ELEMENTS OF MANAGEMENT OF INFORMATION TECHNOLOGY IN 21st CENTURY OF SCHOOL ADMINISTRATORS UNDER OFFICES OF THE SECONDARY EDUCATION SERVICE AREA, SOUTHERN ISAN GROUP

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ABSTRACT
This study aimed to analyze the management of information technology (IT) elements among school administrators in the 21st century, specifically within the offices of the secondary education service area in the Southern Isan group. Additionally, it sought to examine the validity of structural equation modeling (SEM) concerning these elements. A sample of 330 school administrators from the Southern Isan group was selected using multi-stage random sampling. Data were collected through a questionnaire with established validity (0.80-1.00) and high reliability (0.960). Confirmatory factor analysis was employed, revealing four main aspects of IT management: Information Technology, Strategy, Management Processes, and Personnel. The SEM model demonstrated consistency with empirical data ($\chi^2 = 49.29$, df = 41, $\chi^2/df = 1.20$, p = 0.176, RMSEA = 0.026, CN = 383.25, CFI = 0.99, GFI = 0.97, AGFI = 0.95), aligning with hypothesized assumptions.
Keywords: Elements, Management, Information Technology

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INTRODUCTION

Information technology plays a crucial role in various domains, especially in education. It allows for the rapid creation of effective learning resources, promoting quality and diversity in lifelong learning. The development of modern, non-redundant digital technology networks for education and management ensures comprehensive and efficient access to services for all stakeholders. Therefore, the formulation of the Digital Economy Policy has emerged as a critical initiative, aligning with the evolving landscape of the 21st century. Information technology facilitates informed decision-making and prompt action. With the enactment of the Information Technology Policy, extending from governmental bodies to educational institutions, there is a concerted effort to provide accessible, high-quality information and communication infrastructure services adhering to international standards. This transformation requires schools to adapt their management paradigms accordingly (Office of the Secretariat of the Education Council, Ministry of Education, 2017). In the current educational landscape, operational challenges persist with information technology implementation in schools, presenting several key issues: 1) Infrastructure: Investigations reveal that the computer network systems utilized in schools operate at suboptimal speeds. 2) Human Resource Development: There is a deficiency in fostering teacher engagement in conferences and training sessions focused on information technology. The imperative integration of information technology in education underscores its necessity. However, numerous challenges emerge across various facets, including unresponsive computer systems and software. Additionally, there remains a noticeable skill gap among personnel in utilizing computer technology effectively. Furthermore, inadequate internet connectivity and ineffective management exacerbate these challenges. The Ministry of Education's evaluation of information and communication technology usage underscores disparities in executive perception regarding its importance, coupled with a lack of coherent strategies for personnel development. Moreover, inefficiencies in equipment utilization and a dearth of system integration exacerbate these challenges. Insufficient budget allocations for maintenance further impede progress. The fragmented development of information technology across the educational system results in resource wastage and inefficiencies. The researcher has noted the challenges associated with technology utilization in management practices. Therefore, there is a keen interest in investigating the components of information technology management among school administrators in the 21st century, particularly in the Secondary Education Area Office. This study aims to enhance school management processes, resulting in smoother and more successful operations. To achieve this goal, this research will analyze the intricacies of information technology management in the 21st century among school administrators within the purview of the Secondary Education Service Area. The focus will be on the South Isan Group. Additionally, the structural equation modeling of information technology management in this context will be validated to contribute to a better understanding of effective management strategies in educational settings.

LITERATURE REVIEWS

Information Technology (IT) is a potent instrument that has brought about significant changes in different facets of life in the 21st century. It has enhanced the accessibility of information, optimized communication processes, and increased productivity in the business sector. Additionally, IT has transformed the realms of education, innovation, entertainment, and social influence. As technological advancements persist, IT is poised to assume a more prominent position in influencing the trajectory of our global future (Nealy, 2018). Effective school management necessitates the integration of communication systems, information management systems, learning management systems, and administrative management systems across all operational facets. The adoption of an ICT-centered school management framework can yield

advantages; nonetheless, it also presents hurdles that require mitigation. Communication systems, information management systems, learning management systems, and administrative management systems constitute fundamental elements of ICT-centered school management frameworks (Antonyan, 2023). After thorough research by Picciano (2011). The evidence shows that the strategic model of IT management requires the development of policies and standards in addition to providing support for technology use. Establishing clear standards for hardware, software, and internet networks is crucial, as is planning for human resource management and employee training.
From the literature review, the conceptual framework can be drawn as shown in Figure 1.

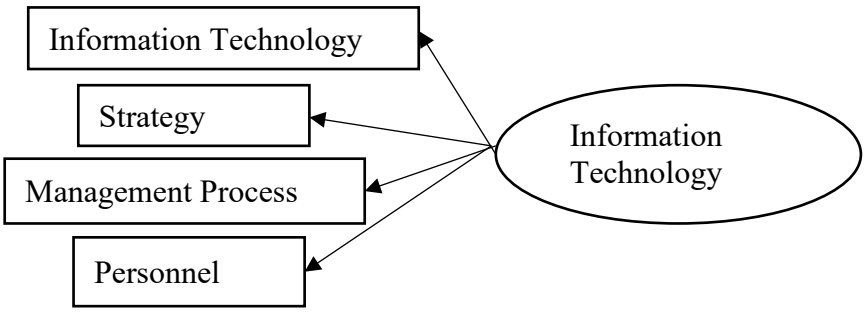

Figure 1 Conceptual Framework

RESEARCH METHODOLOGY

The study was then designed to adopt a quantitative and Qualitative research approach. The population in this study consisted of 804 school administrators from under Offices of the Secondary Education Service Area, Southern Isan Group from 402 schools. The samples were composed of 300 school administrators under the Offices of the Secondary Education Service Area, Southern Isan Group. Due to the studied sample size calculation a ratio of 25:1 by Hair et al. (2010).the number of samples per observed variables, with 12 variables, 300 school administrators under Offices of the Secondary Education Service Area, Southern Isan Group. They were selected by multi-stage random sampling. A questionnaire has two parts. The first part of the questionnaire includes the demography such as age, education, and experience as a school administrator. Then, the second part is on a Likert scale with 1-5 rating-scales from 1 meaning "extremely disagreeable" to 5 meaning "extremely agreeable" to study information technology, strategy, administrative process, and personnel of elements of information technology. Before the instrument was applied for data collection, the item-objective congruence (IOC) and reliability test of the questionnaire through Cronbach's alpha were systematically conducted. From the investigation, the result revealed that the IOC was between 0.80 and 1.00. Cronbach's alpha was obtained at 0.958, illustrating the sufficient quality of the research tool (Polit & Beck, 2006; Hair et al., 2012). To get the data, this study sent questionnaires to school administrators in Nakhonratchasima, Buriram, and Surin provinces. Regarding data analysis, the descriptive statistics, including frequency, percentage, mean, standard deviation, skewness, and kurtosis, were school administrators. Besides, structural equation modeling as well as confirmatory factor analysis (CFA) with contemplating good-fit indices, and convergent and discriminant validity implied by factor loading, Chi-Square, df, p-value, RMSEA, CFI, GFI, and AGFI was administered. The studied model was expected to produce satisfied good-fit indices (Tabachnick et al., 2007). However, the model was allowed to be adjusted based on modification indices when the model was judged not fit (Knekta et al., 2019). To address the achievement of a focused objective, the results are reported in a descriptive and tabulated pattern. All the details are portrayed in the following section.

RESEARCH RESULTS

Considering the respondents' age, the result indicated that the majority of the school administrators aged 41-50 years old (182 persons, or 60.70%), followed by the ages between 35-40 years old (55 persons, or 18.30%) and above 50 years old (53 persons, or 17.70%). However, the lowest number of respondents was those aged below 35 years old (equally, 10 people, or 3.30%). In terms of educational level, the highest level was that school administrators had graduated with a master's degree (267 people, or 89.00%). In the meantime, who obtained doctoral degrees and bachelor's degrees (24 people, or 8.00%, and 9 people, or 3.00%, respectively)? Concerning the respondents' experience as a school administrator was less than 5 years (123 people, or 41.00%). The second order represented the numbers of the respondents who were more than 15 years (112 people or 37.30%). followed by the experience between 5-10 years (41 persons, or 13.70%) and 11-15 years (24 persons, or 8.00%).

Table 1

No.	Status	Quantity	Percentage
1	age		
	Below 35 years	10	3.30
	35 -40 years	55	18.30
	41 -50 years old	182	60.70
	Above 50	53	17.70
2	Education		
	Bachelor's degree	9	3.00
	Master's degree	267	89.00
	Doctoral degree	24	8.00
3	Experience		
	Less than 5 years	123	41.00
	5-10 years	41	13.70
	11-15 years	24	8.00
	More than 15 years	112	37.30
	sum	**300**	**100.00**

Elements of Management of Information Technology.

Table 2 displays the mean, standard deviation, and interpretation of related variables. The class interval for data interpretation uses the reference from Best & Kahn (2006). The findings addressed those respondents who highly agreed on elements of management of information technology, and that it was vital to acknowledge Information Technology, Strategy, Administrative Process, and Personnel. In addition, skewness and kurtosis, which were considered for assessing normal data distribution, were acceptable since their values ranged between ± 3.00 (Curran et al., 1996; Kline, 2005).'

Table 2 Mean, Standard Deviation and Interpretation of Related Variables

Variables	Mean	Std. Deviation	Skewness	Kurtosis	Agreeable Level
Information Technology					
HW	4.516	0.365	-0.584	-0.111	Extremely Agreeable
SW	4.660	0.304	-0.546	-0.711	Extremely Agreeable
DT	4.663	0.282	-0.683	-0.185	Extremely Agreeable
NW	4.717	0.304	-0.785	-0.560	Extremely Agreeable
HW	4.516	0.365	-0.584	-0.111	Extremely Agreeable
Strategy					
OB	4.645	0.311	-0.495	-0.861	Extremely Agreeable

Variables	Mean	Std. Deviation	Skewness	Kurtosis	Agreeable Level
AE	4.653	0.320	-0.816	-0.681	Extremely Agreeable
Administrative Process					
OR	4.588	0.344	-0.871	1.714	Extremely Agreeable
OC	4.615	0.322	-0.482	-0.647	Extremely Agreeable
Personnel					
PP	4.614	0.345	-0.412	-1.079	Extremely Agreeable
DP	4.547	0.387	-0.665	0.555	Extremely Agreeable
MP	4.518	0.355	-0.274	-0.860	Extremely Agreeable

Model Development.

The crucial point for evaluating the model, confirmatory factor analysis with good-fit indices was first performed and analyzed. The results revealed that good-fit indices (Chi-square value of 49.29, df of 41, Cmin/df of 1.202, P-value of 0.176, CN of 383.24, GFI of 0.97, AGFI of 0.95, RMRSEA of 0.026) were acceptable.

Finalized Model and Hypothesis Analysis

After the model investigation using confirmatory factor analysis (CFA) was conducted, the finalized model through the employment of structural equation modeling was derived (shown in Figure 2).

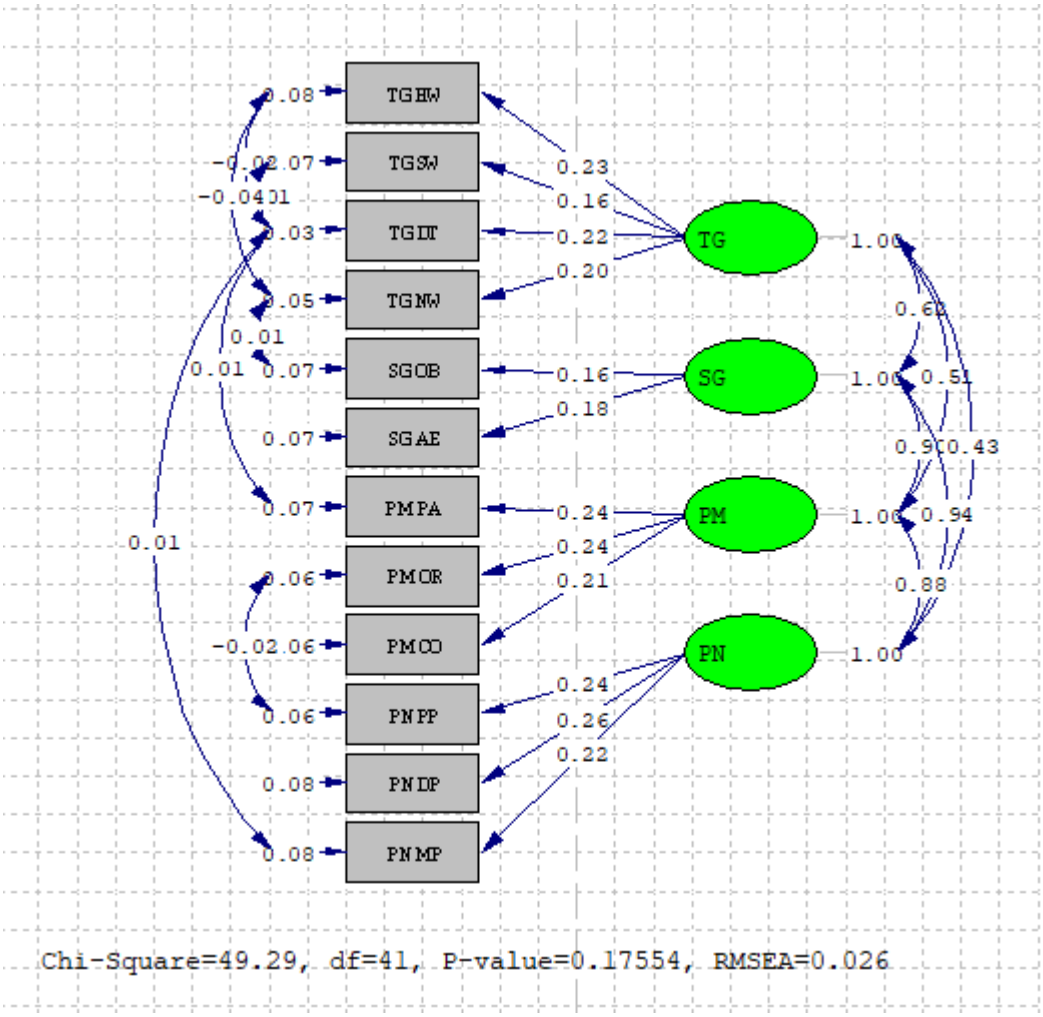

Figure 2 Finalized Model

DISCUSSION & CONCLUSION

Based on the aforementioned findings, several noteworthy issues merit discussion. Firstly, it is noteworthy that all four main components of the model align with empirical data, indicating a robust correlation. This convergence underscores the pervasive importance of information technology (IT), which has rapidly evolved into an indispensable tool for knowledge acquisition and dissemination on a global scale. Across educational institutions, administrators universally recognize IT as an essential resource. Consequently, there exists a collective imperative to cultivate and enhance personnel skills to leverage IT effectively in managing teaching and learning systems. This imperative is echoed in Chandraourai's (2012) findings, which emphasize the pivotal role of developing teachers' proficiency in utilizing information technology within educational settings, thereby empowering administrative personnel to adopt modern and efficient IT practices.

Recommendations

School administrators must prioritize information technology management to guarantee the availability of adequate facilities to cater to their requirements. It is imperative to develop a model that centers on the factors influencing the efficacy of information technology management among school administrators.

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Data Availability Statement: The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Conflicts of Interest: The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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