

The Affecting of Service Innovations Capability on the Efficiency of the Provincial Electricity Authority Employees in Phra Nakhon Si Ayutthaya, Thailand

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Abstract

The objectives of this research were 1) to test the influence of service innovation capability affecting the efficiency of the Provincial Electricity Authority employees in Phra Nakhon Si Ayutthaya Province, 2) to test the influence of knowledge integration and the technology acceptance that affected the service innovation capability. The questionnaire was used to collect data from 234 Provincial Electricity Authority employees in Phra Nakhon Si Ayutthaya Province using the calculation method according to the proportion of the actual population in each unit together with convenience sampling. The statistics used for data analysis were frequency distribution, percentage, mean, standard deviation, and multiple regression analysis used to test the hypothesis. The research results revealed that 1) The service innovation capability included the development of competency to be up-to-date, the perception of value of customers, and the digitization affecting the efficiency of the employees of the Provincial Electricity Authority in Phra Nakhon Si Ayutthaya Province. As for the integration of power from all sectors, it does not affect the efficiency of the employees of the Provincial Electricity Authority in Phra Nakhon Si Ayutthaya Province. 2) The integration of knowledge and technology acceptance affected the service innovation capability.

Keywords: Service Innovation, Operational Efficiency, Provincial Electricity Authority

Introduction

As the technological changes nowadays play an important role in all types of business operations, traditional business practices have to change in order to avoid backwardness. Similarly, the service businesses need to adapt to innovate in order to develop more efficient services (Thetchip, 2018), especially government agencies responsible for serving people. In the past, it was found that government agencies had problems with service efficiency, compared to the private sector. However, due to the current people's expectation to receive public services from the state with efficiency, quality, and speed, the new image of the Thai bureaucracy (Janthawong, 2014) is expected.

The Provincial Electricity Authority is a government organization that has direct duty to serve people. In the past, some services might not meet the needs of people. The Provincial Electricity

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Authority is trying to change the service model by incorporating service innovations. Service innovation has therefore become essential for governments to adapt in preparing for change in the era of globalization that cannot be managed in the original form. This will enable the Thai government to be efficient in competition and keep pace with other countries. The development of government innovations called bureaucracy 4.0 are based on the concept of 3 new types of operations, namely 1) an open and connected public sector, 2) a people-centered service of public sector and access to the needs of the people at the individual level, and 3) the smart government with high performance and modernity. These are combined with the three key factors that will make the bureaucracy 4.0 successful including 1) the integration of power between the government and other sectors in society, 2) innovation, and 3) digitization. This is a transformational concept of public administration that enhances the efficiency of government services (Deeyiam & Boontongkham, 2020). Service innovation capability creates a new service model that helps organizations adapt to changing environment causing the operation of the business to develop and achieve service performance (Luangsakdapich, 2020). Service innovation is driven by a number of factors, especially the personnel who operate which is an important machine in servicing. If personnel have knowledge and can integrate knowledge coupled with the acceptance and adoption of efficient technology as a supplementary tool for service delivery, it will produce good results and make the operation more efficient. Therefore, the integration of knowledge and the technology acceptance is an important factor leading to the innovation in the organization (Sivapitak, 2014).

The integration of knowledge will help synthesizing the body of knowledge in the organization leading to the development of new service idea that transforms from knowledge to service innovation capability (Jongjaroenchaisakul, 2016). In addition, the use of technology by personnel is caused by interest making them choose to learn new technology. It also cause the work process or new service which is innovative creative behavior that helps operating better (Serivichayaswadi & Jaroenwisan, 2019). The service innovation is therefore an important factor for government organizations that have an obligation to serve the people, such as the Provincial Electricity Authority that has to develop a new service model in accordance with the expectations of people. It leads to the satisfaction of service users as much as possible. The researcher was interested in studying the influence of competency in service innovation which consists of competency development to be up-to-date, perception of value of customers strengthening all sectors and digitalization that affect the performance of the Provincial Electricity Authority employees in Phra Nakhon Si Ayutthaya Province and study the influence of knowledge integration and the technology acceptance that affects the service innovation capability. The research results will be used to develop services in order to create efficiency in the performance of the Provincial Electricity Authority employees in the future. It can be used as the guideline for correcting, improving and reducing complaints from service recipients and develop customer service work of the Provincial Electricity Authority to have more quality.

Research Objectives

- 1) To test the influence of the ability of service innovations on the efficiency of the employees of the Provincial Electricity Authority in Phra Nakhon Si Ayutthaya Province.
- 2) To test the influence of knowledge integration and the technology acceptance that affects the service innovation capability.

Literature Review

Service innovation capability refers to the service operations of a new service-oriented workforce that improves from the original service. It is about the behavior using technology or other usage patterns to improve the customer service process to be more efficient, including the development of modern performance, perception of value of customers, strengthening all sectors, and digitalization.

High performance organization refers to the personnel planning and preparation and pre-analyses risks in applying innovations and new knowledge to work in order to be resilient to global changes. There is open communication among personnel including participation in the development of the organization. This leads to cooperation until success in the operation with regard to the environment and society entirely to meet the needs of customers for maximum satisfaction. As human resources are valuable resources, the organization therefore needs to develop the competency of personnel to be up-to-date to increase the potential leading to success in future operations. People with ability will make the organization go to excellence both in terms of efficiency and effectiveness (Inthong, 2017). Human capital management is a key element in the development of personnel's ability to achieve the most efficient work (Trakunweerayut et al., 2015). This leads to Hypothesis 1.1) Modernization of competency development affects the efficiency of the Provincial Electricity Authority employees in Ayutthaya Province.

Perception of customer value means understanding the needs of customers with care and listen to customer problems by working proactively. The customers are facilitated to use the services at all time and can receive service in many channels to meet the needs of customers. The aim is to provide customers with good experience and impression so that they have willingness to engage in service development. The perception of customer value is a new service concept where government agencies should be aware of their customers' feelings, needs, or satisfaction on anything in order to improve and develop products and services to meet the needs and deliver that value to the customers with most satisfaction (Jongjaroenchaisakul, 2016). The customer attention leads to quality service, resulting in service success and revenue growth (Luangsakdapich, 2020). Customer-centricity improves service efficiency and service recipients are more satisfied with the service (Wongchaiya et al., 2017). This leads to Hypothesis 1.2) the perception of customer value affects the performance of the Provincial Electricity Authority employees in Ayutthaya Province.

Networking refers to coordination in the work within the organization. Other sectors have been upgraded from coordination to working altogether and develop towards cooperation mission. The information has been transferred and shared with each other collaborating with all sectors in government agencies that work altogether in unity and harmony with the central, regional and local government agencies for convenience and speed. The operational steps can be reduced and convenience can be provided to service recipients enabling personnel to operate faster (Sirisamphan, 2021). The fast and effective government services can truly meet the needs of people and help working effectively (Sangthongloun, 2017). Thus, social networking is associated with efficiency and operational efficiency (Gesthong, 2018) leading to Hypothesis 1.3) that the integration of power from all sectors affects the performance of the Provincial Electricity Authority employees in Phra Nakhon Si Ayutthaya Province.

Digital transformation means to modify the work process by applying digital technology into the work process to create new services and interactions with customers. This enables organizations to adapt in a rapidly evolving business environment. Digital transformation is important in internal management. As digital technology makes operations more efficient, only the organizations with efficient management system and quick access to information will survive (Pleanbangyang, 2015). This can create long-term competitive advantage (Malisuwan, 2017). The adoption of digital technology in the digital workplace will not only help competing with other businesses but it also make employees work more efficiently to create satisfaction for employees (Ditto (Thailand) PCL, 21st July, 2021). It can create convenience for customers who receive services (Jiranantararat, 2021). The applications of information technology helps increasing efficiency, speed and work competency (Parmwong et al., 2016). It leads to Hypothesis 1.4) Digitalization affects the performance of the Provincial Electricity Authority employees in Phra Nakhon Si Ayutthaya Province.

Knowledge integration means that personnel in the organization can work altogether by coordinating knowledge such as plans, processes, information, resource management and operation in accordance with the intended purpose. The knowledge is exchanged in working as a team. There is a transfer and sharing of knowledge with one another to help analyzing or giving suggestions for work. There is work that is connected to help developing operations to be more efficient integration of knowledge. Members of the organization must share knowledge, ideas, information and provide suggestions to develop new products or services (new service idea) resulting in innovation. It is also the gathering of knowledge from experts with different knowledge by combining such knowledge in order to find creative product ideas or new services that can help one another to solve problems or determine the methods of operation. It can also develop cooperation in building the organization to be an innovative organization as well as increasing the innovation capability and performance (Jongjaroenchaisakul, 2016) to create products and good future for the organization. Therefore, the integration of knowledge affects the ability to service innovation. This leads to Hypothesis 2: the integration of knowledge affects the ability of service innovation.

Technology acceptance means understanding and recognizing the importance and benefits of technology as important. The decision is made in adopting technology to improve service processes to benefit service operations. This can respond to changes in the external environment and customer satisfaction. Technology adoption is a method or way to create growth or the ability to compete for the survival of the business. The ability is emphasized to create innovation (Rattanawong, 2014). It shows that the adoption of information technology influences service innovation (Rattanawong, 2014) leading to Hypothesis 3: technology adoption affects service innovation capability.

Research Conceptual Framework

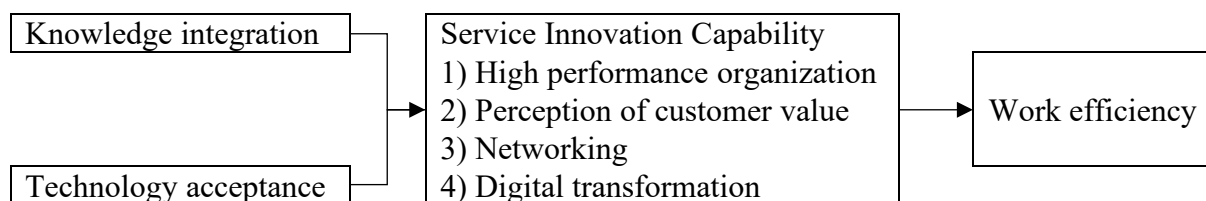


Figure 1 Research conceptual framework

Research Methodology

Population and Samples

The population used in this research was employees of the Provincial Electricity Authority in Phra Nakhon Si Ayutthaya Province of 17 locations, totaling 563 employees (Provincial Electricity Authority, 2021). The sample size was calculated from the Taro Yamane formula at 95% confidence level to obtain 234 samples using the calculation method based on the actual population in each unit.

Data Collection and Analysis

The data collection with questionnaires is divided into 6 parts; 1) personal factors, 2) work data as Check list, 3) service innovation capability consisting of high performance organization, perception of customer value, networking, and digital transformation, 4) operational efficiency, 5) knowledge integration and technology acceptance. It is a 5 Rating scale question where 1 means the least agree, 5 means the most agree, and 6) opinions and suggestions which are open-ended question. The statistics used to analyze the data were frequency, percentage, mean, standard deviation. The Pearson's Correlation Coefficient and Multiple Regression Analysis were determined at the statistical significance at .05 level.

Quality assurance of research tools

1) For checking the Content Validity, the researcher examined the quality of research tool by testing the content validity bringing the created questionnaire to present to 3 experts for considering the Index of Item Objective Congruence (IOC). It was found that the IOC value was between 0.67-1.00.

2) For checking the Reliability, the researcher brought the questionnaire to try out for 30 sets and the obtained data were tested by statistical methods. When considering the alpha coefficient according to Cronbach's alpha co-efficient, the results of the validated alpha coefficients between 0.740 and 0.950 were greater than 0.7. The questionnaire was considered to have a high level of confidence (Vanichbuncha, 2017) and can be used for the data collection.

Research Results

From the research, it was found that the majority of respondents were male for 56.83%. 46.58% aged between 25-35 years. 55.98% had bachelor's degree. 32.48% had the duration of working in the organization between 5-10 years. 35.90% had salary below 20,000 baht and most work was in the accounting and processing department for 24.78%.

Research Hypothesis Testing

In hypothesis testing, the researcher tested the properties of the variables to see whether they were suitable for multiple regression analysis techniques. The Pearson correlation coefficient was found to avoid the relationship problem of having too high independent variables until the Multicollinearity problem occurred. It was found that the correlation coefficient was between 0.467-0.658 which was not more than 0.8 (Srisatidnarakul, 2007). In addition, it was considered together with the VIF (Variance Inflation Factors) and found that the VIF was 1.664-1.972, which was not more than 10 (Srisatidnarakul, 2007). Therefore, the multiple regression could be analyzed. The results of the analysis are shown in Table 1 and Table 2.

Table 1 Results of the analysis on the service innovation capability consisted of high performance organization, perception of customer value, networking, and digital transformation affecting the performance of Provincial Electricity Authority employees in Phra Nakhon Si Ayutthaya Province

Service innovation capability	Efficiency of performance		t	p-value
	Regression Coefficient (β)	Standard Error (ϵ)		
Constant (a)	-004.1E-013	0.051	0.000	1.000
1) High performance organization	0.150	0.071	2.108	0.036*
2) Perception of customer value	0.240	0.067	3.594	0.000**
3) Networking	0.073	0.071	1.032	0.303
4) Digital transformation	0.313	0.065	4.791	0.000**
Adjusted R Square	0.401			

** Level of significance $p < .01$, * Level of significance $p < .05$

From Table 1, it was found that the independent variables in service innovation capability consisted of high performance organization, perception of customer value, networking, and digital transformation forecasted the dependent variables at 40.10% based on the Adjusted R Square value of 0.401. When considering each variable, it was found that the high performance organization affected the performance of the Provincial Electricity Authority employees in Phra Nakhon Si Ayutthaya Province significantly at the 0.01 level ($\beta = 0.150$, $p < .05$). Hypothesis 1.1 was accepted.

The perception of customer value affected the performance of the Provincial Electricity Authority employees in Phra Nakhon Si Ayutthaya Province significantly at the 0.01 level ($\beta = 0.240$, $p < .01$). Hypothesis 1.2 was accepted. The networking did not affect the

performance of the Provincial Electricity Authority employees in Phra Nakhon Si Ayutthaya Province ($\beta = 0.073$, $p > .05$). Hypothesis 1.3 was not accepted. The digital transformation affected the performance of the Provincial Electricity Authority employees in Phra Nakhon Si Ayutthaya Province significantly at the 0.01 level ($\beta = 0.313$, $p < .01$). Hypothesis 1.4 was accepted.

Table 2 Results of the analysis on knowledge integration and technology acceptance affecting the service innovation capability

Variables	Service innovation capability		t	p-value
	Regression Coefficient (β)	Standard Error (ϵ)		
Constant (a)	- 0.003	0.048	- 0.053	0.957
1) Knowledge integration	0.494	0.063	7.906	0.000**
2) Technology acceptance	0.254	0.063	4.051	0.000**
Adjusted R Square	466.0			

** Level of significance $p < .01$, * Level of significance $p < .05$

From Table 2, it was found that the independent variables of knowledge integration and technology acceptance forecasted the variables based on the service innovation capability for 46.60%. The consideration on the Adjusted R Square was 0.466. When considering each variable, it was found that the knowledge integration affected the service innovation capability significantly at 0.01 level ($\beta = 0.494$, $p < .01$). Hypothesis 2 was accepted. The technology acceptance affected the service innovation capability significantly at 0.01 level ($\beta = 0.254$, $p < .01$). Hypothesis 3 was accepted.

Conclusion and Discussion

The results of data analysis on the service innovation capability affecting the performance of the Provincial Electricity Authority employees in Phra Nakhon Si Ayutthaya Province could be summarized and discussed as follows:

Hypothesis 1: The service innovation capability consisted of high performance organization, perception of customer value, networking, and digital transformation affecting the performance of the Provincial Electricity Authority employees in Phra Nakhon Si Ayutthaya Province. The research results revealed that:

Hypothesis 1.1: The competency development of high performance organization affects the performance of the Provincial Electricity Authority employees in Phra Nakhon Si Ayutthaya Province due to the development of performance to have high performance capability and to be modern. What the Provincial Electricity Authority has continually strived to develop by focusing on the personnel which is an important engine to drive the organization. The work will be planned and the risks are analyzed to reduce the defects that may cause operational errors. When the problem arises, the operation can be adjusted appropriately. In addition, the employees also bring innovation and various knowledge to be used in the development of work processes to keep up with the changes in the current social conditions. This can facilitate the operation and customer service. The employees can communicate and access to operational information in the organization freely. The operation will take into account the environment and society entirely. The development of high performance organization will help the operation to be smooth and efficient. This was consistent with the research of Phasuk (2016) finding that the core competencies at the individual level or the core competencies of police officers at the operational level were the competencies that directly affected the performance of each police officer under the Southern Border Provinces Police Operations Center.

Hypothesis 1.2: The perception of customer value affects the performance of the Provincial Electricity Authority employees in Phra Nakhon Si Ayutthaya Province because the perception of customer value is something that every employee is aware of. If employees understand and recognize the value of customers, they can serve customers in various fields to the fullest extent of their abilities. They will be willing and ready to listen to customers' problems and expedite problem solving for customers immediately taking into account the convenience of customers importantly. When the employees are able to perform such tasks to the fullest, the work will be more efficient. This was consistent with the research of Damsangsawat et al. (2021) finding that the people-centered integrated service provision of providers to people with diabetes and hypertension in Hat Yai District and Na Thawi District, Songkhla Province, was an important element for efficient operation affecting the strong health system.

Hypothesis 1.3: It was found that the networking does not affect the performance of the Provincial Electricity Authority employees in Phra Nakhon Si Ayutthaya Province. This may be because the Provincial Electricity Authority can be classified as a highly secure organization. There are no other competitors in the same type of service business. Moreover, the operations of the Provincial Electricity Authority employees are in accordance with the defined rules and regulations. In coordinating with external agencies, it is only a group of senior management or some employees who are responsible for coordinating. Most of the employees who responded to the survey were employees who performed their duties according to the procedures assigned on the job site. Even working in the agency, there are the upstream, mid-stream, downstream operation with step-by-step work. Each employee or most departments will only work as they are assigned. They do not have much coordination as they should. This is different from the business sector or agencies that compete in the same business which must coordinate work with other agencies or seeking business partners to gain competitive advantage. The networking therefore does not affect operational efficiency. This was consistent with the research of Luangsakdapich (2020) finding that the service innovation capability to network interoperability dimension does not affect the operating results of the hotel business in Thailand.

Hypothesis 1.4: It was found that the digitization affects the performance of the Provincial Electricity Authority employees in Phra Nakhon Si Ayutthaya Province. As the Provincial Electricity Authority is a leading modern organization in the region and has supported, promoted, and developed every work process by using digital technology, whether Digital Business, using digital technology to increase the efficiency of the products and the current services. This shall follow the strategic positioning in 2022-2023 to "transform the organization to become Digital Utility". Digital Service and the development of digital technology can increase efficiency in customer service by developing the database and customer data analysis system including improving communication channels and customer service through Digital Channel, Digital Operational Excellence. The modern electrical technology is developed with Smart Grid and the focus is on the communication to link between data and technology (Interoperability). It includes the use of digital technology to support the improvement of work processes to be efficient, fast, responding to needs and customer expectations. Therefore, the employees have adopted digital technology in every work process to develop work processes to be simple and fast. The adoption of digital technology has also resulted in new types of services. Every Digital Channel and Digital transformation thus help the employees and organizations better adapted to today's environment resulting in operational efficiency. It was consistent with the research of Parmwong et al. (2016) finding that the development of vocational teachers in the application of information technology for work efficiency can help increasing knowledge and skills in data collection and presentation of information that is accurate and useful to the operations. This shall lead to the achievement of goals that is efficient, fast and increases the ability to work. This was consistent with the research of Laorach

(2021) finding that the ongoing digital transformation of organizations has an impact on employee productivity.

Hypothesis 2: It was found that the knowledge integration affects the service innovation capability. In the organization operation, the employees have applied knowledge from various disciplines to work altogether in the organization. Each department has employees with knowledge in each field working altogether to achieve the objectives and bring about the development of new service ideas that transform from knowledge to ability. In addition, the employees also have knowledge sharing and transfer their work experience to one another. They recommend or give suggestions to one another in the operation to help checking and fixing operational deficiencies. This resulted in the improvement and creates new innovations that are useful in product development and services of the Provincial Electricity Authority. The integration of knowledge thus affects the service innovation capability. This was consistent with the research of Yu et al. (2016) studying the knowledge integration in innovative group projects finding that the combination of innovation talent and the process of knowledge integration is the key to the innovation efficiency. It can help increasing the innovation capability of the organization. This is also consistent with the research of Jongjaroenchaisakul (2016) discovering that the integration of organizational knowledge had positive impact on service innovation capability.

Hypothesis 3: Technology acceptance affects service innovation capability because the Provincial Electricity Authority has developed service innovations in various ways such as Work Order Management Application (WOM) on Mobile Application or electronic signature. There are many new innovations that the Provincial Electricity Authority has invented to provide convenience and speed in the service of electricity users. The operations under these innovations have made the Provincial Electricity Authority employees in learning, adapting and accepting technology. The Provincial Electricity Authority employees are well aware that technology is important, necessary and useful for service works. The use of technology in the service gives customers convenience and more satisfaction. At the same time, the technology adoption will allow employees to work more easily, conveniently and quickly. It can reduce employee fatigue and create satisfaction for employees as well. Therefore, if employees become more accepting of technology, they will create the service innovation capability. This was consistent with the research of Taherdoost (2019) studying the importance of evaluating technology acceptance for successful implementation and the development of new technologies. It was found that the adoption and user confidence of technology are critical to new innovation development.

Recommendations from Research Results

For networking, the research results showed that the networking from all sectors does not affect operational efficiency. This may be due to the fact that most employees are operational level employees who perform their duties only. However, organizations should encourage employees to integrate collaboration, such as holding meetings or propose a common idea to develop joint operations to achieve the goals set by the organization. This is to achieve data sharing between networks with the views of advantages or defects that can help fixing or developing innovation in order to work quickly, easily, and more efficiently.

Recommendations for Future Research

1) In this research, the researcher studied the service innovation capability in accordance with the variables in 4 areas. It was found that there were 3 aspects of service innovation capability that affected operational efficiency and there was 1 aspect which did not affect the efficiency of operations, such as the networking which is a very important variable. This may be because most of the respondents were operational level employees performing their duties. They rarely contact or coordinate with other sectors. The variables of networking from all sectors should be re-studied using new population groups, for example, a study at the individual level of the

Provincial Electricity Authority administrators or at the corporate level to confirm the research results to be more valuable.

2) For the next study, there should be an in-depth study by interviewing real workers or corporate executives to get in-depth information and more variety apart from collecting questionnaires or collecting samples from a wider population, for example, in the province or in other sectors. This is to get more diverse information leading to the development of the service of the Provincial Electricity Authority and improve the performance of the Provincial Electricity Authority employees.

References

- Damsangsawat, N., Wanwilai, P., Chuakompeng, A., & Khamkong, M. (2021). Comparison of an Integrated People-Centered Health Services for Patients with Diabetes and Hypertension as Perceived by healthcare Providers, Hatyai and Nathawee District, Songkhla Province. *Academic Journal of Community Public Health*, 7(3), 17-31.
- Deeyiam, S., & Boontongkham, N. (2020). Public Innovation in Thai Government Sector. *Journal of Legal Entity Management and Local Innovation*, 6(3), 287-299.
- Gesthong, T. (2018). A Model of Social Capital Development of Village Philosophers. *Research and Development Journal Suan Sunandha Rajabhat University*, 2(10), 132-141.
- Inthong, P. (2017). *Development of government agencies into high-performance organizations: a case study*, Department of Skill Development Ministry of Labor. Master's Thesis, Ramkhamhaeng University.
- Janthawong, S. (2014). *Problems of Thai bureaucracy administration*. Retrieved from https://ewt.prd.go.th/ewt/region6/ewt_dl_link.php?nid=6236&nid=6236.
- Jiranantararat, P. (2021). *SCG Logistics moves towards Digital Driven Logistics Company for today's efficiency and future opportunities*. Retrieved from www.scg.com/innovation/scg-logistics-digital-driven-logistics.
- Jongjaroenchaisakul, C. (2016). *Service Innovation Capability: An Empirical Evident from Boutique Hotel Business in Thailand*. Doctoral Thesis, Silpakorn University.
- Laorach, J. (2021). Digital transformation and Impacts to Organization. *Journal of Human Sciences*, 22(1), 227-240.
- Luangsakdapich, R. (2020). Service Innovation Capability and Service Performance: Evidence from Hotel Businesses in Thailand. *Chulalongkorn Business Review*, 42(1), 43-67.
- Malisuwan, S. (2017). *Digital Transformation*. Retrieved from www.nbtc.go.th/getattachment/News/Information/28909/Digital-Transformation.pdf.aspx.
- Parmwong, E., Sikhabandit, S., & Theerawitthayalert, P. (2016). A Model of Management on Vocational Teacher Development in Technology Applications for Work Efficiency. *Journal of Chandrakasemsarn*, 22(42), 61-70.
- Phasuk, N. (2016). *The Effect of Individual Competencies on Job Performance of Police officers in the Southern Border Provinces Police Operation Center*. Doctoral Thesis, Prince of Songkla University.
- Pleanbangyang, S. (2015). Effectiveness in Using Information Technology for Working of Local Administration Organization Officials Case Study: Amphoe Phutthamonthon. *Veridian E-Journal, Silpakorn University*, 8(3), 1051-1062.
- Provincial Electricity Authority. (2021). *Employee search system within the Provincial Electricity Authority*. Retrieved from <https://intranet.pea.co.th>.
- Rattanawong, W. (2014). *The Antecedents and Consequences of Service Innovation for Tour Business in Southern Thailand*. Doctoral Thesis, Prince of Songkla University.

- Sangthongloun, V. (2017). *Approaches for the integration of collaboration between the central, provincial and local government agencies in the provincial area (The National Defence Course)*. Bangkok: Thailand National Defence College.
- Serivichayaswadi, P., & Jaroenwisan, K. (2019). Acceptance and Use of Technology: The Important Role in Creative Behavior of Employee in Thailand MICE Industry. *Dusit Thani College Journal*, 13(3), 505-519.
- Sirisamphan, T. (2021). *Integrated Public Administration*. Retrieved from http://web.sut.ac.th/qa/pdf/Knowledge-general/11-Plan_Official_Integrate.pdf.
- Sivapitak, S. (2014). Knowledge Management and Innovation Processes Affecting the Survival of Business Organization. *Suthiparithat Journal*, 28(85), 45-60.
- Srisatidnarakul, B. (2007). *Leadership and strategic management in nursing organization for the 21st century*. Bangkok: Chulalongkorn University.
- Taherdoost, H. (2019). Importance of Technology Acceptance Assessment for Successful Implementation and Development of New Technologies. *Global Journal of Engineering Sciences*, 1(3), 1-3.
- Thetchip, P. (2018). *The development of business service innovation in the digital age*. A paper presented at the 2nd UTCC Academic Day, University of the Thai Chamber of Commerce, Thailand.
- Trakunweerayut, Y., Sathapornwachana, S., & Khotchasit, S. (2015). Model of High Performance School Administration under Local Administrative Organization. *Journal of Graduate Studies Valaya Alongkorn Rajabhat University*, 9(1), 12-25.
- Vanichbuncha, K. (2017). *Advanced Statistical Analysis with SPSS for Window*. Bangkok: Sam Lada limited partnership.
- Wongchaiya, P., Ampansirirat, A., & Pinjai, P. (2017). Patient-Centered Care: Health Care Services for the 21st Century. *The Southern College Network Journal of Nursing and Public Health*, 4(Special issue), 361-371.
- Yu, M., Zhu, F., & Wang, P. (2016). Study on Knowledge Integration in Innovation Clustering Project. *Open Journal of Social Sciences*, 4, 177-186.