

ASSET AND LIABILITY MANAGEMENT (ALM) STRATEGY IN MICROFINANCE INSTITUTIONS FOR LONG-TERM FINANCIAL STABILITY

Gunawan Widjaja

Universitas 17 Agustus 1945 Jakarta, Indonesia

widjaja_gunawan@yahoo.com

Abstract

Managing assets and liabilities is very important because disbursement of funds and distribution of funds in the form of credit must be carried out in order to optimize the funds collected to gain profits for the bank. ALM is a process of planning, organizing and monitoring which functions as integrated control of assets and liabilities which are interconnected in an effort to achieve profits for microfinance institutions. The method used is a literature review. Writing this discussion uses information procedures regarding the discussion, in the form of previous research, then reviewing and analyzing various sources related to the discussion raised by the researcher. This research discusses the theory of asset and liability management, a review of the basic concepts and importance of ALM, an introduction to the role and challenges of MFIs in the economy, long-term financial stability, and a discussion of the factors that influence MFI financial stability.

Keywords: Strategy, asset and liability management, microfinance institutions, long-term financial stability.

INTRODUCTION

Asset and liability management, also known as Assets and Liability Management (ALM), is guaranteed to exist in every microfinance institution. Both sides of the balance sheet, namely the liabilities side which describes the source of funds and the assets side which describes (allocation) of funds must be managed efficiently, effectively, productively and as optimally as possible because it is the main business for every bank. Management of assets and liabilities is called Asset and Liability Management, known as ALM (Asset and Liability Management). Assets and Liabilities in each microfinance are managed by the Assets and Liability Committee (ALCO) which is organizationally invisible in the organizational structure, but its activities exist and are managed in team work and operationally are generally within the treasury division, which is led by the deputy main director / directors in charge of the treasury division and the treasury division generally as chief executive with members coming from the treasury division, credit division, research & development division, central

administration division. The existence of ALM is to manage risks that may arise in daily business activities which are designed in such a way as to maximize income while limiting asset and liability risks by complying with monetary policy provisions and bank supervision through an organization called ALM. In its implementation, to establish a policy, ALM requires sufficient information and appropriate analysis results. The information required consists of external and internal data. This ALM functions to provide recommendations to bank management so that they can minimize the risks faced and optimize profits while remaining within the corridor in accordance with applicable regulations. Thus, a strong quality ALM will provide a strong and clear foundation in determining the business strategy of microfinance institutions (Choirunnisak, 2022).

Managing assets and liabilities is very important because disbursement of funds and distribution of funds in the form of credit must be carried out in order to optimize the funds collected to gain profits for the bank. Assets and Liabilities Management (ALM) is a process of planning, organizing and monitoring which functions as integrated control of assets and liabilities which are interconnected in an effort to achieve profits for microfinance institutions.

Since the creation of this ALM, the importance of a bank managing liquidity has become more widely acknowledged. In particular, the focus has been on reducing the risk of liquidity caused by a lack of funds, which could force the bank to sell some of its assets at a loss in order to meet its obligations or look for funds at an interest rate higher than the market rate. Bank income will be impacted by this. It is probable that public trust in the bank will diminish if this situation persists (Naning Fatmawati, 2018).

ALM is a crucial idea that is applied across many sectors, but it is most prevalent in the banking and insurance sectors. By raising net interest income, a strong policy framework for asset management can boost bank profitability. An improved perspective would be a well-coordinated procedure to mix the balance sheet elements appropriately. The technique's main idea is that a business needs to have enough assets to cover its liabilities. Ultimately, asset-liability mismatches (ALM) can provide hazards, and ALM is a methodical technique that helps mitigate those risks.

Many firms can gain from implementing an ALM framework since it's critical for them to comprehend all of their assets and liabilities. Implementing asset and liability management allows institutions to proactively manage their liabilities, which helps them better plan for unforeseen future events. Businesses can identify and quantify risks on the balance sheet and lower the

risk of mismatches between assets and liabilities by utilizing the ALM framework (Muslina, 2016).

Financial organizations can decrease risk and increase efficiency and profitability by carefully aligning assets and liabilities. Because of this, businesses must create custom ALM frameworks to account for particular goals, risk tolerances, and legal requirements. ALM is also a long-term approach that uses data sets and forecasts for the future. In the end, ALM is a synchronized procedure that manages the whole balance sheet of a company.

RESEARCH METHOD

A method is an approach that can be utilized to accomplish a task. In the meantime, research methodologies might be understood as research when they are used to uncover phenomena already present or gather data (Zulkarnaen, W., et al., 2020).

Systematic literature review is a method for examining a corpus (collection of) scientific literature, to develop insights, critical reflection, future research paths, and research questions (Dumay et al., 2016). The aim of this literature review study is to examine asset and liability management (ALM) strategies in microfinance institutions for long-term financial stability. The research was conducted by collecting reviewed papers through a combination of systematic and electronic processes. The first step is to search for the title of the article according to the keywords, namely asset and liability management, microfinance institutions, and long-term financial stability. This article was obtained from Google Scholar. In the second stage, journals and articles are classified based on the journal concerned: accounting journals, economic journals, business journals, management journals. The third step is to determine inclusion and exclusion criteria that are useful for selecting which articles or journals can be used. The fifth step is to write the theoretical basis using a writing style of detailed description, study analysis, study approach, and theme or subject matter.

Writing this discussion uses information procedures regarding the discussion, in the form of previous research, then reviewing and analyzing various sources related to the discussion raised by the researcher.

RESULT AND DISCUSSION

Asset and Liability Management Theory (ALM)

The process of managing cash flows and assets to lower the risk of loss from failing to make timely payments on debts (liabilities) is known as asset and

liability management, or ALM. Implementing appropriate asset and liability management strategies can increase a company's profits. The main concept of asset and liability management is to focus on timing or time management of cash flow appropriately by planning payment of obligations on time. When the time comes for the company to pay its obligations, the assets it owns are sufficient to pay those obligations. Assets must be able to be converted into cash equivalent to the company's liabilities (Burhanriffudin, 2018).

A number of variables may come into play while implementing asset and liability management, such as risk mitigation, strategic asset allocation, and changes to the capital and regulatory structure of the business. If the company is able to balance assets and liabilities, there will be a surplus that can be managed actively to increase company profits (Choirunnisak, 2022).

The idea behind asset and liability management in business is to ensure long-term stability and profitability through controlling credit quality, preserving liquidity, and making sure there is enough operating cash on hand to fund day-to-day operations.

So, it can be concluded that the goal of asset and liability management is the proper management of assets and liabilities to obtain the maximum possible profit. The application of this concept is not limited to the banking or insurance industry, but can also be applied by corporations operating in other fields, even for personal finance.

Asset and liability management must be implemented, not only at the head office but in all offices that carry out business activities. By definition, asset and liability management (ALM) is a PDCA (Plan, DO, Check, and Action) cycle process of collecting, analyzing processes, reporting, and determining asset and liability management strategies with the aim of eliminating existing risks to achieve objectives. certain. The focus of asset and liability management (ALM) is to coordinate the entire portfolio of assets and liabilities in order to maximize profits which will later be given through dividends to all shareholders, in the long term by paying attention to liquidity needs and the principle of prudence (Muslina, 2016).

Asset and liability management (ALM) is a coordinated process that uses a framework to oversee an organization's entire balance sheet. Unlike other risk management practices, ALM ensures that assets are invested most optimally and liabilities are reduced over time. Mismatches are typically the result of changes in the financial landscape, such as changes in interest rates or liquidity requirements. The full ALM framework focuses on long-term stability

and profitability by maintaining liquidity requirements, managing credit quality, and guaranteeing sufficient operating capital.

Financial organizations have always handled risks differently depending on the kind of risk involved. But now that the financial scene has changed, it is viewed as an antiquated strategy. Asset, liquidity, and credit risk are just a few of the macro-level risks that are addressed by ALM procedures, which are centered on asset management. ALM is a continuous process that, in contrast to traditional risk management techniques, continuously assesses risks to make sure the company is within its risk tolerance and complies with legal requirements. Asset managers, banks, insurance firms, pension funds, and other financial institutions are among the businesses that have adopted ALM procedures.

Review of Basic Concepts and Importance of ALM

The fast advancement of information technology and the globalization age have had an impact on corporate operations, especially the banking services industry. The management of assets and liabilities will be impacted by this shift in banking policy. The bank in question will become a victim of the current era of escalating competition if the climate is not changed. Competent resources are necessary for success in the banking industry. A bank that has better resources will be able to create funding and lending pricing strategies. A system that can create the function of collecting and distributing these money through asset and liability management is necessary to determine bank fund management strategies and policies (Y Jiang, 2019).

Asset and Liability Management (ALM) is a process of operationalizing management functions which include planning, organizing, actuating, and controlling (POAC) in the field of balance sheet structure management, namely capital, fund fertilization, and mutually coordinated use of funds to maximize the balance sheet structure. banks in achieving optimal profit levels with a calculated level of risk. Asset and liability management is a series of actions and procedures designed to control financial positions. This ALM is also to manage risks that may arise in daily business activities which are designed in such a way as to optimize income while limiting asset and liability risks by complying with monetary policy provisions and bank supervision. The increasing risk of ALM in a bank is in the form of:

1. Financing risk, namely the debtor will fulfill all his obligations (late installments or repayment) on time.

2. Liquidity risk, namely the risk that the bank will not be able to fulfill its obligations on time or can only fulfill its obligations through emergency loans (high interest) and/or selling assets at low prices.
3. Pricing risk, namely the risk of loss due to changes in interest rates. This risk is a result of Net Interest Margin (NIM) or lack of liquidity, or a gap due to inaccurate pricing calculations for assets and liabilities.
4. Foreign exchange risk, namely the risk of loss as a result of changes in the exchange rate regarding "open positions" due to adverse exchange rate movements.
5. Gap risk, namely the risk of loss from an imbalance in interest rate maturity due to adverse interest rate movements.

The central theme of asset and liability management (ALM) is the sustainable management of the bank's entire balance sheet with a view to ensuring an appropriate balance between the mobilization of funds and their deployment in relation to maturity profiles, costs and returns as well as risk exposure so as to increase profitability, ensure sufficient liquidity, manage risks and ensure long-term survival.

Microfinance Institutions

Microfinance institutions are one of the facilities specifically established by the government to provide empowerment and business development services for small communities. The facilities provided are in the form of capital loans, managing savings, as well as micro-scale business development consulting services for members and the community.

Thus, microfinance institutions are an alternative for society, especially for owners of Micro, Small and Medium Enterprises (MSMEs) who have low incomes. Therefore, MFIs generally do not seek profit. Apart from that, financing and loans through microfinance institutions are easier to apply for with terms ranging from daily to annual (A, R Ahmad, 2020).

Financial institutions that are specifically created to offer services related to business development and community empowerment are known as microfinance institutions. These services may include managing savings accounts, lending money to members and the community for micro-scale business ventures, or offering business development consulting services that go beyond making a profit. According to this definition, an MFI is an organization having both a social and business objective, with a focus on community development activities while maintaining its status as a financial intermediation institution. As financial institutions that serve as intermediaries,

MFIs also engage in lending and savings operations. These efforts are necessary to raise community awareness of saves, particularly in low-income areas, in addition to lending (Layyinaturrobaniyah, 2019).

Currently, Microfinance Institutions have become a global discourse which is believed by many parties to be a way to overcome poverty. Various multilateral and bilateral institutions develop microfinance in various cooperation programs. Governments in various developing countries have tried to develop microfinance in various development programs. Various financial institutions and non-governmental organizations also play a role in microfinance applications.

In economic development, small and medium businesses are very necessary to stimulate the economy. However, very often problems arise that occur in small and medium businesses, apart from consistency in entrepreneurship, the most crucial problem is the problem of limited capital. In order to tackle the issue of restricted capital and the government's declining fiscal ability, it is imperative to enhance the capabilities of financial institutions as a substitute funding source for farmers and rural communities. Micro Financial Institutions (LKM) are among the financial institutions that can be used and promoted to finance economic activity in rural areas where the bulk of the population owns enterprises in the micro sector. Although this institution has spread throughout rural areas, its use has not been to its full potential (Noman et al, 2017).

In the journey of microfinance institutions in Indonesia, they still face several challenges, as follows: access to capital, human resources and regulations. Microfinance institutions exist in various forms, from still operating individually without standard standards to having an interconnection system between financial institutions (Mujiana, 2015).

On the other hand, the money flow paradox is still the toughest challenge for microfinance institutions today, namely when all people prefer to save money in public banks. It is true that public confidence in saving money in microfinance institutions is still low, requiring the institution to offer high rewards or be able to ask for financial support from other, much larger financial institutions (Syukron, 2016).

ALM Strategy for MFIs

The implementation of asset and liability management policies in microfinance institutions is to address several things, namely:

1. Ratios, targets and liquidity limits, including: Primary reserves include cash, accounts at Bank Indonesia which are calculated from third party funds (DPK), Secondary reserves which are calculated from third party funds (DPK)
2. Maturity gap targets and time period
3. Funds placement guidelines and funding strategies, sources and diversification
4. Forex positions, targets and stop limits: Buy currency and Sell currency
5. Balance sheet structure
6. Earning and performance goals: Return on assets (ROA), Return on equity (ROE), Net interest margin (NIM)
7. Bank capital adequacy-CAR requirements
8. Pricing policies and guidelines
9. Delegation of authority and responsibility for fast and accurate decision making (Rotinsulu et al, 2019).

Every microfinance institution that applies ALM will always be in the process of the big framework above, so that to achieve the goals it requires prudence regarding all risk management that is open to all bank activities, along with compliance with all the rules that govern them. The focus of Asset Liability Management (ALM) is to coordinate the entire portfolio of assets and liabilities in order to maximize profits which will later be given through dividends to all shareholders, in the long term by paying attention to liquidity needs and the principle of prudence in managing sources of funds and distribution of funds by parties. microfinance institutions (A R Ahmad, 2020).

Review of the ALM Strategy that has been implemented by MFIs in various places

One example of the ALM strategy that has been implemented by MFIs is that ALM is the main focus of banking management's attention in business expansion. The results of a study from Rifuddin (2021) show that bank management has a big responsibility and is very important in improving performance and developing the assets and liabilities they own. This condition influences the form of policy on the part of banking management, including by strengthening the adequacy of the capital structure within acceptable limits, maintaining the liquidity position, and determining reserves for value losses. Then banks externally formulate strategies to grow and maintain market

confidence, provide stimulus for the birth of innovation that is able to move the real sector and build partnerships with related institutions to develop sectors such as the tourism industry, import-export industry and product substitution. This control is very important for the company and has a big impact on the performance of both the company and employees. ALM can be seen as a short-term plan by monitoring the balance sheet. This makes it possible to achieve maximum interest margin (net interest margin) and minimize potential volatility. ALM can also be seen as a strategy for implementing strategic implementation goals in the fund or financial sector (Burhanriffudin, 2018).

Asset and Liability Management (ALM) is an operational process of management functions which includes planning, organizing, actuating and controlling in the field of balance sheet structure management. One of them is the Indonesian Sharia bank. Such as capital and use of funds or credit distributed to customers. Post-merger in Indonesian Sharia banks is a very significant determining factor, because if optimal input accumulation occurs then it is hoped that it will provide maximum output so that efficiency occurs. In managing Liquidity Management and Capital Management in Conventional Banks the value is greater than managing Liquidity Management, Price Management and Capital Management in Sharia Banks. Meanwhile, in asset liability management, price management, Islamic banks have a greater level of price management than conventional banks. The Islamic banking alma policy component is the same as the conventional banking policy component, only the difference lies in taking profits from foreign exchange trading to maximize banking profits, and observing interest fluctuations (Naning Fatmawati, 2018).

The intermediation function of banks can strengthen the economic forces that shape the sharia financial ecosystem in Indonesia, where banks are financial institutions that are able to provide answers to community needs. Increasing operational efficiency or optimizing finances related to asset management. Funds from surplus parties will be collected by the bank and then distributed to parties experiencing deficits, in the form of productive activities. Productive activities that will produce output that absorbs labor which has the impact of increasing income on a microeconomic or macroeconomic basis. The sharia banking industry is an industry that is very popular in the sharia financial sector which plays a role between the deficit and surplus parties. A bank is said to have a deficit if expenditure is greater than income, while a surplus means income is greater than expenditure. Banking mergers in Indonesia give people confidence in banking products. The development of banking assets hit the economy in Indonesia which shook the progress of banking credit. However,

asset management will continue to grow the banking economy (Iramayasari & Adry, 2020).

Long Term Financial Stability

Long-term financial planning is an important foundation for ensuring financial stability in the future. For every individual, be it millennials, working professionals, or those heading towards retirement, having a well-planned financial strategy is the key to achieving sustainable financial goals (X Liu et al, 2017).

Several reasons long-term financial planning is so important:

1. **Achieve Financial Goals**
Long-term financial planning helps set specific and measurable long-term financial goals, such as purchasing a home, children's education, or retirement preparation.
2. **Provides protection from risk**
With careful planning, you can prepare yourself to face emergency situations or unexpected changes that can affect your financial condition in the long term.
3. **Utilize Financial Resources**
By planning your finances wisely, you can allocate financial resources more efficiently, ensuring that the money you have can achieve long-term goals.

Steps in Long Term Financial Planning:

1. **Determine Financial Goals**
Identify your specific long-term financial goals. Whether it's buying property, saving for education, or preparing for retirement, having clear goals is the first step in long-term financial planning.
2. **Create a Budget and Expenditure Plan**
Create a budget that takes into account your income and expenses regularly every month. Set a spending plan to prioritize savings and investments to achieve long-term goals.
3. **Start focusing on investing for the future**
Take advantage of investment instruments such as mutual funds to develop an investment portfolio. Start early to harness the power of long-term investment growth.
4. **Periodic Review**

Financial planning is not something rigid. Review your financial plan periodically and adjust it to changes that may occur in your life in the long term, such as marriage, the birth of a child, or a career change (Nabella et al, 2019).

Financial system stability refers to the state of a financial system that is capable of withstanding both domestic and foreign unrest while operating effectively and efficiently. The intermediation function and other financial services in the financial system can operate at their best to support the expansion of the national economy by preserving the stability of the financial system. Thus, preserving economic stability depends greatly on the stability of the financial system. To achieve financial security in the future, long-term financial planning is essential (Rotinsulu et al, 2019).

Discussion of Factors Affecting MFI Financial Stability

To measure the financial stability of MFIs, the most appropriate indicators to use to predict MFI instability are indicators that are directly related to MFI activities as intermediation institutions. The main indicator that is directly related to banking performance in a system is the level of banking capitalization which is related to bad loans as a source of erosion of MFI capital. Apart from that, the decline in loan quality is the core problem of the systemic banking crisis. The factors that influence the financial stability of MFIs are:

1. Pressure Factor
 - a. A ratio called Non-Performing Loans (NPL) is used to assess a bank's capacity to absorb the risk of borrowers' failure to repay credit.
 - b. The Capital Adequacy Ratio (CAR) measures how much of a bank's risky assets—such as credit, investments, securities, and claims against other banks—are financed by its own capital in addition to money received from sources unrelated to its operations.
 - c. Return on Assets (ROA) is a metric used to assess how well banks use the assets they possess to generate profits. The performance of the bank is better the higher the Return On Assets (ROA). The return on assets utilized by the business is indicated by the ROA ratio.
2. Intermediation Factors:
 - a. Third Party money (DPK) are a group of monies that come from the general public, including both private citizens and corporate entities. Banks acquire these money through a variety of bank-owned savings product instruments.

- b. The loan to deposit ratio (LDR) is a ratio that's utilized to assess how much money was given out as credit by third parties. The bank will have to assume more risk the more money it gives out in the form of credit for deposits.
- 3. Efficiency Factor:
 - a. Considering that bank operating income is heavily reliant on the difference between the interest earned from disbursed credit and the interest provided by third party funds, Net Interest Margin (NIM) is used to measure bank management's ability to generate income from interest by looking at the bank's performance in disbursing credit.
 - b. A bank's ability to efficiently conduct its operational activities is gauged by the BOPO ratio, or Operational Expenses to Operating Income. In 2017, Noman et al.

CONCLUSION

ALM is a crucial idea that is applied across many sectors, but it is most prevalent in the banking and insurance sectors. Microfinance institutions can enhance their profitability by augmenting their net interest revenue through the implementation of an efficient asset management policy framework. Ultimately, asset-liability mismatches (ALM) can provide hazards, and ALM is a methodical technique that helps mitigate those risks.

The implementation of asset and liability management policies in microfinance institutions is to address several things, namely: Ratios, liquidity targets and limits, Maturity gap targets and time periods, Funds placement guidelines and funding strategies, sources and diversification, Position, targets and stop limits foreign exchange, Balance sheet structure, Pricing policies and guidelines, Delegation of authority and responsibility for fast and precise decision making. Asset and liability management theory, a review of the basic concepts and importance of ALM, an introduction to the role and challenges of MFIs in the economy, long-term financial stability, and a discussion of the factors that influence MFI financial stability.

REFERENCES

- Ahmad, R. A. 2020. Tantangan Dalam Pengentasan Kemiskinan: Peran Lembaga Keuangan Mikro Islam Dan Keuangan Sosial. In *Prosiding Seminar Nasional Pengabdian Kepada Masyarakat* (Vol. 1, pp. SNPPM2020LPK-49).
- Burhanriffudin. 2018. Pengaruh Asset Liability Management Terhadap Kinerja

- Bank (Studi Komperatif Pada PT Bank Rakyat Indonesia, Tbk, dan PT Bank BRI Syariah). *Journal of Institution And Sharia Finance*, Vol.1, No.1.
- Choirunnisak. 2022. *Penerapan Konsep Asset And Liability Management (ALMA) dalam Islam Sistem perbankan*. STEBIS: Perbankan Syariah: Jurnal pemikiran dan Pengembangan perbankan Syariah. Vol. 7, No.2
- Eko, A. dan A. Syukron. 2016. Implementasi model pengukuran produktivitas berdasarkan pendekatan fungsi produksi Cobb-Douglas untuk mengetahui tingkat produktivitas perusahaan. *J. Rekayasa Teknologi Industri Hijau*. 2 (2) : 1 – 15.
- Faroji, Ridwan, dan Rifuddin. 2021. Pengaruh Display Produk terhadap Keputusan Pembelian pada PT. Bina Argamulya Cimone. *Jurnal Tadbir Peradaban*. 1(1). 42-47
- Fatmawati, Naning. 2018. Peranan Manajemen Risiko Dengan Pendekatan Alma (Asset and Liabilities Management) pada Perbankan Syariah. *Jurnal Wadiah*, 2(2).
- Iramayasari, & Adry, M. R. 2020. Pengaruh Inklusi Keuangan Terhadap Stabilitas Sistem Keuangan dan Pertumbuhan Ekonomi di ASEAN. *Jurnal Kajian Ekonomi Dan Pembangunan*, 2(1), 161– 176.
- Jiang, Y., Li, C., Zhang, J., & Zhou, X. 2019. Financial Stability and Sustainability under the Coordination of Monetary Policy and Macroprudential Policy: New Evidence from China. *Sustainability (Switzerland)*, 11(6), 1– 21.
- Layyinaturrobaniah, Layyinaturrobaniah. 2019. Lembaga Keuangan Mikro Dan Pemberdayaan Perempuan Sebagai Upaya Pengentasan Kemiskinan Di Kabupaten Sumedang. *Sosiohumaniora* 21 (2): 140–43.
- Liu, X., Lei, L., & Jin, Y. 2017. Money Supply, Real Estate Prices and Financial Stability: Empirical Study Based on SVAR Model. *China Academic Journal*.
- Mujiana & Elisa. 2015. Analisis Faktor-faktor yang mempengaruhi keputusan pembelian via internet pada toko Online. *Jurnal Online Marketing*.
- Muslina, R. N. 2016. Analisis Kesesuaian Konsep Asset And Liability Management (ALMA) Dengan System Perbankan Syariah. *Media Syariah*, Vol.18, No.2, 365.
- Noman, A. H. M., Gee, C. S., & Isa, C. R. 2017. Does Competition Improve Financial Stability of the Banking Sector in ASEAN Countries? An Empirical Analysis. *PLOS ONE*, 12(5), 1–27.
- Wahyudi, S. T., Nabella, R. S., & Badriyah, N. 2019. Analisis Pengaruh Siklus Keuangan Terhadap Stabilitas Sistem Keuangan Di Indonesia. *Jurnal Ekonomi Dan Bisnis*, 20(2), 87–95.
- Wati, E. S. C., Rotinsulu, T. O., & Siwu, H. F. D. 2019. Analisis Faktor-Faktor Yang

Mempengaruhi Stabilitas Sistem Keuangan di Indonesia Periode 2013:Q1 – 2018:Q4. *Jurnal Berkala Ilmiah Efisiensi*, 19(03), 149–159.

Zulkarnaen, W., Fitriani, I., & Yuningsih, N. 2020) Pengembangan Supply Chain Management Dalam Pengelolaan Distribusi Logistik Pemilu Yang Lebih Tepat Jenis, Tepat Jumlah Dan Tepat Waktu Berbasis Human Resources Competency Development Di KPU Jawa Barat. *Jurnal Ilmiah MEA (Manajemen, Ekonomi, & Akuntansi)*, 4(2), 222-243.