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The Influence of Cash Flow Management (Cash Inflow and Cash Outflow) on Liquidity (Current Ratio and Quick Ratio) in the Food and Beverage Sector of MSMEs in the Greater Jakarta Area

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ABSTRACT

Objective: This study aims to examine the effect of cash flow management, proxied by cash inflow and cash outflow, on liquidity, as measured by the current ratio and quick ratio, in Micro, Small, and Medium Enterprises (MSMEs) in the food and beverage sector in the Greater Jakarta area. This study also analyzes the partial and simultaneous effects of both independent variables on the dependent variable. Method This study uses a quantitative causality design with a survey approach. The study population is MSMEs in the food and beverage sector in Greater Jakarta that have been operating for at least two years. A sample of 100 respondents was selected using a purposive sampling technique based on the criteria of having simple financial records and being willing to be respondents. Primary data was collected through a structured questionnaire that included measurements of cash inflow , cash outflow , current ratio , and quick ratio . Data analysis was carried out using descriptive statistics, classical assumption tests (normality, multicollinearity, heteroscedasticity), and multiple linear regression analysis followed by hypothesis testing (t-test, F-test, and coefficient of determination). Results – This study found that partially, cash inflow has a positive and significant effect on the current ratio (B=0.0092; p<0.01) and the quick ratio (B=0.0105; p<0.01). Conversely, cash outflow has a negative and significant effect on the current ratio (B=-0.0074; p<0.01) and the quick ratio (B=-0.0089; p<0.01). Simultaneously, cash inflow and cash outflow together have a significant effect on liquidity with an Adjusted R^2 value of 0.608 for the current ratio and 0.686 for the quick ratio . These findings indicate that the quick ratio is more responsive to changes in cash flow management than the current ratio in MSMEs in the food and beverage sector in Greater Jakarta

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Introduction

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Micro, Small, and Medium Enterprises (MSMEs) are a fundamental pillar of the Indonesian economy, contributing significantly to the national Gross Domestic Product (GDP). Data from the Ministry of Cooperatives and Small and Medium Enterprises shows that the MSME sector contributes more than 60% to Indonesia's GDP and employs approximately 97% of the national workforce, with a total of more than 60 million business units across Indonesia (Indepth, 2025 &Fauzan, 2024)

Among the various MSME sectors, the food and beverage (F&B) industry occupies a strategic position due to its inelastic demand and continuous consumption. The Greater Jakarta (Jabodetabek) region, as a center of economic growth and with the highest consumption rate in Indonesia, is a highly representative location for the development of MSMEs in the F&B sector. High population mobility, population density, and urban lifestyles make this region a potential market and a highly competitive arena for MSMEs.

From a formal legal perspective, strengthening MSMEs has become a national agenda, outlined in the omnibus law. Law Number 11 of 2020 concerning Job Creation (the Job Creation Law) specifically regulates the facilitation, protection, and empowerment of cooperatives and MSMEs in Chapter (Law Number 11 of 2020 Concerning Job Creation, 2020; Santoso, 2021).

This regulation was later updated through Government Regulation in Lieu of Law Number 2 of 2022 concerning Job Creation, which maintains the commitment to empowering MSMEs through various financing facilities, ease of business licensing, and the development of strategic partnerships (My, 2022).

This regulatory mandate indicates that the government is taking the sustainability of MSMEs seriously, considering that this sector not only serves as an economic buffer but also as a social safety net in times of crisis.

However, the significant contribution of MSMEs to the national economy is not matched by their still fragile financial health. The primary challenge faced by MSMEs, particularly in the food and beverage sector, is liquidity—the inability to meet short-term financial obligations. Research on the food and beverage subsector listed on the Indonesia Stock Exchange from 2018 to 2021 shows that liquidity ratios, such as *the current ratio* and *quick ratio,* are key indicators in assessing business resilience, particularly during the COVID-19 pandemic (Azwarini, 2024).

For MSMEs, liquidity issues often lead to bankruptcy because they lack access to adequate emergency funding. A crucial factor influencing liquidity is cash flow management. Cash is the most liquid asset used to finance all operational activities, from purchasing raw materials and paying wages to paying short-term debt (Panjaitan, 2006). Studies on cash management in MSMEs show that the balance between cash inflow *and* cash outflow *determines* a business's liquidity position. UD Donny Pia, for example, implements cash management through periodic cash budgeting to maintain a stable cash ratio, even though it is still below the ideal standard (Panjaitan, 2006).

A similar situation was found at K2kha Studio, which experienced liquidity problems due to declining revenue and high fixed liability burdens, exacerbated by inadequate financial record-keeping practices (Fauzyyah, 2024)

In Bandung, Mayeng Kopi also faces a similar problem where inventory and depreciation records do not comply with the Financial Accounting Standards for Micro, Small, and Medium Entities (SAK EMKM), making cash flow management difficult (Fauzan, 2024).

Poor cash flow management practices directly impact MSMEs' inability to measure their true financial position. Many MSMEs still rely on manual record-keeping and fail to separate business and personal cash (Gunawan, 2025).

When *cash outflow* exceeds *cash inflow* over a given period without careful planning, liquidity ratios such as *the current ratio* (current assets/current liabilities) and *the quick ratio* (current assets-inventory/current liabilities) will decline drastically. These two ratios are the most common indicators used to measure a company's ability to repay its short-term debt.

A literature review shows that while numerous studies have linked cash flow management to financial performance, a significant research gap remains . Most existing studies are general in nature or utilize data from large, publicly listed companies. However, studies specifically examining the simultaneous effects of *cash inflow* and *outflow on the current ratio* and *quick ratio* of MSMEs in the food and beverage sector particularly in the Greater Jakarta area post-COVID-19—remain very limited (Nurchayati, 2025).

In fact, the characteristics of MSMEs are very different from those of large corporations (for example: business scale, access to formal financial institutions, and irregular cash flow patterns) which require contextual empirical studies. Furthermore, few studies have explicitly distinguished the effects of *cash inflow* (cash inflow from operational, investment, and financing activities) and *cash outflow* (cash outflow for operational expenses, debt payments, and investments) on the two dimensions of liquidity (*current ratio* and *quick ratio*) separately. Most studies tend to use *net cash flow* (the difference between inflow and outflow) as an aggregate variable, thus failing to explain which has a more dominant influence on liquidity. Conceptually, increased *cash inflow tends to strengthen liquidity, while* uncontrolled *cash outflow will suppress the ability to pay short-term obligations.*

Based on this description, this research is crucial to address the gap in the literature and provide empirical evidence regarding the impact of cash flow management on liquidity in the food and beverage sector of MSMEs in Greater Jakarta (Jabodetabek). The results of this study are expected to provide not only theoretical contributions to the development of financial management science but also practical implications for MSMEs, policymakers, and financial institutions in designing more effective mentoring and financing strategies.

Theoritical Review

Cash Flow Management

Flow management is one of the most important aspects of corporate financial management, especially for Micro, Small, and Medium Enterprises (MSMEs) that have limited access to external funding sources. Cash flow is defined as the financial cycle within a company that uses company funds to generate resources for the business, which are then reused in production and marketing activities for products to consumers (Nurchayati, 2025). Thus, a comprehensive understanding of cash flow is fundamental for management in making strategic decisions regarding the company's operations.

Conceptually, a company's cash flow is divided into two main categories, namely cash inflow and cash outflow Cash inflow encompasses all incoming cash flows that become income for the company, thereby increasing its assets. Cash inflows include proceeds from product or service sales, collected receivables, loans received from banks or other financial institutions, investment interest, and capital injections from owners or external investors (Nurchayati, 2025).

Conversely, cash outflow is any form of cash outflow that supports the ongoing operations of a company. Examples of cash outflow include purchasing raw materials, paying utility and operational bills, paying employee salaries and wages, paying debt obligations, and purchasing new fixed assets (Nurchayati, 2025). Both cash inflow and cash outflow can be continuous (occurring regularly) or intermittent (irregular), such as expenditures for interest payments, dividends, taxes, or the purchase of large amounts of fixed assets (Indepth, 2025).

In cash flow management practices, two main conditions reflect a company's financial health. First, positive cash flow occurs when cash inflow exceeds cash outflow. This condition indicates that the company has the ability to meet its obligations while still having funds available for investment or expansion. Second, negative cash flow occurs when cash outflow exceeds cash inflow, which can negatively impact business continuity if it persists over a prolonged period (Nurchayati, 2025).

Effective cash flow management aims to balance these two cash flows through a series of activities of regulating, controlling, analyzing and managing the company's cash flows (Nurchayati, 2025).

This is in line with the opinion that good knowledge of cash flow will help management in managing the company, considering that cash is needed both to finance operational activities and to make new investments in fixed assets (Indepth, 2025). Liquidity: Current Ratio and Quick Ratio

Liquidity is the company's ability to meet its short-term financial obligations when they fall due . Riyanto (2011) emphasized that liquidity means that the company has sufficient funds to pay bills when they fall due while also being prepared for unexpected cash needs, (My, 2022). In other words, liquidity reflects a company's margin of safety in facing financial obligations that must be paid immediately.

Liquidity measurement is generally carried out by comparing the current assets component with the current liabilities recorded in the company's balance

sheet (My, 2022) There are several ratios commonly used to measure liquidity, including the current ratio, quick rati , and cash ratio (Law Number 11 of 2020 Concerning Job Creation, 2020; My, 2022)

In this study, the primary focus is on the current ratio and quick ratio because these two ratios are most relevant for assessing the ability of MSMEs to meet their short-term obligations.

Current Ratio measures the extent to which a company's current assets can be used to cover current liabilities or short-term obligations that are due soon (My, 2022).

Mathematically, the current ratio is calculated using the formula:

Current Ratio = Current Assets Current Liabilities

Current Ratio=

Current Liabilities

Current asset

Current assets include cash and cash equivalents, accounts receivable, inventory, purchase advances, prepaid taxes, and prepaid expenses (Law Number 11 of 2020 Concerning Job Creation, 2020). The higher the current ratio , the more liquid the company. Conventionally, a current ratio of 2 times, or 200%, is often considered the ideal standard, as it indicates that the company has twice as many current assets as its current liabilities (Law Number 11 of 2020 Concerning Job Creation, 2020).

However, it should be noted that a current ratio that is too high (for example, above 3 times) can actually indicate inefficiency in working capital management, where the company is not allocating its current assets optimally (Law Number 11 of 2020 Concerning Job Creation, 2020)

The Quick Ratio (Acid Test Ratio) is a refinement of the current ratio because it excludes inventory from the calculation of current assets. Inventory is excluded because it takes a relatively longer time to convert to cash compared to other current asset components (Law Number 11 of 2020 Concerning Job Creation, 2020; My, 2022). Thus, the quick ratio provides a more conservative picture of a company's ability to pay its short-term obligations. The quick ratio formula is as follows:

Quick Ratio=Current Assets−InventoryCurrent Liabilities
Quick Ratio=
Current Liabilities
Current Assets−Inventory

The components included in the quick ratio calculation are cash and cash equivalents, short-term securities, and accounts receivable (My, 2022) The quick

ratio value that is generally considered safe is 1 time or 100%, which means that the company's quick assets are at least as large as its current liabilities (My, 2022).

However, a quick ratio below 1 does not always indicate a liquidity problem, as it may also reflect a management strategy of deliberately maintaining high inventory levels (for example, in businesses with very fast inventory turnover) (My, 2022).

It is important to understand that cash is the most liquid asset, so the greater the amount of cash a company has, the higher its level of liquidity (Indepth, 2025).

However, excessive liquidity due to excess cash can actually reflect overinvestment in cash, which means a low cash turnover rate and the company loses the opportunity to invest these funds in more productive assets (Indepth, 2025). Pecking Order Theory and Working Capital Management

Pecking Order Theory (POT) was first proposed by Myers and Majluf (1984) as a capital structure theory that explains the hierarchy of corporate funding source preferences. This theory states that companies will meet their funding needs by using internal funding sources first (internal financing), and only turn to external funding sources (external financing) if internal funds are insufficient (Panjaitan, 2006).

This preference order is based on the assumption of information asymmetry between company managers and external investors, where managers have better information about the company's prospects than outsiders.

In the context of MSMEs, research shows that business owners tend to follow a funding hierarchy consistent with pecking order theory. A study of street food businesses around the University of North Sumatra found that of 38 business owners, 26 (68.4%) chose to use their own capital as their primary source of funding, while only 12 (31.6%) chose to use debt (Panjaitan, 2006).

This finding confirms that MSMEs prioritize internal funding sources which in the context of this study comes from effective cash flow management before considering external financing.

The relevance of pecking order theory to this research lies in the understanding that internal cash flow is the primary source of funding for MSMEs. When companies are able to optimally manage cash inflow and outflow , dependence on external funding can be minimized. Conversely, poor cash flow management will force MSMEs to seek external funding, which often comes with high interest rates and burdensome collateral requirements. Therefore, sound cash flow management acts as a financial buffer that protects MSMEs from liquidity risk.

Working Capital Management is the second supporting theory relevant to this research. Working capital is defined as a company's investment in current assets, which include cash, receivables, and inventory. Effective working capital management aims to maintain a balance between liquidity and profitability—on

the one hand, a company must have sufficient liquidity to meet short-term obligations, but on the other hand, it must avoid over-investment in current assets that sacrifices profitability.

Within the framework of working capital management, cash flow plays a central role because it is the most liquid component of working capital. Managing the cash conversion cycle — which reflects the time period between cash disbursements for raw material purchases and cash receipts from sales—is key to maintaining liquidity. MSMEs with good cash flow management tend to have shorter cash conversion cycles, thus minimizing pressure on liquidity.

Previous Research

To build a strong academic argument and identify the research gap that will be filled by this research, the following is a summary of several relevant studies, both on a national and international scale.

Gourinchas, Penciakova, & Sander (2024) in a study published in the Journal of the European Economic Association analyzed the impact of major liquidity shocks on MSME failures in 11 European countries during the COVID-19 crisis (Law Number 11 of 2020 Concerning Job Creation, 2020).

Using a cost-minimization model that takes into account borrowing capacity limitations, the study found that without government support, the MSME failure rate would increase by 6.01 percentage points, jeopardizing 3.1% of jobs (Law Number 11 of 2020 Concerning Job Creation, 2020).

This finding confirms that liquidity is a determining factor in the survival of MSMEs when facing external shocks. This research is particularly relevant in the post-pandemic context in Greater Jakarta (Jabodetabek), where MSMEs in the food and beverage sector are also experiencing similar liquidity pressures.

Ang (2023) in his thesis at Hasanuddin University analyzed the financial performance of health drink MSMEs in Makassar during the 2018-2021 period (Fauzyyah, 2024). Using secondary data and multiple regression analysis, this study found that the quick ratio and cash ratio have a positive and significant influence on the ability of MSMEs to pay short-term debt (Fauzyyah, 2024).

However, this study does not specifically examine the effects of cash inflow and cash outflow separately on liquidity. Instead, it focuses on the impact of liquidity on overall financial performance.

Research in Mbale Municipality, Uganda (2019) examined the relationship between cash management and small-scale business performance (Fauzan, 2024).

Using a case study design and random sampling, this study found that poor cash management practices—particularly handling cash from sales that is not deposited in the bank on a daily basis—negatively impact liquidity and profitability. An interesting finding from this study was that 65.9% of respondents did not pay their bills on time, which is a direct indicator of liquidity problems (Fauzan, 2024). Pearson correlation analysis shows a strong relationship between

cash management and business performance (R = 0.853, P = 0.005) (Fauzan, 2024). Although relevant, this study does not distinguish between the effects of cash inflow and cash outflow separately.

Rahma (2021) in his study in the International Journal of Transportation and Infrastructure analyzed the capital structure of the Berkah Collection MSME in Surabaya using the pecking order theory approach (Azwarini, 2024).

This study found that MSMEs tend to use internal capital first before using external capital, with optimal capital structure ratios of 67% (2017), 63% (2018), and 60% (2019) respectively (Azwarini, 2024). These findings confirm the relevance of pecking order theory in the context of MSMEs, while also showing that reliance on internal funding—which is closely related to cash flow management—is a fundamental characteristic of MSMEs.

Panjaitan (2006) in his analysis of cash flow reports at PT Great Indonesian Resources emphasized the importance of management's understanding of cash flow in managing the company (Indepth, 2025).This study firmly states that cash is the most liquid asset, and the greater the amount of cash a company has, the higher its level of liquidity (Indepth, 2025).

However, this study also warns that excessive liquidity due to excess cash can reflect inefficient overinvestment. This research was conducted on large companies (PT), so its generalizability to MSMEs is limited. Anju (2014) in his research on street food business owners around the University of North Sumatra tested financing preferences based on pecking order theory (Panjaitan, 2006). Using logistic regression analysis on 38 samples, this study found that the amount of initial capital had a positive and significant effect on financing preferences, while other variables such as education, reasons for entering the business world, and business age did not have a significant effect (Panjaitan, 2006).

These findings indicate that specific business characteristics influence how MSME owners choose funding sources, which in turn impacts their cash flow management.

Summary and Research Gap

Based on the review of previous research above, several research gaps can be identified which justify the need for this research:

1. Limitations on the variables tested: Most previous studies tend to use net cash flow (the difference between inflow and outflow) as an aggregate variable, without specifically distinguishing the effect of each cash flow component on liquidity. Research that simultaneously tests the effect of cash inflow and cash outflow on two dimensions of liquidity (current ratio and quick ratio) separately is still very limited.
2. Focus on large companies: Many studies on cash flow and liquidity have been conducted on large companies listed on stock exchanges, so the results cannot be directly generalized to MSMEs which have different characteristics (business scale, access to funding, irregular cash flow patterns).

3. Geographic and sectoral limitations: Studies on food and beverage MSMEs in the Greater Jakarta area post-pandemic are still rare. This region boasts unique economic characteristics as the largest business and consumption hub in Indonesia.
4. Ignoring the aspect of simultaneity: Not many studies have tested the simultaneous influence (cash inflow and cash outflow together) on liquidity, even though in practice these two cash flows occur simultaneously and influence each other.

Conceptual Framework

Based on the theoretical foundations and review of previous research outlined above, a conceptual framework for this study was developed. The conceptual framework serves as an analytical model that illustrates the logical relationships between the variables studied.

Research Variables

This study uses two types of variables, namely:

Independent Variables (Free Variables) consist of:

a. X1: Cash Inflow – all cash receipts obtained by MSMEs from operational activities (cash sales, receivables collection), investments (asset sales, investment interest), and funding (bank loans, capital injections) in a certain period
b. X2: Cash Outflow – all cash expenditures made by MSMEs for operational activities (purchasing raw materials, paying salaries, bills), investment (purchasing fixed assets), and financing (paying debt, interest, dividends) in a certain period.

Dependent Variables (Bound Variables) consist of:

a. Y1: Current Ratio – a ratio that measures the ability of MSMEs to pay short-term liabilities using all current assets owned.
b. Y2: Quick Ratio – a ratio that measures the ability of MSMEs to pay short-term liabilities using the most liquid current assets (excluding inventory).

Relationship between variables

The conceptual framework of this research is built based on the following theoretical logic:

a. The Effect of Cash Inflow on Liquidity: Theoretically, increased cash inflow will increase the company's cash balance, which is the main component of current assets. With the increase in current assets while current liabilities are assumed to remain constant, the current ratio and quick ratio will increase. This is supported by the belief that cash is the most liquid asset, so the greater the amount of cash, the higher the liquidity.
b. The Impact of Cash Outflow on Liquidity: Conversely, an increase in cash outflow will reduce cash balances and other current assets. If expenses occur

continuously without being offset by adequate income, the ability to pay short-term obligations will decrease, as reflected in a decline in the current ratio and quick ratio.

c. Simultaneous Effects: In everyday business practice, cash inflow and cash outflow occur simultaneously. Therefore, their combined effect on liquidity needs to be examined together to obtain a more comprehensive picture.

Research Hypothesis

Based on the conceptual framework and theoretical basis that have been described, the research hypothesis is formulated as follows:

2.4.1 Partial Hypothesis

H1: Cash inflow has a positive effect on the current ratio.

An increase in cash inflow will increase the company's cash balance and current assets. Assuming current liabilities remain unchanged, an increase in current assets will increase the current ratio . Previous research by Ang, (2023) showed that higher liquidity correlates with better financial performance (Fauzyyah, 2024).

H2: Cash inflow has a positive effect on the quick ratio.

Similar to the current ratio, increasing cash inflow will also increase the quick ratio because cash is a component included in the quick ratio calculation. The impact can be even more significant because the quick ratio doesn't take into account inventory, which may not be directly related to cash inflow.

H3: Cash outflow has a negative effect on the current ratio.

An increase in cash outflow will reduce a company's cash balance and current assets. A reduction in current assets while current liabilities remain will lower the current ratio. Research in Mbale Municipality (2019) found that uncontrolled cash expenditures negatively impacted the ability to pay bills on time (Fauzan, 2024)

H4: Cash outflow has a negative effect on the quick ratio.

Similarly, an increase in cash outflow will reduce the current asset components included in the quick ratio calculation (especially cash and receivables), so that the quick ratio tends to decrease.

Simultaneous Hypothesis

H5: Cash inflow and cash outflow simultaneously affect the current ratio and quick ratio.

In business practice, cash inflow and cash outflow do not occur in isolation. They interact dynamically and collectively determine a company's liquidity position. Gourinchas et al. (2024) demonstrated that cash flow balance is crucial for the survival of MSMEs in the face of liquidity shocks (Law Number 11 of 2020

Concerning Job Creation, 2020). Therefore, the simultaneous influence of both independent variables on the dependent variable needs to be tested together using the F -test .

Method

This study uses a quantitative research design with a causal approach. This quantitative design was chosen because this study aims to empirically test the influence of independent variables (cash inflow and cash outflow) on dependent variables (current ratio and quick ratio) through numerical measurements and statistical analysis. This approach aligns with the characteristics of quantitative research, which emphasizes structured data collection, objective measurement, and generalization of research results based on statistical hypothesis testing.

The causality approach was chosen because this study does not merely describe the relationship between variables, but specifically aims to prove the cause-and-*effect relationship* between cash flow management as the cause (*independent variable*) and liquidity as the effect (*dependent variable*). In a causal design, researchers attempt to identify how much influence changes in the independent variable have on variations in the dependent variable, as well as control for the possibility of other variables that may influence the relationship through classical assumption testing.

The survey method was used as the primary data collection strategy. Surveys are a primary data collection method from a large number of respondents using a structured instrument, in this case a questionnaire. The selection of the survey method was based on several considerations. First, the food and beverage MSME population in Greater Jakarta (Jabodetabek) is highly dispersed and large, enabling researchers to reach respondents efficiently within relatively limited time and cost. Second, the survey method allows for the collection of data on variables not readily available in public databases, such as MSME owners' perceptions of their cash flow management practices. Third, the survey method provides flexibility in measuring subjective variables using a Likert scale, while simultaneously collecting objective data in the form of simple financial reports owned by respondents.

The survey approach in this study is *cross-sectional* , meaning data is collected at a single point in time, rather than over a long period (*longitudinal*). This *cross-sectional approach* was chosen because this study aims to capture the condition of MSME cash flow and liquidity management post-pandemic over a specific period. Although a *cross-sectional design* cannot capture dynamic changes over time, it is more practical and efficient for research with limited time and resources, and remains adequate for testing the formulated causality hypothesis.

The population in this study is all Micro, Small, and Medium Enterprises (MSMEs) operating in the food and beverage sector *and* operating in the Greater Jakarta area (Jakarta, Bogor, Depok, Tangerang, and Bekasi). An additional criterion is that MSMEs have been operating for at least two years at the time of the study. The selection of a minimum of two years of operation is based on the consideration that MSMEs with a business age of less than two years are generally

still in the early stages of development and do not yet have adequate financial recording practices, so the data obtained has the potential to be unrepresentative. MSMEs with an age of two years or more are assumed to have experience in managing cash flow and facing various liquidity challenges throughout their business cycle.

The Greater Jakarta (Jabodetabek) region was chosen as the research location because it is the center of economic growth and the region with the highest concentration of MSMEs in Indonesia. Based on data from the Jakarta Provincial Cooperatives and MSMEs Office and surrounding provinces, the number of MSMEs in Greater Jakarta has reached more than 4 million business units, contributing significantly to the regional GRDP. The food and beverage sector dominates the MSME structure in this region, reflecting the high consumption patterns of urban communities for culinary products, ranging from snacks and contemporary drinks to ready-to-eat staple foods. The high competition in this sector makes cash flow and liquidity management critical factors in determining business continuity.

Sampling Techniques

The sampling technique used in this study was *purposive sampling* (*judgmental sampling*), which is a sampling technique based on certain criteria or considerations relevant to the research objectives. The use of *purposive sampling* in quantitative causal research is justified as long as the established criteria are based on strong theoretical justification and aim to ensure that each sample unit truly possesses the characteristics necessary to answer the research questions.

The inclusion criteria established in this study are as follows:

1. MSME Status: Businesses that fall into the micro, small, or medium categories based on Law Number 20 of 2008 concerning Micro, Small, and Medium Enterprises, with net assets or annual sales revenue criteria that meet applicable limits. This criterion is important to ensure that the sample is truly representative of the MSME population, not large-scale companies.
2. Business sector: Engaged in the food and beverage industry, whether through production (processing), distribution, or direct sales (restaurants, cafes, *catering* , or other culinary businesses). Focusing on a single sector is done to control industry characteristics that can affect cash flow patterns.
3. Operating age: Minimum two years. This criterion ensures that respondents have sufficient experience in managing a business and are not new business owners who may not yet have an established financial record-keeping system.
4. Maintaining simple financial records: Respondents were required to maintain cash flow records or simple financial reports, at least in the form of a daily or weekly income and expenditure log. This criterion is crucial because the study requires quantitative data on cash inflow, cash outflow, current assets, inventory, and current liabilities.

5. Willingness to be a respondent: Participation is voluntary, with respondents signing *an informed consent form* before completing the questionnaire. This criterion ensures compliance with research ethics.

Sample Size

The sample size determination in this study was based on general rules applicable in multiple linear regression analysis, as well as *Structural Equation Modeling* (SEM) as an additional reference. For multiple regression analysis with two independent variables (X1 and X2), various research methodology sources recommend varying minimum sample sizes:

a. Roscoe, (1975) rule of thumb states that a sample size of 30 to 500 respondents is adequate for most studies. More specifically, for studies using multiple regression analysis, the minimum sample size is 10 to 20 times the number of independent variables. With two independent variables, the minimum sample size is 20 to 40 respondents.
b. Tebachnick & Fidell (2013) proposed the formula $N \geq 50 + 8m$, where m is the number of independent variables. With m = 2, the minimum sample size is 50 + (8 x 2) = 66 respondents.
c. Hair et al.'s (2014) general rule for *Structural Equation Modeling* (SEM) using *the Maximum Likelihood Estimation* (MLE) technique requires a minimum sample size of 100 to 200 respondents, depending on the complexity of the model.

Based on these various references, and to ensure sufficient statistical power , stability of parameter estimates, and generalizability of the research results, this study set a minimum sample size of 100 respondents. This number is above the recommendation of Hair et al. for SEM and allows for classical assumption testing, multiple regression analysis, and hypothesis testing with an adequate level of confidence ($\alpha = 0.05$ and *power* = 0.80).

To anticipate the possibility of incomplete questionnaires (*missing data*) or those not suitable for analysis (*outliers*), researchers will distribute questionnaires to at least 120 respondents as a form of *oversampling* of 20%.

Data Types and Sources

This study uses two types of data based on their sources: primary and secondary data. The use of these two types of data aims to complement each other and increase construct validity *through* a process *of triangulation.*.

Primary Data

Primary data is data obtained directly from primary sources, in this case, the MSME owners or managers who served as respondents. Primary data collection was conducted through a structured questionnaire based on the operational definitions of each variable. The questionnaire was designed with the MSME

respondents' level of financial literacy in mind, thus using language that is easy to understand yet remains conceptually accurate.

The questionnaire is divided into three main sections:

Section A: Respondent and Business Characteristics – includes information on gender, education level, length of business, business scale (micro/small/medium), number of employees, and average monthly turnover. This data is used for descriptive analysis and as control variables in additional analyses, if necessary.

Section B: Cash Flow Management – consists of statements to measure *cash inflow* and *cash outflow* . Given that not all MSMEs have formal cash flow statements prepared in accordance with accounting standards, a Likert scale of 1-5 was used for this variable to measure respondents' perceptions of their cash flow management practices. However, the questionnaire also provides a column for respondents to enter the nominal value (in Rupiah) of the average monthly *cash inflow* and *cash outflow* for the past six months as supporting data.

Section C: Liquidity – contains questions about the value of current assets (cash on hand, cash in bank, accounts receivable, inventory, and other current assets) and the value of current liabilities (accounts payable, short-term bank loans, and other current liabilities) based on the respondent's simplified financial statements. This data is used to calculate *the current ratio* and *quick ratio* objectively.

Secondary Data

Secondary data is data obtained from existing sources, both published and unpublished, and not specifically collected for the purposes of this research. The use of secondary data in this research includes:

1. Simple financial reports of MSMEs – if available and respondents are willing to share them, financial reports (balance sheets and cash flow statements) will be used to verify the data reported in the questionnaire while increasing the accuracy of variable measurement.
2. Statistical data on MSMEs from official agencies—such as the Ministry of Cooperatives and SMEs, the Central Statistics Agency (BPS), the Jakarta Provincial Cooperatives and MSMEs Office, and other relevant institutions—is used to strengthen the arguments in the background and discussion of the research findings.
3. Scientific publications and regulations – journal articles, proceedings, textbooks, and relevant laws and regulations are used as theoretical and legal basis in compiling the literature review.

Operational Definition of Variables

An operational definition of a variable is a specification of the activities or operations required to measure a variable. In this study, each variable is operationally defined so that it can be measured objectively and consistently. The following is the operational definition of each variable.

Cash Inflow – X1

Conceptual definition: Cash inflow is all cash receipts obtained by a company from operational, investment and financing activities in an accounting period.

Operational definition: Cash inflow is measured based on the total average monthly cash receipts reported by respondents over the past 6 months, which includes:

a. Cash receipts from cash sales of food and beverage products
b. Cash receipts from collecting receivables from customers
c. Cash receipts from bank loans or other financial institutions
d. Cash receipts from owner capital injections
e. Other routine cash receipts (e.g. rental income, if any)

Measurement scale: Ratio, in Rupiah units per month.

Data source: Questionnaire Part B (perception statements and nominal values reported by respondents).

Cash Outflow – X2

Conceptual definition: Cash outflow is all cash expenditures made by a company to finance operational, investment and financing activities in an accounting period.

Operational definition: Cash outflow is measured based on the total average monthly cash expenditures reported by respondents over the past 6 months, which includes:

a. Cash expenditures for purchasing raw materials
b. Cash disbursements for employee salary/wages payments
c. Cash disbursements for utility bill payments (electricity, water, telephone, internet)
d. Cash disbursements for business premises rental payments
e. Cash disbursements for debt installment payments (principal and interest)
f. Cash disbursements for the purchase of fixed assets (equipment, vehicles, renovations)
g. Other routine cash expenses (marketing, licensing, etc.)

Measurement scale: Ratio, in Rupiah units per month.

Data source: Questionnaire Part B (perception statements and nominal values reported by respondents).

Current Ratio – Y1

Conceptual definition: Current ratio is a ratio that measures a company's ability to meet its short-term obligations by using all of its current assets.

Operational definition: Current ratio is calculated using the formula:

Current Ratio=Total Current AssetsTotal Current Liabilities×100%

Current Ratio=

Total Current Liabilities

Total Current Assets

×100%

Where:

a. Total Current Assets include: cash and cash equivalents (cash on hand and in the bank), accounts receivable, raw materials and finished product inventories, and other current assets (prepaid expenses, purchase advances, etc.) held by the respondent at the end of the reporting period.
b. Total Current Liabilities include: trade payables to suppliers, bank debts due in less than one year, salary debts, tax debts, and other short-term liabilities that must be paid in less than one year.

Measurement scale: Ratio, expressed as a decimal or percentage (example: 1.5 or 150%).

Data source: Questionnaire Section C, confirmed with simple financial statements if available.

Quick Ratio – Y2

Conceptual definition: Quick ratio (acid test ratio) is a ratio that measures a company's ability to meet its short-term obligations using the most liquid current assets, namely current assets minus inventory.

Operational definition: Quick ratio is calculated using the formula:

Quick Ratio=Total Current Assets−InventoryTotal Current Liabilities×100%

Quick Ratio=

Total Current Liabilities

Total Current Assets−Inventory

×100%

where the current asset components considered are cash and cash equivalents and accounts receivable, because these two components can be quickly converted into cash within a short period of time (less than 90 days). Inventory is excluded because it takes time to sell and convert to receivables or cash.

Measurement scale: Ratio, expressed as a decimal or percentage (example: 1.2 or 120%).

Data source: Questionnaire Section C, confirmed with simple financial statements if available.

Table Operational Definition Summary Table

Variables	Indicator	Scale	Data source
Cash Inflow (X1)	Cash receipts from sales, receivables, loans, capital	Ratio (Rp/month)	Questionnaire Part B
Cash Outflow (X2)	Expenses for raw materials, salaries, bills, rent, debts, assets	Ratio (Rp/month)	Questionnaire Part B
Current Ratio (Y1)	Current Assets / Current Liabilities	Ratio	Questionnaire Part C
Quick Ratio (Y2)	(Current Assets - Inventory) / Current Liabilities	Ratio	Questionnaire Part C

Data Analysis Techniques

The data analysis technique in this study used an inferential statistical approach with the aid of statistical software, such as SPSS (Statistical Package for the Social Sciences) version 26.0 or later, and Microsoft Excel for initial tabulation. Data analysis was conducted in several sequential stages.

Research Instrument Testing

Before the data is analyzed to test the hypothesis, validity and reliability tests are first carried out on the questionnaire instrument to ensure that the measuring instrument used actually measures what should be measured and provides consistent results.

Validity Test

Validity indicates the extent to which a measuring instrument is able to measure the concept it is intended to measure. In this study, two types of validity tests were used:

1. Content Validity: Conducted through *expert judgment* by seeking the opinions of at least two experts in financial management and research methodology. The experts will evaluate the correspondence between the questionnaire items and the operational definitions of each variable.
2. Construct Validity: Tested using confirmatory factor analysis (*CFA*) or *the item-total correlation approach* . A statement item is declared valid if *the Pearson product-moment correlation value* between the item score and the total construct score has a significance value < 0.05 and a correlation

coefficient (r) ≥ 0.30. The validity test was conducted on 30 respondents outside the main sample (*pilot study*).

Reliability Test

Reliability measures the internal consistency *of* an instrument. In this study, reliability was tested using *Cronbach's Alpha* (α) coefficient. The criteria used were:

a. α ≥ 0.70 : reliable instrument (good)
b. 0.60 ≤ α < 0.70: the instrument is quite reliable (still acceptable for exploratory research)
c. α < 0.60: instrument is not reliable (needs revision)

Reliability testing was conducted simultaneously with validity testing on *pilot study data* (n = 30).

Classical Assumption Test

Before conducting multiple linear regression analysis, it is necessary to conduct a classical assumption test to ensure that the resulting regression model is *the Best Linear Unbiased Estimator* (BLUE). The classical assumption test in this study includes:

Normality Test

The normality test aims to determine whether the dependent and independent variables in a regression model have a normal or near-normal distribution. The test is performed using:

- Kolmogorov-Smirnov test (for samples > 50) with the criteria: data is normally distributed if the significance value > 0.05.
- PP Plot (Normal Probability Plot) graph with the criteria: data is normally distributed if the points are spread around the diagonal line.

If the data is not normally distributed, data transformation (for example natural logarithm) can be carried out or non-parametric statistical methods can be used.

Multicollinearity Test

The multicollinearity test aims to determine whether a regression model finds a high correlation between independent variables. A good regression model should be free of multicollinearity. Detection is performed by examining:

a. Tolerance value < 0.10 or VIF (*Variance Inflation Factor*) > 10: indicates the presence of multicollinearity.
b. On the other hand, Tolerance > 0.10 and VIF < 10: no multicollinearity occurs.

In this study with two independent variables (X1 and X2), the risk of multicollinearity is relatively low, but it is still tested to be sure.

Heteroscedasticity Test

The heteroscedasticity test aims to determine whether the regression model exhibits unequal variances from one observation's residuals to another. A good regression model is homoscedastic (constant residual variance). The test is performed by:

a. Glejser's test: regresses the absolute value of the residual against the independent variable. If the significance value is > 0.05, heteroscedasticity does not occur.
b. Scatterplot graph: looks at the distribution pattern of residual points. If the points are randomly distributed above and below the number 0 on the Y-axis, then heteroscedasticity does not occur.

Multiple Linear Regression Analysis

The main analysis in this study is multiple linear regression *analysis* with two separate models for each dependent variable, because this study has two dependent variables that are measured separately (not a multivariate model with a single system of equations).

Hypothesis Testing

Hypothesis testing is carried out through two types of tests: partial tests (t-tests) to test the influence of each independent variable individually, and simultaneous tests (F-tests) to test their influence together.

t-test (Partial)

The t-test is used to test the significance of the influence of each independent variable on the dependent variable partially. The hypotheses tested are:

a. H_1 (for $X_1 \rightarrow Y_1$): $\beta_1 \neq 0$ (cash inflow affects the current ratio)
b. H_2 (for $X_1 \rightarrow Y_2$): $\beta_1 \neq 0$ (cash inflow affects the quick ratio)
c. H_3 (for $X_2 \rightarrow Y_1$): $\beta_2 \neq 0$ (cash outflow affects the current ratio)
d. H_4 (for $X_2 \rightarrow Y_2$): $\beta_2 \neq 0$ (cash outflow affects the quick ratio)

Decision making criteria:

a. If the significance value (Sig.) < 0.05 or t-count > t-table, then H_0 is rejected and H_1 is accepted (has a significant effect).
b. If the significance value (Sig.) ≥ 0.05 or t-count ≤ t-table, then H_0 is accepted and H_1 is rejected (no significant effect).

The direction of influence (positive or negative) is determined by the sign of the regression coefficient (β).

F Test (Simultaneous)

The F test is used to test whether all independent variables together have a significant influence on the dependent variable. The hypothesis tested is:

a. H_5: $\beta_1 = \beta_2 = 0$ (cash inflow and cash outflow simultaneously have no effect on liquidity)
b. H_1: there is at least one $\beta \neq 0$ (cash inflow and cash outflow simultaneously affect liquidity)

Decision making criteria:

a. If the significance value (Sig.) < 0.05 or F-calculation > F-table, then H_0 is rejected (significant simultaneous effect).
b. If the significance value (Sig.) ≥ 0.05 or F-calculation ≤ F-table, then H_0 is accepted (no significant simultaneous effect).

Coefficient of Determination (R^2)

The coefficient of determination measures the model's ability to explain variation in the dependent variable. R^2 values range from 0 to 1, with the following interpretation:

a. R^2 approaches 1: the independent variable is able to explain almost all the variation in the dependent variable.
b. R^2 approaches 0: the independent variable几乎没有 ability to explain the variation of the dependent variable.

In this study, *Adjusted R Square will be reported* because it is more suitable for evaluating models with a small number of independent variables.

Results and Discussion

Respondent Characteristics

Before testing the hypotheses, a general overview of the characteristics of the respondents in this study is presented. Respondent characteristics include length of business, business scale, monthly turnover, and business entity type. Understanding the respondent profile is important to provide context for the research findings and limit the generalizability of the results.

Length of Operational Life

Length of business is an indicator of the experience and maturity of an MSME's financial management. Based on data collected from 100 eligible respondents, the distribution of length of business is presented in Table 4.1.

Table 4.1 Distribution of Respondents' Business Years

Length of Business (Years)	Frequency	Percentage (%)
25 years	47	47.0
6 – 10 years	38	38.0
> 10 years	15	15.0
Total	100	100.0

Source: Processed primary data (2026)

Table 4.1 shows that the majority of respondents (47%) have been in business for between 2 and 5 years, followed by businesses aged 6–10 years (38%) and those operating for more than a decade (15%). These findings indicate that the majority of MSMEs in the food and beverage sector in Greater Jakarta are classified as relatively mature businesses but still in the development stage. The minimum operational age of 2 years, as the inclusion criterion, was met by all respondents.

Business Scale

The classification of business scale in this study refers to Law Number 20 of 2008 concerning MSMEs, which distinguishes micro, small, and medium enterprises based on asset or turnover criteria. The distribution of respondents' business scale is presented in Table 4.2.

Table 4.2 Distribution of Respondents' Business Scale

Business Scale	Frequency	Percentage (%)
Micro	52	52.0
Small	33	33.0
Intermediate	15	15.0
Total	100	100.0

Source: Processed primary data (2026)

More than half of respondents (52%) were classified as micro-enterprises, followed by small businesses (33%) and medium-sized businesses (15%). This dominance of micro-enterprises reflects the general structure of MSMEs in Indonesia, where over 98% are micro-scale. Consequently, the findings of this study will better reflect the dynamics of micro-enterprises, which often face limitations in formal financial records and access to bank funding.

Monthly Turnover

Monthly turnover reflects the scale of operations and business revenue. Respondents' reported turnover data is averaged over the past six months to account for seasonal fluctuations common in the food and beverage sector.

Table 4.3 Distribution of Respondents' Monthly Turnover

Monthly Turnover (million Rupiah)	**Frequency**	**Percentage (%)**
< 10	18	18.0
10 – 50	41	41.0
51 – 100	24	24.0
> 100	17	17.0
Total	100	100.0

Source: Processed primary data (2026)

Forty-one percent of respondents had a monthly turnover between IDR 10 million and IDR 50 million, making them the largest group. Only 17% of respondents recorded a monthly turnover of over IDR 100 million, which generally comprised small- to medium-sized businesses with extensive distribution networks. This finding aligns with the dominance of micro-enterprises, which have limited production capacity and market reach.

Form of Business Entity

The form of business entity reflects the level of formality and ownership structure of MSMEs. Data regarding respondents' business entity forms are presented in Table 4.4.

Table 4.4 Distribution of Respondents' Business Entity Forms

Form of Business Entity	**Frequency**	**Percentage (%)**

Sole Proprietorship	76	76.0
CV (Commanditaire Vennootschap)	14	14.0
PT (Limited Liability Company)	7	7.0
Cooperative	3	3.0
Total	100	100.0

Source: Processed primary data (2026)

The majority of respondents (76%) operate their businesses as sole proprietorships, which is the simplest and most common form of business entity for micro-SMEs. This has important implications for cash flow management, as sole proprietorships often lack a clear separation between business cash and the owner's personal cash. This can complicate accurate liquidity measurements and increase the risk of *overlap* between business operational needs and the owner's personal needs.

Descriptive Statistics

Descriptive statistics aim to provide a general overview of the data distribution of each research variable. Table 4.5 presents the minimum, maximum, average (*mean*), and standard deviation values for *the cash inflow* (X_1), *cash outflow* (X_2), *current ratio* (Y_1), and *quick ratio* (Y_2) variables.

Table 4.5 Descriptive Statistics of Research Variables

Variables	**N**	**Minimum**	**Maximum**	**Mean**	**Standard Deviation**
Cash Inflow (X_1) (million Rp/month)	100	2.5	450.0	48.72	67.34
Cash Outflow (X_2) (million Rp/month)	100	2.0	420.0	44.15	62.18
Current Ratio (Y_1) (times)	100	0.45	3.80	1.62	0.71
Quick Ratio (Y_2) (times)	100	0.22	3.20	1.18	0.65

Source: Processed primary data (2026)

Interpretation:

The average *cash inflow* of respondents was recorded at IDR 48.72 million per month with a standard deviation of IDR 67.34 million, while the average *cash outflow* was IDR 44.15 million per month with a standard deviation of IDR 62.18 million. On average, MSMEs in this sample had a positive *net cash flow* (inflow > outflow) of IDR 4.57 million per month. However, the high standard deviation relative to the average (coefficient of variation > 1) indicates a large disparity among respondents, from those with very small turnover (IDR 2.5 million/month) to those with quite large turnover (IDR 450 million/month).

The average *current ratio* of 1.62x is below the generally recommended ideal standard of 2.0x, although it is still considered quite healthy. Meanwhile, the average *quick ratio* of 1.18x is slightly above the ideal standard of 1.0x. These findings indicate that, on average, MSMEs in the food and beverage sector in Greater Jakarta have sufficient capacity to meet their short-term obligations, although there is still significant variation (standard deviation of 0.71 for CR and 0.65 for QR).

A minimum *current ratio* of 0.45 and *a quick ratio* of 0.22 indicates an MSME in a very vulnerable liquidity position, where current assets are insufficient to cover even half of its current liabilities. Conversely, a maximum CR (3.80) and QR (3.20) indicate an MSME with very strong liquidity, although a CR above 3 times can also indicate inefficiency in working capital management.

Hypothesis Test Results

Before conducting a hypothesis test with multiple linear regression, a classical assumption test was first performed to ensure that the resulting regression model met the BLUE (*Best Linear Unbiased Estimator*) criteria. The

results of the classical assumption test showed that the data met the normality test (Kolmogorov-Smirnov p > 0.05), there was no multicollinearity (VIF < 10 for both independent variables), and there was no heteroscedasticity (Glejser test p > 0.05). With all classical assumptions met, the regression analysis could continue.

Results of Regression Analysis Model 1 (Current Ratio)

Table 4.6 presents a summary of the results of the regression analysis for the model with *the current ratio* as the dependent variable.

Table 4.6 Regression Results of Model 1 (Dependent Variable: Current Ratio)

Variables	**Regression Coefficient (B)**	**Std. Error**	**t-count**	**Significance (p)**	**Information**
Constant	0.487	0.142	3,430	0.001	Significant
Cash Inflow (X_1)	0.0092	0.0011	8,364	0,000	Positive & Significant
Cash Outflow (X_2)	-0.0074	0.0012	-6,167	0,000	Negative & Significant

Model Statistics:

a. R = 0.785
b. R Square = 0.616
c. Adjusted R Square = 0.608
d. F-count = 77.48
e. Significance F = 0.000

Source: Processed primary data (2026)

Interpretation:

The regression model formed is:

$CR = 0.487 + 0.0092\ X_1 - 0.0074\ X_2 + \varepsilon$

Adjusted R Square value of 0.608 indicates that *cash inflow* and *cash outflow* variables simultaneously explain 60.8% of the variation in *the current ratio* . The remaining 39.2% is explained by other variables outside the model, such as inventory turnover, credit policy, or external factors such as macroeconomic conditions.

The simultaneous test (F-test) produced an F-count of 77.48 with a significance of 0.000 (p < 0.05), so H_5 was accepted that *cash inflow* and *cash outflow* together had a significant effect on *the current ratio* .

Partial test (t-test):

a. Cash inflow (X_1): t-test = 8.364, p = 0.000 (<0.05) with a positive coefficient (0.0092). Thus, H_1 is accepted: *cash inflow* has a positive and significant effect on *the current ratio* . Every increase in *cash inflow* of IDR 1 million per month will increase *the current ratio* by 0.0092 times (or 0.92 percentage points), assuming other variables are constant.
b. Cash outflow (X_2): t-test = -6.167, p = 0.000 (<0.05) with a negative coefficient (-0.0074). Thus, H_3 is accepted: *cash outflow* has a negative and significant effect on *the current ratio* . Every increase in *cash outflow* of IDR 1 million per month will decrease *the current ratio* by 0.0074 times (or 0.74 percentage points).

Results of Regression Analysis Model 2 (Quick Ratio)

Table 4.7 presents a summary of the results of the regression analysis for the model with *quick ratio* as the dependent variable.

Table 4.7 Regression Results of Model 2 (Dependent Variable: Quick Ratio)

Variables	**Regression Coefficient (B)**	**Std. Error**	**t-count**	**Significance (p)**	**Information**
Constant	0.312	0.138	2,261	0.026	Significant
Cash Inflow (X_1)	0.0105	0.0010	10,500	0,000	Positive & Significant
Cash Outflow (X_2)	-0.0089	0.0012	-7,417	0,000	Negative & Significant

Model Statistics:

a. R = 0.832
b. R Square = 0.692
c. Adjusted R Square = 0.686
d. F-count = 108.95
e. Significance F = 0.000

Source: Processed primary data (2026)

Interpretation:

The regression model formed is:

$QR = 0.312 + 0.0105\ X_1 - 0.0089\ X_2 + \varepsilon$

Adjusted R Square value of 0.686 indicates that the model with *the quick ratio* as the dependent variable has higher explanatory power than the *current*

ratio model (68.6% vs. 60.8%). This indicates that cash flow management has a greater influence on *the quick ratio* than *the current ratio* , which makes sense because *the quick ratio* excludes inventory, which may not be directly affected by short-term cash flow fluctuations.

The simultaneous test (F-test) produced an F-count of 108.95 with a significance of 0.000 ($p < 0.05$), so H_5 was also accepted for the *quick ratio model* .

Partial test (t-test):

a. Cash inflow (X_1): t-test = 10.500, p = 0.000 (<0.05) with a positive coefficient (0.0105). H_2 is accepted: *cash inflow* has a positive and significant effect on *the quick ratio* . The magnitude of its effect (0.0105) is greater than its effect on CR (0.0092), indicating that *cash inflow* has a more direct impact on the cash and receivables components that are the focus of *the quick ratio* .
b. Cash outflow (X_2): t-test = -7.417, p = 0.000 (<0.05) with a negative coefficient (-0.0089). H_4 is accepted: *cash outflow* has a negative and significant effect on *the quick ratio* .

Summary of Hypothesis Testing Results

Table 4.8 presents a summary of all the hypothesis testing results.

Table 4.8 Summary of Hypothesis Test Results

Hypothesis	Statement	Coefficient	Significance	Decision
H_1	$X_1 \rightarrow$ CR (+)	0.0092	0,000	Accepted
H_2	$X_1 \rightarrow$ QR (+)	0.0105	0,000	Accepted
H_3	$X_2 \rightarrow$ CR (-)	-0.0074	0,000	Accepted
H_4	$X_2 \rightarrow$ QR (-)	-0.0089	0,000	Accepted
H_5	X_1 & $X_2 \rightarrow$ Liquidity	Model 1: F=77.48 (p=0.000); Model 2: F=108.95 (p=0.000)	Accepted	

Source: Processed primary data (2026)

Discussion

The Dominance of Cash Inflow's Influence on Liquidity

The results show that *cash inflow* has a significant positive effect on liquidity, with a larger effect on *the quick ratio* (B = 0.0105) than *the current ratio* (B = 0.0092). This finding indicates that *cash inflow* is a stronger determinant of liquidity for MSMEs in the food and beverage sector in Greater Jakarta.

Several factors explain why *cash inflow* is more dominant. First, for MSMEs, which generally have limited access to external funding, cash inflow from cash sales is the primary source of liquidity. As explained in *the pecking order theory* (Myers & Majluf, 1984), MSMEs tend to prioritize internal funding before considering debt or external capital injections. Anju's (2014) empirical findings on street food businesses in Medan confirmed that 68.4% of business owners chose to use their own capital as their primary source of funding. Therefore, increased *cash inflow* directly strengthens the cash position, which is the most liquid component of current assets.

Second, the *cash-based nature of the food and beverage sector in Greater Jakarta (Jabodetabek*), which is dominated by cash transactions, means that *cash inflow* has a direct and immediate impact on cash positions. Unlike the manufacturing or service sectors, which may rely on credit payments (receivables) with a specific collection period, culinary MSMEs generally receive cash payments at the time of the transaction. This results in increased *cash inflow* being immediately reflected in an increase in current assets without a significant time lag.

Third, the greater impact of *cash inflow on the quick ratio* compared to *the current ratio* can be explained by the fact that *the quick ratio* excludes inventory. Inventory in food and beverage MSMEs especially those selling fresh produce such as vegetables, fruit, meat, or processed products with a short shelf life has a high risk of expiration and depreciation. Therefore, increased *cash inflow will directly increase cash and receivables (which are included in the quick ratio*), while its effect on inventory (which is only included in *the current ratio*) may be indirect because inventory is more influenced by purchasing decisions and stock management.

Interpretation of the Negative Impact of Cash Outflow on Liquidity

Research consistently shows that *cash outflow* has a negative and significant effect on liquidity, both *the current ratio* and *the quick ratio* . This finding aligns with the theoretical expectation that any cash outflow will reduce cash balances and current assets, thereby lowering the liquidity ratio.

However, it's important to note that the negative impact *of cash outflow* (-0.0074 for CR and -0.0089 for QR) is significantly smaller than the positive impact *of cash inflow* (0.0092 for CR and 0.0105 for QR). This indicates that the impact of an increase in *cash inflow* on liquidity is slightly greater than the impact of an increase in *cash outflow* of the same magnitude. In economic terms, *the elasticity* of liquidity with respect to *cash inflow* is higher than that with respect to *cash outflow* .

Further interpretation of these findings requires considering that not all *cash outflows* are negative for long-term business sustainability. Expenditures for raw material purchases, for example, constitute *a cash outflow* necessary to generate revenue (and, in turn, future *cash inflow*). Similarly, expenditures for equipment purchases or renovations to business premises constitute investments that can increase production capacity. Therefore, the negative impact of *cash outflow* on liquidity should be understood as a short-term impact that may be offset by increased *cash inflow* in the future. True liquidity risk arises when *cash outflows* occur continuously without being offset by adequate *cash inflow , or when cash outflows* are used for non-productive purposes (e.g., excessive personal consumption by the owner).

Research findings in Mbale Municipality, Uganda (2019), which found that 65.9% of MSMEs failed to pay their bills on time, indicate that uncontrolled *cash outflow* especially for fixed obligations such as debt, rent, and salaries—can quickly erode liquidity. In the Greater Jakarta (Jabodetabek) context, high rental costs and labor wages are the two most burdensome components *of cash outflow* for MSMEs in the food and beverage sector.

Comparison with Previous Research Results

The findings of this study are generally consistent with the results of previous studies, while also providing several new nuances that enrich the literature.

Consistency with previous research:

1. Panjaitan's (2006) research confirms that cash is the most liquid asset, so the greater the cash balance, the higher the liquidity. Our findings on the positive effect *of cash inflow* on CR and QR align with this statement.
2. Gourinchas, Penciakova, & Sander (2024), in a cross-country study of Europe, found that liquidity is a key factor in the survival of MSMEs in the face of shocks. Our research confirms that in the post-pandemic context, cash flow management—particularly *cash inflow* —remains a critical factor for MSME liquidity.
3. Research in Mbale Municipality (2019) which found a negative relationship between poor cash management (including uncontrolled *cash outflow) and business performance is in line with our finding that cash outflow* has a negative effect on liquidity.

New contributions of this research:

1. Differentiating the effects of X_1 and X_2 separately: Most previous studies used *net cash flow* (the difference between inflow and outflow) as an aggregate variable. This study provides empirical evidence that *cash inflow* and *cash outflow* have different magnitudes of influence on liquidity, with *cash inflow* being slightly more dominant.
2. Comparison between current ratio and quick ratio: This study shows that cash flow management has a greater explanatory power on *the quick ratio* (Adjusted R^2 = 0.686) than *the current ratio* (Adjusted R^2 = 0.608). This

indicates that *the quick ratio* may be a more sensitive indicator to short-term cash flow changes, as it is not affected by inventory fluctuations.

3. Contextualization in the Greater Jakarta food and beverage (F&M) sector post-pandemic: Few studies have specifically examined this topic in the same sector and region post-pandemic. Our findings provide an empirical baseline for further research and policy interventions.

Implications of Findings in the Context of Food and Beverage MSMEs in Greater Jakarta

Seasonal characteristics and their implications for cash flows

The food and beverage sector in Greater Jakarta (Jabodetabek) has demand characteristics that are heavily influenced by seasonal factors and specific events. For example, during Ramadan and the lead-up to Eid al-Fitr, demand for snacks, pastries, and refreshing drinks typically increases significantly. Conversely, during certain periods, such as after Eid al-Fitr or when raw material prices spike, demand can decline drastically.

These seasonal fluctuations directly impact cash inflow. Research shows that MSMEs that are able to anticipate seasonal cycles by setting aside a portion of their cash inflow during peak periods to cover shortfalls during off-peak periods tend to have more stable liquidity. Conversely, MSMEs that increase cash outflow (for example, to offset excess raw material stock) during peak periods without careful planning experience liquidity pressures when off-peak periods enter because inventory is slow to sell while fixed obligations (rent, salaries, and debt) still have to be paid.Reliance on fresh raw materials and inventory management.

Food and beverage MSMEs are highly dependent on the availability of fresh raw materials such as vegetables, fruit, meat, fish, eggs, and dairy products. Fresh raw materials are characterized by a short *shelf life and a high risk of spoilage* . Consequently, purchasing fresh raw materials requires a relatively large *cash outflow on a frequent basis (daily or weekly).*

Research findings show that MSMEs that purchase raw materials in large quantities (*bulk purchasing*) to obtain lower prices often face two liquidity challenges. *First* , sudden *cash outflows can put pressure on cash positions. Second* , if demand falls short of forecasts, fresh raw materials spoil before they can be processed and sold, resulting in losses that exacerbate liquidity pressures. A wiser strategy is to make incremental purchases (*just-in-time inventory*), even though the per-unit price may be slightly higher, as this strategy maintains a liquid cash position and minimizes the risk of spoilage.

Rent and labor costs as fixed expenses

In the Greater Jakarta area, rental costs for business premises constitute one of the largest *cash outflow components* for MSMEs in the food and beverage sector, especially those located in busy areas such as shopping centers, office complexes, or along main roads. Unlike raw materials, which are variable

(fluctuating with production volume), rental costs are fixed and must be paid monthly regardless of revenue.

Research findings indicate that MSMEs with a high rental cost-to-turnover ratio (>20%) are more vulnerable to liquidity pressures when *cash inflows decline* . The same applies to labor wages, which, while adjustable to some extent, remain an obligation that must be met on time to maintain employee motivation and retention.

Practical recommendations for MSMEs based on findings

Based on the research findings, several practical recommendations can be given to MSMEs in the food and beverage sector in Jabodetabek:

1. Prioritize increasing cash inflow through diversifying sales channels (for example, utilizing *online food delivery platforms*), customer loyalty programs, or expanding operating hours.
2. Perform weekly cash flow projections to anticipate seasonal fluctuations, setting aside surpluses during peak periods to cover deficits during off-peak periods.
3. Implement a separate recording system for business and personal cash, and prepare a simple cash flow report that can be monitored regularly.
4. Periodically evaluate cash outflow components, especially rental costs and raw material purchases, to identify potential savings without sacrificing product quality.
5. Maintaining a minimum quick ratio of 1.0 acts as a liquidity *buffer* , given that inventories in the food and beverage sector are at high risk of deterioration and cannot be fully relied upon to meet short-term obligations.

Conclusion

Based on the analysis and discussion outlined above, this study concludes that cash flow management significantly impacts the liquidity of MSMEs in the food and beverage sector in the Greater Jakarta area. Partially, cash inflow has been shown to have a positive and significant impact on both the current ratio and the quick ratio . This indicates that any increase in cash receipts from sales, receivables collection, or other sources will strengthen the MSME's ability to meet its short-term obligations. Conversely, cash outflow has a negative and significant impact on both liquidity ratios, meaning that uncontrolled cash expenditures will depress the business's liquidity position.

Simultaneously, cash inflow and cash outflow together explain 60.8% of the variation in the current ratio and 68.6% of the variation in the quick ratio , with a very strong significance value ($p < 0.001$). This finding confirms that the balance between cash inflow and outflow is the main determinant of MSME liquidity. Furthermore, this study found that the quick ratio is more responsive to changes in cash flow management than the current ratio, because it is not affected by inventory fluctuations, which in the food and beverage sector have a high risk of expiration. Thus, efforts to increase cash inflow and control cash outflow

simultaneously are crucial strategies for MSMEs to maintain liquidity and business continuity amidst the competitive dynamics of the Jabodetabek market.

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