Causal Model of Budget Allocation Factors Affecting Online Learning

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ABSTRACT
Online learning is a form of distance education that allows learners to interact with technology and virtual classrooms. It is a popular and beneficial method of learning, especially when learners can access it properly. One advantage of online learning is that learners can study topics of personal interest or learn from experts who are far away. Additionally, the recent COVID-19 situation has highlighted the importance of online learning. However, to make online learning more accessible to all learners, one key factor is the allocation of budget towards online education.The objective of study is to examine the Structural Equation Modeling (SEM) with empirical data for factors related to the allocation of budget for online learning. The research uses a mixed-method approach, combining in-depth interviews and quantitative research through statistical analysis, along with the synthesis of related studies and the application of a conceptual framework summarizing key points from New Public Financial Management (NPFM).The research tool used in this study is a questionnaire. The sample group consists of individuals working in the public sector, specifically those involved in the allocation of educational budgets for schools under the Office of the Basic Education Commission (OBEC). This includes both policymakers and those responsible for implementing the policies.Data analysis was conducted using Structural Equation Modeling (SEM). The results of the study, based on SEM analysis with empirical data, identified six key factors in the budget allocation that impact online learning. These factors include leadership, planning, reporting, controlling, coordination, and successful management encompassing the budget allocation for online learning.The seven hypotheses, the overall goodness of fit results align with the hypotheses and empirical data.

Keywords: Budget Allocation, Online Learning and Education Policy

INTRODUCTION

The first large-scale online learning initiative occurred in 1996, following the invention of the World Wide Web (Harasim, 2000). The COVID-19 pandemic has further underscored the importance of online education. However, it has yet to achieve the desired outcomes, as reflected in the government's frequent policy efforts and initiatives to promote and enhance online learning. However, under Thailand's 20-year national strategy (2018-2037), the government continues to focus on preparing Thai citizens with skills to keep pace with global changes. This includes expanding educational and learning policies that integrate information and communication technology, as well as lifelong learning. Digital learning, in particular, is considered a key tool by the government for developing and enhancing human resources, aiming to make these skills foundational knowledge for learners and citizens alike. Furthermore, digital tools are seen as essential for helping the country stay competitive in the global landscape (Ministry of Education, 2022).One of the essential tools for national development, particularly in education, which is indispensable, is the budget. In the past, the Ministry of Education (MOE) has taken steps to reduce educational inequality following the COVID-19 pandemic by creating measures to assist through the allocation of budget for teaching and learning equipment, aiming to alleviate the educational burden on students, teachers, and parents (Office of the Permanent Secretary, Ministry of Education, 2021).

In the past, the educational process in Thailand aimed to produce or create human capital for a better quality of life. As a result, the government placed great importance on investing in education. However, the allocation of the government budget for education has consistently faced fundamental challenges, which can be summarized as follows: 1) Limited resources while needing to provide educational services to the public2) The proportion of the national budget allocated to educational management, and 3) The

allocation of budget for different types of education at various levels(Thanapornpan, 1976).Subsequently, regarding the budget policy for online education in Thailand, a policy was established to provide tablet computers to schools, in accordance with the National Education Act B.E. 2542, as amended (No. 2) B.E. 2545 and (No. 3) B.E. 2553, as part of the framework for educational reform in the 21st century, and the Basic Education Core Curriculum B.E. 2551. In 2011, Prime Minister Yingluck Shinawatra implemented a four-year administrative plan focusing on education that aimed to rapidly develop the use of information technology as a tool to achieve equality in education comparable to international standards. This led to the nationwide online education policy, which involved the procurement of tablet computers, initially implemented at the primary education level, along with the development of a curriculum integrated into the tablet computers, and the establishment of a wireless internet system (Limswat, Jarumanee, and Wanichsuphawong, 2017). However, this policy has not continued to the present day. Recently, a special budget of approximately 22 billion baht was allocated, which includes funding to support internet costs for online learning, as indicated by the Office of the Basic Education Commission (OBEC) in their study of the current situation, which designed three groups of learners along with proposed solutions (Office of the Permanent Secretary of Education, 2021). This policy is still awaiting the results that will arise from it.
All above these, it is evident that whenever the government aims to develop the country's education, particularly in the era of online technology, it must utilize budget allocation as a critical tool for addressing issues. However, to allocate a budget effectively for comprehensive online learning, it is essential to consider multiple components involved in the budget allocation process. Studies from various countries indicate that the Structural Equation Modeling (SEM) model that enhances the effectiveness of online learning involves several factors, including instructors, learner experiences, content or teaching materials, the creation of group projects that allow learners to collaborate and work as a team, and individual projects that encourage learners to initiate creativity independently, along with audio and video resources, and team-based instruction for collaborative learning (Marks, Sibley & Arbaugh, 2005;Albassam, 2020). However, research by Lloyd, Byrne & McCoy (2012) found that the conditions enabling instructors to participate in online teaching and effectively transfer knowledge to learners include sufficient budget, institutional resources, development of appropriate knowledge and skills for online teaching, instructor satisfaction with participating in online education, and ease of using technology. Enhancements or improvements to enrich the ecosystem for learners' online learning must stem from budget allocations to develop and fulfill various factors that will ensure the successful establishment of an online lesson development ecosystem for learners. Therefore, this leads to an interest in studying the Structural Equation Modeling (SEM) with empirical data concerning budget allocation factors that encompass online learning so that government budget allocations can effectively address online learning issues and meet the needs of target groups aiming to develop the skills of the country's population in alignment with technological development globally.

Objective

To examine the Structural Equation Modeling (SEM) with empirical data for factors related to the allocation of budget covering online learning

Conceptual Framework

The conceptual framework for this research aims to develop and validate a Structural Equation Model that aligns with empirical data for guiding the allocation of budgets encompassing online learning, based on the principles of New Public Financial Management (NPFM). The researcher reviewed relevant theories, concepts, documents, and studies related to budget allocation strategies for online learning. This led to the formulation of seven hypotheses: Hypothesis 1: Leadership has a direct effect on planning. Hypothesis 2: Controlling has a direct effect on reporting. Hypothesis 3: Reporting has an indirect effect on coordination. Hypothesis 4: Coordination has a direct effect on planning. Hypothesis 5: Coordination has an indirect effect on the success of budget management. Hypothesis 6: Planning has a direct effect on the success of budget management. Hypothesis 7: Leadership and control are interrelated. The conceptual framework can be summarized in the following figure.

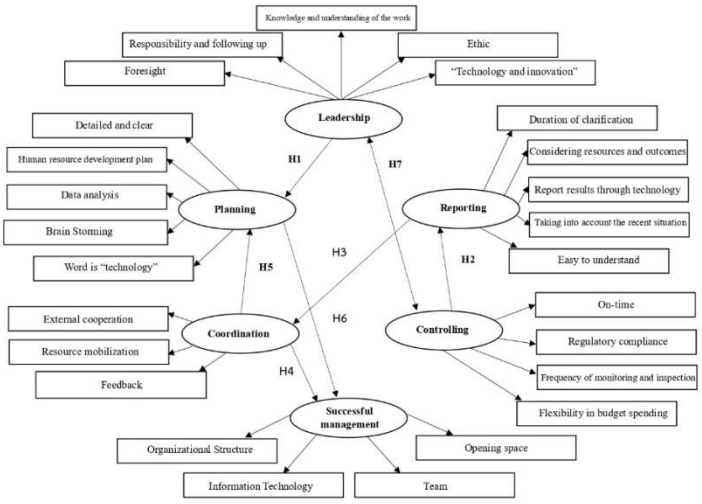


Figure 1. Conceptual Framework

RESEARCH METHODOLOGY

The researcher conducted a mixed-method study that distilled insights from the analysis and synthesis of related research, integrating it with the application of the conceptual framework summarizing the key issues of New Public Financial Management (NPFM). This framework includes factors within each component that have been confirmed as significant for developing guidelines for budget allocation in online learning. This led to the examination of a Structural Equation Modeling (SEM) using empirical data regarding budget allocation factors that impact online learning.

1.Population and Samples

The target population for the mixed method consists of individuals working in the public sector who are involved in the allocation of educational budgets to schools under the Office of the Basic Education Commission (OBEC). This includes both policymakers and those implementing these policies. Specifically, the relevant government agencies include: BudgetBureau, Ministry of Finance, Office of the National Economic and Social Development Board, Bangkok Primary Educational Service Area Office, The Secondary Educational Service Area Office Bangkok and its surrounding provinces, which include: Nakhon Pathom Province, Nonthaburi Province, Pathum Thani Province, Samut Prakan Province, Samut Sakhon Province, Samut Songkhram Province. Additionally, schools under the Office of the Basic Education Commission (OBEC). The researcher has determined a sample size of 262 to represent the target population. However, the sample size was established using the rule of thumb method as outlined by Hair et al (2019), which suggests a sample size based on the number of observed variables. This method proposes a sample size of about 10 individuals per observed variable in the structural model being studied. The researcher has identified 26 observed variables, leading to a typical sample size of around 260. To enhance the accuracy of the model, the sample size was increased to 262.The sampling was conducted using probability sampling methods, allowing for random selection among stakeholders who could provide responses.

2. Data Collection

The research method employed in this quantitative study utilizes a structured questionnaire as the primary research instrument, which was administered to the target population. The researcher reviewed the literature and had the questionnaire validated by experts. Additionally, the reliability of the instrument was tested. The questionnaire consists of two sections: Section 1: General information about demographic characteristics and the current responsibilities of the respondents within their organizations. Section 2: Measurement of variables related to the factors influencing budget allocation for online learning, which includes: Aspect 1: Perception of leadership Aspect 2: Perception of planning Aspect 3: Perception of performance reporting Aspect 4: Perception of oversight Aspect 5: Perception of

coordination Aspect 6: Perception of success in managing budget allocation for online learning. The questions in the questionnaire utilize a Likert scale measurement with five levels of response.

3. Data Analysis

Step 1: Measuring and considering the grouping of both latent variables and the inclusion of observed variables into the aforementioned components through SEM analysis. However, prior to this, the variables should be analyzed using confirmatory factor analysis (CFA). Step 2: Analyzing Structural Equation Modeling (SEM) to create a framework for allocating budgets for online learning that encompasses the learners' ecosystem. This involves testing the established hypotheses and determining the values of various variables, including both latent and observed variables, arranged accordingly.

RESULTS

1.Results of Confirmatory Factor Analysis (CFA)

Confirmatory Factor Analysis (CFA) is used to demonstrate the importance of components and the variables within those components. The details of the evaluation of the conceptual model include sufficient values indicating the model's fit with the empirical data (X^2 = 584.577, df = 261, p-value = 0.000, CFI = 0.963, SRMR = 0.031, RMSEA = 0.069). The details in Table 1 show that the factor loading values are greater than 0.7 for each component, and the descriptive analysis reveals that the mean values range from 4.19 to 4.39

Table 1: Reliability and validity of the conceptual model

Construct	Items	Factor Loading	Mean	S.D.	Composite Reliability	Average Variance Extraction
Leadership (α = 0.895)	L1	0.860	4.30	0.79	**0.927**	**0.718**
	L2	0.938	4.35	0.76		
	L3	0.885	4.39	0.75		
	L4	0.831	4.38	0.79		
	L5	0.805	4.33	0.79		
Planning (α = 0.920)	P1	0.873	4.34	0.78	**0.950**	**0.793**
	P2	0.850	4.39	0.78		
	P3	0.945	4.29	0.77		
	P4	0.871	4.27	0.79		
	P5	0.852	4.29	0.78		
Reporting (α = 0.957)	R1	0.926	4.28	0.80	**0.965**	**0.848**
	R2	0.924	4.30	0.79		
	R3	0.914	4.25	0.81		
	R4	0.905	4.32	0.76		
	R5	0.935	4.29	0.79		
Controlling (α = 0.931)	C1	0.899	4.25	0.80	**0.940**	**0.798**
	C2	0.923	4.28	0.79		
	C3	0.903	4.37	0.75		
	C4	0.851	4.32	0.75		
Coordination (α = 0.891)	CO1	0.831	4.26	0.76	**0.912**	**0.776**
	CO2	0.882	4.28	0.75		
	CO3	0.923	4.27	0.76		
Successful management of budget allocation (α = 0.884)	M1	0.780	4.29	0.74	**0.912**	**0.721**
	M2	0.894	4.26	0.73		
	M3	0.820	4.19	0.85		
	M4	0.902	4.35	0.73		

Source: Calculated by researcher

2. Results of Structural Equation Modeling (SEM)

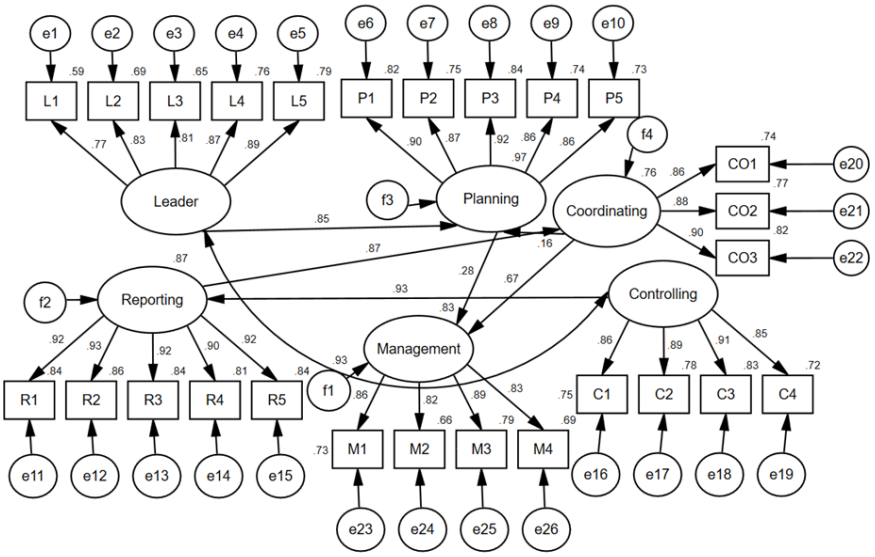
The results of the overall goodness of fit of the model according to the hypotheses and empirical evidence align with the criteria set by Hair et al. (2019) in cases where the sample size exceeds 250 (this study has a total sample size of 262). Additionally, the number of observed variables is less than 30. The statistical values of the hypothesis model and empirical evidence showed that some criteria were not met, including a chi-square value of 0.000 (passed) and a Root Mean Square Error of Approximation (RMSEA) of 0.101

(not passed). Meanwhile, the Comparative Fit Index (CFI) was not met the criterion at 0.910 (not passed) and the Standard Root Mean Square Residual (SRMR) was 0.047 (passed). Subsequently, the researcher modified the model based on the Modification Indices (MI) and found that the adjusted model's statistical values for the factor model were consistent with the empirical data. All statistical values that met the criteria included a chi-square of 0.000 (met) and an RMSEA of 0.069 (met), a CFI of 0.962 (met), and an SRMR of 0.040 (met). This indicates that the goodness of fit results for the model are consistent with the hypotheses and empirical data.

Table 2: Results of Examining the Goodness of Fit of the Organizational Model to Analyze the Relationship Model of Variables in the Structural Equation Modeling **(**SEM**)**

Index	**Before Adjustment**		**After Adjustment**	
	Statistics	**Results of Examination**	**Statistics**	**Result of Examination**
X^2 p-value (<0.05)	0.000	Passed	0.000	Passed
CFI (> 0.92)	0.910	Not passed	0.962	Passed
SRMR (<0.08)	0.047	Passed	0.040	Passed
RMSEA (<0.07)	0.101	Not passed	0.069	Passed

Source: Calculated by researcher



Chi-square = 591.283, df = 264, p-value = 0.000, CFI = 0.962, SRMR = 0.040, RMSEA = 0.069

Figure 2. Results of Examining the Goodness of Fit of the Model with Empirical Data of Success of managing budget allocation for online learning Variables

Source: Calculated by researcher

Result of Examining the Research Hypothesis Model of Causal Relationship Path Analysis

All results are consistent with the hypotheses from H1 to H7. Moreover, when considering the values along the paths of the variables, the highest weighted paths in the model are: leadership to planning (weight = 0.855), control to reporting (weight = 0.935), and reporting to coordination (weight = 0.872). There is a reciprocal relationship between the variables of leadership and control.

Table 3: Analysis Results of Direct Effect, Indirect Effect, and Total Effect

Antecedents	**Consequences**											
	Successful management for budget allocation R^2 = 0.832			**Reporting R^2 = 0.874**			**Planning R^2 = 0.969**			**Coordination R^2 =0.760**		
	DE	**IE**	**TE**	**DE**	**IE**	**TE**	**DE**	**IE**	**TE**	**DE**	**IE**	**TE**
Leadership	-	0.237***	0.237***	-	-	-	0.855***	-	0.855***	-	-	-
Controlling	-	0.585***	0.585***	0.935***	-	0.935***	-	0.133***	0.133***	-	0.815***	0.815***

Antecedents	Consequences											
	Successful management for budget allocation $R^2 = 0.832$			Reporting $R^2 = 0.874$			Planning $R^2 = 0.969$			Coordination $R^2 = 0.760$		
	DE	IE	TE	DE	IE	TE	DE	IE	TE	DE	IE	TE
Reporting	-	0.626***	0.626***	-	-	-	-	0.142***	0.142***	0.872***	-	0.872***
Coordination	0.673***	0.045***	0.718***	-	-	-	0.163***	-	0.163***	-	-	-
Planning	0.277***	-	0.277***	-	-	-	-	-	-	-	-	-

DE = Direct Effect, IE = Indirect Effect, TE = Total Effect
Source: Calculated by researcher
Noted: *** represent the 0.01 level of significant

The results of the structural equation modeling analysis revealed that: 1) Leadership has a direct effect on planning, with statistical significance at the 0.01 level and a coefficient of 0.855, indicating a positive effect. Additionally, leadership also has an indirect effect on the success of managing the allocation of budgets for online learning, with a coefficient of 0.237. 2) Control has a direct effect on reporting, with statistical significance at the 0.01 level and a coefficient of 0.935, indicating a positive effect. Moreover, control has an indirect effect on the success of budget management, planning, and coordination, with statistical significance at the 0.01 level and coefficients of 0.585, 0.133, and 0.815, respectively. 3) Reporting has an indirect effect on coordination, planning, and the success of budget management, with statistical significance at the 0.01 level and coefficients of 0.872, 0.142, and 0.626, respectively, all indicating a positive effect. 4) Coordination has a direct effect on planning and the success of budget management, with statistical significance at the 0.01 level and coefficients of 0.163 and 0.673, respectively, indicating a positive effect. However, coordination has an indirect effect on the success of budget management, with statistical significance at the 0.01 level and a coefficient of 0.045. 5) Planning has a direct effect on the success of budget management, with statistical significance at the 0.01 level and a coefficient of 0.277, indicating a positive effect.

DISCUSSION

From the concept of New Public Financial Management (NPFM) (Bovaird & Loffler, 2001; Guthrie, Olson & Humphrey, 1999; Sirisunhirunet al, 2019), it has been applied to the components of budget allocation in the agency, consisting of aspects of leadership, planning, reporting, controlling, coordination, and the success of managing the allocation of budgets for comprehensive online learning for students.

1) Leadership, it comprises five sub-components (L1-L5). Leaders have responsibilities (L2), pay attention to various budget details, and adhere strictly to regulations (Paebua&Ruaphan, 2013; Yotsritha, 2021; Thongudom&Monthaisong, 2021). They also possess knowledge and understanding of their work (L3) (Yodsri, 2022; Thaemruangit&Inrak, 2023; Thongudom&Monthaisong, 2021). Additionally, they exhibit forward-thinking characteristics (L1), with a vision that includes thoughts, attitudes, and forecasting (Leertwivanapong et al., 2017; Paebua&Ruaphan, 2013; Thaemruangit&Inrak, 2023). Furthermore, they emphasize ethics and morality (L4), including honesty and accountability, which aligns with various studies that highlight the moral integrity and honesty of leaders (Thongudom&Monthaisong, 2021; Jaroenrach, 2021).

2) Planning, it comprises five sub-components (P1-P5). Data or factual analysis (P3) involves having facts or data that can be used to support the planning process (Kong, 2005; Ozkul, 2001; Saputra, 2018). Operational plan details (P1) include having indicators in the plan's details to enhance the specificity of the planning, aligning with the mission (Yotsritha, 2021; Tangdee, 2015; Thanirat, Prasan and Suntharanurak, 2019). Creating a space for feedback from internal and external agencies (P4) refers to gathering opinions or holding meetings to solicit feedback from personnel and agencies both internally and externally (Toyai, Umpanyaand Phakdee, 2009; Nanthathat, 2016; Bartlett &Schugurensky, 2021). Developing a human resource development plan (P2) means establishing a framework for knowledge development and operations of personnel within the agency to ensure they have understanding and knowledge, which is crucial for building the infrastructure for online learning (Berge, 1995; Kaewurai, Yuh, &Khongcharoen, 2023; Hew & Cheung, 2008; Lim, Cheung & Hew, 2011).

3) Reporting, it comprises five sub-components (R1-R5). Content that is easy to understand (R5) refers to information that can be communicated clearly, allowing recipients to easily comprehend it. The frequency of budget clarification (R1) pertains to the cycle of reporting or compiling budget clarification reports,

aligning with the reporting cycle of budget allocation, which is emphasized in several studies regarding the duration of budget allocation clarifications (Nanthathat, 2016; Jaroenrach, 2021; Thaemruangit&Inrak, 2023). Reporting details (R2) include results that encompass outcomes aligned with objectives. Creating detailed and clear reports considers resources and outcomes related to online learning, showing the relationship between resources, outcomes, and cost-effectiveness (Toyai, Umpanya, and Phakdee, 2009; Suanklai&Phetroj, 2023). Reporting channels through technology (R3) indicate that using platforms or technology for reporting allows for rapid dissemination. The modernity of public reporting (R4) is a critical component, as continuously updating information ensures the effectiveness of the reports.

4) Control and monitoring, it comprises four sub-components (C1-C4). Compliance with regulations (C2) refers to the consistency of regulations regarding budget allocation and expenditure between the allocating agency and the receiving agency (Naksuwan&Tharatsrisutthi, 2021). Timeliness of monitoring and evaluation (C3) emphasizes the punctuality of monitoring. Timeliness of expenditure (C1) involves the appropriateness of the expenditure timeline to ensure timely monitoring and evaluation during this period. The timeline for allocating budgets to various agencies should be appropriate and timely according to the objectives of budget utilization (Lertwiwattanapong et al., 2017; Jaroenrach, 2021; Suwanpool, Wongnaya and Waipia, 2023). The autonomy and flexibility of budget spending (C4) pertain to the flexibility in allocation and spending that aligns with budget utilization objectives and results. Control and monitoring should be flexible, transparent, and accountable (Schleicher, 2012; Kong, 2005; Tsang, 1996; Sangganagara, 2022; Mir &Sutiyono, 2013; Njonde& Kimanzi, 2014).

5) Coordination, it comprises three sub-components (CO1-CO3). Coordinating feedback from internal and external agencies (CO3) involves collaboratively gathering opinions from internal and external agencies to create guidelines for budget allocation that consider various factors (Thongudom&Monthaisong, 2021; Naksuwan&Tharatsrisutthi, 2021; Harnanusorn, 2014; Saputra, 2018; Sangganagara, 2022). Resource mobilization from external sources (CO2) includes funds, time, and knowledge to analyze budget allocation in online education, representing an investment in education that utilizes resources from stakeholders (Toyai, Umpanya and Phakdee, 2009; Harnanusorn, 2014; Rebell, 2011). Coordinating cooperation with external agencies for budget allocation consideration (CO1) involves interviewing external agencies during budget consideration to ensure that allocation can cover all aspects, thus requiring external agencies to participate in the budget allocation process.

6) Successful management for budget allocation in online learning, it comprises four sub-components (M1-M4). Employee participation (M4) refers to the involvement of internal and external personnel in providing opinions, thinking, and implementation. Modern data storage and protection technology (M2) refers to platform systems that can store data for analysis or budget allocation data (Rugchatjaroen, 2014; Nanthathat, 2016; Naksuwan&Tharatsrisutthi, 2021). The agency responsible for evaluating online learning budget allocation (M3) consists of a team established to analyze and monitor the online learning situation (Toyai, Umpanya and Phakdee, 2009; Nanthathat, 2016; Thongudom&Monthaisong, 2021; Naksuwan&Tharatsrisutthi, 2021; Suwanpool, Wongnaya, and Waipia, 2023). An agile and uncomplicated organizational structure (M1) means that the agency does not have processes requiring multiple approvals or numerous lines of authority.

Results Based on All Hypotheses:

Hypothesis 1: Leadership has a direct effect on planning. Leadership directly affects planning. Several studies have shown that leaders influence the direction of budget allocation planning and operational planning within organizations, concerning both budget allocation and the quantitative and qualitative deployment of personnel (Paebua&Ruopan, 2013; Thongudom&Monthaisong, 2021).

Hypothesis 2: Controlling has a direct effect on reporting results. Control directly affects reporting results. The assessment and control will impact the reporting (Passerini & Granger, 2000) because reporting must align with the objectives for which the budget has been allocated. Control and monitoring serve as mechanisms to demonstrate how budget allocation reporting and implementation should be conducted.

Hypothesis 3: Reporting results has a direct effect on coordination. Reporting results directly affects coordination, planning, and success in budget management. Reporting results helps identify improvements in teaching and online learning, enabling students to learn more effectively. These outcomes facilitate networking to enhance students' education (Chantharutai&Yamthim, 2024).

Hypothesis 4: Coordination has a direct effect on planning. Coordination directly affects planning and success in budget management. The government must invest in information technology, connecting networks via the internet, instructional programs, curriculum development, and enhancing hardware and software (Hennessy, 2010). Therefore, coordinating with various agencies will enhance the efficiency of budget allocation, allowing agencies to share resources and preventing the government from excessively allocating budgets to any single area.

Hypothesis 5: Coordination has an indirect effect on success in budget management. Coordination indirectly affects success in budget management. Successful organizational management requires coordination with both internal and external agencies, or creating a committee to survey the context of schools and online learners, ensuring that operations are not complicated and allowing multiple agencies to express their opinions, thus facilitating successful budget allocation (Chaijeena, 2018; Wasono, Karim &Darsyah, 2019).
Hypothesis 6: Planning has a direct effect on success in budget management. Planning directly affects success in budget management. Good planning and understanding of the facts, along with data analysis for planning—particularly analyzing the context of schools, children's learning, school sizes, and classrooms—will lead to more comprehensive budget allocation for online learning (Arbaugh & Duray, 2001).
Hypothesis 7: Leadership and control are interrelated. Specifically, leaders influence the control, monitoring, and evaluation of budget allocation for online learning, while at the same time, control or monitoring and evaluation will also affect the vision, duties, and operations of leaders (Pipatanwatanaroj&Sarasawang, 2024).

Suggestions
From the study results on the allocation of budgets covering online learning for students, guidelines can be established for budget allocation to the responsible agencies for consideration and implementation of policies or as a model for budget allocation. This policy framework can be modified and applied in the consideration of the operational guidelines of agencies involved in budget allocation or those responsible for implementing policies. Additionally, future studies can incorporate these recommendations to enhance the comprehensive knowledge regarding budget allocation for online learning.

1. Policy Suggestions
1)The implementation of public education policies, especially regarding online learning, must consider the components that drive budget allocation agencies. Leaders must possess a sense of responsibility and understanding of organizational dynamics and budget allocation strategies. Planning requires thorough analysis of data, factual information, current situations, and future trends. Coordination is essential for collaborating with both internal and external agencies to ensure comprehensive budget allocation considerations. Monitoring and control involve important regulations that need to be flexible, while the rules for budget allocation and expenditure between allocating agencies and those implementing the budget must align with the objectives of its use. Finally, clear and easy-to-understand reporting is essential, as online learners range from children to adults in their surrounding environments. Therefore, to ensure that budget allocation truly considers the needs of learners, the outcomes of the allocation must be presented in a way that reaches the target audience, allowing them to be aware, informed, and able to provide feedback, as well as offering details under an effective online learning framework.
2) The network for driving the allocation of budgets for online learning is essential because budget allocation cannot solely establish the infrastructure necessary for operational activities within budgetary agencies directed towards implementing agencies. Every sector must collaborate and act simultaneously, such as by creating spaces for expressing opinions and presenting empirical data to ensure that the budget allocation efforts of these agencies comprehensively cover online learning for students. Sometimes, the budget is insufficient to meet all arising demands, and at times, budget management is complicated when it comes to equitable distribution. Therefore, building a network and promoting an ecosystem among agencies is crucial to effectively share resources and genuinely address the needs.

2. Suggestions for Future Research
1) Increasing the stakeholder groups involved in conducting surveys or quantitative research that utilizes empirical data from surveys for analysis. These stakeholders include sectors beyond the public sector, particularly within the community or target groups who receive services from public education policies or online learning initiatives. Therefore, gathering additional data from various stakeholder groups will enhance the research, expand knowledge, and improve the allocation of budgets that support online learning, ultimately better meeting the needs of learners.
2) Expanding the scope to include the context of Thailand is essential, as obtaining representatives from various sectors or contexts across the country allows for the recognition of differences and demonstrates a more accurate representation of Thailand. Consequently, policies regarding online learning can be developed with greater depth and difference. This approach also reflects that study results will emerge from diverse local contexts with varying economic, social, and environmental conditions, as well as the

needs of people in each area. The government can utilize this information to promote or devise strategies for budget allocation to support educational resource development.

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