research Hypotheses

Based on the literature review and the research framework, this study proposes seven research hypotheses:

H1: The task characteristics of the claims application system positively affect the task-technology fit of the claims application system.

H2: The technological characteristics of the claims application system positively affect the task-technology fit of the claims application system.
H3: The computer self-efficacy of claims personnel positively affects the task-technology fit of the claims application system.
H3-1: The computer self-efficacy of claims personnel positively affects their satisfaction with the claims application system.
H4: The task-technology fit of the claims application system positively affects the reuse intention of claims personnel.
H5: The task-technology fit of the claims application system positively affects the satisfaction of claims personnel.
H6: The satisfaction of claims personnel with the claims application system positively affects their reuse intention.

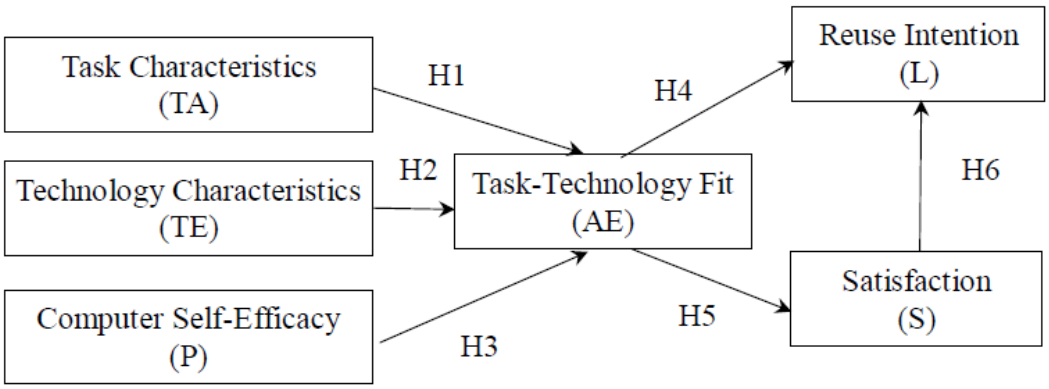

Figure 1. The research framework of the present study

Questionnaire Design

Task Characteristics (TA)

This study defines task characteristics as "the satisfaction of claims personnel with the claims application system in completing tasks." Based on task characteristics, the survey items are designed to investigate whether the claims personnel find the claims application system effective in helping them complete their tasks. There are four survey items, refined into final items, including "data access and retrieval speed, image file download speed, system stability (infrequent crashes), and operational smoothness (no delays)."

Technology Characteristics (TE)

This study defines technology characteristics as "the satisfaction of claims personnel with the design of the claims application system's file creation functions." Based on technology characteristics, the survey items are designed to measure the satisfaction of claims personnel with the claims application system. There are five survey items, refined into final items, including "string indexing design, data retrieval accuracy, error correction performance, ability to display non-standard characters, and operational design of executing alliance chains."

Computer Self-Efficacy (P)

This study defines computer self-efficacy as "the perceived proficiency of claims personnel in computer and operating system operations based on their background." Survey items based on computer self-efficacy are designed to measure the individual's basic computer skills and proficiency in performing operating system tasks. There are two survey items, refined into final items, including "basic computer operation skills proficiency and proficiency in performing specific operating system tasks."

Task-Technology Fit (AE)
This study defines task-technology fit as "the perceived fit of claims personnel with the claims application system in assisting them to complete tasks." Based on task-technology fit characteristics, survey items are designed to measure the perceived fit of the claims personnel with the claims application system. There are five survey items, refined into final items, including "efficiency in executing alliance chains and paper-based tasks, meeting work application needs, efficiency of updated file creation functions, time cost reduction, and reduction of company labor costs."

Satisfaction (S)
This study defines satisfaction as "the overall satisfaction of claims personnel with the quality performance of the claims application system." Satisfaction survey items are developed based on the perceived fit after use, measuring the overall satisfaction of claims personnel with the claims application system. There are six survey items, refined into final items, including "speed of linking to operational webpages, text-to-page ratio, functionality menu design, performance of input commands, overall operational performance, and quality of downloading alliance chain image files."

Reuse Intention (L)
This study defines reuse intention as "the willingness of claims personnel to continue supporting and using the claims application system." Survey items based on perceived fit and overall satisfaction after using the claims application system are designed to measure the reuse intention of claims personnel with the current claims application system. There are four survey items, refined into final items, including "being accustomed to the system and tending to continue using it, wanting to continue using the system even if a better one is available, recommending the system to peers, and increased willingness to use after system upgrades."

3. RESULTS AND DISCUSSIONS

Task Characteristics (TA)
This dimension includes 4 items. According to the analysis results, the satisfaction data for task characteristics, arranged from lowest to highest, are: TA2 speed of executing image file download tasks < TA1 speed of executing data storage and retrieval tasks < TA4 smoothness of executing work tasks (no delay) < TA3 stability when executing work tasks (infrequent crashes). Only TA3 stability when executing work tasks (infrequent crashes) exceeded the midpoint value of 3, while the rest did not reach the midpoint value. The data indicates that claims personnel are generally satisfied with the current company's computer hardware equipment, finding it appropriate and stable, but they are dissatisfied with the smoothness of executing tasks such as downloading image files and accessing or retrieving data from the database. This suggests that although the computers do not crash frequently, the response speed of certain related information technology tools is unsatisfactory and needs improvement.

Technology Characteristics (TE)
This dimension includes 5 items. According to the analysis results, the satisfaction data for technology characteristics, arranged from lowest to highest, are: TE5 operational design of executing alliance chains < TE4 ability to display non-standard characters < TE3 error correction performance < TE1 string indexing design < TE2 data retrieval accuracy. Only TE4 ability to display non-standard characters and TE5 operational design of executing alliance chains did not exceed the midpoint value of 3. The data indicates that claims personnel are generally satisfied with the unique error correction and indexing functions of the current

company's claims system, but most believe that the ability to read non-standard characters and the operational design of executing alliance chains need improvement.

Computer Self-Efficacy (P)
This dimension includes 2 items. The data for computer self-efficacy shows that the claims personnel's perceived proficiency in basic computer operation skills and proficiency in performing operating system tasks both have averages exceeding the midpoint value of 3. This is mainly because basic computer operations are a prerequisite before employment, and they have more than 3 months of experience using the operating system. Therefore, the statistical results show no options below proficiency. However, the data also indicates a slight gap between confidence in basic computer operations and confidence or proficiency in certain system operations or usage processes.

Task-Technology Fit (AE)
This dimension includes 5 items. According to the analysis results, the agreement data for task-technology fit, arranged from lowest to highest, are: AE1 alliance chain efficiency better than paper < AE4 updated system reduces my operating time cost < AE2 meets my work application needs < AE5 reduces company labor costs < AE3 updated file creation function makes me more efficient. Only AE3 updated file creation function makes me more efficient exceeded the midpoint value of 3, while the rest did not. The data indicates that claims personnel agree that system updates can effectively improve file creation efficiency, but they do not believe it can reduce their operating time cost. Observing further, 56.8% of claims personnel only indicated neutrality, which is more than half of the statistical sample, making it difficult to conclude that the updated file creation is effective. Additionally, due to the lack of agreement that executing alliance chains is more efficient than paper, they do not agree it can effectively reduce personal operating time costs or meet application needs, nor do they agree it can reduce company labor costs.

Satisfaction (S)
This dimension includes 6 items. According to the analysis results, the satisfaction data, arranged from lowest to highest, are: S6 quality of downloading alliance chain image files < S5 overall operational performance of the system < S1 speed of linking to operational webpages < S4 performance of executing index commands < S3 design of system function menus < S2 text-to-page ratio of operating pages. Only S2 text-to-page ratio of operating pages and S3 design of system function menus exceeded the midpoint value of 3. The data indicates that claims personnel are dissatisfied with the current information technology tools provided by the company in terms of the speed of linking to operational webpages, performance of executing index commands, overall operational performance, and the quality of downloading alliance chain image files.

Reuse Intention (L)
This dimension includes 4 items. According to the analysis results, the agreement data for reuse intention, arranged from lowest to highest, are: L4 upgrading the system also increases reuse intention < L3 I would recommend this system to peers < L2 even if there is a better system, I still want to continue using it in the future < L1 I am accustomed to this system, so I tend to continue using it. Only L1 I am accustomed to this system, so I tend to continue using it reached the midpoint value of 3. The rest did not. The data indicates that most people do not agree that upgrading the system increases reuse intention, nor would they recommend this system. Observing further, the average for continuing to use the system even if there is a better one is 2.95, close to the midpoint value of 3. According to Goodhue & Thompson (1995), using the

information technology tool is not voluntary; it is configured by the company due to task needs. Therefore, even if there is a better system, the reluctance to spend time learning a new system results in a tendency to continue using the current system, but future reuse intention remains ambivalent.

4. CONCLUSIONS AND SUGGESTIONS

Based on the results of descriptive statistics for the six dimensions, it is found that the common lowest satisfaction issue is mainly related to the operation of the blockchain. There is also dissatisfaction with the use of updates as a method to improve efficiency, as it is believed that it does not reduce personal operational time costs. It is recommended that the company address these issues directly, identify updates that truly enhance efficiency, or seek a better system to improve organizational efficiency.

Recent observations in the claims department, along with information from industry peers, indicate that working until 9 PM and unpaid weekend overtime seem to be the norm for claims personnel. The employer's use of a responsibility system to circumvent labor law overtime restrictions leads employees to avoid requesting overtime pay. This imbalance between working hours and wages increases the turnover rate. Additionally, new recruits struggle to adapt to the complex operational methods, such as the extensive data entry and multiple reviews required. If the company values data retention but lacks robust IT tools to support it, these issues not only hinder operational efficiency but also make talent retention and recruitment difficult. It is suggested that the company have the IT department further investigate the system to identify and resolve these issues.
Based on the data from the independent samples t-test, it is found that women have higher satisfaction with task characteristics (TA) than men. This dimension mainly addresses satisfaction with the entire process of using the current claims application system to complete work tasks, including speed, stability, and smoothness. Sociological and various literature studies indicate that women typically exhibit more patience, compliance, and tolerance compared to men, which aligns with the findings of this study. This can be considered a normal phenomenon.

From the ANOVA variance analysis and the Scheffé post hoc test, it is found that claims personnel aged 56 and above have higher satisfaction levels compared to those aged 26-35. When facing changes within an organization, past experiences, mindset adjustments, or anticipated obstacles influence whether changes are resisted or accepted (Ajzen, 1985)[16]. Senior personnel are usually more familiar with the company's operations and workplace environment, showing less sensitivity or frustration with old systems or updates. Conversely, younger personnel may not understand these issues and fail to see the benefits of frequent system updates. It is suggested that the company provide explanations to help adjust user attitudes. Furthermore, the ANOVA variance analysis shows significant differences in satisfaction only by age, with no significant differences in other dimensions, education levels, or system usage duration, indicating a consensus across the department. It is recommended that the company seek solutions from the items in Table 4-2 of the descriptive statistics.

According to the Spearman rank correlation statistics and simple regression analysis, only the computer self-efficacy of claims personnel has a negative impact on satisfaction with the claims application system. Although the impact is not high and is not strongly related to personal experience, it indicates that the system's usability still needs improvement, which is an area the company must address.

H1: The task characteristics of the claims application system positively affect the task-technology fit of the claims application system.
H2: The technological characteristics of the claims application system positively affect the task-technology fit of the claims application system.
H3: Computer self-efficacy of claims personnel positively affects task-technology fit of claims application system.
H3-1: Computer self-efficacy of claims personnel negatively affects satisfaction with claims application system.
H4: Task-technology fit of the claims application system positively affects the intention of claims personnel to reuse the system.
H5: Task-technology fit of the claims application system positively affects the satisfaction of claims personnel.
H6: Satisfaction with the claims application system positively affects the intention of claims personnel to reuse the system.

For the investors, the return rate for the first round of investment is about 13%; and the second round is about 25%. This investment return rate is much higher than the return rate of time deposits and bonds. For the labors, they can has at least NT$ 40,000 per month and just need to work about 4 days per week. This salary level is much better than that of ordinary office workers. For land providers, every units of land they can received NT$ 20,000 per year.

Because the innovation business model has very good business benefits not only for the case company but also for the investors, labors, and land providers. Therefore, the innovation business model proposed in the present study can be promoted and applied to relevant countries.

REFERENCES

Adeyinka, T., Mutula, S. (2010). A proposed model for evaluating the success of WebCT course content management system. Computers in Human Behavior.26(6),1795-1805.
Ajzen, I. (1985). From intentions to actions: A theory of planned behavior. In Action control: From cognition to behavior (pp. 11-39). Berlin, Heidelberg: Springer Berlin Heidelberg.
Bandura, A. (1977). Self-efficacy: toward a unifying theory of behavioral change. Psychological review, 84(2), 191.
Bhattacherjee, A. (2001). Understanding information systems continuance: An expectation-confirmation model. MIS quarterly, 351-370.
Chellappa, R. (1997). Intermediaries in cloud-computing: A new computing paradigm. In INFORMS Annual Meeting. Dallas (pp. 26-29).
Compeau, D. R., & Higgins, C. A. (1995). Computer self-efficacy: Development of a measure and initial test. MIS quarterly, 189-211.
Davis, F. D. (1985). A technology acceptance model for empirically testing new end-user information systems: Theory and results (Doctoral dissertation, Massachusetts Institute of Technology)
DeLone, W. H., & McLean, E. R. (2003). DeLone and McLean model of information systems success: a ten-year update. Journal of management information systems, 19(4), 9.
Earley, P. C. (1994). Self or group? Cultural effects of training on self-efficacy and performance. Administrative science quarterly, 89-117.
Goodhue, D. L., & Thompson, R. L. (1995). Task-technology fit and individual performance. MIS quarterly, 213.

Hill, T., Smith, N. D., & Mann, M. F. (1987). Role of efficacy expectations in predicting the decision to use advanced technologies: The case of computers. Journal of applied psychology, 72(2), 307.

Hsuan-Lei Shao & Hajime Osawa. (2015). From Digital Library to Digital Humanities: Case Study of Japanese Toyo-bunko Archives. Journal of Humanities College of Liberal Arts National Chung Hsing University Issue 55 (2015/09) Pp. 101-123. (In Chinese)

https://content.teldap.tw/index/blog/?p=1672

Locke, E. A., Sirota, D., & Wolfson, A. D. (1976). An experimental case study of the successes and failures of job enrichment in a government agency. Journal of Applied Psychology, 61(6), 701.

Marakas, G. M., Yi, M. Y., & Johnson, R. D. (1998). The multilevel and multifaceted character of computer self-efficacy: Toward clarification of the construct and an integrative framework for research.I nformation systems research, 9(2), 126-163.

Taiwan Digital Archives Expansion Project, (2008).

Teng-Wei Yang (2018). Research on the Principles and Applications of Blockchain Operations. (Unpublished master's thesis). Executive MBA Program, School of Management, National Central University, Taoyuan City, Taiwan