International Journal of Economics, Business and Innovation Research
https://e-journal.citakonsultindo.or.id/index.php/IJEBIR
E-ISSN : 2964-0865
IJEBIR

Risk Management Implementation Strategy To Improve Agency Performance: A Study At The Directorate General Of Informatics Applications

Febrianto[1], Zulkifli[2], Lola Fitria Sari[3]

[1]Management Study Program (Master), Graduate School, Pancasila University, [2,3] Management Study Program, Pancasila University

Corresponding Author: lastfebri@gmail.com , zulkifli@univpancasila.ac.id , lola.fitria@univpancasila.ac.id

Abstract

This study analyzes the effect of budget planning, good public governance (GPG), and financial applications on agency performance, both directly and through risk management as an intervening variable, and formulates a risk management implementation strategy at the Directorate General of Informatics Applications (Ditjen Aptika), Indonesia. A mixed-methods design was used. Quantitative data were collected from 200 employees through a questionnaire and analyzed using PLS-SEM (SmartPLS 3.0); Qualitative data were obtained from a focus group discussion (FGD) and analyzed using IFE, EFE, TOWS, and QSPM matrices. Budget planning, GPG, and financial applications significantly and positively affect risk management (R^2 = 0.688). Budget planning, GPG, and risk management significantly affect agency performance, whereas financial applications have no direct effect (R^2 = 0.658). Risk management mediates all three relationships, with full mediation for financial applications. The strategic analysis places DG Aptika in cell II of the IFE–EFE matrix, and the QSPM selects “measuring regulatory success and continuously evaluating performance” as the priority strategy (score 2.45). The findings indicate that investments in budget planning and governance are more effective when integrated with a structured risk management system.

Keywords: Budget Planning; Good Public Governance; Financial Applications; Risk Management; Agency Performance

INTRODUCTION

The performance of government agencies reflects the level of achievement of the agency's goals and objectives as a translation of its established vision, mission, and strategy. In Indonesia, the measurement and reporting of this performance is regulated

Copyright at authors some right reserved this work is licensed under a Creative Commons Attribution-ShareAlike 4.0 International License.

through the Government Agency Performance Accountability System (SAKIP) based on Presidential Regulation Number 29 of 2014. Accountable financial management is one of the main foundations of this performance, so the quality of budget planning, governance, and financial information system support requires attention.

The Directorate General of Information Technology Applications (Aptika), under the Ministry of Communication and Informatics (now the Ministry of Communication and Digital), is tasked with formulating and implementing policies in the field of information technology application governance, including e-government, e-business, and information security. Initial data indicates several problems. First, the ministry's budget absorption tends to be low at the beginning of the year and accumulates in the final quarter, particularly capital expenditures, even though the national absorption target has been set per quarter in the Budget Execution Performance Indicators (IKPA). Second, the ministry's financial report received an unqualified opinion in 2020–2021, but this dropped to a qualified opinion in 2022–2023. Third, monitoring results by the Government Internal Supervisory Apparatus (APIP) on the implementation of risk management at the echelon II level indicate that most units within the Directorate General of Information Technology Applications (Aptika) remain in the "insufficient" or "insufficient" category. Fourth, a financial verification application developed during the pandemic facilitates document review, but the burden on verifiers has increased with budget increases and the implementation of at-cost-based official travel, and users are still found to be paying little attention to budget ceilings and accounts.

Previous research generally examines budget planning, governance, or information systems on performance separately, and many of these are conducted in companies or banks. Studies that integrate all three in central government agencies with risk management as a connecting mechanism, while reducing it to strategy formulation, are relatively limited. This research fills this gap by answering: (1) whether budget planning, GPG, and financial applications influence risk management and agency performance; (2) whether risk management influences performance and mediates the relationship; and (3) what strategies are most appropriate to improve the performance of the Directorate General of Aptika.

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Risk management and agency performance

Risk is understood as uncertainty that can lead to deviations from expected outcomes (Darmawi, 2022; Wibowo, 2022). Risk management encompasses the systematic process of identifying, analyzing, mitigating, and monitoring risks (Hillson & Simon, 2020). Within the ministry, its implementation is guided by internal risk management guidelines, with oversight by the inspectorate general as the APIP. Studies

Copyright at authors some right reserved this work is licensed under a Creative Commons Attribution-ShareAlike 4.0 International License.

in government agencies indicate that the success of risk management implementation depends on critical organizational factors (Jauhari et al., 2021), while studies in the banking sector link risk management to financial performance (Yanti & Setiyanto, 2021), and studies in the service sector link it to competitive advantage (Utami et al., 2024). Based on this, H7 is formulated: risk management has a positive and significant effect on agency performance.

Budget planning

The budget serves as a tool for planning, controlling, and measuring performance (Chidinma, 2022). Good budgeting practices are related to organizational performance (Francois & Penn, 2023) and assist in financial risk management by establishing priorities and limits on resource use (Anwar & Marliani, 2024). Therefore, H1 is formulated: budget planning has a positive and significant effect on risk management; and H4: budget planning has a positive and significant effect on agency performance.

Good public governance

GPG, which encompasses accountability, transparency, participation, efficiency and effectiveness, fairness, and legal certainty, is associated with the performance of local governments and public organizations (Panji et al., 2018; Dharu, 2021; Maryana & Astuti, 2023; Caesaratri & Sulistiyowati, 2024). Several studies have also found a relationship between governance and disclosure or risk management practices (Dinata et al., 2023; Muslih & Maghfiroh, 2023). Therefore, H2 is formulated: GPG has a positive and significant effect on risk management; and H5: GPG has a positive and significant effect on agency performance.

Financial applications

Digitalization of financial management is expected to improve efficiency, data accuracy, and oversight capabilities (Kurniawan et al., 2023). Accounting information systems and an understanding of information technology are related to the quality of government financial reporting and governance (Herinda & Sulistiyowati, 2023; Zanaria & Sari, 2023), while digital technology is also being developed to detect and predict financial risks (Chen et al., 2021; Li et al., 2023). H3 is formulated: financial applications have a positive and significant effect on risk management; and H6: financial applications have a positive and significant effect on agency performance.

The mediating role of risk management

If budget planning, governance, and financial systems help agencies identify and control risks, and such risk control drives the achievement of objectives, then risk

Copyright at authors some right reserved this work is licensed under a Creative Commons Attribution-ShareAlike 4.0 International License.

management can be a mechanism that channels the influence of these three variables on performance. H8, H9, and H10 are formulated: risk management mediates the influence of budget planning, GPG, and financial applications on agency performance, respectively.

RESEARCH METHODS

Design and location

This research used mixed methods with a field study at the Directorate General of APTIKA, Jakarta, in December 2024. The quantitative phase tested hypotheses H1–H10, while the qualitative phase formulated strategies. The independent variables were budget planning (X1), GPG (X2), and financial applications (X3); the intervening variable was risk management (Z); and the dependent variable was agency performance (Y).

Population, sample, and instruments

Respondents were 200 employees of the Directorate General of Aptika involved in budget planning, risk management, financial applications, and budget execution (including team leaders and application managers). This number meets the minimum requirement of five times the number of indicators (39 indicators) for SEM analysis. The majority of respondents were male (66%), aged 41–50 years (46%), and had 5–15 years of service (55.5%). The instrument was a closed-ended questionnaire with an ordinal scale (Likert) measuring budget planning (5 indicators), GPG (12 indicators), financial applications (5 indicators), risk management (6 indicators), and agency performance (11 indicators). Qualitative data were collected through FGDs with five informants: the Secretary of the Directorate General, the Head of the Planning and Budgeting Team, the Head of the Finance Team, the Head of the Personnel Team, and the person responsible for financial applications.

Analysis techniques

Quantitative analysis used PLS-SEM with SmartPLS 3.0 (Hair et al., 2017). The measurement model was assessed through outer loading (≥ 0.60), composite reliability (> 0.70), average variance extracted (> 0.50), and the Fornell–Larcker criterion. The structural model was assessed through path coefficients, R^2, f^2, and Q^2. Significance was tested by bootstrapping at the 5% level (t-table 1.972 for df = 195), including indirect effects. The strategy analysis followed three stages of strategy formulation (David, 2009): the input stage (IFE and EFE matrices), the matching stage (IFE–EFE and TOWS matrices), and the decision stage (QSPM).

Copyright at authors some right reserved this work is licensed under a Creative Commons Attribution-ShareAlike 4.0 International License.

International Journal of Economics, Business and Innovation Research
https://e-journal.citakonsultindo.or.id/index.php/IJEBIR
E-ISSN : 2964-0865
IJEBIR

RESULTS AND DISCUSSION

Evaluation of measurement models

All indicators have outer loadings above 0.60 (the lowest is 0.616 for the budget planning indicator PA1), thus meeting convergent validity. Composite reliability for all constructs is above 0.70: budget planning 0.887, GPG 0.948, financial applications 0.875, risk management 0.909, and agency performance 0.938. Discriminant validity is declared met based on the Fornell–Larcker criteria. Thus, the instrument is suitable for use in structural analysis.

Structural model evaluation

Budget planning, GPG, and financial applications together explained 68.8% of the variance in risk management (R^2 = 0.688); with risk management included, the model explained 65.8% of the variance in agency performance (R^2 = 0.658). The Q^2 values were 0.402 (risk management) and 0.395 (agency performance), respectively, indicating good predictive relevance. The path coefficients to risk management were 0.260 (budget planning), 0.429 (GPG), and 0.208 (financial applications). The path coefficients to agency performance were 0.248 (budget planning), 0.342 (GPG), −0.001 (financial applications), and 0.343 (risk management).

Table 1. Results of the direct influence hypothesis test

Hypothesis	Track	t-count	p-value	Decision
H1	Budget planning → Risk management	3,065	0.002	Accepted
H2	GPG → Risk management	3,062	0.002	Accepted
H3	Financial applications → Risk management	5,158	0,000	Accepted
H4	Budget planning → Agency performance	2,902	0.004	Accepted
H5	GPG → Agency performance	4,942	0,000	Accepted
H6	Financial applications → Agency performance	0.008	0.993	Rejected
H7	Risk management → Agency performance	3,915	0,000	Accepted

Source: Primary data processed with SmartPLS 3.0 (2025). t-table = 1.972.

The f^2 test shows that financial applications make the largest contribution to risk management (0.198) compared to GPG (0.062) and budget planning (0.075), while the

Copyright at authors some right reserved this work is licensed under a Creative Commons Attribution-ShareAlike 4.0 International License.

International Journal of Economics, Business and Innovation Research
https://e-journal.citakonsultindo.or.id/index.php/IJEBIR
E-ISSN : 2964-0865
IJEBIR

largest contribution to agency performance comes from GPG (0.173), followed by risk management (0.129), budget planning (0.069), and financial applications (0.000).

Table 2. Results of the indirect influence test (mediation)

Hypothesis	Track	p-value	Types of mediation
H8	Budget planning → Risk management → Agency performance	0.039	Partial
H9	GPG → Risk management → Agency performance	0.026	Partial
H10	Financial applications → Risk management → Agency performance	0.048	Full

Source: primary data processed with SmartPLS 3.0 (2025).

Discussion of the impact on risk management

The H1 finding indicates that the more structured budget planning is, the better an agency manages its risks. Planning with clear procedures, systematic stages, and timely implementation reduces uncertainty in program implementation, in line with the budget's role in financial risk management (Anwar & Marliani, 2024). In the context of the Directorate General of Aptika (Aptika), this is relevant to the accumulation of budget absorption in the final quarter: realistic planning allows for early identification of the risk of delays.

GPG has the largest coefficient on risk management (0.429). Accountability, transparency, and participation strengthen internal control and open up stakeholder input, which helps uncover unidentified risks. These results are consistent with studies linking governance to risk management practices and disclosures (Dinata et al., 2023; Muslih & Maghfiroh, 2023).

Financial applications have a significant impact and have the highest f^2 on risk management. Applications that provide accurate budget realization, output, and procurement data enable early detection of deviations, such as budget shortfalls or account discrepancies, and reduce human error. This aligns with the view that financial digitalization improves accuracy and oversight (Kurniawan et al., 2023).

Discussion of the influence on agency performance

Budget planning and the Government Governance Standards (GPG) directly impact agency performance. Budgets aligned with strategic priorities and transparent and

Copyright at authors some right reserved this work is licensed under a Creative Commons Attribution-ShareAlike 4.0 International License.

accountable governance encourage effective and efficient resource use, consistent with findings from local government organizations and other institutions (Panji et al., 2018; Maryana & Astuti, 2023; Caesaratri & Sulistiyowati, 2024). Risk management also significantly impacts performance: agencies that are able to identify and mitigate risks are better prepared to face uncertainty in achieving targets, consistent with Yanti and Setiyanto (2021) and Jauhari et al. (2021).

Financial applications had no direct impact on performance. This finding is interesting because they strongly influence risk management. A plausible explanation, based on field conditions, is that the applications function primarily as verification and control tools, so their benefits to performance only become apparent when the information is used in risk management and managerial decisions. User competency constraints and verification workloads due to business travel at cost likely also limit their direct impact. This explanation is interpretive and needs to be tested in further research.

The mediating role of risk management

Risk management mediates all three relationships. For budget planning and GPG, both direct and indirect effects are significant, resulting in partial mediation: both improve performance directly and through improved risk management. For financial applications, only the indirect effect is significant, resulting in full mediation: financial applications improve performance only when their information is translated into better risk management. The practical implication is that investing in financial technology without strengthening risk management processes may not result in measurable performance improvements.

Strategy formulation

Input and matching. The IFE Matrix yielded a score of 2.75 (moderate). Its main strengths are a clear legal basis for duties and functions, adequate facilities and infrastructure, productive-age human resources with technical expertise, and good relationships with stakeholders. Weaknesses include unequal distribution of tasks and employee competencies, budget constraints, ineffective communication, suboptimal service satisfaction, and suboptimal operational oversight. The EFE Matrix yielded a score of 3.40 (strong), with opportunities in the form of the government's focus on human resource development (Making Indonesia 4.0), economic growth and investment in the technology sector, and regulatory support; and threats in the form of limited understanding of technology by civil servants, inconsistent policy changes, budget constraints, and public pressure. This combined score places the Directorate General of Aptika in cell II of the IFE–EFE Matrix, which leads to a selective growth and development strategy.

Copyright at authors some right reserved this work is licensed under a Creative Commons Attribution-ShareAlike 4.0 International License.

International Journal of Economics, Business and Innovation Research
https://e-journal.citakonsultindo.or.id/index.php/IJEBIR
E-ISSN : 2964-0865
IJEBIR

The TOWS matrix produces SO strategies (preparing competent human resources and improving employee understanding of technological developments), WO (increasing HR capabilities through training and internal work programs), ST (improving employee understanding of regulations and building work safety communication media), and WT (developing organizational capabilities, maintaining compliance, and maintaining cooperation agreements with external parties). These strategies are grouped into three alternatives for QSPM.

Decision. The QSPM results are presented in Table 3.

Table 3. QSPM Results

Alternative strategies	Total weighted score	Ranking
S1: Adapting to changing regulatory needs	1.97	3
S2: Measuring regulatory success and continuously evaluating performance	2.45	1
S3: Reward and recognition of employees	2.21	2

Source: processed primary data (2025).

Strategy S2 received the highest score and is therefore a top priority. This strategy aligns with the quantitative results: because risk management has proven to be the link between planning, governance, and financial systems and performance, ongoing monitoring and evaluation mechanisms are necessary to measurably manage risk, regulatory compliance, and performance outcomes. Strategy S1 remains relevant as a supporting strategy to respond to regulatory changes, while S3 can strengthen human resource competencies and motivation, which are internal weaknesses.

Risk management implementation strategy

Based on the integration of quantitative and qualitative findings, the proposed implementation strategies include: (1) strengthening budget planning through the preparation of quarterly absorption plans accompanied by a risk register of delays; (2) strengthening the principles of GPG, especially internal oversight and transparency of budget decisions, as part of the risk management framework; (3) utilizing financial application data (budget realization, output, and procurement) as input for risk monitoring, not just as a verification tool, accompanied by increasing user competency; (4) developing comprehensive risk mitigation procedures and mapping risks systematically across all units; and (5) implementing a periodic cycle of regulatory performance measurement and evaluation according to the priority results of the QSPM.

Copyright at authors some right reserved this work is licensed under a Creative Commons Attribution-ShareAlike 4.0 International License.

CONCLUSION

Budget planning, GPG, and financial applications have a positive and significant effect on risk management at the Directorate General of Aptika. Budget planning, GPG, and risk management significantly influence agency performance, while financial applications have no direct effect. Risk management mediates the influence of all three variables on agency performance, partially for budget planning and GPG and fully for financial applications. The priority strategy of the QSPM results is to measure regulatory success and continuously evaluate performance.

Implications. Theoretically, this research expands the study of public sector performance by positioning risk management as a connecting mechanism. Practically, agencies need to integrate budget planning, governance, and financial applications into a risk management system, as well as conduct ongoing performance monitoring and evaluation.

Limitations and suggestions. The study was conducted at a single agency using perceptual data and a cross-sectional design, thus limiting generalization and causal inference. The focus group discussions (FGDs) involved five informants. Future research is recommended to include other agencies, incorporate variables such as organizational culture, leadership, and user competency, use objective performance data (e.g., IKPA and SAKIP scores), and examine factors that prevent financial applications from directly impacting performance.

Thank-you note

The authors would like to thank the leadership and staff of the Directorate General of Aptika for their data support and participation in this research.

BIBLIOGRAPHY

Anwar, R., & Marliani, S. (2024). Peran anggaran dalam pengelolaan risiko keuangan perusahaan. *Jurnal Digital Bisnis, Modal Manusia, Marketing, Entrepreneurship, Finance, & Strategi Bisnis (DImmensi), 4*(2), 34–41.

Caesaratri, F. C. I., & Sulistiyowati, F. (2024). Good public governance, sistem pengendalian intern, dan kinerja pemerintah daerah. *Proceeding Accounting Skill Competition, 3*(1), 194–200.

Chen, Y., Kumara, E. K., & Sivakumar, V. (2021). Investigation of finance industry on risk awareness model and digital economic growth. *Annals of Operations Research*, 1–22.

Chidinma, U. (2022). Performance measurement in an organization via budget and budgetary control. *Journal of World Economy, 1*(2), 1–8.

Darmawi, H. (2022). *Manajemen risiko*. Bumi Aksara.

Copyright at authors some right reserved this work is licensed under a Creative Commons Attribution-ShareAlike 4.0 International License.

David, F. R. (2009). *Strategic management: Concepts and cases* (12th ed.). Pearson Prentice Hall.

Dharu, H. S. D. (2021). *Pengaruh good governance, komitmen organisasi, dan pengawasan internal terhadap kinerja organisasi pemerintah daerah: Budaya organisasi sebagai variabel pemoderasi* [Disertasi, STIESIA Surabaya].

Dinata, M., Yusralaini, Y., & Susilatri, S. (2023). Pengaruh struktur kepemilikan dan good public governance terhadap pengungkapan manajemen risiko. *CURRENT: Jurnal Kajian Akuntansi dan Bisnis Terkini, 4*(3), 421–433.

Francois, E. E., & Penn, C. C. (2023). The effects of budgetary management practices on the performance of SMEs in Cameroon. *American International Journal of Business Management, 6*, 1–9.

Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2017). *A primer on partial least squares structural equation modeling (PLS-SEM)* (2nd ed.). Sage.

Herinda, D. Y. P., & Sulistiyowati, F. (2023). Pengaruh penerapan standar akuntansi pemerintah berbasis akrual, sistem informasi akuntansi dinas daerah, dan good public governance terhadap kualitas laporan keuangan pemerintah daerah. *Jurnal Manajemen dan Bisnis*, 433–451.

Hillson, D., & Simon, P. (2020). *Practical project risk management: The ATOM methodology*. Berrett-Koehler Publishers.

Jauhari, R., Sukmadilaga, C., & Mulyani, S. (2021). Implementasi dan critical success factor manajemen risiko di instansi pemerintah. *Jurnal Paradigma Ekonomika, 16*(2), 285–298.

Kurniawan, Y. J., Sjahruddin, H., Nuraeni, S., Swaputra, I. B., Astakoni, I. D. M. P., & Agustina, E. S. (2023). *Digitalisasi manajemen keuangan*. Cendikia Mulia Mandiri.

Li, X., Wang, J., & Yang, C. (2023). Risk prediction in financial management of listed companies based on optimized BP neural network under digital economy. *Neural Computing and Applications, 35*(3), 2045–2058.

Maryana, D., & Astuti, D. D. (2023). Pengaruh pengendalian intern dan penerapan prinsip-prinsip good public governance terhadap kinerja manajerial pada Dinas Pendidikan Provinsi Jawa Barat. *Jurnal Akuntansi, 18*(2), 26–38.

Muslih, M., & Maghfiroh, O. I. (2023). Pengaruh good public governance terhadap pengungkapan manajemen risiko perusahaan. *Jurnal Ilmiah Manajemen, Ekonomi, & Akuntansi (MEA), 7*(2), 1070–1086.

Panji, I. G. N. A. A., Dewi, I. G. A. A. O., & Suardani, N. L. R. (2018). Pengaruh implementasi good public governance dan integritas sistem pelayanan unggulan terpadu (SIPUTU) terhadap kinerja Kepolisian Resor Karangasem. *Jurnal Ilmiah Akuntansi dan Bisnis, 3*(2), 209–225.

Copyright at authors some right reserved this work is licensed under a Creative Commons Attribution-ShareAlike 4.0 International License.

Peraturan Presiden Republik Indonesia Nomor 29 Tahun 2014 tentang Sistem Akuntabilitas Kinerja Instansi Pemerintah.

Utami, E. Y., Fatchuroji, A., Devi, E. K., Harsono, I., & Sutanto, H. (2024). Analisis korelasi manajemen risiko dan ketahanan bisnis terhadap keunggulan kompetitif perusahaan sektor jasa di Indonesia. *Sanskara Manajemen dan Bisnis, 2*(2), 92–102.

Wibowo, A. (2022). *Manajemen risiko*. Penerbit Yayasan Prima Agus Teknik.

Yanti, B. C. D., & Setiyanto, A. I. (2021). Analisis pengaruh manajemen risiko terhadap kinerja keuangan perbankan yang terdaftar di BEI. *Journal of Applied Managerial Accounting, 5*(2), 95–104.

Zanaria, Y., & Sari, G. P. (2023). Pengaruh pemahaman teknologi informasi, value for money, dan pengendalian internal terhadap good public governance pada Badan Pengelolaan Keuangan dan Aset Daerah Kota Metro. *Journal of Oikonomia, 1*(2), 49–55.

Copyright at authors some right reserved this work is licensed under a Creative Commons Attribution-ShareAlike 4.0 International License.