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The Influence of Strategic Planning, Operational Risk Management, and Monitoring and Evaluation on the Operational Performance and Business Sustainability of Nutrition Fulfillment Service Units (SPPG)

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A B S T R A C T
This study examines the influence of strategic planning, operational risk management, and monitoring and evaluation on the business sustainability of Nutrition Fulfillment Service Units (SPPG) under Indonesia's Free Nutritious Meal Program, with operational performance tested as a moderating variable. Using a quantitative design and purposive sampling, data were collected from 100 SPPG heads across Indonesia and analyzed through moderated regression analysis. Results show that strategic planning, operational risk management, monitoring and evaluation, and operational performance each significantly and positively affect business sustainability, whereas operational performance does not significantly moderate the other three relationships. The findings suggest operational performance functions as a direct driver of sustainability rather than a boundary condition, with practical implications for national program governance.

INTRODUCTION

Adequate nutrition for school-age children is closely tied to their health, cognitive development, and social participation. Insufficient nutrient intake during this critical growth period can impair physical development, weaken immune function, and raise the risk of chronic disease later in life, while poor nutritional status is consistently linked to reduced cognitive performance and learning outcomes (Best et al., 2010; Damsgaard et al., 2012; Zenebe et al., 2018). Beyond the individual level, malnutrition also carries macroeconomic consequences: studies estimate that undernutrition costs national economies roughly 3% of gross domestic product through lost productivity and higher healthcare expenditure (Kraef et al., 2020; Moench-Pfanner et al., 2016).

Malnutrition remains a serious concern in Indonesia. Although UNICEF (2024) data show a steady decline in stunting (from 37.2% in 2013 to 21.5% in 2023) and wasting (from 12.1% to 7.7% over the same period), the country continues to face a double burden of malnutrition, as overweight and obesity have not fallen at a comparable pace. In response, the Government of Indonesia launched the Free Nutritious Meal Program (Program Makan Bergizi Gratis/MBG) as a sustainable solution to address nutritional deficiencies directly, complemented by nutrition education to encourage healthier eating habits. The program targets 17.5 million beneficiaries in 2025 with an approved budget of IDR 71 trillion, delivered through 5,000 Nutrition Fulfillment Service Units (Satuan Pelayanan Pemenuhan Gizi/SPPG) rolled out in stages across 38 provinces, and is expected to reach 100% coverage (approximately 80 million beneficiaries) by 2029.

Large-scale government programs of this kind are frequently constrained by weak governance, limited inter-agency coordination, and insufficient stakeholder engagement, all of which threaten implementation and business sustainability (Ezenwaka et al., 2022; Mutambik et al., 2022; Pradipta et al., 2022). SPPG operations are also exposed to multidimensional operational risks—financial, managerial, technical, and compliance-related—arising from fiscal weaknesses, inadequate leadership and governance structures, technological dependence, and regulatory non-compliance (Didraga, 2015; Gilmour & Lewis, 2006; Hanson et al., 2018; Ibrahim et al., 2023; Khatib et al., 2021; Newcomer, 2007; Volk, 2010). A review by Indonesia's Financial and Development Supervisory Agency (BPKP) further identified weak legal foundations, suboptimal inter-agency coordination, potential conflicts of interest, and gaps in financial, procurement, distribution, and food-safety monitoring within the MBG Program, alongside heavy dependence on central-government financing for its continued operation.

A proactive approach to identifying and mitigating risk is therefore essential to safeguard the program's performance and continuity (Barry et al., 2021; R. A. Nugroho & Nafi'ah, 2022), since weak risk management can disrupt implementation, misallocate resources, and erode public trust (Rudolf & Spinler, 2018)—consequences that would be especially damaging for a program addressing a pressing nutritional problem among Indonesian children. Given these considerations, this study measures the influence of strategic planning,

operational risk management, and monitoring and evaluation on the operational performance and business sustainability of the Free Nutritious Meal Program, and examines whether operational performance moderates these relationships, with the aim of providing an evidence base for minimizing operational risk and strengthening the program's long-term continuity.

LITERATURE REVIEW

Result-Based Management

This study is grounded in Result-Based Management (RBM), a management approach that places measurable results—rather than inputs or activities alone—at the center of planning, implementation, monitoring, evaluation, and reporting (Pazvakavambwa & Steyn, 2014). RBM relies on a logic model linking inputs, activities, outputs, outcomes, and impact, and stresses that performance information must be actively used to improve program design, allocate resources, and support evidence-based decisions rather than merely satisfy administrative reporting requirements (Andrews et al., 2019; Heinrich, 2002; Moynihan & Pandey, 2010). In the context of this study, strategic planning, operational risk management, and monitoring and evaluation represent the managerial processes emphasized by RBM, while operational performance and business sustainability correspond to its output and outcome dimensions, providing a coherent theoretical rationale for the hypothesized relationships.

Business Sustainability

Business sustainability refers to a program's capacity to continue operating, be maintained, and keep generating benefits beyond its initial implementation phase (Begovic et al., 2017). The Program Sustainability Framework identifies eight domains that underpin sustainability—environmental support, funding stability, partnerships, organizational capacity, program evaluation, program adaptation, communication, and strategic planning (Schell et al., 2013)—indicating that sustainability depends not only on current program success but also on an organization's capacity to manage resources, build stakeholder support, evaluate outcomes, and adapt over time. In this study, business sustainability is measured through SPPG heads' perceptions of the program's ability to keep running consistently, drawing on these eight domains.

Strategic Planning

Strategic planning is a systematic process organizations use to formulate and implement strategies that guide them toward a defined future direction, requiring an assessment of both internal conditions and the external environment so that resources are aligned effectively with strategic goals (Dhlamini, 2024; Hamilton et al., 2017). Ayuningtyas (2013) identifies four steps in the planning process: setting objectives, determining the organization's position, identifying strengths and weaknesses, and formulating an implementation plan with clear roles, resource allocation, schedules, and key performance indicators.

Operational Risk Management

Risk can be defined as the combination of the likelihood of an adverse event and the magnitude of its impact (Kaplan & Garrick, 1981), while operational risk specifically denotes losses arising from inadequate or failed internal processes,

people, systems, or external events (Tâm et al., 2024). Effective risk management is a systematic process of identifying, assessing, prioritizing, mitigating, and reviewing such risks, and functions not merely as a control mechanism but as a strategic foundation for organizational continuity and effectiveness (Freise & Seuring, 2015; Power, 2004).

Monitoring and Evaluation

Monitoring and evaluation are related but distinct functions: monitoring is a continuous process that tracks progress and detects deviations from plans at an early stage, whereas evaluation is a periodic, systematic assessment of a program's value, results, and effectiveness (Santos & Coad, 2023). Beyond oversight, monitoring and evaluation serve as instruments of learning, accountability, and evidence-based decision-making, and are most effective when guided by indicators that are clear, measurable, relevant, and SMART in design (Belcher et al., 2024; Crawford & Bryce, 2003).

Operational Performance

Operational performance reflects the extent to which a program achieves its planned outputs, outcomes, and intended changes, encompassing relevance, coherence, effectiveness, efficiency, and sustainability rather than budget absorption or activity completion alone (Begovic et al., 2017; Centers for Disease Control and Prevention, 2018; OECD, 2023). As a multidimensional construct linking process to impact, operational performance is central to assessing whether public programs such as MBG deliver tangible benefits to their intended recipients.

Hypothesis Development

Strategic planning is a recognized antecedent of program sustainability: because it establishes long-term direction, an implementation roadmap, and adaptive mechanisms for risk and contextual change, programs with sound strategic planning are better positioned to sustain their operations (Moreland-Russell et al., 2023; Schell et al., 2013; Sridharan et al., 2007; Weiss, 2025).

H1: *Strategic planning affects the business sustainability of the MBG Program.*

Operational risk management functions as an adaptive capacity that helps organizations maintain stability and resilience despite uncertainty, and is closely tied to sustained financial and social performance, particularly in resource-constrained operating environments (Maksum et al., 2024; Vega et al., 2025).

H2: *Operational risk management affects the business sustainability of the MBG Program.*

Monitoring and evaluation constitute one of the core domains of the Program Sustainability Framework, as the ability to evaluate achievements, use feedback, and document results is essential for programs to be maintained over the long term (Moreland-Russell et al., 2023; Santos & Coad, 2023).

H3: *Monitoring and evaluation affect the business sustainability of the MBG Program.*

Strategic planning alone may be insufficient for sustainability unless it is translated into tangible operational results; when operational performance is high, sound planning is more readily converted into legitimacy, stakeholder support, and continued resourcing (George et al., 2019; Schell et al., 2013; Sridharan et al., 2007).

H4: *Operational performance moderates the effect of strategic planning on the business sustainability of the MBG Program.*

The contribution of risk management to sustainability may likewise be contingent on operational performance, as high performance provides evidence that risk-control mechanisms genuinely work in practice, thereby making the benefits of risk management more apparent to stakeholders (Freise & Seuring, 2015; Schell et al., 2013; Yazo-Cabuya et al., 2024).

H5: *Operational performance moderates the effect of operational risk management on the business sustainability of the MBG Program.*

Similarly, the influence of monitoring and evaluation on sustainability may strengthen when operational performance is high, since monitoring findings are more easily translated into corrective decisions and continued stakeholder support when a program already demonstrates good performance (Crawford & Bryce, 2003; Sparkes & Werners, 2023).

H6: *Operational performance moderates the effect of monitoring and evaluation on the business sustainability of the MBG Program.*

Finally, programs that achieve their targets, implement effectively, and use resources efficiently tend to build greater stakeholder legitimacy and support, which in turn strengthens their prospects for continued funding and operation (Korhonen et al., 2023; Santos & Coad, 2023).

H7: *Operational performance affects the business sustainability of the MBG Program.*

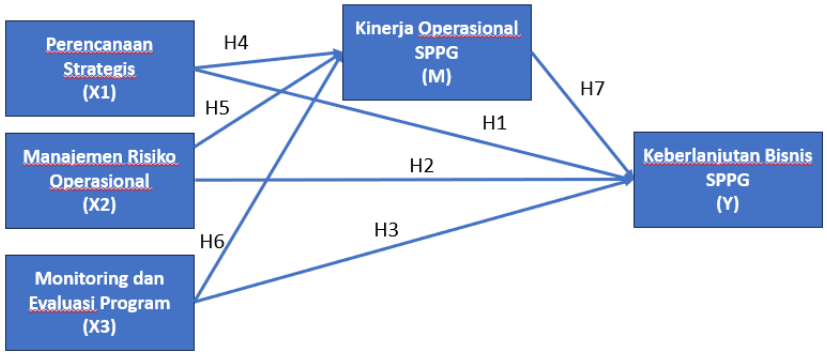

Figure 1. Conceptual Framework

METHODOLOGY

This study employed a quantitative design using purposive sampling. The population comprised the heads of all 100 Nutrition Fulfillment Service Units (SPPG) operating under the MBG Program across Indonesia as of January 2025. Because the population size was known and a 5% margin of error was deemed acceptable, the sample size was determined using the Slovin formula, and given the modest population size, all 100 SPPG heads meeting the inclusion criterion—units actively operating within the MBG Program with a head available to respond—were included as respondents.

Five latent variables were measured on a five-point Likert scale (1 = strongly disagree to 5 = strongly agree): Strategic Planning (X1, 6 items covering objective-setting, internal and external analysis, identification of strengths and weaknesses, implementation staging, and resource allocation), Operational Risk

Management (X2, 6 items covering risk identification, assessment, prioritization, mitigation, contingency planning, and periodic review), Monitoring and Evaluation (X3, 6 items covering routine monitoring, documentation, use of indicators, service-output evaluation, stakeholder feedback, and follow-up action), Operational Performance (M, 6 items covering target achievement, resource efficiency, process integration, food quality and safety, service accuracy, and service resilience), and Business Sustainability (Y, 6 items covering external support, funding stability, long-term partnerships, organizational capacity, evaluative learning, and sustainability planning).

Data were collected through an online questionnaire distributed via Google Form to SPPG heads nationwide, a method chosen for its efficiency in reaching geographically dispersed respondents and its suitability for capturing the perceptual, self-reported nature of the constructs under study. To mitigate social desirability, common method, and non-response bias, respondent confidentiality was assured, no answer was framed as right or wrong, and the instrument's validity and reliability were tested prior to full distribution.

Instrument validity was assessed using Pearson item-total correlations against the critical r-table value at the 5% significance level, and reliability was assessed using Cronbach's Alpha, with a threshold of 0.60 required for a construct to be considered reliable (Ghozali, 2005). Prior to hypothesis testing, the data were examined for normality (Jarque–Bera test), multicollinearity (Variance Inflation Factor), heteroscedasticity (Glejser test), and autocorrelation (Durbin–Watson statistic). Hypotheses were tested using Moderated Regression Analysis (MRA) with an interaction-term approach in IBM SPSS Statistics 27: H1, H2, H3, and H7 were tested through simple regression models linking each predictor to Business Sustainability, while H4, H5, and H6 were tested through regression models incorporating the interaction between each mean-centered predictor and Operational Performance. A hypothesis was accepted when the t-statistic exceeded 1.96 and the p-value was below 0.05. The study observed standard research-ethics principles, including informed consent, confidentiality and anonymity of respondents, and honest, non-manipulated reporting of results.

RESEARCH RESULT

Respondents comprised 100 SPPG heads (62% male, 38% female), with 58% located on Java (DKI Jakarta and West Java) and 42% outside Java (Aceh, North Sumatra, West Sumatra, Riau, South Sumatra, Lampung, Bangka Belitung Islands, and Riau Islands), reflecting the national scope of the MBG Program since its launch in January 2025.

Descriptive analysis showed that respondents generally rated all five constructs between "agree" and "strongly agree." Within Strategic Planning, SPPG scored highest on identifying internal strengths and weaknesses (mean 3.90) but lowest on setting specific, measurable, time-bound objectives (mean 3.54), suggesting stronger situational analysis than SMART goal-setting. Within Operational Risk Management, contingency planning (3.85) and mitigation steps (3.82) scored higher than early-stage risk identification (3.57) and impact

assessment (3.62), indicating a still largely reactive risk posture. Within Monitoring and Evaluation, incorporating stakeholder feedback (3.88) scored highest while documentation of inputs and outputs (3.71) scored lowest. Within Operational Performance, compliance with food-quality and safety standards (3.86) scored highest while target achievement and service-timing accuracy (3.54) scored lowest. Within Business Sustainability, evaluative learning and adaptability (3.91) scored highest, while funding stability (3.54) and long-term sustainability planning (3.68) scored lowest, underscoring the program's continued dependence on central-government budget allocations.

Reliability and Validity

All five constructs exceeded the 0.60 Cronbach's Alpha threshold, confirming instrument reliability.

Variable	Cronbach's Alpha	Items	Remark
Strategic Planning (X1)	0.852	6	Reliable
Operational Risk Management (X2)	0.859	6	Reliable
Monitoring and Evaluation (X3)	0.882	6	Reliable
Operational Performance (M)	0.902	6	Reliable
Business Sustainability (Y)	0.854	6	Reliable

Table 1. Reliability Test Results

Item-total (Pearson) correlations for all indicators ranged from 0.531 to 0.784, exceeding the critical r-table value of 0.197 (n = 100, df = 98, α = 5%), confirming that all items were valid.

Structural Model and Hypothesis Testing

The overall regression model incorporating Strategic Planning, Operational Risk Management, Monitoring and Evaluation, and Operational Performance as predictors of Business Sustainability produced an R^2 of 0.383 (Adjusted R^2 = 0.357; F = 14.72, $p < 0.001$), indicating that the model explained 38.3% of the variance in Business Sustainability and was statistically fit. Classical assumption tests supported the model's validity: residuals were normally distributed (Jarque–Bera = 2.468, p = 0.291), no multicollinearity was present (VIF between 1.167 and 1.524), the Glejser test showed no heteroscedasticity (highest p = 0.806), and the Durbin–Watson statistic (1.737) indicated no meaningful autocorrelation.

Hypothesis	*Relationship*	*Coef.*	*t-Statistic*	*p-Value*	*Result*
H1	*Strategic Planning → Business Sustainability*	*0.316*	*3.299*	*0.001*	*Supported*
H2	*Operational Risk Mgmt. → Business Sustainability*	*0.358*	*3.797*	*0.000*	*Supported*
H3	*Monitoring & Evaluation → Business Sustainability*	*0.220*	*2.231*	*0.028*	*Supported*
H4	*Strategic Planning × Op. Performance → Sustainability*	*0.027*	*0.322*	*0.748*	*Not supported*

Hypothesis	Relationship	Coef.	t-Statistic	p-Value	Result
H5	Risk Mgmt. × Op. Performance → Sustainability	-0.142	-1.720	0.089	Not supported
H6	Monitoring & Eval. × Op. Performance → Sustainability	-0.048	-0.584	0.561	Not supported
H7	Operational Performance → Business Sustainability	0.606	7.533	0.000	Supported

Table 2. Hypothesis Testing Results

H1, H2, H3, and H7 were supported ($t > 1.96$; $p < 0.05$), confirming that Strategic Planning, Operational Risk Management, Monitoring and Evaluation, and Operational Performance each exert a positive, significant direct effect on Business Sustainability. H4, H5, and H6 were not supported (t between -1.720 and 0.322; p between 0.089 and 0.748), indicating that Operational Performance did not significantly moderate the effect of the three predictors on Business Sustainability; the strength of these relationships was statistically consistent regardless of an SPPG's operational-performance level.

DISCUSSION

Consistent with Result-Based Management, the finding that strategic planning significantly influences business sustainability (H1) confirms that the quality of an SPPG head's planning—from objective-setting through resource allocation—directly shapes an SPPG's ability to keep operating and delivering benefits (Pazvakavambwa & Steyn, 2014; Schell et al., 2013). However, its coefficient (0.316) was smaller than that of Operational Risk Management (0.358) and considerably smaller than Operational Performance (0.606), consistent with the view that strategic planning functions as a necessary but not sufficient antecedent: it opens the door to sustainability, but realizing that potential still depends on the quality of day-to-day execution (Boyne & Walker, 2010; Dhlamini, 2024). This points to a practical priority for the National Nutrition Agency (BGN) and SPPG heads: translating strategic plans into concrete, monitored operational indicators rather than treating planning as a static document.

Operational risk management showed the strongest effect among the three non-moderated predictors (H2: $\beta = 0.358$, $t = 3.797$), affirming that an SPPG's capacity to identify, assess, prioritize, and respond to operational risk is critical to sustaining a nationally complex food supply chain characterized by input-price volatility, distribution delays, and food-safety hazards (Didraga, 2015; Muthuveeran et al., 2020; Stasytytė, 2013). Descriptive results nonetheless reveal that SPPG are relatively stronger at contingency planning than at early risk identification, suggesting current practice remains more reactive than systematically anticipatory (Kaplan & Garrick, 1981).

Monitoring and evaluation also significantly predicted sustainability (H3: $\beta = 0.220$, $t = 2.231$), though with the smallest coefficient among the three non-moderated predictors. This is consistent with the view that monitoring and evaluation operate as a feedback mechanism whose influence on sustainability materializes only once findings are acted upon (OECD, 2023); given that the MBG

Program has been running for under two years, a mature data-use culture may still be forming across SPPG units (Centers for Disease Control and Prevention, 2018), a pattern reinforced by descriptive findings of residual cases of food-safety incidents and nutrition-standard shortfalls in some units.

The absence of a significant moderating role for Operational Performance (H4, H5, H6) can be explained on several grounds. First, since the MBG Program is still in its early implementation phase (launched in 2025), the range of operational-performance scores across SPPG units may not yet be wide enough to produce a detectable interaction effect. Second, the program's highly centralized design—with standard operating procedures, budget-disbursement schedules, menu specifications, and reporting mechanisms largely set uniformly by BGN—limits the extent to which individual SPPG heads can translate planning, risk management, or monitoring quality into meaningfully differentiated operational performance. Third, interaction effects generally have much smaller effect sizes than main effects and require larger samples to detect (McClelland & Judd, 1993), and a sample of 100 SPPG heads may lack sufficient power to identify a small but genuine moderation effect. Rather than functioning as a boundary condition, Operational Performance appears—consistent with the RBM results chain—to act as a channel through which planning, risk management, and monitoring translate into sustainability, a role reinforced by its being the strongest direct predictor of Business Sustainability in the model (H7: $\beta = 0.606$, $t = 7.533$), ahead of all other paths.

This last finding indicates that stakeholders confer continued support based on verifiable operational outcomes rather than on the quality of planning documents or procedures alone (Boyne & Walker, 2010; Newcomer, 2007), underscoring that strengthening SPPG operational performance—particularly target achievement and service-timing accuracy, which scored lowest among its indicators—should be a strategic priority for BGN alongside, rather than instead of, continued investment in planning, risk management, and monitoring capacity.

A methodological caveat should be noted: the Chapter IV dataset underlying these results was collected to validate the analytical framework and reporting format ahead of the program's national rollout, and the specific coefficients—particularly regarding the non-significant moderation paths—should be treated as illustrative pending re-estimation on the complete, real survey data from all SPPG heads nationwide

CONCLUSIONS AND RECOMMENDATIONS

Strategic planning, operational risk management, monitoring and evaluation, and operational performance each exert a positive and significant direct effect on the business sustainability of SPPG, while operational performance does not significantly moderate the relationship between the first three variables and sustainability—suggesting it instead functions as a direct channel within the program's results chain rather than as a boundary condition. Not all SPPG units have yet fully implemented these managerial practices, leaving room for improvement across all four domains.

For BGN and SPPG heads, these findings carry several practical implications. Strategic planning should move beyond document preparation toward translating objectives into measurable, regularly monitored operational indicators, supported by standardized self-assessment tools and targeted training for SPPG heads. Operational risk management should shift from a reactive to a more anticipatory posture through routinely updated risk registers, diversified supplier networks, and accessible contingency funds. Monitoring and evaluation should be strengthened through standardized digital reporting systems and a set of common key performance indicators that enable systematic follow-up on corrective actions. Operational performance should be reinforced through continuous technical training, quality-control systems at each production stage, and performance-based incentive mechanisms. Finally, because funding stability remains the most fragile dimension of sustainability, BGN should explore diversified, medium-term financing mechanisms—including cost-sharing with regional governments and partnerships with local suppliers and microfinance institutions—to reduce dependence on central-government budget allocations and strengthen SPPG's long-term financial resilience.

ADVANCED RESEARCH

This study has several limitations. Data relied on self-reported perceptions from SPPG heads, which may be subject to social desirability and common method bias. The cross-sectional design captured only a single point in the program's early implementation phase, when operational maturity across units was still developing, and the analysis considered only one moderating variable (operational performance), leaving other plausible moderators—such as regional institutional support, human-resource capacity, or geographic accessibility—unexamined. Sample coverage was also limited to units willing and able to participate, which may constrain generalizability. Importantly, the dataset analyzed in this study was collected to validate the proposed analytical framework and reporting format ahead of the program's national implementation; the reported coefficients, statistical results, and conclusions—particularly regarding the non-significant moderation effects—should therefore be recalculated and verified once complete field data from all SPPG heads nationwide become available.

Future research could adopt mixed-methods designs combining the survey approach with in-depth interviews or case studies involving SPPG heads, field officers, BGN facilitators, and beneficiaries to enable stronger triangulation; employ longitudinal designs tracking SPPG over one to two years of operation to capture how planning, risk management, and monitoring shape sustainability as operational maturity increases; incorporate additional contextually relevant variables such as regional institutional support, supplier and stakeholder partnership quality, SPPG leadership characteristics, and logistical accessibility; conduct comparative studies across urban–rural, Java–outside Java, or foundation-managed versus enterprise-managed SPPG; and include beneficiaries' perspectives directly, rather than relying solely on SPPG heads'

self-assessments, to obtain a more holistic picture of the program's effectiveness and sustainability.

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