
CHAPTER 1 – INTRODUCTION**1.1 Background**

Indonesia the world's largest nickel reserves with an estimated 21 million tons, which roughly accounts for 22 percent of global reserves. The country is also the world's top producer of metal, with production hitting 1 million tons in 2022. Australia has the second-largest nickel reserves of approximately 20 million tons or 21 percent of the global share. However, the country only produced 160,000 tons of the metal in 2022. Brazil has an estimated 16 million tons in reserves but produced approximately 100,000 tons of the metal in 2022.

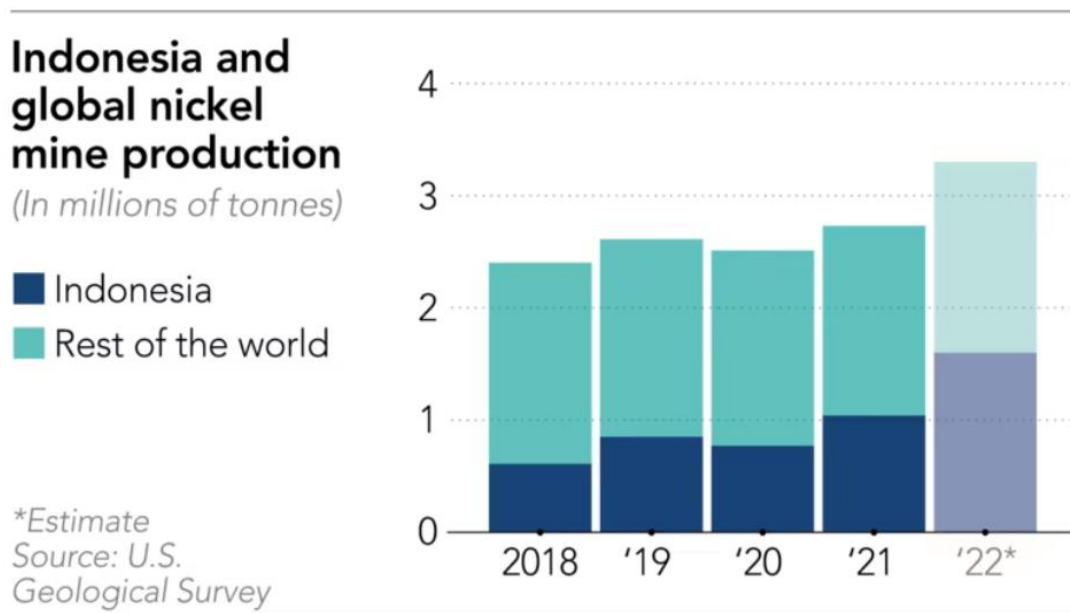


Figure 1. Nickel Production

Indonesia's nickel reserves are making the country indispensable to the global EV industry with the country aiming to be a global EV hub. Global EV makers, which include US's Tesla and China's BYD, are said to be finalizing deals to invest in Indonesia, according to the country's Coordinating Minister for Maritime Affairs and Investment, Luhut Binsar Pandjaitan. Indonesia aims to be one of the top three producers of EV batteries in the world by 2027. Moreover, to complement its nickel-based battery industry, the country is also developing lithium refineries and anode

material production facilities. Historically, Indonesian nickel smelters are equipped to produce Class 2 nickel (ferronickel/pig iron) while battery cathode production requires Class 1 nickel that contains at least 99.8 percent nickel. With its 278 million population, Indonesia also presents opportunities for the sale of EV vehicles ranging from motorbikes to cars. Formidable challenges and opportunities for investors include consumer affordability and the lack of public charging infrastructure. The government has an ambitious target of having 2.5 million EV users by 2025

The geographical conditions and coverage area of the Manado Branch of PT ABC , which includes Gorontalo, the Likupang site, and the Ternate support point, where under the Ternate support point it is the representative with the largest coverage area covering the entire halmahera area including Obi Island . Based on the results of unit sales calculations in 2022, the largest sector to grow is in the nickel business in the Halmahera area with 89% sales to nickel, where unit market share and product support have decreased due to the entry of products from China, namely Sany, which is very aggressive in expanding the nickel area in Central halmarea and the obi islands.

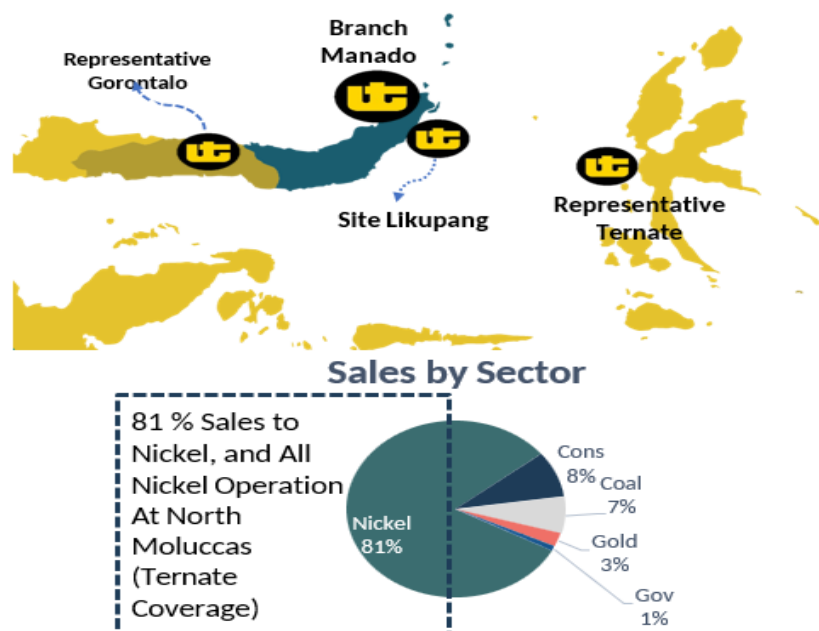


Figure 2. PT ABC Coverage

The performance metric of On-Time In-Full (OTIF) measures the efficiency of delivering products to customers according to their specifications and within the

agreed-upon timeframe. An OTIF performance below 90% indicates challenges in meeting customer expectations regarding product availability, timely deliveries, and order accuracy. This performance gap can have a direct impact on customer satisfaction and loyalty. One of the fundamental pillars of achieving customer satisfaction is the provision of quality product support. In the past 3 years, the graph indicates that the OTIF parts are still below target. In 2020, the average OTIF at UT Ternate was 77%. In 2021, it increased to 88%. However, as of June 2022, the OTIF dropped to 63%. Based on the FI data, UT Ternate is still below target. With a target of 83%, UT Ternate recorded a significantly low figure of 63% in 2022. This indicates that UT Ternate is still unprepared to support the rapid business growth in the Halmahera area, The Lead Time Outgoing at UT Ternate is still below target compared to other areas. This is due to several factors, such as the absence of a regular transport system, the high cost of shipping in the Ternate area, and the excessively high productivity of the manpower in spare parts, indicating an overload of work. This situation leads to the parts lead time customers falling below target and reduces level of support customers.

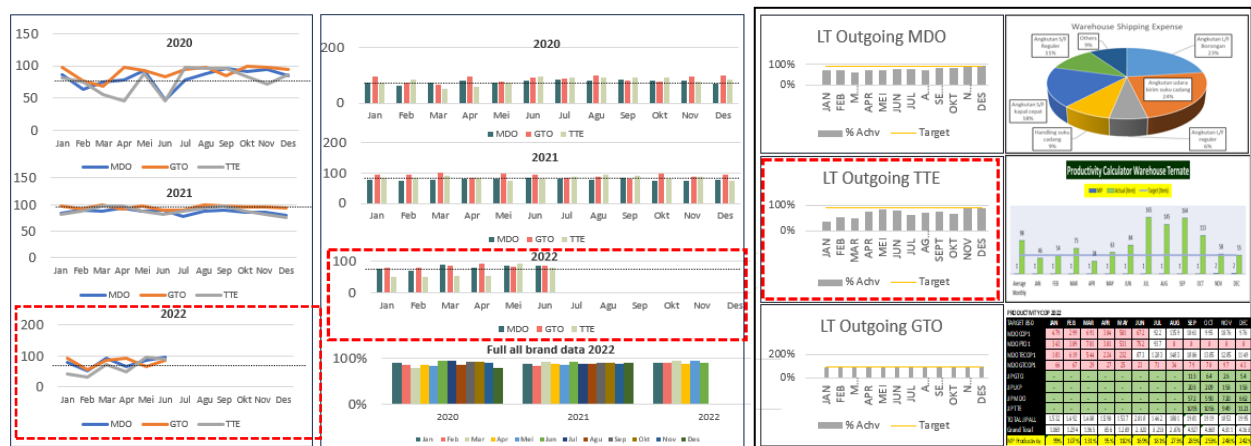


Figure 3. Product Support Quality Achievement

This thesis proposal aims to explore a comprehensive approach to enhance customer satisfaction by elevating the quality of product support services through the establishment of a support point and the strategic implementation of OTIF strategies. The context of this study is set in South Halmahera, with a specific focus on Site Obi,

where businesses grapple with unique challenges to their customer base. Businesses operating in South Halmahera, particularly at Site Obi, face distinctive challenges in delivering effective product support. The geographical location and limited infrastructure is customer issue resolution. Furthermore, the diverse needs and preferences of customers within the region necessitate personalized and context-aware support approaches. These challenges underscore the need for a localized support strategy that is not only efficient but also aligns with the cultural and logistical nuances of the region. South Halmahera, encompassing Site Obi, is characterized by its unique geographical setting.

The region's remote location, limited transportation infrastructure, and potential connectivity issues can pose obstacles to businesses in providing efficient and timely product support. These geographical challenges might lead to delays in issue resolution, impacting customer satisfaction and eroding brand reputation. A support point, as a physical and virtual hub for customer assistance, offers an innovative approach to tackling the challenges of personalized support in South Halmahera (Site Obi). By establishing a localized support point, businesses can bridge the gap between customers and support teams, ensuring face-to-face interactions and building trust. Furthermore, this approach can serve as a community knowledge center, providing valuable insights into common issues and enabling peer-to-peer support among customers. In the era of digital transformation, technology has emerged as a powerful enabler for enhancing various aspects of business operations. When strategically applied to product support, digitalization can streamline processes, enable data-driven insights, and facilitate seamless communication between businesses and their customers. Digital tools such as, self-service portals, and data analytics can empower businesses to proactively identify and address customer issues. However, the integration of digital solutions should be approached thoughtfully, considering the unique characteristics of the local business environment.

1.2 Research Problems

The below-target achievement of On Time In Full (OTIF) performance is having a detrimental impact on customer service levels. Delays in lead times for parts supply have resulted in poor results in the OTIF Parts Index. This situation has served as a catalyst for research, especially evident given the OTIF performance falling below 90% in South Halmahera (Site Obi).

1.3 Research Objectives

1. Fisibility study Support Point Site Obi to improve product support performance
2. Achieve OTIF as target 90%

1.4 Significance of Study

In a study entitled "Optimizing product support (spare parts procurement) strategy by considering the operating system environment" explains that the Product support, which is also referred to as after sale service to the product, is important for the customer as well, because it assures the expected function of the product in its operational phase (Ghodrati B., Banjevic D., Jardine AKS, 2009). The significance of the research between the above research and the research that will be carried out in this study lies in the product support factors used in this study. In previous studies, to increase product support with supporting factors for the selection of spare parts that are adjusted to the operating conditions of the machine, while in this study, researchers examined the increase in product support in specific solutions for businesses operating in South Halmahera (Site Obi) to address critical challenges related to OTIF (On-Time In-Full) performance, geographical constraints, and customer satisfaction.

1.5 Research Questions

1. How to increase quality product support by OTIF (On Time In Full) Index?
2. How to analyze feasibility new support point investment by (IRR) Analysis?

1.6 Hypothesis

Provide New Support Point may be increase OTIF (On Time In Full) Index as target 90%, enhance the effectiveness and efficiency of product support processes for businesses in South Halmahera (Site Obi).