



**Analysis of the Impact of COBIT 2019 Implementation on Improving  
Risk Control and Management in Education Services: A Case Study of  
SMK Ibnu Khaldun Panambangan**

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**Abstract**

*In the digital era, educational institutions face challenges in managing information technology (IT) controls and risks to maintain data security and ensure service quality. COBIT 2019 as an IT governance framework offers solutions to strengthen control and risk management in this sector. This study aims to analyze the impact of the implementation of COBIT 2019 on improving control and risk management at SMK Ibnu Khaldun Panambangan. The research method used is a qualitative descriptive approach with case studies. Data were collected through interviews, observations, and questionnaires, which were processed using descriptive statistical analysis and correlation tests to determine the relationship between the implementation of COBIT 2019 and control variables and risks. The results of the study showed a significant improvement in IT risk control and security, with a positive correlation value between the implementation of COBIT 2019 and the effectiveness of risk management. While challenges still exist in terms of standards compliance, strategies such as regular training and system monitoring have proven effective in optimizing the implementation of these frameworks. In conclusion, the implementation of COBIT 2019 contributed substantially to improving IT governance at SMK Ibnu Khaldun, with recommendations for increased compliance and stricter controls in the education sector.*

**Keywords:** COBIT 2019, IT governance, risk management, IT controls, education, information security.

**A. Introduction**

In the digital age, the increasing reliance on information technology (IT) has prompted the education sector to be more serious in managing IT controls and risks. The implementation of a good IT control framework, such as COBIT 2019, is important in ensuring the reliability of information systems, reducing operational risks, and improving technology-based



services. However, research shows that more than 60% of educational institutions at the global level still do not fully understand and implement frameworks such as COBIT 2019, which focuses on improving governance and overall risk management (ISACA, 2019; (Kumape & Chernovita, 2022; Maulana Fikri et al., 2020). This causes many institutions to experience problems such as data security, low compliance with standards, and high operational risks that threaten the quality of education services.

SMK Ibnu Khaldun Panambangan is one of the schools that relies on information technology to manage student data, curriculum, and other administrations. Challenges include weak IT controls, inability to anticipate data security risks, and lack of understanding of risk management. This condition puts schools at risk of operational disruption and potential loss of important data. The implementation of COBIT 2019 can be an effective solution for SMK Ibnu Khaldun in strengthening the control and risk management system, as well as ensuring a safer and more efficient learning process (Afdhani & Soewito, 2024; Gouwnalan & Tanaamah, 2023; Rasmila et al., 2025).

Given education's reliance on secure and reliable IT systems, there is an urgent need to evaluate how the COBIT 2019 framework can be implemented in the education sector, especially in vocational schools that have limited infrastructure capacity compared to universities or large institutions (Aziz et al., 2023; Dwi Putra et al., 2022; Nugraha et al., 2021). This study will test the effectiveness of COBIT 2019 in strengthening IT controls, reducing risks, and ensuring operational compliance at SMK Ibnu Khaldun Panambangan. This study is important to provide insight for other educational institutions in understanding the advantages of COBIT 2019 implementation on risk management. Therefore, this study will add a new perspective on the effectiveness and challenges of COBIT 2019 implementation in the vocational school environment.

This research will fill the knowledge gap related to the implementation of COBIT 2019 in vocational schools, which has not been widely researched (Ariyadi et al., 2019; Luh et al., 2023; Setyadi, 2025). The focus of this research is not only on the implementation of COBIT 2019 as a control framework, but also on measuring its impact on improving risk management and operational efficiency at SMK Ibnu Khaldun Panambangan (Utomo et al., 2022; De Haes et al., 2020; Jawad et al., 2023). Thus, this research will contribute to a deeper understanding of how this IT governance framework can function optimally in high schools.

This research aims to:

1. Evaluate the impact of the implementation of COBIT 2019 on improving control and risk management at SMK Ibnu Khaldun Panambangan.

2. Identify the challenges faced during the COBIT 2019 implementation process in the vocational education environment.

3. Provide recommendations for educational institutions in implementing IT governance frameworks to improve the security and efficiency of their IT systems.

The benefits of this study include:

- For Educational Institutions: Provide guidance in strengthening IT control and risk management through the implementation of COBIT 2019.

- For IT Managers in Schools: Gain practical insights on the implementation and impact of COBIT 2019 on school information systems.

- For Policy Makers: Provide empirical evidence related to the need for the adoption of IT governance frameworks in the education sector to improve service quality and data security.

This research is expected to have long-term implications for improving governance and risk management standards in secondary education institutions, so that it can increase public trust in technology-based education services. Furthermore, the results of this study can be a reference for government agencies to encourage the implementation of effective risk control and management frameworks in schools.

## **B. The First Aspect of the Discussion, As the Second Section**

### **Data Presentation and Description of Findings**

#### **Data Collection**

The data of this study includes the results of surveys and interviews regarding the implementation of the COBIT 2019 framework at SMK Ibnu Khaldun (Gamaliel et al., 2024; Prabowo et al., 2023) Panambangan. The survey was filled out by respondents who included administrative staff, IT staff, and school principals. Here is the data obtained from the survey:

<b>Indikator COBIT 2019</b>	<b>Rata-rata Skor</b>
Kontrol Risiko	4.3
Manajemen Keamanan Informasi	4.1
Efektivitas Kontrol Operasional	4.0
Kepatuhan terhadap Standar	3.8
Pemantauan & Evaluasi	4.2
Penggunaan Sumber Daya IT	4.3
Kolaborasi dan Koordinasi	3.9
Responsivitas terhadap Risiko	4.1
Kualitas Pelayanan Pengguna	4.2

The data showed that the indicators of risk control, IT resource utilization, and monitoring & evaluation had the highest scores ( $\geq 4.2$ ), indicating that the implementation of this framework has a positive impact on risk management and control in schools. However, the average score on "Compliance with Standards" is lower (3.8), indicating the need for improvement in maintaining and standardizing procedures.

### **Description of Findings**

From in-depth interviews, administrative and IT staff stated that the implementation of COBIT 2019 helps optimize the management of the school's IT system, minimize security risks, and improve data management efficiency (Meiharsiwi et al., 2024). They also identified that strengthened risk controls can detect potential data leaks early and keep student and staff information safe.

### **Statistical Analysis and Significance of Results**

Statistical analysis used Pearson correlation tests to see the relationship between the implementation of COBIT 2019 and the improvement of control and risk management. The results of the correlation test showed a significant positive correlation between the two variables:

<b>Variabel</b>	<b>Nilai Korelasi (r)</b>	<b>Signifikansi (p)</b>
Implementasi COBIT 2019 & Kontrol Risiko	0.72	0.003
Implementasi COBIT 2019 & Manajemen Risiko	0.69	0.005

Correlation values of 0.72 and 0.69 indicate a strong positive relationship between the implementation of COBIT 2019 and improved risk control and management. A significance of  $p < 0.05$  indicates that this association is statistically significant.

### **Specific Findings**

#### **Effective Strategy**

The findings of the study show that the implementation of strategies such as periodic monitoring, optimal utilization of IT resources, and improving the quality of staff training effectively support the successful implementation of COBIT 2019 (Syukron et al., 2024). The direct involvement of school principals in supervising the use of this framework also plays an important role in maintaining compliance with the established standards.

### **Differences Based on Variables**

An analysis of demographic variables (e.g., work experience and job position) shows that staff with more than 5 years of experience better understand the importance of implementing strict IT controls. Younger staff, on the other hand, tend to have challenges in early adaptation, but quickly adjust after receiving training.

### **Interpretation of Results**

#### **Correlation with Theory**

The results of this study support IT governance theories that emphasize the importance of risk management in improving the reliability of information systems. According to risk control theory, the implementation of frameworks such as COBIT 2019 helps in identifying, mitigating, and responding to risks faster, as seen in the increase in risk responsiveness scores at Ibnu Khaldun Vocational School.

#### **Contribution of Findings**

This research contributes to the understanding of how the COBIT 2019 framework can be effectively applied in the education sector, particularly in improving control and risk management in schools with limited IT resources (Sopacua & Haryani, 2024). These findings also provide insight into the importance of training and support from top management in optimizing the implementation of the framework.

#### **Practical Implications: Recommendations for Companies**

Based on the findings, the following recommendations can be given to companies or institutions that want to implement COBIT 2019 in the education sector:

1. **Training Improvement:** Provide intensive training to staff on the use of the framework and the importance of risk control.
2. **Periodic Monitoring:** Conduct regular monitoring of IT activities and security systems to prevent data leaks.
3. **Compliance Standards:** Improve compliance with IT governance standards by ensuring that operating procedures and documentation are always up-to-date.
4. **Management Engagement:** Encourage management to actively engage in IT oversight and ensure that best practices are applied.

#### **Strategic Change**

These findings underscore the importance of strategic changes in the approach to IT management in educational institutions, such as increased investment in IT training for staff and the development of clearer and more

structured procedures. The proper implementation of the framework can also reduce adverse information security risks, such as data leakage or non-compliance with standards.

### **Discussion**

The results of this study highlight several important aspects that are relevant to IT governance theory and practice, especially in the context of education. A notable discovery is how the implementation of COBIT 2019 can improve IT controls, especially in minimizing risk, optimizing resources, and improving responsiveness to security threats. Here are some of the discussion points from this study:

#### **The Effectiveness of COBIT 2019 in Risk Management in the Education Sector**

The implementation of COBIT 2019 has been proven to improve risk management, in line with IT governance theory which states that a risk control framework must assist institutions in identifying and managing risks that may arise (Nisa' et al., 2023). The results show that this framework provides a clear framework for SMK Ibnu Khaldun Panambangan in implementing a safe and effective IT policy.

#### **Compliance with Operational Standards and Procedures**

Compliance with standards is an important aspect that needs to be improved. However, a relatively lower compliance score (3.8) indicates that there are challenges in consistently implementing COBIT 2019 in the school environment. Some staff noted that the existing documentation and procedures sometimes did not keep up with the latest updates of the framework.

#### **Correlation of Results with Previous Literature and Research**

The governance frameworks such as COBIT can improve risk management. The improvement in risk control scores and risk responsiveness shows that SMK Ibnu Khaldun Panambangan can maintain operational stability and ensure that the existing risk control is running optimally.

#### **Effective Strategies in Framework Implementation**

The effective strategies identified in this study include top management involvement, proper training for IT staff, and regular monitoring of the system. SMK Ibnu Khaldun also uses periodic evaluation techniques to ensure that the framework is implemented correctly and that adjustments are made as needed.



### **Recommendations for the Implementation of IT Governance Framework in the Education Sector**

These findings indicate that to achieve optimal results, educational institutions must strengthen their IT control structures with frameworks such as COBIT 2019. The following recommendations can be used as a reference:

1. **Implementation of an Integrated Reporting System:** Ensuring that any identified risks are reported to the authorities.

2. **Use of Risk Monitoring Tools:** Such as Screaming Frog SEO Spider or GTMetrix, for periodic monitoring and improving response to potential risks.

### **Long-Term Implications for Educational Institutions**

The implementation of COBIT 2019 not only has a direct impact on improving IT security, but also on the efficiency of the overall education process. This framework helps create a culture of compliance and increase public trust in educational institutions, especially related to student data security and a more structured learning process.

This study provides strong evidence that the COBIT 2019 framework can significantly support risk control efforts and strengthen IT management in the education sector. Effective strategies, such as increased training and management engagement, are key factors in the successful implementation of this framework. By implementing the recommendations that have been suggested, SMK Ibnu Khaldun Panambangan and other educational institutions can achieve a significant improvement in the quality of their IT management.

### **C. Concluding Remarks**

This study aims to evaluate the impact of the implementation of COBIT 2019 on improving risk control and management at SMK Ibnu Khaldun Panambangan and identify challenges and effective strategies in the implementation of this framework. Based on the analysis of data and findings, the following are conclusions that answer the objectives of the study:

#### **1. Impact of COBIT 2019 Implementation on Improved Risk Control and Management**

The implementation of COBIT 2019 has been proven to improve IT control and risk management effectiveness at SMK Ibnu Khaldun Panambangan. The results show that the indicators of risk control,

monitoring, and operational control effectiveness achieve high scores, which reflects an improvement in risk identification and proactive management of information systems. With this framework, SMK Ibnu Khaldun is better able to ensure data security and operational stability, increasing the reliability of IT systems used to support educational activities.

## **2. Identify Challenges and Effective Strategies**

The main challenges in the implementation of COBIT 2019 at SMK Ibnu Khaldun include compliance with standards and adaptation by staff. Strategies that have proven effective in addressing these challenges are periodic training, active involvement of principals in IT supervision, and regular monitoring of the system. This strategy supports increased staff understanding of the importance of controls and compliance with the framework, while strengthening the school's response to potential IT risks.

## **3. Recommendations for Educational Institutions**

Based on the results of the research, SMK Ibnu Khaldun Panambangan succeeded in showing that COBIT 2019 can have a positive impact on governance and risk management in the education sector. Recommendations include the implementation of intensive training, review of compliance standards, and regular monitoring to maintain quality control. This step is expected to be applied more widely in other educational institutions, so that it can increase public trust in technology-based educational services and ensure data security.

Overall, this study confirms that the implementation of COBIT 2019 is a strategic step that can support efforts to improve control and risk management in the school environment. This emphasizes the urgency of an IT governance framework for the education sector, especially in the digital era that demands high security and reliability of information systems.

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