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Rethinking Liquidity in Nonprofit Organizations: The Dual Role of Excess Cash in Explaining Financial Vulnerability

Teresa Elvira-Lorilla  | Inigo Garcia-Rodriguez  | M. Elena Romero-Merino  | Marcos Santamaria-Mariscal 

University of Burgos, Burgos, Spain

Correspondence: Inigo Garcia-Rodriguez (inigogr@ubu.es)

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ABSTRACT

This study examines the dual impact of excess cash holdings on the financial vulnerability of nonprofit organizations (NPOs) through an integrative framework that combines insights from the behavioral theory of the firm and agency theory. From a behavioral perspective, excess liquid assets represent unabsorbed organizational slack that can enhance financial resilience by buffering organizations against funding shocks. From an agency perspective, however, unusually high cash balances may be absorbed into administrative structures, increasing internal costs and weakening financial discipline. Using a large panel dataset of 9177 NPOs in England and Wales (42,350 observations from 2015 to 2022) and generalized structure equation modeling, we find that excess cash is directly associated with a lower likelihood of future financial vulnerability, consistent with its precautionary role as a financial buffer. At the same time, excess cash is associated with higher overhead costs, which in turn slightly increase financial vulnerability. This indirect channel partially offsets, but does not eliminate, the protective effect of excess liquidity. Overall, the findings show that excess cash can strengthen nonprofit financial resilience while simultaneously generating internal cost dynamics that attenuate its benefits. By distinguishing between unabsorbed and absorbed slack, the study clarifies how liquidity accumulation can have both stabilizing and potentially adverse consequences for nonprofit financial health.

1 | Introduction

Nonprofit organizations (NPOs) manage liquid assets not only to sustain day-to-day operations but also as a central tool for strengthening their financial health, or, alternatively, reducing their exposure to financial vulnerability (an organization's susceptibility to financial problems, as defined by Tevel et al. (2015, 2502). A substantial body of research has shown that maintaining adequate liquidity ratios (relationship between liquid assets and short-term liabilities) is beneficial for NPOs, whether as a component in composite indicators of financial vulnerability (Andrés-Alonso et al. 2016; Prentice 2016; Jimeno García et al. 2023), as a factor reducing the risk of dissolution (Park et al. 2022), or as part of managerial practices that enhance resilience by

enabling organizations to anticipate and absorb financial strain (Searing et al. 2021; Young and Searing 2022).

However, the effects of liquidity are not universally positive. Although adequate liquid funds strengthen financial stability, very large balances may generate concerns among stakeholders, who may interpret them as unused or idle resources and may create scope for internal cost expansion when high discretion over liquid assets weakens managerial discipline. Prior research documents associations between high liquidity and increased administrative spending (Core et al. 2006; Hughes 2013; Lee and Woronkovicz 2019), suggesting that the consequences of liquidity may be more ambiguous when balances significantly exceed operational needs.

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This tension raises two closely related questions that remain insufficiently explored in nonprofit literature. First, it remains unclear whether excess cash (liquidity above expected levels) reduces NPOs' future financial vulnerability. Although liquidity is widely assumed to provide a protective buffer, prior research has not explicitly examined whether unusually high cash balances (excess cash) fulfill this stabilizing function over time. Second, the coexistence of potentially positive and negative effects of cash accumulation raises the question of how internal cost dynamics interact with this relationship. Excess of liquidity may strengthen financial resilience, yet it may also be absorbed into administrative structures, increasing overhead. It is unclear whether these internal adjustments mitigate, counteract, or have no effect on the role of excess cash in preventing financial vulnerability.

Addressing these questions requires moving beyond existing studies that focus on cash levels or internal costs separately and adopting a framework that examines excess liquidity and internal cost dynamics jointly. Accordingly, our analysis builds on an integrative theoretical framework that brings together insights from the behavioral theory of the firm (Bourgeois 1981; Cyert and March 1963) and agency theory (Jensen 1986; Jensen and Meckling 1976). From a behavioral perspective, liquidity can be understood as a form of organizational slack (*unabsorbed slack*) that provides NPOs with a buffer to accommodate internal and external pressures, preserve operational continuity, and reduce the risk of disruption or failure. By contrast, agency theory draws attention to risks associated with discretionary liquid resources, which may weaken managerial discipline and become gradually absorbed into administrative structures (*absorbed slack*), thereby increasing overhead. Taken together, these perspectives offer a coherent analytical basis for examining whether excess cash both protects NPOs from financial distress and simultaneously generates internal dynamics that could attenuate this benefit.

We test these relationships using panel data from 9177 NPOs in England and Wales (42,378 observations) covering the period 2015–2022 and generalized structure equation modeling (GSEM). The findings reveal a dual effect. Excess cash is directly associated with a lower likelihood of future financial vulnerability, consistent with its role as a precautionary buffer. However, excess liquidity is also associated with higher overhead, which in turn slightly increases vulnerability. This pattern supports a *competitive mediation* relationship, that is, “the indirect effect and the direct effect are significant but point in opposite directions” (Hair et al. 2021, 142). In this sense, the protective influence of excess cash remains, but its magnitude is partially offset by internal cost adjustments linked to managerial discretion.

This study makes four contributions to the literature on nonprofit liquidity and financial health. First, it provides one of the few forward-looking assessments of whether excess cash, not liquidity in general, is associated with a lower likelihood of future financial vulnerability. Prior research has examined liquidity as a response to uncertainty, but no empirical evidence tests whether unusually high cash balances fulfill their intended protective function. Second, by integrating behavioral and agency perspectives, the study refines the conceptualization of excess liquidity, showing that its effects depend not only on its magnitude but also on how it is allocated internally, whether it

remains as unabsorbed slack or becomes embedded as absorbed slack. Third, the analysis introduces organizational overhead as a mediating mechanism, offering empirical evidence on whether internal spending patterns amplify, offset, or counteract the precautionary benefits of excess cash. Finally, by comparing alternative measures of financial vulnerability, the study contributes to ongoing methodological discussions and demonstrates the importance of multidimensional approaches for capturing the financial condition of NPOs.

The remainder of the study is structured as follows. In the next section, we present the theoretical arguments supporting the proposed hypotheses between the concepts of excess cash, financial vulnerability, and overhead. Then, we describe the sample, variables, models, and methodology used in this study. After that, we show the descriptive and explanatory results of the study, including robustness and sensitivity analyses. Finally, we present the conclusions, implications, and limitations of the study.

2 | Excess Cash Holding, Overhead Costs, and Financial Vulnerability in NPOs

Research on liquidity in NPOs has grown substantially over the past two decades, focusing mainly on the determinants and consequences of cash holdings and related financial buffers (e.g., Core et al. 2006; Fisman and Hubbard 2003, 2005; Hughes 2013; Lee and Woronkovic 2019; Pizzini and Sterin 2025; Ramirez 2011). However, most prior studies analyze overall liquidity levels rather than the implications of holding liquid resources above what would be expected given an organization's characteristics and operating environment. This distinction matters because liquid resources generally function as unabsorbed slack, offering organizations flexibility to respond to uncertainty. However, it is the portion of liquidity held above expected levels (*excess cash*) that is particularly susceptible to managerial discretion. Such discretionary slack may either remain available as a buffer to strengthen financial resilience or become absorbed into administrative structures, with potential implications for internal allocation patterns and, ultimately, financial condition.

Building on this premise, the following subsections examine the dual role of excess cash in nonprofit financial vulnerability. Section 2.1 develops the expectation that discretionary liquidity can reduce future vulnerability by serving as a buffer against financial shocks. Section 2.2 explores the potential indirect effect of excess cash through overhead costs, reflecting whether slack remains a flexible reserve or becomes absorbed into administrative structures.

2.1 | Excess Cash Holdings and Financial Vulnerability

As previously advanced, previous literature has pointed out several reasons why NPOs hold part of their assets in the form of cash and cash equivalents. Among them, nonprofit research highlights the use of liquidity as a buffer against uncertainty, consistent with the role of slack in helping organizations cope with unpredictable funding shocks (Core et al. 2006; Fisman and

Hubbard 2003; Pizzini and Sterin 2025). This buffering behavior aligns with what the broader finance literature describes as a precautionary use of cash.

This explanation for cash holdings argues that cash reserves reduce the likelihood of having financial problems as they can be used to face situations of need caused by financial disturbances and crises, without having to drastically reduce expenditures and thus the services provided or jeopardize their financial sustainability. This is why these resources are often referred to as “rainy day” funds (e.g., Fisman and Hubbard 2003; Pizzini and Sterin 2025; Zietlow 2020). Although this reason has been raised in several studies (e.g., Fisman and Hubbard 2003, 2005; Pizzini and Sterin 2025), prior research has devoted limited direct attention to whether *excess cash* (defined as liquidity held above expected levels given its characteristics) is associated with lower future financial vulnerability.

In this sense, NPOs might use their excess cash, over and above what they require for the normal operation of the NPO, to cope with unforeseen fluctuations in revenues, thus acting as a buffer against financial difficulties (Fisman and Hubbard 2003; Frumkin and Keating 2010; Ramirez 2011). This additional liquidity allows NPOs to address unexpected needs (Core et al. 2006; Pizzini and Sterin 2025) without reducing program activities, seeking emergency funding (e.g., borrowing or special donation campaigns), or selling fewer liquid assets (Bowman 2002). This buffering role of cash above expected levels is particularly relevant in the nonprofit sector, where there is a traditional reluctance to use debt (Elvira-Lorilla et al. 2024; Mitchell and Calabrese 2019).

Thus, NPOs with these additional cash buffers can be expected to improve their financial health by increasing their financial slack and enhancing their ability to withstand financial shocks (Bowman et al. 2012; Prentice 2016), thereby reducing the probability of entering a situation of financial vulnerability. Conversely, NPOs whose liquidity level are insufficient to maintain normal operations will be less able to cope with unforeseen revenue and expense mismatches, which may increase their likelihood of becoming financially vulnerable.

Hypothesis 1. *The greater the excess cash holdings of an NPO, the less financially vulnerable it is.*

2.2 | The Mediating Role of Overhead Costs in the Relationship Between Excess Cash and Financial Vulnerability

Beyond its direct effect, excess cash may also influence an NPO’s financial condition indirectly. In NPOs, overhead represents resources absorbed into administrative and support structures, a form of absorbed slack that can have different implications for financial resilience. When overhead reflects the resources necessary to coordinate programs and sustain normal operations, absorbed slack may strengthen organizational stability. However, when excess liquidity becomes embedded in administrative structures through managerial discretion, absorbed slack may increase cost rigidity and reduce adaptability.

This duality provides the basis for examining how excess cash relates to overhead costs, and how overhead, in turn, may influence financial vulnerability.

2.2.1 | Excess Cash Holdings and Overhead Costs

As noted above, prior literature highlights the presence of agency problems in NPOs with accumulated cash holdings (e.g., Calabrese and Gupta 2019; Core et al. 2006; Lee and Woronkiewicz 2019). Although some scholars have argued that the nondistribution constraint limits opportunistic behavior by nonprofit employees or managers (e.g., Brody 1996; Hansmann 1980), empirical evidence shows that agency issues can still arise (Hyndman and McConville 2018; Miller 2002). NPOs are not prevented from generating surpluses; rather, they cannot distribute them to organizational insiders and lack mechanisms to refund unused contributions to donors (Hansmann 1980; Core et al. 2006). Prior research shows that the absence of residual claimants does not eliminate incentives for insiders to influence resource allocation (Fama and Jensen 1983; Romero-Merino and García-Rodríguez 2016). As Slivinski (2002, 186) observes, NPOs are not exempt from “moral hazard, opportunism, adverse selection and other problems of asymmetric information.” This view is consistent with subsequent empirical evidence on agency issues in NPOs (e.g., Du Bois et al. 2009).

In this context, excess cash may facilitate the absorption of slack into administrative or support structures, leading to higher overhead costs. Beyond managerial discretion, abundant internal liquidity may also contribute to the gradual expansion of organizational structures over time. Prior nonprofit research shows that when resources are plentiful, organizations may institutionalize additional routines, roles, or support functions that are not strictly required for core service delivery (Frumkin and Keating 2010; Hughes 2013).

These processes do not necessarily imply inappropriate behavior. Administrative expansion may reflect internal preferences, accumulated routines, or the institutionalization of support functions when monitoring is limited. Prior research shows that unusually large liquid reserves are often accompanied by increases in overhead spending (Calabrese and Gupta 2019; Core et al. 2006; Hughes 2013; Lee and Woronkiewicz 2019), indicating that discretionary slack may become embedded within the organization.

Accordingly, we expect that excess cash holdings will be associated with higher overhead costs.

Hypothesis 2. *Higher excess cash holdings are associated with higher overhead costs.*

2.2.2 | Overhead Costs and Financial Vulnerability

Administrative expenditures are necessary to coordinate activities, sustain operations, and support mission delivery, such that both very low and very high levels of overhead may be associated with organizational frictions. Importantly, in this study overhead

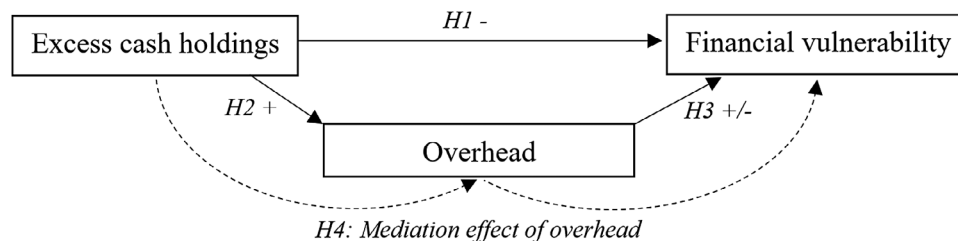


FIGURE 1 | Graphic model.

TABLE 1 | Sample selection.

	NPOs	Obs.
Beginning sample size	176,795	607,743
Less observations without financial information	-155,731	-526,728
Less observations with reporting periods different than a year information and years not in study	-3550	-13,433
Less observations with obvious data errors (such as negative assets or liabilities, negative expenses, no program expenses, no administrative expenses, program expenses in excess of total expenses, no industry classification code)	-3476	-13,272
Less observations with no information for our main variables	-963	-4141
Less observations with less than 3 consecutive years	-3898	-7791
Final sample size	9177	42,378

Abbreviation: NPOs, nonprofit organizations.

is not treated as a component of financial vulnerability itself, as in some composite vulnerability indices, but as an internal allocation outcome that may shape future financial vulnerability through different organizational mechanisms. This conceptual distinction allows overhead costs to operate as a mediating variable, linking excess cash to subsequent financial vulnerability, without implying tautology.

Overhead costs (resources absorbed into administrative and support structures) may influence an NPO's financial condition through two distinct organizational mechanisms. From a behavioral perspective, overhead can operate as absorbed slack that enhances the organization's ability to cope with uncertainty. Administrative structures provide coordination, managerial support, and adjustment margins that allow the organization to reorganize internal activities during periods of turbulence without compromising mission delivery. This view is consistent with the classic argument of Tuckman and Chang (1991) that NPOs with higher administrative expenses are better positioned to manage financial shocks and therefore less financially vulnerable. It is also aligned with the resilience literature (Mitchell 2018; Young and Searing 2022) which shows that NPOs with insufficient administrative capacity may lack the infrastructure needed to mobilize additional resources or adapt effectively when revenues decline (Calabrese 2013; Young and Searing 2022).

In a scenario of decreasing revenues, NPOs with higher administrative spending may have greater scope to adjust internal processes without affecting mission-related activities. They can reduce or reallocate administrative expenses to meet short-term obligations, rather than cutting program expenditures that would

diminish the quantity or quality of services delivered (Amin and Harris 2017; Greenlee and Trussel 2000; Trussel 2002). This capacity to absorb shocks internally reduces the need to seek new sources of revenue in short term or to implement disruptive programmatic changes (Cheng and Yang 2019). In this sense, overhead may function as a protective buffer that provides flexibility in responding to unforeseen changes in the environment (Chikoto and Neely 2014; Lacey and Searing 2015). So, we propose that:

Hypothesis 3a. *Higher overhead costs are associated with lower financial vulnerability.*

However, the protective role of overhead has several limitations. Reducing administrative expenses is rarely immediate or costless: contract renegotiation, staff restructuring, or legal obligations often prevent organizations from adjusting overhead in the same period in which a financial shock occurs (Andrés-Alonso et al. 2015; Thomas and Trafford 2013). When overhead cannot be reduced quickly, it becomes a rigid cost structure that absorbs resources needed to maintain program delivery during downturns.

In addition, overhead carries strong reputational and funding implications. Donors and watchdog agencies frequently interpret high administrative spending as a sign that fewer resources are being directed toward mission activities, even when overhead supports legitimate operational needs (Coupet and Berrett 2019; Elvira-Lorilla et al. 2024; Parsons 2003; Trussel and Parsons 2007; Mitchell and Calabrese 2019; Qu and Daniel 2021). Persistent concerns about "high overhead" may erode donor confidence

TABLE 2 | Definition of variables.

Variable	Definition
Dependent variable	
FINANCIAL VULNERABILITY	Dummy variable that takes the value “1” if the sum of VARNA, TATD, and CASD is equal to two or three, and “0” otherwise
Independent variable	
EXCESS CASH	Variable created from the residuals of the model developed by Core et al. (2006)
Mediating variable	
OVERHEAD	Ratio of administrative expenses: administrative expenses/total expenses
Control variables	
SIZE	Natural logarithm of total assets
AGE	Natural logarithm of the years elapsed since the recording of the NPO
MARGIN	Operating margin: (total revenues – total expenses)/total revenues
REVENUE CONCENTRATION	Hirschman–Herfindahl index using five sources of revenues: donations and legacies, trading activities, charitable activities, investments, and other revenues
GOVERNMENT FUNDING	Proportion of government revenues (grants and government contracts) over total revenues
INDUSTRY	Five dummy variables that take the value “1” depending on which of the five sector categories they are assigned to: Arts, Education, Health, Human Services, and Others
Variables used in the robustness and sensitivity analysis	
VARNA	Dummy variable that takes the value “1” if the value of the proportional variation in net assets over 2 years ($\text{Net assets}_{t+2} - \text{Net assets}_t$)/ Net assets_t of the NPO is in the bottom quintile of the industry to which the organization belongs, and “0” otherwise
TATD	Dummy variable that takes the value “1” if the value of the Total Assets/Total Liabilities ratio of the NPO is in the bottom quintile of the industry to which the organization belongs, and “0” otherwise
CASD	Dummy variable that takes the value “1” if the value of the Current Assets/Short-term Liabilities ratio of the NPO is in the bottom quintile of the sample, and “0” otherwise
TOP EXCESS CASH	Dummy variable that takes the value “1” if the value of EXCESS CASH is in the upper quartile of the sample, and “0” otherwise
POSITIVE EXCESS CASH	Dummy variable that takes the value “1” if EXCESS CASH is positive, and “0” otherwise
CASH 3 MONTHS	Dummy variable that takes the value “1” if cash surpasses 3 months of expenses of the NPO, and “0” otherwise
CRISIS	Dummy variable that takes the value “1” if the year is 2020, 2021, or 2022, and “0” otherwise
Variables used in the excess cash model	
CASH HOLDINGS	Ratio of cash to total expenses of the organization
CVREV	Standard deviation of total revenues divided by the average revenues of the NPO in the period analyzed
Revenues	Natural logarithm of the NPO’s total revenue
Access to debt	Dummy variable that takes the value “1” when the NPO has accessed long-term debt during the period analyzed, and “0” otherwise

TABLE 3 | Descriptive statistics.

Variable	Mean	Median	SD	Min.	Max.
FINANCIAL VULNERABILITY	0.1176	0	0.3222	0	1
EXCESS CASH	0.0000	-0.1397	0.4990	-1.1564	3.8767
OVERHEAD	0.2074	0.1481	0.2126	0	1
SIZE	19,595,238	3,281,325	50,981,143	93,214	359,819,680
AGE	23.6537	20	15.9850	2	61
MARGIN	0.0166	0.0256	0.2538	-1.3816	0.7033
REVENUE CONCENTRATION	0.7525	0.8034	0.2130	0.3125	1
GOVERNMENT FUNDING	0.1828	0.0041	0.2879	0	0.9915
VARNA	0.1998	0	0.3999	0	1
TATD	0.1992	0	0.3994	0	1
CASD	0.1998	0	0.3992	0	1
TOP EXCESS CASH	0.2500	0	0.4330	0	1
POSITIVE EXCESS CASH	0.3289	1	0.4698	0	1
CASH 3 MONTHS	0.5566	1	0.4968	0	1
CRISIS	0.3341	0	0.4718	0	1
CASH HOLDINGS	0.4971	0.3178	0.6207	0.0002	4.1342
CVREV	0.2257	0.1688	0.1966	0.0285	1.1922
Revenues	6,770,654	2,070,916	14,616,991	560,978	107,017,000
Access to debt	0.5444	1	0.4980	0	1

Note: Variables measured as logarithms have been expressed in real terms. For descriptive purposes, we have included the variable CASH HOLDINGS.

and reduce funding flows, increasing the risk of financial vulnerability over time.

These risks are amplified when administrative structures expand through managerial discretion rather than organizational necessity. Agency theory suggests that, in the absence of residual claimants and under conditions of limited external monitoring, managers may favor decisions that increase internal stability or personal utility, such as enlarging administrative staff, increasing compensation, or creating internal units not essential to mission execution. Such discretionary absorption of slack embeds resources in permanent cost structures (increasing fixed costs) rather than preserving them as flexible reserves. As a result, organizations become less adaptable to revenue fluctuations and more exposed to financial stress. Overhead, in this case, does not enhance resilience but instead heightens vulnerability by increasing rigidity and diverting resources away from mission priorities (Andrés-Alonso et al. 2015; Mitchell and Calabrese 2019; Thomas and Trafford 2013). Following this argumentation, our alternative hypothesis is

Hypothesis 3b. *Higher overhead costs are associated with higher financial vulnerability.*

These last two hypotheses (H2 and H3) lead us to propose a fourth hypothesis concerning the mediating role of overhead costs in the relationship between excess cash and financial vulnerability. As stated in hypothesis H2, excess cash may influence the extent with resources becoming absorbed into administrative structures, consistent with prior research showing that liquid

reserves can expand managerial discretion and shape internal allocation. Hypothesis H3, in turn, proposes that overhead costs may affect financial vulnerability, either by enhancing organizational flexibility through additional administrative capacity or by increasing rigidity and generating donor concerns when administrative spending is perceived as excessive. Accordingly, our final hypothesis is

Hypothesis 4. *Overhead costs mediate the relationship between excess cash and financial vulnerability.*

Therefore, based on the above hypotheses and as can be seen in Figure 1, our theoretical framework proposes a direct relationship and a mediated relationship. (Hypothesis H4).

3 | Data, Variables, Models, and Methodology

3.1 | Data

The data used for this study came from the Charity Commission, whose main purpose is to register and regulate NPOs in England and Wales. This database comprises a maximum of 5 years for each NPO and was downloaded between 2021 and 2023, including all publicly available observations. As Table 1 shows, to create our sample, we first eliminated observations of NPOs that did not provide financial information. In addition, observations with a financial period longer or shorter than 1 year were also excluded due to limitations in their comparability, as well as those reporting negative revenues in any of the categories. Finally,

TABLE 4 | Results of estimations.

	FINANCIAL OVERHEAD VULNERABILITY	
	(1)	(2)
EXCESS CASH	0.0102*** (0.0021)	-1.3422*** (0.0786)
OVERHEAD		0.3942*** (0.0669)
SIZE	-0.0061*** (0.0006)	-0.0236** (0.0098)
AGE	-0.0071*** (0.0015)	-0.2110*** (0.0208)
MARGIN	0.0127*** (0.0046)	-0.28633*** (0.0600)
REVENUE CONCENTRATION	-0.1125*** (0.0049)	1.2439*** (0.0774)
GOVERNMENT FUNDING	-0.0140*** (0.0037)	-0.3545*** (0.0542)
Constant	0.4043*** (0.0108)	-2.2223*** (0.1863)
INDUSTRY	<i>Included</i>	<i>Included</i>
Years	<i>Included</i>	<i>Included</i>
Number of obs.	42,378	42,378
Wald chi ²		1035.52***
VIF	1.78	1.73
Direct effect		-1.3422*** (0.0786)
Indirect effect		0.0040*** (0.0011)
Total effect		-1.3382*** (0.0785)

Note: Robust clustered standard errors in parentheses.

Abbreviation: VIF, variance inflation factors.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

selecting observations from the period 2015–2022, the final sample is composed of 9177 NPOs and 42,378 observations.

3.2 | Variables

Table 2 shows the definition of the variables used in this study. Regarding the dependent variable, as a measure of financial vulnerability (FINANCIAL VULNERABILITY), we utilize a multidimensional measure that allows us to collect different financial aspects that characterize this situation (Andres-Alonso et al. 2016; Bowman 2011; Garcia-Rodriguez et al. 2021; Prentice 2016). Specifically, we use the dummy variable proposed by Andres-Alonso et al. (2016). We considered three dimensions for the construction of this variable: proportional variation in net assets over the last 2 years (VARNA) (operational vulnerability); the ratio of total assets divided by total liabilities (TATD) (solvency vulnerability); and the ratio of current assets divided by short-term liabilities (CASD) (liquidity vulnerability). On the basis of this, we created a dummy variable for each of these three dimensions that takes the value “1” if the NPO is in a vulnerable

situation, that is, when it is situated in the bottom quintile of the measure in the industry to which the organization belongs, being “0” otherwise. Then, for each organization, we added the values of the three previous dummies, obtaining a value between 0 and 3 (ordered from least to most financially vulnerable). Finally, like Garcia-Rodriguez et al. (2021), we grouped the results into two categories to create the variable FINANCIAL VULNERABILITY: “financially non-vulnerable organizations” (when the NPO has no or only one problem) and “financially vulnerable organizations” (when the NPO has 2 or 3 financial problems). This grouping, in which more than one problem must be present for an NPO to be classified as financially vulnerable, is based on the fact that the problems identified in each of the three dimensions are of a different nature—they actually represent problems of profitability/sustainability, solvency, and liquidity, respectively—, and, as Andres-Alonso et al. (2016, 2557) state, “this multidimensional approach implies that we must observe more than one variable to confirm that a nonprofit organization is vulnerable.”

The independent variable of this study is excess cash (EXCESS CASH). On the basis of the model developed by Core et al. (2006), we calculate the variable EXCESS CASH from the residuals of the following equation (see Table 2 for definitions of variables):

$$\begin{aligned} \text{CASH HOLDINGS}_{it} = & \beta_0 + \beta_1 \text{CVREV}_{it} + \beta_2 \text{Revenues}_{it} \\ & + \beta_3 \text{Access to debt}_{it} + \beta_4 \text{Access to debt} \\ & \times \text{CVREV}_{it} \\ & + \beta_5 \text{INDUSTRY}_{it} + d_t + \varepsilon_{it} \quad (\text{Model 1}) \end{aligned}$$

As we can see, we control for sector and year, and standard errors are calculated with clusters by organization and year due to the panel format of the data. Table A1 shows the results of this estimation.

Regarding the mediating variable (OVERHEAD), we use the administrative expense ratio, defined as administrative expenses divided by total expenses. In the Charity Commission for England and Wales, administrative and fundraising expenses are reported as separate categories. Prior research adopts different conceptualizations of overhead, sometimes combining administrative and fundraising expenses and in other cases distinguishing between their components (e.g., Chikoto and Neely 2014; Mitchell and Calabrese 2019). In this study, we focus exclusively on administrative expenses in order to isolate resources absorbed into internal administrative structures, which is most closely aligned with our theoretical emphasis on organizational slack and internal cost dynamics.

As Table 2 shows, we also include some control variables that have been commonly used in the financial vulnerability literature (e.g., Andrés-Alonso et al. 2015; Garcia-Rodriguez et al. 2021; Trussel 2002; Tuckman and Chang 1991). Specifically, we include the size and age of the NPO (SIZE and AGE), its operating margin (MARGIN), its revenue concentration (REVENUE CONCENTRATION), and its share of government funding (GOVERNMENT FUNDING). We also include year and sector dummy variables. To avoid perturbations derived from outliers, all variables of a continuous nature have been winsorized at 1%.

TABLE 5 | Robustness and sensitivity analyses: TOP EXCESS CASH, POSITIVE EXCESS CASH, and CASH 3 MONTHS.

	FINANCIAL		FINANCIAL		FINANCIAL	
	OVERHEAD	VULNERABILITY	OVERHEAD	VULNERABILITY	OVERHEAD	VULNERABILITY
	(1)	(2)	(3)	(4)	(5)	(6)
TOP EXCESS CASH	0.0148*** (0.0025)	-1.1921*** (0.0493)				
POSITIVE EXCESS CASH			0.0150*** (0.0023)	-1.2034*** (0.0428)		
CASH 3 MONTHS					0.0116*** (0.0021)	-1.2900*** (0.0333)
OVERHEAD		0.3683*** (0.0677)		0.3870*** (0.0678)		0.4058*** (0.0674)
SIZE	-0.0059*** (0.0006)	-0.0537*** (0.0096)	-0.0060*** (0.0006)	-0.0430*** (0.0095)	-0.0054*** (0.0006)	-0.0711*** (0.00912)
AGE	-0.0072*** (0.0015)	-0.2140*** (0.0208)	-0.0072*** (0.0015)	-0.2132*** (0.0208)	-0.0073*** (0.0015)	-0.2158*** (0.0210)
MARGIN	0.0145*** (0.0045)	-0.4841*** (0.0576)	0.0140*** (0.0045)	-0.4255*** (0.0573)	0.0162*** (0.0045)	-0.4211*** (0.0599)
REVENUE	-0.1121*** (0.0049)	1.2296*** (0.0777)	-0.1123*** (0.0049)	1.2582*** (0.0779)	-0.1109*** (0.0049)	1.1784*** (0.0777)
CONCENTRATION	-0.0135*** (0.0037)	-0.4262*** (0.0548)	-0.0137*** (0.0037)	-0.4188*** (0.0549)	-0.0146*** (0.0037)	-0.3762*** (0.0548)
GOVERNMENT						
FUNDING						
Constant	0.3975*** (0.0104)	-1.2980*** (0.1800)	0.3986*** (0.0105)	-1.4287*** (0.1800)	0.3857*** (0.0104)	-0.4875*** (0.1743)
INDUSTRY	<i>Included</i>	<i>Included</i>	<i>Included</i>	<i>Included</i>	<i>Included</i>	<i>Included</i>
Years	<i>Included</i>	<i>Included</i>	<i>Included</i>	<i>Included</i>	<i>Included</i>	<i>Included</i>
Number of obs.	42,378	42,378	42,378	42,378	42,378	42,378
Wald chi ²		1332.81***		1510.30***		2185.42***
VIF	1.77	1.72	1.77	1.72	1.76	1.71
Direct effect		-1.1921*** (0.0493)		-1.2034*** (0.0428)		-1.2900*** (0.0333)
Indirect effect		0.0054*** (0.0014)		0.0058*** (0.0013)		0.0047*** (0.0011)
Total effect		-1.1867*** (0.0493)		-1.1976*** (0.0427)		-1.2853*** (0.0332)

Note: Entre paréntesis, errores estándar robustos agrupados.

Abbreviation: VIF, variance inflation factors.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

3.3 | Model and Methodology

To carry out our analysis, we use GSEM, that is a robust methodology for testing mediation and suitable for our data, given the binary nature of the dependent variable. In particular, the first part of the model follows a logistic regression (since we analyze the effects on the binary dependent variable), while when analyzing the mediating variable, it follows a linear regression.

Therefore, the GSEM model based on the hypotheses is as follows:

$$\text{FINANCIAL VULNERABILITY}_{it+2} = \beta_0 + \beta_1 \text{EXCESS CASH}_{it} + \beta_2 \text{OVERHEAD}_{it}$$

$$+ \beta_3 \text{CONTROL VARIABLES}_{it}$$

$$+ d_t + \varepsilon_{it}, \quad (\text{Model 2})$$

$$\text{OVERHEAD}_{it} = \beta_0 + \beta_1 \text{EXCESS CASH}_{it} + \beta_2 \text{CONTROL VARIABLES}_{it} + d_t + \varepsilon_{it}$$

where the subscript i identifies the NPO, t indicates the year, d_t represents the annual dummy variables, and ε represents the random error term. As can be seen in the above model, following Garcia-Rodriguez et al. (2021), all the variables that determine the probability of financial vulnerability are lagged by 2 years, given that the vulnerability situation not only reflects a certain asset

TABLE 6 | Sensitivity analysis: VARNA, TATD, and CASD.

	VARNA (1)	TATD (2)	CASD (3)
EXCESS CASH	−0.0126 (0.0280)	−0.7237*** (0.0471)	−1.6404*** (0.0678)
OVERHEAD	0.0932 (0.0570)	0.3140*** (0.0572)	0.3480*** (0.0606)
SIZE	−0.1634*** (0.0082)	−0.0642*** (0.0083)	0.3058*** (0.0080)
AGE	−0.0569*** (0.0176)	−0.2774*** (0.0174)	−0.0119 (0.0184)
MARGIN	−1.1448*** (0.0518)	−0.0645 (0.0506)	−0.1466*** (0.0548)
REVENUE CONCENTRATION	0.1658*** (0.0604)	1.3779*** (0.0639)	1.1621*** (0.0643)
GOVERNMENT FUNDING	−0.1147** (0.0447)	−0.0398 (0.0428)	−0.8956*** (0.0520)
Constant	1.1464*** (0.1454)	−1.0767*** (0.1570)	−7.0320*** (0.1591)
INDUSTRY	<i>Included</i>	<i>Included</i>	<i>Included</i>
Years	<i>Included</i>	<i>Included</i>	<i>Included</i>
Number of obs.	42,378	42,378	42,378
Wald chi ²	1147.34***	1440.53***	2431.93***
Direct effect	−0.0126 (0.0280)	−0.7237*** (0.0471)	−1.6404*** (0.0678)
Indirect effect	0.0010 (0.0006)	0.0032*** (0.0009)	0.0036*** (0.0010)
Total effect	−0.0116 (0.02796)	−0.7206 (0.0470)***	−1.6369 (0.0678)***

Note: Robust clustered standard errors in parentheses.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

situation but also implies a certain evolution over a certain period (as expressed by the operational dimension).

Furthermore, considering the panel structure of our data, we calculated clustered robust standard errors, which allows for correlation within each NPO, while maintaining independence between organizations and years (Coupet and Schehl 2022; Elvira-Lorilla et al. 2024), and calculated variance inflation factors (VIF) to determine whether there are multicollinearity problems among the variables.

4 | Results

4.1 | Descriptive Results

Table 3 shows the descriptive statistics of the variables. Overall, 11.76% of the NPOs are considered financially vulnerable (FINANCIAL VULNERABILITY) by suffering from at least two of the three problems included in the multidimensional measure. The cash holdings of the NPOs in the sample represent, on average, practically half (49.71%) of their total expenses (CASH HOLDINGS). Regarding excess cash (EXCESS CASH), although its mean is zero, most of the organizations have a negative excess

(about two-thirds of the observations). Moreover, NPOs spend, on average, 21% of their expenses on administrative and support structures (OVERHEAD).

In relation to the control variables, on average, NPOs have more than 17 million pounds in assets (SIZE) and were registered almost 24 years ago (AGE). In addition, their operating margin (MARGIN), on average, is positive (1.66%), their revenue concentration (REVENUE CONCENTRATION) is 0.75, and 18% of their revenues come from government sources. By sector, most NPOs belong to Education (35.63%), Health (7.92%), or Other (50.67%) sectors, whereas Human Services and Arts are only represented in minor proportions (3.90% and 1.88%, respectively).

4.2 | Explanatory Results

Table 4 shows the estimates of our model. In the second column of Table 4 (estimations with financial vulnerability as the dependent variable), we observe that EXCESS CASH decreases the probability of a situation of financial vulnerability of the NPO, which confirms our hypothesis H1, in line with the precautionary purpose of excess cash.

To test the indirect effect, in the first column, we can see that, in line with hypothesis H2, excess cash holdings are associated with higher overhead costs, highlighting the agency problems generated by the increased managerial discretion derived from being able to use these resources without direct supervision. Moreover, in the second column of Table 4, we can observe that overhead costs have a significant impact on the probability of financial vulnerability. In this case, the positive coefficient indicates that the higher the proportion of expenses that the NPO allocates to administrative and support structures, the higher the likelihood that the organization will be classified as financially vulnerable, supporting the argument of hypothesis H3b.

Therefore, the results also confirm the mediating effect of overhead costs on the relationship between excess cash and the financial vulnerability of the NPO. However, the results show a competitive mediation relationship (also called opposite or suppressive mediation) (Hair et al. 2021; MacKinnon et al., 2002; Zhao et al. 2010). As Table 4 shows, both the direct effect and the indirect effect are statistically significant but their directions are opposite, whereas the direct effect indicates that excess cash reduces the probability of financial vulnerability for the NPO, the indirect effect shows that greater excess cash increases such probability—excess cash increases overhead costs, which leads to an increase in the likelihood of being financially vulnerable. This is shown by observing the coefficients of the different effects, whereas the coefficient of the direct effect is -1.3422 , that of the total effect (including the indirect effect) is -1.3382 . However, looking at the magnitudes of the above coefficients, this decrease is quite small, so that the financial buffer function of excess cash prevails. Thus, the beneficial effect of excess cash (lower probability of financial vulnerability) is slightly reduced by the indirect effect (harmful to financial health) caused by the increase in overhead costs.

Regarding the control variables, we find that size, age, margin, and revenues from government sources decrease the probability

TABLE 7 | Sensitivity analysis: nonlinear effect and moderation relationship.

	FINANCIAL VULNERABILITY (1)	FINANCIAL VULNERABILITY (2)
EXCESS CASH	−1.6745*** (0.0517)	−1.2789*** (0.0989)
EXCESS CASH ²	0.4324*** (0.0206)	
EXCESS CASH × OVERHEAD		−0.2940 (0.3470)
OVERHEAD	0.4159*** (0.0670)	0.3373*** (0.0969)
SIZE	−0.0154 (0.0096)	−0.0242** (0.00959)
AGE	−0.2045*** (0.0210)	−0.2109*** (0.0208)
MARGIN	−0.2429*** (0.0593)	−0.2857*** (0.0601)
REVENUE CONCENTRATION	1.2336*** (0.0782)	1.2471*** (0.0775)
GOVERNMENT FUNDING	−0.3075*** (0.0545)	−0.3570*** (0.0543)
Constant	−2.5407*** (0.1847)	−2.2027*** (0.1867)
INDUSTRY	<i>Included</i>	<i>Included</i>
Years	<i>Included</i>	<i>Included</i>
Number of obs.	42,378	42,378
Wald chi ²	1781.87	1044.40
VIF	1.78	1.78

Note: Robust clustered standard errors in parentheses.

Abbreviation: VIF, variance inflation factors.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

of being in financial vulnerability 2 years later, whereas revenue concentration increases it. These results are in line with those obtained by previous studies on financial vulnerability in NPOs (Burde et al. 2017; Tevel et al. 2015; Trussel 2002; Tuckman and Chang 1991). Moreover, the model is globally significant, and the VIF values obtained reveal that there are no multicollinearity problems (all estimates have a value below 2.0).

4.3 | Robustness and Sensitivity Analysis

To study the robustness of the results explained above, we estimate the model using alternative measures for the independent variable (TOP EXCESS CASH, POSITIVE EXCESS CASH and CASH 3 MONTHS). These three dummy variables indicate whether the NPO's excess cash is in the top quartile of the sample, is positive, or exceeds 3 months of the NPO's expenditure, respectively. After that, we use as dependent variable each of the three dummy variables utilized to create the multidimensional variable

FINANCIAL VULNERABILITY (VARNA, TATD, and CASD). Next, we test the existence of a nonlinear relationship between excess cash holdings and financial vulnerability, as well as the suitability of a moderating (rather than mediating) model. Moreover, we analyze whether the Covid-19 pandemic crisis may have impacted the relationship previously studied. Finally, we check whether excluding one industry (Others) from the sample influences the results. Tables 2 and 3 show the definitions and descriptive statistics for the variables used in these additional analyses.

First, by using alternative measures of the independent variable, as Table 5 (Columns 1–4) shows, the results of excess cash (measured with TOP EXCESS CASH and POSITIVE EXCESS CASH, respectively) on the likelihood of financial vulnerability and the mediating role of overhead costs remain the same as when using the original independent variable—the control variables also retain their effect. Furthermore, in Columns 5 and 6 of Table 5, we use the 3 months of expenses (CASH 3 MONTHS) as a measure of the independent variable. As can be seen, although

TABLE 8 | Sensitivity analysis: CRISIS.

	FINANCIAL VULNERABILITY	
	(1)	
EXCESS CASH	−1.4008***	(0.1027)
OVERHEAD	0.3939***	(0.0670)
CRISIS	−0.0531	(0.0715)
EXCESS CASH × CRISIS	0.1280	(0.1476)
SIZE	−0.0236**	(0.0096)
AGE	−0.2109***	(0.0208)
MARGIN	−0.2871***	(0.0601)
REVENUE CONCENTRATION	1.2440***	(0.0774)
GOVERNMENT FUNDING	−0.3545***	(0.0542)
Constant	−2.1550***	(0.1770)
INDUSTRY	<i>Included</i>	
Years	<i>Included</i>	
Number of obs.	42,378	
Wald chi ²	1043.73***	
VIF	1.89	
Direct effect	−1.4008***	(0.1027)
Indirect effect	0.0040***	(0.0011)
Total effect	−1.3967***	(0.1027)

Note: Robust clustered standard errors in parentheses.

Abbreviation: VIF, variance inflation factors.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

the nuances of this variable differ from those of EXCESS CASH, the results do not vary with respect to those explained above, maintaining the sense and significance of the relationships.

Next, we utilize as dependent variable each of the three dummy variables (VARNA, TATD, and CASD) used to form the multidimensional measure of financial vulnerability—which captures different aspects of the concept of financial vulnerability (Andres-Alonso et al. 2016). Table 6 shows these analyses, without including the estimations of the relationship between EXCESS

TABLE 9 | Results of estimations without industry OTHERS.

	FINANCIAL OVERHEAD VULNERABILITY	
	(1)	(2)
EXCESS CASH	0.0111***	−1.7256***
	(0.0030)	(0.1215)
OVERHEAD		0.2323**
		(0.1024)
SIZE	−0.0065***	0.0182
	(0.0009)	(0.1478)
AGE	−0.0005	−0.0743*
	(0.0029)	(0.0457)
MARGIN	−0.0053	−0.2509***
	(0.0076)	(0.0963)
REVENUE CONCENTRATION	−0.0916***	1.6515***
	(0.0064)	(0.1114)
GOVERNMENT FUNDING	−0.0217***	−0.4855***
	(0.0049)	(0.0763)
Constant	0.3804***	−3.7877***
	(0.0168)	(0.3034)
INDUSTRY	<i>Included</i>	<i>Included</i>
Years	<i>Included</i>	<i>Included</i>
Number of obs.	21,319	21,319
Wald chi ²		503.97***
VIF	1.71	1.67
Direct effect		−1.7256***
		(0.1215)
Indirect effect		0.0026*
		(0.0013)
Total effect		−1.7230***
		(0.1214)

Note: Robust clustered standard errors in parentheses.

Abbreviation: VIF, variance inflation factors.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

CASH and OVERHEAD, as financial vulnerability has no influence and, therefore, is the same as the one presented in Column 1 of Table 4. As Table 6 shows, the estimations relating to TATD and CASD (Columns 2 and 3) maintain the same results as when using the variable FINANCIAL VULNERABILITY. However, when using VARNA (column 1), we can see that neither the direct effect (the EXCESS CASH coefficient is not significant) nor the indirect effect (the OVERHEAD coefficient is also not significant) is maintained. Moreover, when using TATD and CASD (Columns 2 and 3 of Table 6), the effect and significance of several control variables—SIZE, AGE, MARGIN, and GOVERNMENT FUNDING—change, which shows the importance of operationalizing the concept of financial vulnerability, given that, depending on the variable used, the results can be substantially different.

In Table 7, we also check whether other types of models can better explain this relationship. Specifically, in Columns 1 and 2, we analyze the possible existence of a nonlinear effect of EXCESS CASH on the financial vulnerability of NPOs. When introducing the

quadratic term (EXCESS CASH^2), its coefficient is statistically significant. However, when calculating the inflection point (1.94), we observe that only a very small part of the sample (2%) is above the value at which excess cash ceases to have a positive effect on the financial health of NPOs. Furthermore, in Columns 3 and 4, we check whether the relationship between the variables is better explained by a moderating effect. However, the results show that the interaction between EXCESS CASH and OVERHEAD is not significant and, therefore, the moderation model does not explain this relationship, unlike the proposed mediation model.

Moreover, we analyze the possible impact of the crisis derived from Covid-19 on the relationship between EXCESS CASH and the probability of FINANCIAL VULNERABILITY. We include the dummy CRISIS and, to test a possible moderating effect on this relationship, we incorporate the multiplicative variable $\text{CRISIS} \times \text{EXCESS CASH}$ (the estimation that analyzes the relationship between EXCESS CASH and OVERHEAD is the same as the one presented in Column 1 of Table 4). As Table 8 shows, this crisis had neither a direct effect nor a moderating role in the relationship between excess cash holdings and the probability of financial vulnerability of the NPO.

Finally, we also check whether the analysis without including the industry Others in the sample modifies the meaning of the results. As Table 9 shows, the interpretation of the results remains the same.

5 | Conclusions

This study contributes to a better understanding of why NPOs hold excess cash, an issue traditionally surrounded by normative assumptions rather than empirical validation. This research addresses a key gap by empirically examining two dimensions associated with cash accumulation noted by previous literature—its precautionary value and the risk of being absorbed into administrative structures—simultaneously, providing an integrated test of whether excess cash holdings reduce future financial vulnerability and whether that effect is mediated by changes in overhead costs.

We find that excess cash decreases the probability of financial vulnerability 2 years later—offering robust evidence for its role as a precautionary buffer—but we also show that excess cash increases organizational overhead costs—likely due to increased managerial discretion in the absence of direct oversight—and these overhead costs, in turn, increase financial vulnerability. Therefore, excess cash exerts a dual and opposing influence: It strengthens financial health directly but weakens it indirectly by increasing overhead costs (Andrés-Alonso et al. 2015; Thomas and Trafford 2013). Importantly, however, the net effect is positive. This finding confirms that although excess cash may lead to a marginal increase in overhead, this does not substantially undermine its protective role.

Our results challenge one of the prevailing financial norms in the nonprofit sector: The idea that cash accumulation should be minimized and resources quickly allocated to current programs. Although this approach is often perceived as a sign of efficiency and responsiveness to donor expectations, it can compromise

the organization's long-term resilience. We show that maintaining a financial buffer, even at the risk of increasing the administrative structure, significantly improves organizational sustainability. This repositions excess liquidity not as idle or unproductive capital, but as a strategic safeguard for mission continuity. Moreover, this competitive mediation relationship highlights the importance of not considering isolated relationships. In this sense, the increase in administrative expenses caused by excess cash could seem quite detrimental to the NPO, but its magnitude is offset by the beneficial effect on financial health.

This research offers four main academic contributions. First, it provides the first empirical validation of the precautionary role of excess cash in reducing future financial vulnerability in NPOs, shifting the literature from retrospective interpretations to a forward-looking perspective. In this way, this study reconceptualizes excess liquidity as a tool for enhancing organizational resilience, emphasizing its strategic role within nonprofit financial management. Second, this study refines the conceptualization of excess cash by integrating behavioral—understanding excess cash as unabsorbed slack that might protect NPOs from funding problems—and agency—considering that unusually high cash levels might be absorbed into administrative structures—perspectives. The effect of this excess of liquid assets depends not only on its amount but also on whether internally they remain as unabsorbed slack or are integrated as absorbed slack. Third, it identifies and empirically tests a mediating mechanism—organizational overhead—thus offering a more nuanced understanding of how internal dynamics shape the relationship between cash reserves and financial health. Fourth, it demonstrates that the operationalization of financial vulnerability significantly influences research outcomes, highlighting the importance of adopting multidimensional measurement approaches.

The results of this research also offer practical implications. For managers, excess cash can be justified to stakeholders as a legitimate strategy to enhance financial resilience. At the same time, boards must remain vigilant about potential increases in overhead costs and implement appropriate monitoring mechanisms. Similarly, regulators and supervisory agencies need to rethink the strict limits that are sometimes placed on the accumulation of liquid resources, as these have been found to prevent financial problems. Moreover, donors, who are generally reluctant to allow NPOs to accumulate cash, must understand that these buffers might guarantee the continuity of the organizational mission, which implies a change in the traditional paradigm that all money must be allocated to NPO programs. A balance between financial stability and operational discipline is crucial. In this sense, this study supports the idea that cash reserves should not be seen as a failure to allocate resources, but rather as an investment in the long-term viability of the NPO and its mission.

This study presents some limitations. First, the sample analyzed may have a survival bias, given that inactive organizations do not report financial information. Second, our analysis focuses on NPOs operating within a common law country, which might limit the generalization of our results (Chen et al. 2024). Third, although it has been tested in additional analyses, the period

analyzed may be conditioned to some extent by the crisis resulting from Covid-19, whose characteristics differed from those of the previous financial crisis, but which has had particular relevance in some industries in the nonprofit sector. Moreover, in our model both excess cash and overhead are measured in the same period—as both explain the probability of financial vulnerability—which could influence the results between these two variables. Finally, the predictive capacity of the model used to calculate excess cash is relatively limited.

This study also identifies key directions for future research. First, it could be interesting to simultaneously analyze the determinants of excess cash and its effects on the organizational financial health. Second, testing the model in other time periods could yield valuable insights. Moreover, although the Covid-19 crisis did not cause an increase in vulnerability, the response of administrative expenditures during that sub-period warrants further investigation. Third, cross-national comparisons—especially in civil law contexts—would enhance the generalizability of our findings. Fourth, future research could examine how excess cash affects donor perceptions, transparency, and fundraising outcomes, particularly given the potential reputational implications of holding large amounts of cash. In this sense, the existence of nonlinear relationships between these variables warrants further exploration. Finally, long-term analyses could explore the sustainability of liquidity strategies and the possibility of diminishing returns over extended time horizons.

In sum, this study provides robust empirical support for rethinking liquidity in the nonprofit sector as a cornerstone of strategic financial management. Although much remains to be explored, our findings underscore that treasury management in NPOs is not merely a technical function but a strategic choice that shapes both the survival and legitimacy of mission-driven organizations.

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Ethics Statement

This study is based exclusively on publicly available information. No human participants, personal data, or sensitive information were involved.

Conflicts of Interest

The authors declare no conflicts of interest.

Data Availability Statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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Appendix A

TABLE A1 | Estimation of CASH HOLDINGS.

CASH HOLDINGS	
CVREV	0.5081*** (0.0335)
Revenues	−0.0455*** (0.0025)
Access to debt	−0.0990*** (0.0105)
Access to debt × CVREV	0.1611*** (0.0484)
Constant	1.1532*** (0.0389)
INDUSTRY	<i>Included</i>
Years	<i>Included</i>
Number of obs.	42,378
<i>F</i> (df)	179.60***
<i>R</i> ²	0.0692
VIF	1.69

Note: Robust clustered standard errors in parentheses.

Abbreviation: VIF, variance inflation factors.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.