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The Role of Information Technology in Governance Mechanism for Strategic Business Contribution: A Pilot Study

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***Abstract*—Information Technology Governance (ITG) aims in schools to align IT and business transformation, which is also important in high schools (HS). This study focuses on identifying the factors that influence the mechanism of ITG in HS to contribute to the business strategy. Teachers, staff, and management from Indonesia were chosen as research respondents. The Development model, which includes the readiness model, success model, and system trust variables, was used for media analysis to create the ITG model. The study used the Quantitative method to measure the significance value between variables using Partial Least Squares Structural Equation Modeling (PLS-SEM). The analysis revealed that the ITG model is composed of nine variables, with four exogenous variables and four endogenous variables, and the ITG variable showed a significant value of 0.75. This indicates that the supporting variables for ITG, including four exogenous and four endogenous variables, significantly affect the ITG variable by 75%. The study also found that an increase in the system trust variable due to good IT and business variables can have a positive impact. This ITG trust model can be used to assess the alignment of IT and business strategies and whether IT investments support business objectives in HS. The study can also help HS stakeholders identify the antecedent factors of ITG.**

Keywords— **ITG; IT strategy; business strategy; HS; PLS-SEM.**

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I. INTRODUCTION

The implementation of Information Technology (IT) has been intended to aid humans in various tasks such as creating, storing, communicating, and disseminating information, thereby affecting different aspects of human life [1], [2]. This advancement has brought about significant changes in all fields, including the education sector [3]. However, the onset of the Covid-19 pandemic has resulted in unprecedented changes in the education sector [4]. All regions have implemented locking and closing activities that require meeting and human interaction - including schools [5]. Due to lockdown and closure measures enforced in almost all regions, schools have adopted internet-based services to facilitate communication, interaction, and continuation of work responsibilities from home [6]. Figure 1 shows that the Covid-19 pandemic has accelerated the digitization of education. The number of people who participated in the survey was three times higher than in the pre-COVID-19 era. At present, at least 80% of their interactions are digital, indicating a significant increase in IT usage during the pandemic, which has also led to mental health problems.

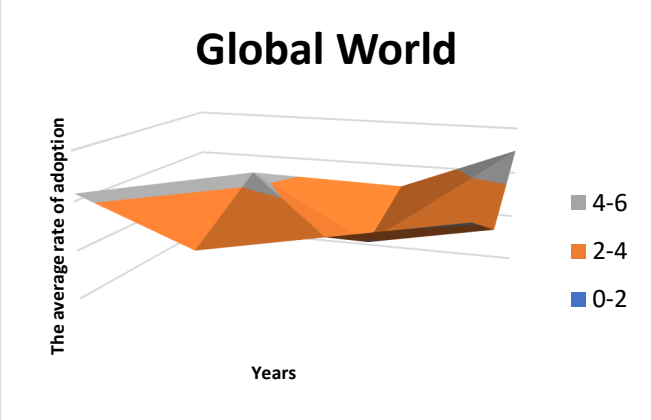

Fig. 1 COVID-19 has accelerated the digitization of education. (www.mckinsey.com)

In 2021, there has been a noticeable increase in online learning and the use of gadgets, surpassing the growth seen in

the three years before the pandemic [7]. As a result, traditional face-to-face learning has been replaced with e-learning methods, which utilize the Internet as its primary medium [8]. The approach is strongly connected to the Information Technology (IT) industry, which employs the Internet as its primary communication channel. During the Covid-19 pandemic, the government has implemented a policy of remote learning or e-learning [9]. However, e-learning presents various difficulties for educators, students, institutions, and society. E-learning is like an oasis in the desert that makes it easy for users to learn and become Usability in skills anytime and anywhere [10].

This research focuses on High Schools (HS) as the subject of investigation and recognizes them as providers of secondary education that require digital technology for academic services and education management services [11], [12]. In Indonesia, high schools can be categorized as private and public [11]. The research emphasizes the examination of academic services and IT-based education management services. The effectiveness of e-learning and the utilization of new digital technologies serve as a connection between teachers and students who are physically separated [13]. The objective is to enhance the integration of IT in high schools. Hence, it is necessary to establish a standardized assessment of the IT Governance (ITG) mechanism.

The main objective of this study is to present an ITG framework that guarantees the satisfaction of stakeholders' needs in a high school setting. The model evaluates the conditions and preferences of the stakeholders in alignment with the school's business objectives. It establishes priorities for decision-making processes, guides the allocation of IT resources and investments, and tracks performance based on goals and directions specified in the study's reference [12]. The evaluation process primarily concentrates on assessing, monitoring, and ensuring the proper implementation of ITG within the high school. This involves effectively managing data integrity and operating under the school's business and IT objectives.

To put it briefly, the field of education is undergoing a significant shift towards e-learning, which involves using technology for educational purposes. The rise of distance learning, also known as e-learning, allows individuals to access education at any time and from any location [13]. The study has introduced an ITG trust framework to assist stakeholders in effectively evaluating HS institution's business and IT goals 14]. Section 2 introduces the ITG framework for this study, while Section 3 explains the adoption model. The findings from the adoption analysis are illustrated in Section 4. Ultimately, Section 5 presents the conclusions.

II. Material and Method

A. Information Technology Governance

Previous research has extensively studied The IT Governance Framework, particularly on De Haes's conceptual mechanism framework. This framework comprises three distinct variables: relational, process, and structural [15], [16]. Figure 2 represents the framework developed by De Haes for understanding the conceptual mechanism.

Fig. 2 ITG Mechanism Framework [15]

This study is a research endeavor focused on IT governance (ITG) in the HS. Previous research on this topic has not been conducted before. Therefore, this study aims to explore ITG in HS, drawing from the experience of implementing ITG in Higher Education Institutions (HEI) [17]. Consequently, it is crucial to establish an ITG framework that can assess IT governance in the HS setting and determine the alignment between IT strategy and business strategy. Initially, the ITG De Haes model served as a reference for identifying variables supporting assessment indicators' development. The need to evaluate IT management in the HS environment led to the conception of an ITG Framework.

B. Method

This research utilizes the methodology step, as illustrated in Figure 2, based on prior efforts in adopting the framework. The research method step aligns with the previous process of framework adoption.

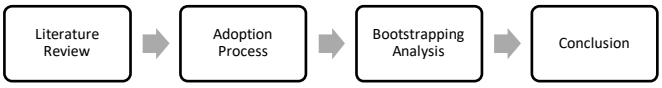

Fig.3 The Methodology step of the ITG Trust Framework

C. Literature Review

The ITG Trust framework is built upon multiple models and frameworks. In this study, the primary reference is the ITG mechanism framework since the aim is to develop the ITG framework. The readiness model, IS success model, Usability model, and System Trust variable are also employed. The independent variable in this framework is the readiness model [18], while the dependent variable construct includes the IS success variable [19], the Usability variable's influencing factors [20], and the System Trust variable [21].

TABLE I
THEORETICAL FRAMEWORK

Theoretical of Model	References
ITG Mechanism Theory	[15], [16]
Technology Readiness Model	[18]
IS success model	[19], [22]
Usability Model	[20]
Progressive of a Model Development	[15], [17], [20], [23]

The primary model of ITG in the ITG trust framework is constructed using indicators of three variables from the ITG mechanism framework. Additionally, the ITG trust framework's proposal becomes a variable in the proposed framework. The developed model includes elements from the readiness model, three independent variables related to IS success, and a system trust variable [20].

Initially, the independent variable of the ITG trust framework is populated by the readiness model, with a change in variable names from "optimism" to "hopefulness" and

"Innovative" to "Breakthrough." This change is made to align the model more effectively with the concept of ITG. Moreover, the independent variable incorporates the concept of structure mechanism based on the ITG mechanism framework. It is worth noting that an indicator of the structure mechanism is implemented in the ITG trust framework.

Second, In the ITG trust framework, the quality of information, service quality, and system quality are three exogen variables. The IS success model is transformed into dependent variables influenced by the ITG trust framework. Additionally, the indicators of the Usability model also impact the ITG trust framework. Specifically, there are five variables from the Usability model, namely Learnability (LEA), Efficiency (EFI), Memorability (MEM), Error (ERR), and Satisfaction (SAT), that influence the three variables of the IS model in the ITG trust framework. These three IS success-independent variables are referred to as QOI, QSV, and QSY, and they serve as components of the process mechanism in the ITG trust framework.

Thirdly, the ITG trust framework incorporates system trust as a key relational factor. System trust is characterized as a novelty and innovative element within this framework. It is determined by active engagement and collaborative interactions among stakeholders. Effective communication between stakeholders and the system and the exchange of knowledge through trust in the system are vital components. Additionally, the ITG Trust framework hierarchically employs the Input, Process, and Output stages, accommodating multiple models.

D. Adoption Process

The suggested framework includes a total of nine variables and 23 relational variables. Fig 4 illustrates the framework that is created by combining the readiness and influence of usability models. The system trust variable meets the initial condition for establishing the structural mechanism of the ITG framework, which pertains to the extent to which stakeholders/management place trust in the IT system.

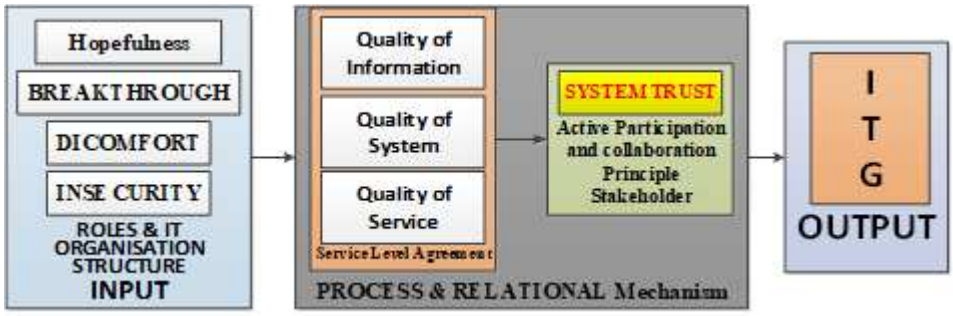

Fig.4 The Conceptual ITG trust framework

The exogen variable in this context is the readiness variable, while the endogen variable is the IS Success model variable. The readiness model comprises four variables: HOP, BTH, DSC, and INS. Regarding the clarification of variables in the ITG trust framework, Table II explains the nine variables listed below:

TABLE II
DEFINITION OF VARIABLE

Var	Definition
HOP	The quality of believing to the IT will probably happen.
BTH	The IT quality is the advanced systems
DSC	The quality to perceive IT is an unpleasant condition
INS	The quality to handle harmful potential
QOI	The quality of IT consistency of the user's expectations
QSY	The quality of the IT content
QSV	The quality of the excellent IT services
SYT	The quality of trust level of users during utilizing of the IT
ITG	The achievement of the IT governance

The ongoing process also contributes to the development of the ITG trust framework. Priyadarsini suggested that stakeholders' perception of the necessity of IT in all aspects of work and human life necessitates organizations to rely on IS and IT as catalysts for conducting their business operations [24]. Since ITG is a component of an organization's overall corporate governance framework, the study conducted by Dutta specifically observed that IT plays a vital role in connecting most institutions/companies and facilitating collaboration among individuals (relational), processes, and technological structures, thereby enabling organizations to fulfill the objectives of their target stakeholders [25]. Building upon the aforementioned previous studies, the following hypotheses are put forward:

In the ITG Trust framework, the adoption of the Usability variable, which includes Learnability (L), Efficiency (E), Memorability (M), Errors (E), and Satisfaction (S), has an impact on three exogen IS Success variables. The relationship between the adoption variables of Usability is explained in Table III.

TABLE III
RELATIONSHIP BETWEEN IS SUCCESS, USABILITY AND ITG TRUST MODEL

I S success variables	Usability variables
QoI	L, E, M, E
QSy	L, E, M, E, S
QSv	L, E, M, E. S

Table III demonstrates that the QOI variable is represented by indicators labeled as L, E, M, and E. In contrast, the QSY and QSV variables are influenced by indicators labeled as L, E, M, E, and S. Lastly, the Usability model impacts three variables within the IS model.

H_1: HOP significantly influences the QOI
H_2: HOP significantly influences the QSY
H_3: HOP significantly influences the QSV
H_4: HOP significantly influences SYT
H_5: BTH significantly influences the QOI
H_6: BTH significantly influences the QSY

H_7: BTH significantly influences the Quality of Service
H_8: BTH significant influences SYT
H_9: DSC significantly influences the QOI
H_{10}: DSC significantly influences the QSY
H_{11}: DSC significantly influences the QSV
H_{12}: DSC significantly influences SYT
H_{13}: INS significantly influences the QOI
H_{14}: INS significantly affects the QSY
H_{15}: INS significantly affects the QSV
H_{16}: INS significantly affects SYT
H_{17}: QOI significantly affects SYT
H_{18}: QOI significantly affects ITG
H_{19}: QSY significantly affects SYT
H_{20}: QSY significantly affects ITG
H_{21}: QSV significantly affects SYT
H_{22}: QSV significantly affects ITG
H_{23}: SYT significantly affects ITG
The 23 hypotheses are presented as a path model, as shown in Fig. 5.

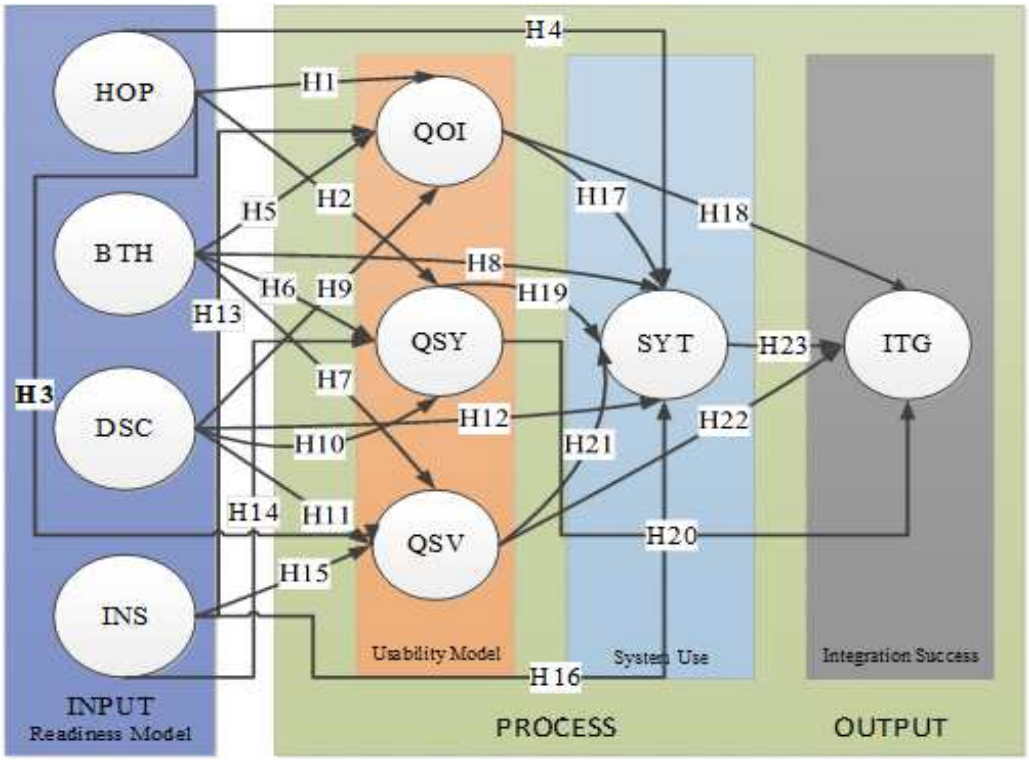

Fig. 5 Path Model of Hypothesis

C. Data Collection

The research process needs to proceed by conducting the data collection phase. This particular step involves testing the hypotheses through a survey. This research focuses on High Schools and their connection to the ITG. An online platform, specifically Google Forms, was utilized to conduct the survey. The target population for this research included teachers, staff management, principals, and vice principals from various high school institutions starting from January 2021. The individuals who responded to the survey formed the respondent group.

Those previously mentioned need to participate in this survey as it has become mandatory. A total of 300 participants responded, with 110 being male and 190 females. All the responses were included in the data analysis. One potential risk in conducting surveys is the occurrence of bias, and to mitigate it, indicators related to a single variable were randomly distributed rather than grouped.

III. Result and Discussion

This section demonstrates the process of gathering data and conducting analysis using the ITG trust model. The analysis includes a multigroup analysis carried out using Smart-PLS [28]. To facilitate the analysis, a model is required as a framework. The ITG trust model is then analyzed by inputting data into Excel since it incorporates the path model. The path model serves as a visualization of all the proposed hypotheses.

Smart-PLS assists in carrying out analysis directly from the graphical representation of the path model. Smart-PLS is a nonparametric statistical technique that does not require data to follow a normal distribution, making it suitable for exploratory studies. Since this research is exploratory, PLS-SEM is the appropriate choice. Analyzing data using Smart-PLS involves two main steps: the measurement or outer model and the inner model.

A. Outer Model Analysis and Demographic of Respondent

The analysis of the outer model pertains to the reliability and validity of the research instrument employed. This analysis specifically examines each underlying variable and its associated indicators. Smart-PLS assesses two key measures: Cronbach's alpha and AVE (Average Variance Extracted). Cronbach's alpha assesses the instrument's reliability, while AVE evaluates its validity. Reliability helps determine the consistency of responses, whereas validity

pertains to whether the items accurately measure the intended concept.

The Outer Model is a measurement model that seeks to define how latent variables and their indicators are connected. The PLS Algorithm procedure is employed to evaluate the outer model. To assess reliability, Cronbach's Alpha is used, which indicates the reliability of all indicators within the model. A minimum value of 0.7 is desired. The outer model undergoes tests based on the type of indicators, either reflective or formative.

The convergent validity test includes specific measures to assess the strong correlation of the concept [29], [30]. To evaluate the convergent validity of a concept with a reflective indicator, the Average Variance Extracted (AVE) is utilized. A value of 0.5 or higher for AVE indicates satisfactory performance. When AVE reaches 0.5 or higher, it signifies that the concept can account for 50% or more of the variation in the items [31], [32]. AVE serves the purpose of verifying whether the discriminant validity requirement has been fulfilled. Construct reliability and validity of this research are presented in Table IV.

TABLE IV
OUTER MODEL ANALYSIS

	Cronbach Alpha	AVE
HOP	0.848	0.622
BTH	0.844	0.616
DSC	0.842	0.613
INS	0.833	0.601
QOI	0.825	0.585
QSY	0.866	0.650
QSV	0.818	0.581
SYT	0.871	0.721
ITG	0.918	0.756

Table V provides an overview of the questionnaires utilized in this research. Before creating the questionnaires, defining and quantifying all the variables was necessary. Each aspect was evaluated using a five-point Likert scale.

TABLE V
DEFINITION OF QUESTIONNAIRES

	Definition	Questionnaires
HOP1	Convenient	IT serves to strengthen the relationship in communication when used
HOP2	Easy to access	IT is easy to connect with other systems (netbook/desktop)
HOP3	Efficiently	IT works efficiently
HOP4	Effectively	IT is functioning effectively
HOP5	Productive	I feel productive with the IT used
BTH1	Innovations	I find learning new IT innovations at work beneficial
BTH2	a kind of Helps	I feel I can use IT at work and help me at work
BTH3	a kind of supports	I am willing to help others understanding new IT innovations in the workplace
BTH4	a solution	I love using new IT innovations at work
BTH5	Convincing win	I love the challenge of learning new IT innovations at work
DSC1	Fluent	I feel that IT is created for ordinary people for work purposes
DSC2	Easy to use	I am easy to use IT because there is a manual for guidance
DSC3	Comfortable	I feel I can rely on IT skills at work
DSC4	Assisted by someone	I feel comfortable using IT at work because it is assisted (Technical Support)
DSC5	Suitable	I feel safe, comfortable and suitable to use IT
INS1	Confidentiality	I feel dependent on IT (Internet, Desktop PC, Printer, Multimedia) at work.
INS2	Integrity	I feel safe (confidentiality) using IT at work because it is not dangerous.
INS3	Availability	I feel confident (integrity) using IT at work because it is safe (Secure)
INS4	Safety in use	I feel that the use of IT is safe
INS5	Resilience	I feel safe giving personal data when using IT because of the use of passwords.
QOI1	Accurate	I feel that the quality of IT information is considered accurate
QOI2	Suitable	The quality of IT information is deemed appropriate for its accuracy
QOI3	Complete	The quality of IT information is considered complete
QOI4	Relevant/continuity	The quality of IT information is deemed relevant to the same as the source.
QOI5	Appropriate	I feel that IT is appropriate with good qualities owned by the school
QSY1	Ease of Use	System hardware ease of use
QSY2	Reliability	System software is reliable and stable to support work.
QSY3	Response time	Internet access speed is quite fast/normal when used
QSY4	Flexibility	System hardware and software function flexibly when accessed and properly.
QSY5	Safe in security	I feel safe using school IT because it has a security system
QSV1	Responsiveness	IT services at schools is responsive/sensitive to help when needed.
QSV2	Equipment Reliability	IT services in schools is reliable (Reliability) on demand.
QSV3	Tangible	IT services from existing assets/equipment is safe and adequate for work
QSV4	Assurance	There is a guarantee (Assurance) of IT services when accessed.
QSV5	Empathy	IT services give attitude and attention to each customer if needed.
SYT1	Efficient	IT systems in schools are efficient, safe, and easy to use
SYT2	Effective	IT system in schools is effective, and supports the school's business processes
SYT3	Flexible	IT system in a flexible school can adapt to demand
SYT4	Resilience	IT system is resilient. It is supported by the collaboration of key stakeholders
ITG1	IT Efficient	IT governance in schools efficiently to supports school business processes
ITG2	IT Effective	IT governance creates innovation for teacher-student
ITG3	Business competition	IT Governance is increasing business competition against other schools.
ITG4	IT risk prevention	IT governance is efficient in preventing and mitigating IT risks.
ITG5	Improve business	IT Governance in schools improves the school's business ability

TABLE VI
PROFILE OF RESPONDENT

	Item	Total	%	Total
Education	High School	28	9.3	
	Bachelor	152	50.7	300
	Master	120	40	
Job	staff	20	6.7	
	Teacher	253	84.3	300
	Principal	27	9	
Ex uses IT	Use IT< 2 yr	24	8	
	2 yr< use IT < 10 yr	73	24.3	300
	10 yr< use IT < 25 yr	185	61.7	
	Use IT > 25 yr	18	6	

Table VI provides an overview of the 300 respondents, detailing their profiles. The respondents were categorized based on their highest education level, current job position, and experience in using IT. The purpose of establishing these criteria for the respondent's profile is to illustrate the demographic characteristics of the respondents or the research sample.

B. R2 Coefficient

The robust framework refers to a framework with a well-fitting framework. The adequacy of this framework can be evaluated by examining the coefficient of determination or R2. The R2 values are presented in Table VII.

TABLE VII
R2 COEFFICIENT

	R2
ITG	0.813
QOI	0.557
QSY	0.517
QSV	0.714
SYT	0.437

Table VII provides a depiction of data that represents the trajectory and outcomes of the internal model. By referring to this figure. An explanation can be derived regarding whether all indicators possess loading values exceeding 0.7.

C. Measurement of ITG trust Variable

The pilot study employed 300 participants for data analysis. The analysis was conducted in accordance with the results of the analysis of the number of respondents, resulting in 300 data points for analysis, as per the sampling formula. The subsequent analysis focuses on variables related to the ITG trust indicator.

TABLE VIII
MEASUREMENT OF HOP INDICATORS

	SD	D	DK	A	SA	AVERAGE
	1	2	3	4	5	
HOP1			8	223	69	4.2
HOP2			21	220	59	4.13
HOP3			68	167	65	3.99
HOP4			35	194	71	4.12
HOP5			20	214	58	4.02
						4,092

The average summary findings from evaluating the Hopefulness factor reveal a score of 4.12. This indicates that when individuals perceive IT in a positive light, it aids in work and learning, proves to be effective in delivering educational and administrative solutions within schools.

TABLE IX
MEASUREMENT OF BTH INDICATORS

	SD	D	DK	A	SA	AVERAGE
	1	2	3	4	5	
BTH1			46	162	92	4.15
BTH2			97	145	58	3.87
BTH3			51	172	77	4.09
BTH4			49	183	68	4.06
BTH5			47	161	92	4.15
			Mean			4.065

According to the findings of the Breakthrough variable survey, 183 participants expressed their agreement regarding their preference for utilizing new IT in their workplace. The results emphasize the significance of acquiring knowledge about innovative IT tools, highlighting their valuable role in the educational process within schools.

TABLE X
MEASUREMENT OF DSC INDICATORS

	SD	D	DK	A	SA	AVERAGE
	1	2	3	4	5	
DSC1	74	**215**	5	4	2	1.82
DSC2	85	167	42	3	3	1.91
DSC3	52	**219**	22	2	5	1.96
DSC4	54	143	98	2	3	2.19
DSC5	62	166	65	5	2	2.06
			Mean			1,988

According to the explanation, a group of three to five participants expressed their agreement on several negative aspects of using IT, such as feeling uncomfortable, unsafe, finding it difficult to use, and perceiving no assistance with work. Conversely, a larger group of 215 to 219 respondents agreed that IT helped them feel comfortable and supported in completing their schoolwork.

TABLE XI
MEASUREMENT OF INS INDICATORS

	SD	D	DK	A	SA	AVERAGE
	1	2	3	4	5	
INS1	73	173	48	4	2	1.96
INS2	58	**212**	25	2	3	1.93
INS3	60	189	45	4	2	2.00
INS4	64	192	40	3	1	1.95
INS5	74	165	54	4	3	1.99
			Mean			1.967

Approximately two to four participants experienced insecurity, lack of confidence, and minimal reliance on IT. Conversely, about 200 respondents expressed a similar viewpoint, but they relied on IT to feel secure and confident. Additionally, they acknowledged the substantial assistance IT provides in administrative tasks, teaching, and student learning.

TABLE XII
MEASUREMENT OF QOI INDICATORS

	SD	D	DK	A	SA	AVERAGE
	1	2	3	4	5	
QOI1				158	142	4.47
QOI2				**174**	126	4.42
QOI3				170	130	4.43
QOI4				148	152	4.51
QOI5			14	**177**	109	4.32
			Mean			4.43

According to the analysis findings, over 170 participants concurred that incorporating IT in educational institutions offers the advantage of obtaining precise, accurate, and high-quality information.

TABLE XIII
MEASUREMENT OF QSV INDICATORS

	SD	D	DK	A	SA	AVERAGE
	1	2	3	4	5	
QSV1			135	117	39	3.56
QSV2			28	**221**	51	4.08
QSV3			20	**246**	34	4.05
QSV4			48	167	85	4.12
QSV5			129	108	56	3.66
		Mean				3,894

This passage discusses over 220 individuals who believe that IT services' reliability in schools is crucial in assisting them with their work. They perceive these services as tangible, secure, and suitable for their work requirements. Ultimately, the passage emphasizes that the existence and assessment of these services should be a significant factor within ITG.

TABLE XIV
MEASUREMENT OF QSY INDICATORS

	SD	D	DK	A	SA	AVERAGE
	1	2	3	4	5	
QSY1			20	224	56	4.12
QSY2			18	**233**	49	4.10
QSY3			31	217	52	4.07
QSY4			13	**243**	44	4.10
QSY5			35	205	60	4.08
		Mean				4.096

Approximately 230 participants believe that IT systems' software provides dependable work support, operates flexibly, and functions effectively during access or usage. The quality of the system is the third crucial aspect in the process that affects the trust of stakeholders in educational institutions.

TABLE XV
MEASUREMENT OF SYT INDICATORS

	SD	D	DK	A	SA	AVERAGE
	1	2	3	4	5	
SYT1			36	188	76	4.13
SYT2			42	188	70	4.09
SYT3			23	**221**	56	4.11
SYT4			27	**202**	71	4.15
		Mean				4.121

It examines whether the IT infrastructure in educational institutions is adaptable and highly durable, backed by the dedication of key participants (school principals). System trust is established through satisfactory performance in terms of information, service, and system quality. This demonstrates that over 200 individuals have a stronger inclination towards the effectiveness of IT governance in educational institutions when it comes to fostering innovative learning between teachers and students. Additionally, they believe it benefits academic administrative procedures and school finances, highlighting the growing demand for IT resources.

TABLE XVI
MEASUREMENT OF ITG INDICATORS

	SD	D	DK	A	SA	AVERAGE
	1	2	3	4	5	
ITG1			49	186	65	4.05
ITG2			25	**232**	43	4.06
ITG3			33	**225**	42	4.03
ITG4			32	203	65	4.11
ITG5			35	205	60	4.08
		Mean				4.067

D. Bootstrapping Analysis

Bootstrapping is used to evaluate the statistical significance or likelihood of direct, indirect, and overall impacts. Additionally, bootstrapping can be employed to determine the significance level of various other measures such as r square and adjusted r square, f square, outer loading, and outer weight.

TABLE XVII
DESCRIBING OF BOOTSTRAPPING ANALYSIS RESULT

Correlation	T statistic	P-Value	Description
HOP→QOI	5.992	0.000	significantly influenced
HOP→QSV	1.746	0.081	in significantly influenced
HOP→QSY	4.836	0.000	significantly influenced
HOP→SYT	0.618	0.537	in significantly influenced
BTH→QOI	3.991	0.001	significantly influenced
BTH→QSV	4.561	0.000	significantly influenced
BTH→QSY	3.887	0.000	significantly influenced
BTH→SYT	1.336	0.182	in significantly influenced
DSC→QOI	1.338	0.181	in significantly influenced
DSC→QSV	5.515	0.000	significantly influenced
DSC→QSY	0.807	0.420	in significantly influenced
DSC→SYT	0.980	0.328	in significantly influenced
INS→ QOI	0.300	0.764	in significantly influenced
INS→ QSV	4.391	0.000	significantly influenced
INS→ QSY	3.680	0.000	significantly influenced
INS→ SYT	0.815	0.415	in significantly influenced
QOI→ SYT	0.677	0.498	in significantly influenced
QOI→ ITG	2.653	0.008	significantly influenced
QSY→ SYT	9.241	0.000	significantly influenced
QSY→ ITG	5.446	0.000	significantly influenced
QSV→ SYT	2.799	0.005	significantly influences
QSV→ITG	9.241	0.000	significantly influenced
SYT→ ITG	13.334	0.000	significance influenced

The PLS SEM bootstrapping method involves bootstrapping all analyzable values in the partial least squares analysis to generate probability values. The figure below illustrates the results of the PLS algorithm's PLS-SEM analysis.

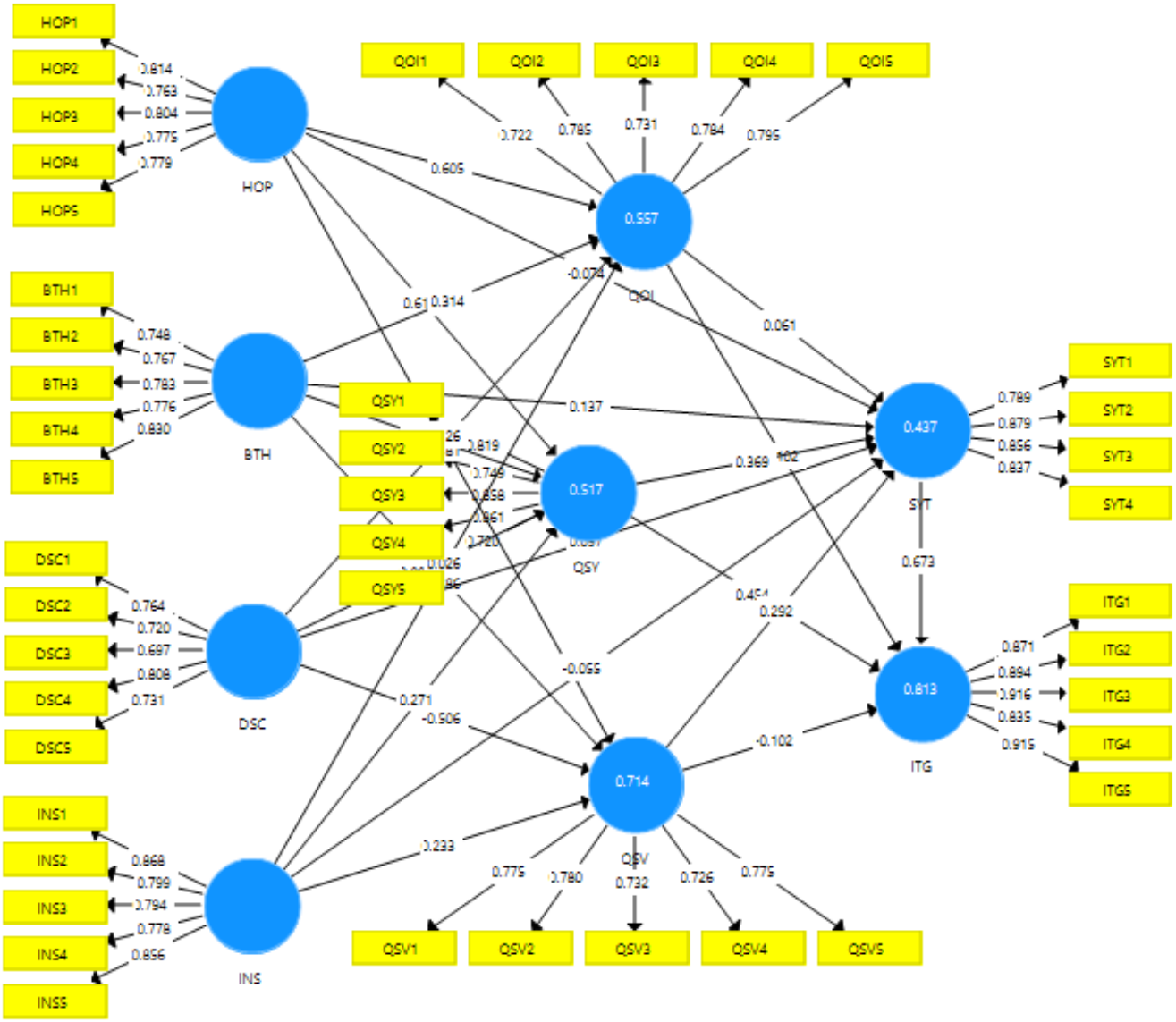

Fig. 6 Path Algorithm Result of ITG trust model

E. Discussion

Table XVII presents tests conducted on the structural model, specifically examining t-statistics greater than the critical t-value from the t-table. To determine the significance of the p-value score, an alpha (α) score of 5% significance is utilized. Sayal asserts that if a bootstrapped value falls below 1.96, the effect is considered insignificant, indicating acceptance of the null hypothesis [33], [34]. This argument supports the research in determining whether variables that are significant or insignificant have an impact on another variable. The score indicates the correlation between one significantly influential variable and another variable. The t-statistic reference for a sample of 300 respondents with a significance level of 5% (alpha) is 1.96. Consequently, if the t-value exceeds the t-table value of 1.96, one variable significantly influences another. The analysis of the bootstrapping results reveals that out of the twenty-three hypotheses examined, eighteen exhibit significant relationships, while five demonstrate insignificant values due to the t-value being lower than the t-table value of 1.96.

The lack of significance of the five hypotheses can be attributed to the small t-count value. The lack of significance can be explained as follows: Firstly, during the COVID-19 pandemic, some respondents perceived breakthrough ideas in information quality even when there was no impact from IT. Secondly, the inconvenience of using IT did not significantly affect information quality because certain users felt comfortable with data access and security. Thirdly, the insignificance of security concerns affected information quality since users did not encounter security issues when accessing information using IT. Fourthly, the lack of significant information quality impacted stakeholders' trust in the system, as respondents had different interpretations of IT system quality at HS that they did not fully comprehend. Finally, similar to information quality, users still had some difficulties understanding system terminologies, resulting in slightly insignificant findings.

Fig 6 presents an analysis using the Partial Least Squares (PLS) Algorithm. This algorithm is a standard method for calculating PLS components (factors) through nonlinear iterative partial least squares. The PLS Algorithm provides the following analysis results: path coefficient values, which

measure the relationship between each exogenous variable and the endogenous variable at the outer loading; these values determine whether the indicator truly represents the variable and assess the direct, indirect, and total effects. Among the exogenous variables, five have no significant impact on the endogenous variables, while one endogenous variable does not significantly affect other endogenous variables. The R Square value indicates the percentage of influence the exogenous variables have on the endogenous variables. Based on the analysis data, the R Square model for ITG has a value of 81.4%, indicating a substantial level of influence.

F. Findings

The research findings have a practical implication: they can support the IT department at HS in addressing the challenges of the information age. One significant contribution of this research is developing an evaluation tool that combines independent and dependent variables to assess IT governance (ITG) in HS. This study employs this instrument to measure the level of ITG in HS. Another contribution of this research is that it aids stakeholders in HS by identifying the factors that precede ITG, specifically focusing on three factors examined in the study. Among these factors, attitude towards IT is the most influential factor in determining ITG. Additionally, to ensure end-user efficiency and ITG, providing sufficient knowledge and training is crucial. Finally, when implementing new systems, stakeholders should prioritize user training to ensure familiarity and proficiency with the new systems.

IV. CONCLUSION

This research has made invaluable contributions to both theory and practice. The empirical aspect of this study involved an investigative process focused on social life, particularly in education. Empirical studies are conducted across various social, economic, scientific, and health domains. However, it is essential to clearly understand several aspects before undertaking empirical research. This study employed an active, diligent, and systematic investigative process to uncover, interpret, and refine facts.

Consequently, this research further reinforces the ITG framework (Grembergen & Haes) as the initial foundation for establishing ITG. As mentioned earlier, when evaluating ITG, HS must recognize the significance of dependent/endogenous or antecedent factors that contribute to the effectiveness and efficiency of ITG. To achieve effectiveness and efficiency in ITG, users must optimize utilizing all available IT infrastructure and facilities under the HS business strategy plan.

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