

The Impact of Cash Management and Fund Revenue on the Financial Performance of Gereja Masehi Advent Hari Ketujuh (GMAHK)

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ABSTRACT

Purpose: This study aims to examine the effect of cash management and public support on the financial performance of nonprofit religious organizations, specifically the Gereja Masehi Advent Hari Ketujuh (GMAHK) in Eastern Indonesia. The study tests whether liquidity and external funding influence financial sustainability and financial independence.

Research Method: This research employs a quantitative design using multiple linear regression with AR(1) autocorrelation correction. The study uses 115 financial statement observations from GMAHK for the period 2013–2025. The dependent variables are the operational reserve ratio and the self-reliance ratio, while the independent variables are the cash ratio and the public support ratio.

Results and Discussion: The findings show that cash management does not significantly affect either operational reserves or financial independence. In contrast, public support has a significant but different effect on the two indicators: it negatively affects operational reserves and positively affects financial independence. This indicates that external funding is more likely to be used for operational needs than for reserve accumulation.

Implications: The findings suggest that nonprofit religious organizations need balanced funding strategies that support both program implementation and reserve building to strengthen long-term financial sustainability.

Originality: This study contributes by providing empirical evidence on financial performance determinants in nonprofit religious organizations in Eastern Indonesia.

Keywords: cash management; fund revenue; financial performance; operational reserve ratio; self-sufficiency ratio.

1. Introduction

Finance is a fundamental aspect of supporting an organization's sustainability and operational effectiveness, including religious organizations such as the Gereja Masehi Advent Hari Ketujuh (GMAHK). As a nonprofit organization, GMAHK has a responsibility to manage its financial resources efficiently and accountably to achieve its established mission of service. Accountability is the most critical requirement in organizational financial management (Dewi et al., 2015). Sound financial management is essential because religious organizations are not profit-oriented but rather focused on the sustainability of their ministry and their moral responsibility to the congregation and stakeholders



(King et al., 2025). Cash management and revenue management are two key components that directly impact financial performance.

Sound cash management—measured in this study through cash ratios or liquidity ratios—reflects the ability to meet short-term obligations and maintain daily operational stability (Brigham & Houston, 2022). Adequate liquidity levels enable organizations to respond to urgent needs and maintain the smooth operation of ministry activities without experiencing excessive financial pressure (Van Horne & Wachowicz, 2018). In nonprofit and religious organizations, cash management is also closely linked to the organization's ability to maintain cash reserves to address funding uncertainties and fluctuations in donations (Elvira-Lorilla et al., 2025). Pizzini & Sterin (2025) also note that effective cash management plays a crucial role in maintaining an organization's financial stability and enhancing its capacity to sustain operational continuity.

Revenue in religious organizations typically stems from several primary sources: tithes, unified offerings, and government grants. Tithes and offerings are forms of congregational contributions based on the theological principle of stewardship. Tithes and unified offerings are the primary sources of operational funding for the GMAHK (General Conference of Seventh-day Adventists, 2022). King (2021) notes that most religious organizations rely on congregational contributions as their primary funding source for carrying out ministry activities and church operations. Additionally, religious organizations may receive supplementary support from government grants or external institutions for social, educational, and community service activities (Gultian, 2025). Government grants can serve as supplementary funding for various programs and operations (Salamon, 2012), particularly during periods of economic instability or when internal revenue sources cannot fully cover increased financial needs. However, reliance on government grants also presents its own challenges, particularly regarding the uncertainty of the amount and the sustainability of such assistance (Anheier, 2014).

In this study, such funding is represented by the public support ratio, which illustrates the level of contribution from the community or congregation toward the organization's total revenue. A high public support ratio may reflect the community's trust in the organization; however, it also increases the organization's reliance on inherently uncertain donations (Elvira-Lorilla et al., 2025). The public support ratio also serves as an indicator of a church's success in building strong relationships with its community (Chaves & Miller, 1999). This makes financial management a critical aspect in maintaining the financial stability of religious organizations.

In religious organizations, financial performance can be measured through indicators such as the operational reserve ratio, working capital requirement ratio, and self-sufficiency ratio, which demonstrate the organization's ability to maintain financial stability and sustain its service activities over the long term. Sufficient working capital ensures that the organization can meet its short-term obligations, fund its programs, and maintain long-term financial stability (Anthony & Young, 2003). Additionally, the self-reliance ratio indicates an organization's ability to fund its operations independently, without excessive reliance on external funding sources (Keating et al., 2005).

Previous studies have examined the relationship between financial management, funding structure, and the sustainability of nonprofit organizations. Pizzini & Sterin (2025) demonstrate that organizational governance is strongly related to cash reserve levels in nonprofit organizations. Another study by Elvira-Lorilla et al. (2025) found that nonprofit organizations tend to implement cash management strategies to maintain liquidity stability amid funding uncertainty. Additionally, research by Su et al. (2022) on churches in the United States indicates that religious organizations tend to

prioritize internal funds over external funding, reflecting a conservative approach to liquidity management. Gultian (2025) also notes that faith-based institutions, including hospitals and religious social organizations, face unique challenges in balancing their service mission with financial sustainability.

Nevertheless, empirical studies that specifically link cash or liquidity ratios and public support ratios to the financial performance of religious organizations remain very limited, particularly those that use non-profit ratio-based performance indicators such as the operational reserve ratio, working capital needs, and the self-reliance ratio (SRR). Thus, there is an urgent need to address this gap in the literature through a contextual quantitative approach grounded in actual data from the church environment. This study is expected to make a significant contribution, both academically and practically, by presenting a relevant, measurable financial evaluation model that can serve as a reference for strategic decision-making in church financial management.

Based on this background, this study aims to analyze the influence of cash management and fund revenue on GMAHK's financial performance. The results of this study are expected to provide practical contributions toward more efficient and sustainable church financial management and to serve as a basis for strategic decision-making to strengthen the organization's resilience to internal and external environmental dynamics. This study analyzes financial statement data from GMAHK Indonesia's Eastern Region for the years 2013–2025 to identify patterns and relationships among these variables. Thus, this study will provide a deeper understanding of the financial dynamics of religious organizations.

This study begins with an introduction that outlines the background and importance of cash and revenue management in improving GMAHK's financial performance, followed by the research problem, objectives, literature review, and the development of hypotheses explaining the relationships among variables. Next, the research methodology is detailed, covering the quantitative approach, sampling techniques, data collection, and the analytical techniques used to test the hypotheses. The discussion section presents the results of the statistical data analysis and relates them to theory and previous findings. The study concludes with a summary of the main findings, practical suggestions for improving church financial management, and recommendations for future research.

2. Literature Review and Hypothesis Development

2.1 Cash Management

Cash management is a key aspect of an organization's financial management, encompassing the planning, control, and optimization of cash inflows and outflows to ensure smooth operations. According to Van Horne & Wachowicz (2018), cash management is an activity aimed at balancing sufficient cash holdings with efficient cash use. Effective cash management allows an organization to avoid cash shortages while maximizing the efficient use of cash (Harahap, 2020). Cash management is intended to maintain liquidity, meet short-term obligations, and minimize idle cash balances without disrupting operations (Brigham & Houston, 2022). According to Harahap (2018), cash is the most liquid asset and is essential for funding operations. In nonprofit organizations, cash management plays a critical role in ensuring operational activities proceed without liquidity constraints.

Optimal liquidity is essential to ensure the sustainability of services. Liquidity is defined as an organization's ability to meet short-term obligations with cash and unencumbered current assets, thereby enabling it to operate without direct reliance on external funding (Calabrese, 2013; Zietlow et

al., 2018). In nonprofit organizations, liquidity is particularly critical due to unstable funding sources that rely on donations and grants. Liquidity reflects an organization's capacity to meet its financial obligations promptly (Ross et al., 2020). According to Fahmi (2016), an organization that can effectively meet its obligations—including payments for employee salaries, overtime pay, electricity, telephone, and water bills—demonstrates good liquidity.

According to Brigham & Houston (2022), the cash ratio measures an entity's ability to meet short-term obligations with its most liquid current assets. Furthermore, this ratio indicates the extent to which cash is sufficient to pay short-term liabilities directly (Hery, 2021). According to Kasmir (2012), liquidity ratios refer to obligations that can be met, whether arising from external or internal sources. These ratios are crucial for assessing liquidity and financial health in the short term. In this study, the cash ratio serves as a measure of cash management effectiveness.

King (2021) notes that churches and faith-based organizations face high funding volatility, necessitating adequate cash reserves to maintain operational stability. Furthermore, effective cash management is closely linked to organizational governance, in which a strong oversight structure contributes to increased cash reserves and improved organizational financial health (Pizzini & Sterin, 2025). Additionally, cash management plays a direct role in the formation of operational reserves. Operational reserves are unrestricted net assets that serve as a financial buffer against revenue uncertainty (Kim & Mason, 2022). Tuckman & Chang (1991) and Bowman (2011) indicate that discretionary liquid assets are strongly related to the financial condition of nonprofit organizations; thus, the higher the liquidity, the greater the organization's ability to build financial reserves.

2.2 Fund Revenue

In the Gereja Masehi Advent Hari Ketujuh Handbook (2022), the General Conference of Seventh-day Adventists (2023), and the General Conference of Seventh-day Adventists (2020), tithing is a financial principle based on biblical teachings. Tithing is one-tenth or 10% of a person's income returned to God as an expression of loyalty and support for the church's ministry. The management of tithes within the GMAHK is entrusted to local churches, but they are not used for local needs; instead, they are sent to the conference level (the church's administrative region). It is used to support ministries, such as paying pastors' salaries, supporting missionary work, and church development in various regions. This tithe is not used for local church operational expenses, such as electricity, water, or renovations. These costs are typically covered through other voluntary offerings.

Tithing in the GMAHK is viewed not merely as a financial obligation, but also as a form of worship and an acknowledgment that all blessings come from God. This practice is understood as an act of returning what is considered God's portion and serves as an indicator of members' spiritual faithfulness. In the GMAHK, tithing is practiced systematically, is regarded as a moral and religious obligation, and serves a relational function by strengthening the bonds among congregation members, pastors, and God (Jacobs, 2015). Furthermore, an organized tithing system demonstrates that the church prioritizes tithing as a crucial institutional and theological practice for sustaining church ministry. Jacobs (2015) explains that tithing within the GMAHK community in South Africa is understood as a meaningful offering and is carried out routinely by church members. Tithing serves to build group solidarity, strengthen social cohesion, and foster a shared sense of responsibility toward the church's ministry. Thus, tithing fulfills not only an economic function but also social and spiritual functions within congregational life.

In addition to tithing, church members are encouraged to make voluntary offerings to support various church programs, such as love offerings for charitable and social activities, building offerings for renovations or construction, and mission offerings for missionary work. Offerings are not only for the needs of the local church but also support the church's global missions and activities. Integrated offerings are voluntary, planned, and purposeful contributions in accordance with God's will, given through the church in an organized manner to support various church needs and ministries. In practice, offerings are distinguished from tithes. While tithes are a fixed 10% of income, offerings are voluntary contributions beyond the tithe. Offerings are typically used to fund local church operations, social activities, mission work, assistance for members in need, and the construction of church facilities. Pitts (2021) explains that, in Christian tradition, offerings are understood as voluntary contributions beyond tithes, often used to help those in need and support church ministries.

The management of tithes and offerings in the GMAHK is carried out through a structured accounting and reporting system. Kuma et al. (2023) explain that the GMAHK uses a formal accounting system as a form of financial stewardship, while religious beliefs remain the foundation for decision-making. This system demonstrates a balance between administrative and spiritual aspects, ensuring that church fund management is not only conducted professionally but also grounded in principles of faith. Kuma et al. (2023) also explain that within the GMAHK, divine and earthly aspects are integrated in financial management. The worldly aspect is manifested through financial reports, record-keeping, and a well-organized accounting system. In contrast, the divine aspect is manifested through the belief that the funds given by the congregation are a divine trust to be managed with full responsibility. This indicates that tithes, offerings, and donations are not merely viewed as sources of funds but also as part of spiritual service and stewardship.

The revenue of religious organizations generally comes from various sources, including tithes, offerings, and external grants (Cafferky, 2015). However, in the context of financial analysis, a clear classification is needed to distinguish funding sources based on their origin and characteristics (Cafferky, 2015). In this study, the organization's revenue sources are operationally classified into two main categories: internal revenue and public support. Internal revenue refers to financial resources generated by the organization's economic activities and asset management that are directly controllable. Meanwhile, public support includes contributions from external parties, such as congregants, donors, and grant-giving institutions. Tithes and offerings in this study are classified as part of public support, as they are economic contributions from individuals outside the organizational entity. However, theologically, they are part of internal religious practices. Thus, both types of funds are treated as external funding sources in the financial ratio analysis.

Other revenue sources include grants from the government or external institutions. According to the Kamus Besar Bahasa Indonesia (2023), grant funds are funds provided by an institution or organization to support specific activities without requiring the recipient to repay them. Grants are generally provided by the government, foundations, or nonprofit organizations to individuals, groups, or organizations that meet certain criteria. Grant funds can be used to support activities related to education, health, and community development. According to the Government Regulation of the Republic of Indonesia (2012) on regional grants, grants may be provided by the central government to local governments or vice versa, to state-owned enterprises, regionally owned enterprises, the public, and/or community organizations incorporated under Indonesian law. These grants may take the form of cash, goods, and/or services, and must be provided through an agreement in accordance with

applicable laws and regulations. Government grants for religious and educational institutions constitute an additional external revenue source for GMAHK.

Public support is a key indicator in assessing the financial strength of nonprofit organizations (Noviantoro & Nugroho, 2019). The extent of public support received reflects the amount of funding available to the organization to implement its programs. However, beyond the mere amount of donations, public support also indicates the extent to which an organization relies on external contributions to carry out its operational activities (Ritchie & Kolodinsky, 2003). A high level of dependence on donations can signal weak financial performance. This is because inherently uncertain funding sources can heighten financial vulnerability, which may ultimately disrupt the continuity of the organization's programs. When dependence is too high, organizations become more vulnerable to funding fluctuations and potential financial crises (Green et al., 2021).

From a donor's perspective, public support can serve as a benchmark for assessing an organization's financial stability. Donors are generally more inclined to contribute to organizations that can demonstrate a diversity of funding sources and are not entirely reliant on donations. Lower dependence indicates healthier, more sustainable financial management, which is a key consideration in donation decisions (FundsforNGOs, n.d.). Keating et al. (2005) explain that the public support ratio can be used to determine the extent to which an organization depends on public contributions as its primary funding source. This ratio is important for assessing the organization's long-term financial stability and the sustainability of its activities, as well as for evaluating funding stability and the organization's relationships with external stakeholders.

2.3 Financial Performance

Financial performance describes the financial condition of an entity, as indicated by a set of financial indicators that assess the effectiveness and efficiency of financial resource management in achieving the organization's objectives (Harahap, 2020). Financial performance in nonprofit organizations is not measured by profitability but by the organization's ability to maintain operational sustainability and use resources efficiently. Financial performance reflects an organization's ability to maintain services and manage resources in an accountable manner (Keating et al., 2005; Kristianti & Ardian, 2022). In this context, financial performance measurement is inseparable from a financial management evaluation system that emphasizes cost efficiency and accountability as the basis for assessing organizational performance (Nurfadila, 2024). Financial performance reflects an organization's ability to maintain financial stability, meet operational needs, and account for funds to donors and other stakeholders (Fina, 2023). Anthony & Young (2003) extensively discuss financial performance in the public sector and nonprofit organizations, emphasizing the importance of accountability, effective fund management, and the achievement of nonprofit organizational goals as performance measures (Pratama, 2022).

According to Ritchie & Kolodinsky (2003), several financial ratios can be used to assess the financial performance of nonprofit organizations, including the operating reserve ratio and the self-reliance ratio (SRR), which, respectively, indicate the resilience of reserve funds and the organization's ability to sustain its activities independently. The use of financial ratio indicators as performance evaluation tools is also consistent with financial performance measurement practices that emphasize the analysis of an organization's efficiency, stability, and sustainability in resource management (Noy, 2023). The operating reserve ratio measures the amount of reserve funds available to finance operational activities relative to total annual expenditures. This ratio provides insight into the

organization's financial resilience and its ability to withstand financial emergencies. Meanwhile, the self-reliance ratio indicates the extent to which an organization can fund its operational activities from internal revenue without relying on external sources.

Dharmadi et al. (2024) explain that the operational reserve ratio reflects the organization's working capital. Working capital is a key indicator showing an organization's capacity to meet short-term obligations and support operational continuity. The concept of working capital was first developed in accounting literature by Williams (1938) and Guthmann & Dougall (1948), who emphasized its importance as a primary element in assessing an entity's liquidity and financial health. Furthermore, Gitman & Zutter (2015) and Brigham & Ehrhardt (2019) define working capital as the difference between current assets and current liabilities, reflecting an organization's ability to meet its short-term obligations. This view is further reinforced by Weston & Copeland (1997) and Brigham & Houston (2022), who emphasize that working capital is a financial resource that sustainably supports daily operations. According to Ikhsan et al. (2016), working capital reflects an organization's ability to manage liquid assets to support operational activities efficiently without neglecting other assets.

2.4 The Relationship Between Cash Management and the Operating Reserve Ratio

The cash ratio reflects an entity's liquidity in meeting its short-term obligations. Good liquidity supports financial stability and operational resilience, thereby positively impacting financial performance. In nonprofit organizations, liquidity plays a crucial role in maintaining operational stability, particularly when facing funding uncertainties stemming from donations and grants (Calabrese, 2013; Zietlow et al., 2018). A high cash ratio indicates sufficient liquid assets that can serve as a financial buffer to establish operational reserves. The findings of Dharmadi et al. (2024) indicate that the cash ratio significantly influences the operating reserve ratio. Thus, effective cash management plays a vital role in enhancing financial performance.

Operating reserves are unrestricted net assets that function as a financial buffer to sustain organizational activities during periods of declining revenue (Kim & Mason, 2022). Bowman (2011) demonstrates that organizations with strong liquidity tend to have greater capacity to build financial reserves. Furthermore, the concept of financial vulnerability emphasizes that the availability of adequate cash contributes to an organization's financial resilience in facing risks (Tuckman & Chang, 1991). High funding volatility demands optimal cash management to maintain financial stability (King, 2021). Therefore, the better the cash management, the greater the organization's ability to build operational reserves (King, 2021).

Liquidity directly affects the operating reserve ratio, as cash is a major component of working capital requirements. High working capital requirements indicate the organization has adequate cash reserves, making operations more stable. However, excessively high levels may indicate overcaution or suboptimal use of funds.

H1: *Cash management (cash/liquidity ratio) has a significant impact on the operating reserve ratio*

2.5 The Relationship Between Cash Management and the Self-Sufficiency Ratio

In addition to affecting operational reserves, cash management also plays a role in enhancing an organization's financial independence. The independence ratio reflects an organization's ability to finance its operations through internal revenue sources without excessive reliance on external sources

(Keating et al., 2005). High liquidity provides organizations with the flexibility to implement programs that can generate internal revenue. With adequate cash availability, organizations have the leeway to develop activities that support financial sustainability (Calabrese, 2013). Additionally, effective cash management enables organizations to reduce their dependence on uncertain external funding (Pizzini & Sterin, 2025).

A high RK indicates stable internal revenue, which helps maintain a healthy cash ratio. Conversely, a low RK means the organization relies on donations, implying that cash can be volatile and difficult to predict. Cash can influence the RK, but not directly. The RK is calculated based on self-generated revenue, not the current cash position. However, if an organization has sufficient cash, it can implement programs that generate its own revenue. In other words, cash provides capital or room for maneuver for the organization to become more self-reliant. Nevertheless, Dharmadi et al. (2024) show that liquidity does not always directly affect self-reliance, as the organization's revenue structure influences self-reliance more than its cash position alone. Nevertheless, cash management continues to support self-reliance by enhancing the organization's operational capacity.

H2: *Cash management (cash/liquidity ratio) has a significant impact on the self-reliance ratio*

2.6 The Relationship Between Fund Revenue and the Operational Reserve Ratio

Revenue in religious organizations derived from tithes, offerings, and donations reflects the level of public support for the organization. High levels of public revenue reflect strong trust and support, which can positively contribute to the organization's financial performance (Wu & Dai, 2025). The public support ratio measures the extent to which the public contributes to the organization's revenue (Internal Revenue Service (IRS), 2021). The public support ratio reflects the extent to which financial organizations (e.g., NGOs, foundations, social organizations) rely on revenue from the public (individual donations, community grants, government grants, etc.) compared to other or commercial funding sources (Nuru et al., 2024; Keating et al., 2005). The higher this ratio, the greater the public support the organization receives (Cho et al., 2024).

The higher the public support ratio, the greater the likelihood that operating reserves will increase, as revenue is more stable and diverse (Bowman, 2011). High public support typically reflects public trust in the organization, and this can promote financial stability and increase operating reserves (Tuckman & Chang, 1991). Conversely, heavy reliance on a single funding source can lead to a low public support ratio if that source suddenly dries up (Carroll & Stater, 2009). Grizzle et al. (2015) also noted that organizations heavily reliant on donations tend to have lower operational reserves because the funds they receive are immediately used to finance operations. This is reinforced by Green et al. (2021), who show that reliance on external funding sources can increase an organization's financial vulnerability.

In faith-based organizations, reliance on congregational donations also creates funding volatility, thereby affecting the organization's ability to build financial reserves (Gultian, 2025). Therefore, the relationship between funding revenue and operational reserves may be non-linear, depending on how the funds are managed. The results of Dharmadi et al. (2024) also indicate that the public support ratio does not significantly affect the operational reserve ratio. Thus, the use of information technology, as measured by the public support ratio, does not yield a significant impact. Grizzle et al. (2015) show that donation levels (as an indicator of public support) have a negative relationship with the size of the operating reserve ratio (ORR) in nonprofit organizations. This suggests that organizations that are highly dependent on public donations tend to have smaller operating reserves.

H3: Funding (public support ratio) has a significant impact on the operational reserve ratio

2.7 The Relationship Between Fund Revenue and the Self-Sufficiency Ratio

Funding also has a significant impact on an organization's financial independence. A high public support ratio reflects high community participation in supporting the organization, which can enhance the organization's ability to fund its operations independently (Cho et al., 2024). According to resource dependence theory, reliance on external funding sources can affect an organization's level of autonomy (Froelich, 1999). However, in the context of nonprofit financial analysis, public support is still classified as an external funding source because it originates from contributions from parties outside the organization's economic entity, even if those parties have a close relationship with the organization (King, 2021).

High levels of public support can enhance organizational autonomy when such contributions are stable and sustainable, thereby enabling the organization to have greater capacity to fund operational activities without the pressure of dependence on specific funding sources (Froelich, 1999). High levels of public support indicate sustainability and public trust, which positively impact financial stability and autonomy (Ab Samad et al., 2023). In this study, the relationship between public support and financial autonomy is understood as the relationship between external funding sources and the organization's ability to build internal funding capacity. Public support serves as an initial resource that enables organizations to strengthen their financial structure, improve the efficiency of fund management, and develop economic activities that ultimately increase the organization's internal revenue. Additionally, active public participation in financial contributions reflects a high level of trust, which can create funding stability and provide room for the organization to develop sustainable internal revenue sources.

High public support typically reflects the community's trust in the organization, and this can foster financial stability and enhance financial independence (Tuckman & Chang, 1991). Conversely, high dependence on a single funding source can result in low public support and independence ratios if that source suddenly ceases to exist (Carroll & Stater, 2009). Research indicates that high public support can enhance funding stability and strengthen an organization's operational capacity, ultimately increasing the financial independence ratio (Ab Samad et al., 2023). Furthermore, active community participation in financial contributions reflects a high level of trust, which supports the organization's long-term sustainability.

H4: Funding revenue (public support ratio) has a significant impact on the self-reliance ratio

3. Research Method

3.1 Sample Selection

This study was conducted at GMAHK Indonesia Eastern Region. It employed a quantitative approach using descriptive analysis and multiple regression to determine the impact of cash management and revenue on GMAHK's financial performance. The data used included liquidity, tithe revenue, unified offerings, government grants, working capital requirements, and expenditures. The data used are secondary data obtained from the financial statements of GMAHK Indonesia Eastern Region for the period 2013–2025. Data were collected through documentation from GMAHK's financial statements. The unit of analysis in this study is the organization's annual financial statements, so each observation

represents a single time period (year). Thus, the data structure used is time-series data reflecting the development of the organization's financial condition over the observation period.

The population for this study comprises the financial statements of GMAHK Indonesia Eastern Region from 2013 to 2025. The sample for this study was selected using purposive sampling based on the following criteria: financial statements available and complete for the study period, data covering the research variables in detail, and data audited or verified by relevant parties. The number of observations in this study reflects not only the number of years observed but also the processing of several components of financial variables within each period, resulting in a larger total number of observations. Based on these criteria, 116 observations suitable for analysis were obtained. During the autocorrelation test using the first-order autoregressive (AR(1)) approach, one initial observation could not be used; thus, the final number of observations used in the regression analysis was 115.

3.2 Measurement of Variables

Research variables: independent variables, namely the cash management variable (X1), measured by the cash or liquidity ratio, and the revenue variable (X2), measured by the public support ratio. The dependent variables are financial performance, measured using the operational reserve ratio (Y1) and the self-reliance ratio (Y2).

Cash management (X1) is measured using the cash ratio, which reflects an organization's ability to meet its short-term obligations using available cash and cash equivalents. Operationally, the cash ratio is calculated as follows: $\text{Cash Ratio} = \text{Cash and Cash Equivalents} / \text{Current Liabilities}$. Funding revenue (X2) is measured using the public support ratio, which indicates the proportion of public contributions to the organization's total revenue. In this study, public support is defined as external funding from contributions by congregants, donors, and grant-giving institutions, as explained in the literature review section. This ratio is calculated as: $\text{Public Support Ratio} = \text{Total Contributions} / \text{Total Revenue}$.

Financial performance in this study is measured through two indicators. First, the operational reserve ratio (Y1), which illustrates the organization's ability to maintain operational sustainability through the availability of financial reserves. This ratio is calculated as: $\text{Operational Reserve Ratio} = \text{Unrestricted Net Assets} / \text{Total Operating Expenses}$. Second, the self-reliance ratio (Y2), which reflects the organization's ability to finance its operations from internal revenue sources. Internal revenue in the self-reliance ratio refers to financial resources generated by the organization's economic activities and asset management and does not include contributions from public support. This ratio is formulated as follows: $\text{Self-reliance ratio (RK)} = \text{Total internal revenue} / \text{Total expenses}$.

All ratio variables in this study were recalculated by the researcher based on financial statement data from GMAHK Indonesia Eastern Region for the 2013–2025 period to ensure consistency in definitions, classification of funding sources, and uniformity of measurement across periods. The resulting ratio values were then used as inputs in descriptive statistical and regression analyses, as presented in the research results section.

In this study, the operating reserve ratio is used as the primary indicator of medium-term financial performance. It is thus conceptually distinguished from working capital requirements, which focus more on the adequacy of current assets for short-term operational activities. This distinction is made to avoid measurement ambiguity and ensure clarity in the interpretation of empirical results.

3.3 Research Model

Data analysis techniques, including descriptive statistics, were employed to provide an overview of trends from 2013 to 2025. Hypothesis testing was conducted using multiple linear regression, with t-tests and F-tests, and the coefficient of determination (R^2). To address potential autocorrelation in the time-series data, estimates were made using AR(1) correction (the Cochrane–Orcutt/GLSAR approach). Data processing was performed using statistical software. The coefficient of determination (R^2) values in this study were relatively low, at 0.136 for the operating reserve ratio model and 0.206 for the self-reliance ratio model. These values indicate that the independent variables in the models explained only a small portion of the variation in the dependent variables. In contrast, the majority of the remaining variation was attributable to factors outside the model that were not included in this study.

4. Results and Discussion

4.1 Analysis Results

4.1.1 Descriptive Statistics

Descriptive statistical tests are used to characterize the sample and provide an overview of the research data before hypothesis testing. Descriptive statistics in this study include the mean, standard deviation, minimum, and maximum for each research variable: the operational reserve ratio, independence ratio, cash or liquidity ratio, and public support ratio. These tests were conducted to provide readers with a statistical overview of the data, making it easier to understand.

Table 1. Descriptive Analysis

Variable	N	Mean	Std Dev	10%	25%	Median	75%	90%
Operating Reserve Ratio	116	0.645	0.389	0.100	0.360	0.720	0.920	1.095
Self-Sufficiency Ratio	116	0.821	0.148	0.685	0.730	0.800	0.890	0.970
Cash/Liquidity Ratio	116	2.975	3.596	0.395	1.155	2.035	3.013	6.885
Public Support Ratio	116	0.829	0.137	0.690	0.710	0.840	0.930	0.975

Based on Table 1, the descriptive statistics for a sample size of 116 across four financial indicators—namely, the cash ratio, public support ratio, operational reserve ratio, and self-reliance ratio—reveal considerable variation in the data distribution. The descriptive statistics indicate that the cash ratio exhibits the greatest variation among the variables. The cash ratio has a mean of 2.975 with a very high standard deviation of 3.596, indicating extreme data dispersion or the presence of significant outliers. This suggests that GMAHK Indonesia Eastern Region's cash position fluctuated during the study period. Meanwhile, the public support ratio shows a relatively stable distribution, with an average of 0.829 and a standard deviation of 0.137, indicating a high degree of consistency in public support across entities. This finding indicates that public contributions as a source of organizational funding are relatively stable over time.

The operational reserve ratio has an average of 0.645 and a standard deviation of 0.389, suggesting unstable financial conditions in some entities and the potential presence of extreme values

that warrant further analysis. This finding indicates variations in organizational capacity to maintain operational reserve funds. Meanwhile, the self-reliance ratio had an average of 0.821 and a standard deviation of 0.148, indicating a relatively high and consistent level of self-reliance in the sample. This finding indicates that, in general, organizations have a fairly strong ability to finance their operations, although differences persist across periods.

Overall, these results provide an initial overview of the financial structure of the entities studied and serve as a basis for further analysis of variable relationships within this study. The descriptive statistics indicate that the financial structure of the religious organizations in this study is not entirely homogeneous. High variability in the cash ratio indicates that liquidity management is dynamic. In contrast, the relatively higher stability in the public support ratio highlights the importance of contributions from congregants and the public as a more consistent source of funding. This picture serves as a crucial foundation for understanding the results of the regression tests in the subsequent stage.

4.1.2 Empirical Results and Hypothesis Testing

Table 2. Regression Test Results

Variable	Operating Reserve Ratio_Y1				Self-Sufficiency Ratio_Y2			
	Coef	t-stat	Std. Error	p-value	Coef	t-stat	Std. Error	p-value
Cash Ratio_X1	-0.001	-0.170	0.006	0.865	-0.001	-280	0.004	0.780
Public Support Ratio_X2	-0.315***	-4.190***	0.075	0.000	0.482***	5.240***	0.092	0.000
Constant	0.673***	2.790***	0.241	0.006	0.425***	5.280***	0.080	0.000
F-stat	8.790***				14.490***			
R ²	0.136				0.206			
Adj R ²	0.120				0.191			
Durbin-Watson	1.95				2.01			

Description:

- * p < 0,10
- ** p < 0,05
- *** p < 0,01

A very small p-value is presented as 0,001

4.2 Discussion

4.2.1 The Impact of the Cash Ratio on Operating Reserves

The test results indicate that the cash ratio does not affect operating reserves. This finding suggests that an organization’s liquidity level does not directly determine its ability to build long-term financial reserves. In other words, even if an organization has relatively high cash holdings, this does not automatically indicate its readiness to face future financial risks. The cash ratio is an indicator of an organization’s ability to meet its short-term obligations. This ratio illustrates how much cash is available to cover current liabilities. However, operational reserves have distinct characteristics as they are more



closely tied to long-term financial strategies deliberately designed by organizational management. Operational reserves are not automatically formed from excess cash; they are established through policies that specifically allocate a portion of financial resources for stability.

Thus, the cash position reflects short-term flexibility more than the medium-term capacity of operational reserves. These findings align with the study by Elvira-Lorilla et al. (2025), which emphasizes that cash holdings in nonprofit organizations must be understood contextually, as high cash balances may reflect financial prudence but can also indicate funding uncertainty and high liquidity needs. This finding is also supported by Pizzini & Sterin (2025), who show that nonprofit organizations' cash reserves are influenced not only by liquidity but also by governance and donor relationships. This means that high cash holdings do not automatically imply strong operational reserves if funding policies are primarily directed toward current operational needs.

In the practice of nonprofit and religious organizations, this situation becomes increasingly complex. Available cash is often used to support service activities, routine operations, and other urgent needs. Consequently, even though a certain amount of cash is available, organizations do not always have policies to set aside a portion of those funds as reserves. This indicates that the orientation of cash usage is more reactive than strategic. This finding aligns with Calabrese's (2013) research, which states that liquidity cannot be used as the sole indicator of an organization's financial resilience. The study emphasizes that organizations with high liquidity do not necessarily have adequate reserves. Furthermore, Bowman (2011) highlights that an organization's financial capacity is more determined by disciplined financial management practices than by the amount of cash held. Furthermore, a study by Kim & Mason (2022) shows that organizations with high liquidity levels can still be vulnerable if they lack clear reserve policies. Another study by Elvira-Lorilla et al. (2026) also found that the presence of cash does not always correlate with an organization's ability to maintain long-term financial stability.

From a managerial perspective, these results indicate that organizations need to shift their approach to financial management. The focus should not only be on maintaining cash availability but also on how that cash is managed and strategically allocated. Without clear reserve policies, cash will function merely as a short-term operational tool, not as an instrument of financial resilience. Thus, the first hypothesis is not supported. This finding confirms that the cash ratio is not a determining factor in the formation of operational reserves, but rather merely one indicator of liquidity conditions that needs to be complemented by a more comprehensive financial management policy.

4.2.2 The Effect of the Cash Ratio on Organizational Autonomy

The results of the study indicate that the cash ratio does not affect organizational independence. This finding suggests that liquidity levels cannot be used as a primary indicator in assessing an organization's ability to stand on its own. Organizational independence is more closely related to the ability to generate and sustain revenue sources without heavy reliance on external parties. An organization may have substantial cash reserves, but if that cash comes from unstable sources, its level of independence remains low. This finding reinforces the argument that liquidity and independence are two distinct dimensions of financial performance, although both are equally important. Furthermore, high cash reserves do not guarantee operational sustainability if the organization lacks a sound revenue management system. Reliance on inconsistent donations or external aid can hinder the organization's ability to plan and develop programs independently. The non-significance of the cash ratio indicates

that the cash position is more a result of funding and expenditure activities rather than a direct determinant of autonomy during the same period.

Research by Kim & Mason (2020) shows that an organization's autonomy is determined more by its revenue structure and diversification of funding sources than by its liquidity alone. Studies also show that organizations dependent on a single funding source are more vulnerable to external pressures, whereas revenue diversification contributes to organizational resilience and sustainability (Chen, 2021). Thus, the second hypothesis is not supported, as the cash ratio is not the primary factor shaping organizational independence but rather reflects short-term financial conditions.

4.2.3 *The Impact of Public Support on Operational Reserves*

The research results show that public support influences operational reserves. These findings indicate that the relationship between an organization and the community plays a strategic role in shaping the organization's financial resilience, particularly in its ability to build operational reserves. Public support reflects the level of trust, participation, and engagement of the community toward the organization. When an organization builds strong trust, the flow of funds from the public tends to be more stable and sustainable. However, empirical results show that this relationship does not strengthen the formation of operational reserves; rather, it has the opposite effect. GMAHKs that rely more heavily on tithes and offerings are likely to face smaller liquidity shocks, thus requiring lower operational reserves or working capital needs.

The public support ratio was found to have a significant negative effect on the operational reserve ratio. This finding indicates that the higher the proportion of revenue derived from public support, the lower the organization's tendency to maintain operational reserves. This result can be explained by the characteristics of religious organizations, which tend to allocate received funds immediately to ministry activities, social programs, congregational activities, and other operational costs. Thus, an increase in public support is not always followed by an increase in reserves, as the additional funds are immediately channeled toward meeting program needs. Additionally, the funding structure of religious organizations may be earmarked (tied to specific purposes), so that specific budget items largely absorb increases in public support and do not strengthen the short-term cash buffer. This pattern may also reflect an adaptive behavior: when public support is high, churches increase service activities, thereby boosting expenditures and reducing reserves. Thus, public support in this context functions more as a source of operational funding than as a tool for building reserves. This indicates a trade-off between using funds for direct services and accumulating financial reserves. This is important to consider in organizational financial management, particularly for nonprofit organizations or the public sector.

This finding is consistent with the research by Green et al. (2021), which shows that the financial resilience of charitable organizations is significantly influenced by their revenue dependency structure and the organization's ability to refrain from using funds directly during shocks. More specifically, King et al. (2025) show that faith-based organizations tend to view stewardship funds as resources to be used immediately for mission and ministry, rather than primarily held as reserves. Therefore, the negative result regarding the relationship between public support and the operational reserve ratio in this study can be understood as a consequence of a highly operational orientation toward fund usage. Nevertheless, the direction of this negative effect does not imply that public support is detrimental to the organization; rather, it indicates that public support is more important for operational activities than

for building financial reserves. Conversely, the findings of this study suggest that the impact of public support depends on the performance indicators used. When the measured indicator is the operational reserve, high public support can suppress reserve formation because funds are used directly.

Research by Tuckman & Chang (1991) indicates that organizations with high public support exhibit lower financial vulnerability. Although some studies, such as those by Tuckman & Chang (1991) and Carroll & Stater (2009), suggest that funding stability can support reserve formation, the results of this study indicate that, in the context of religious organizations, such stability is more directed toward enhancing service activities rather than accumulating reserves. Additionally, Carroll & Stater (2009) found that diversification and stability of funding sources significantly contribute to an organization's ability to maintain reserves. Research by Searing et al. (2021) also shows that organizations with a broad and loyal donor base are better able to withstand crises. Meanwhile, Kim & Mason (2022) emphasize that public trust is a key factor in ensuring an organization's financial sustainability.

From a practical perspective, these findings underscore the importance of communication strategies and transparency within organizations. Organizations that demonstrate accountability and openness in sharing information will more easily gain public trust. This trust is then translated into sustainable financial support. Thus, the third hypothesis is supported. From a practical perspective, this finding emphasizes that organizations need to balance funding for operational activities with the need to build financial reserves. Without a clear reserve policy, increased public support could potentially increase expenditures and undermine the organization's ability to build reserves. Thus, the third hypothesis is supported in terms of significance; however, the negative direction of the relationship indicates that public support increases operational activities rather than being the primary driver of operational reserve formation.

4.2.4 The Impact of Public Support on Organizational Autonomy

Research findings show that public support influences organizational autonomy. These findings indicate that strong ties with the community are a key factor in fostering organizational sustainability and autonomy. Public support not only provides funds but also strengthens the organization's legitimacy and trust. Organizations trusted by the community tend to have broader access to resources, enabling them to develop programs independently rather than relying on a single funding source. Additionally, public support encourages organizations to enhance transparency and accountability. These two aspects are essential foundations for building long-term relationships with donors and other stakeholders. This strong relationship ultimately enhances financial stability and strengthens the organization's independence. Increased income from tithes and offerings strengthens GMAHK's internal capacity to cover expenses.

The public support ratio has a positive and significant effect on the self-reliance ratio. The positive coefficient is consistent with the logic that stronger public support (e.g., tithes/offerings and other contributions) increases the organization's ability to fund its activities, thereby raising self-reliance as its dependence on external funding sources decreases. The finding that the public support ratio positively affects the self-reliance ratio aligns with the research by Ab Samad et al. (2023), which states that the sustainability of nonprofit organizations is greatly influenced by the organization's ability to build a stable, trustworthy, and recurring funding base. Research by Choi et al. (2024) also indicates that public support for nonprofit organizations increases when the organization builds trust, engagement, and strong relationships with the public. In the context of a church, public support reflects not only the

transfer of funds but also the spiritual and institutional involvement of congregation members in sustaining the church's ministry. Therefore, the greater the public support, the higher the organization's level of independence.

These findings are further supported by Wu & Dai (2025), who found that transparency in nonprofit organizations positively affects willingness to donate. This implies that organizations capable of maintaining accountability and public trust will more easily secure sustainable contributions. In this study, stable public contributions appear to be the primary foundation for the organization's operational funding, thereby strengthening the autonomy ratio. This means that in religious organizations such as GMAHK, public support is a highly strategic resource for ensuring financial sustainability.

Research by Park et al. (2022) indicates that public support and sound financial management contribute to an organization's sustainability and resilience, thereby strengthening its long-term autonomy. Furthermore, research by Lee et al. (2023) confirms that resource management competence and stakeholder engagement, including public support, are critical factors in maintaining organizational sustainability. Additionally, research by White et al. (2023) indicates that public trust, donation intent, and sustainable donor behavior play a vital role in enhancing long-term financial support that underpins organizational self-sufficiency. These findings indicate that public support not only has a short-term impact through increased funding receipts but also exerts a strategic influence on the self-sufficiency ratio by promoting funding stability and organizational sustainability. Thus, the fourth hypothesis is supported. These results confirm that public support is a strategic factor in enhancing organizational self-sufficiency.

The contribution of variables in the model remains relatively low, suggesting the possibility of other factors not yet included. The model's explanatory power remains low, indicating the need to explore additional variables to strengthen predictions regarding the self-sufficiency ratio. The relatively low coefficient of determination indicates that the model used has not fully captured all factors influencing the operational reserve ratio and the self-sufficiency ratio. These results align with the systematic review by Ab Samad et al. (2023), which emphasizes that many other factors, such as governance, cost efficiency, revenue diversification, managerial capacity, and flexibility in fund utilization, influence the financial sustainability of nonprofit organizations.

Thus, this study makes two important contributions. First, it confirms that public support is a more decisive factor than liquidity in explaining the financial performance of religious organizations. Second, it demonstrates that the same variable—public support—can yield different directions of influence depending on the performance indicators used. Public support can reduce operational reserves because funds are often used directly for services, but it can also enhance autonomy by serving as the organization's primary funding source. These findings enrich the nonprofit literature, particularly on religious organizations, by demonstrating that the relationship between funding and financial performance must be interpreted more specifically depending on the performance dimension under analysis.

The R-squared (R^2) value for the operational reserve ratio indicates that approximately 13.6% of its variation is explained by the cash ratio and public support ratio in this model. Meanwhile, the Adjusted R-squared corrects R^2 for the number of independent variables and the sample size. This indicates that the independent variables' contribution to the model remains limited and that other variables outside the model may influence the operational reserve ratio. The R-squared (R^2) value for the self-reliance ratio indicates that approximately 20.6% of its variation is explained by the cash ratio

and public support ratio in this model. Meanwhile, the Adjusted R-squared corrects R^2 for the number of independent variables and the sample size. This indicates that the independent variables' contribution to the model remains limited and that other variables outside the model may influence the operating reserve ratio.

5. Concluding Remarks and Recommendation

Based on the findings of an analysis of the financial statements of the Gereja Masehi Advent Hari Ketujuh (GMAHK) in Eastern Indonesia for the period 2013–2025, this study aims to analyze the impact of cash management and public support on the financial performance of this nonprofit religious organization, as measured by the operational reserve ratio and the self-sufficiency ratio. Using a quantitative approach via multiple linear regression with AR(1) adjustment, the results indicate that cash management does not have a significant effect on either financial performance indicator. Conversely, public support was found to have a significant effect in opposite directions: a negative effect on the operational reserve and a positive effect on organizational self-reliance. These findings suggest that liquidity is not the primary factor in determining financial resilience and autonomy, while funding structure—particularly that derived from public support—plays a more dominant role in influencing both dimensions.

This study makes a theoretical contribution by affirming that the financial performance of nonprofit organizations is determined not only by internal factors such as liquidity but also by external factors, namely public support. These findings reinforce the importance of a relational perspective in understanding organizational resilience and autonomy. Practically, the results of this study suggest that organizations need to manage public support more strategically, not only to meet operational needs but also to maintain a balance between fund utilization and the formation of financial reserves. Additionally, enhancing transparency, accountability, and public communication is critical to maintaining public trust. This study also confirms that external funding sources can have varying impacts depending on the financial performance indicators used; therefore, financial decision-making must take these dimensions into account.

This study has several limitations that need to be noted. The research model remains limited to a few variables and cannot yet explain all factors influencing operational reserves and organizational autonomy. Furthermore, the research scope being limited to GMAHK Indonesia Eastern Region means the findings cannot yet be broadly generalized to all nonprofit organizations. The quantitative approach based on secondary data also fails to capture non-financial factors such as governance, leadership, and the quality of social relationships, which can influence an organization's financial performance. Therefore, future research is recommended to develop a model by incorporating additional variables, expanding the scope of the research subjects, and utilizing a panel data approach or mixed methods to gain a more comprehensive understanding of the dynamics of nonprofit organizations' financial performance.

Statement of Use of Generative AI

During the preparation of this work, the author used ChatGPT to assist in improving clarity and readability of the text. The author reviewed and edited the output and takes full responsibility for the content of the publication.



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