

## Determining Strategies for Improving Llft Business Performance with Inequal (Internal Quality) and Servqual (Service Quality) Analysis Case Study: Deli Serdang, North Sumatera)

Clarita Bangun<sup>1</sup>, Muhammad Sonny Abfertiawan<sup>2</sup>

<sup>1,2</sup> Faculty of Civil and Environmental Engineering, Institut Teknologi Bandung, Indonesia  
[claritadpbangun@gmail.com](mailto:claritadpbangun@gmail.com), [msa@fisl.itb.ac.id](mailto:msa@fisl.itb.ac.id)

### Abstract

Currently, the Government has set the 2020-2024 RPJMN to achieve proper and safe access to sanitation (Domestic Wastewater) by 90% to reduce maternal mortality and stunting. In Deli Serdang Regency, the population's access to proper and safe sanitation facilities still needs improvement. Based on City/District Sanitation Strategy Update Document Data. In 2016, it was found that 158,462 residents did not have proper sanitation facilities, 95,077 residents performed open defecation and 25,750 residents disposed of wastewater directly into drainage channels. One of the Government's efforts to achieve the goal of safe sanitation is to implement the Scheduled Sludge Service (LLTT) system, which is a program that connects septic tanks to IPLT. This study aims to identify the dominant factors that affect business performance seen from the INTQUAL dimension from the manager's perspective, namely technical aspects, NSPK aspects, financial aspects, institutional aspects and public relations aspects, and SERVQUAL in terms of LLTT customers seen from the reliability aspect, tangibility, responsiveness, assurance, empathy. This study was conducted to investigate the suitability of the LLTT practice of 78 managers and 78 customers using the purposive sampling technique. The questionnaire results were then analyzed using the Structural Equation Modeling method with SPSS and AMOS. It was found that the model formed had fulfilled the goodness of fit, and it was also found that INTQUAL had a statistically significant effect on Business Performance. The recommendations are focused on the manager or executor, namely by implementing a product characterization strategy, namely product/service engineering strategy, pricing strategy and ease of payment, Development and Marketing Strategy, and Promotion Strategy.

### Keywords

business performance;  
INTQUAL; scheduled sludge  
service; product  
characterization; management



## I. Introduction

Sanitation is one of the environmental problems that are still faced by many cities in Indonesia. Seeing the existing sanitation problems and the rapid population growth rate in Deli Serdang Regency, of course, will have the potential to cause negative impacts. For example, the disposal of human faeces that is not handled correctly can cause contamination of the soil surface and groundwater, which has the potential to be the cause of the transmission of various kinds of digestive tract diseases.

The complete sanitation service chain consists of several stages, namely; collection, transportation, processing and reuse or final disposal. Referring to this chain, one component of the local system sanitation chain is the transportation sub-system. The transportation subsystem is carried out by desludging service providers who act as a

critical link chain so that access to sanitation in a city or region can be realized. Weaknesses in the FSM (faecal sludge management) service chain include many factors, such as users from households who cannot afford professional emptying services; collection and transportation trucks cannot access narrow roads and roads leading to houses; operators who cannot afford transportation from the waste source to a more extensive treatment facility and lack of disposal sites for treated and untreated sewage or insufficient size of treatment facilities. Human Resources (HR) is the most important component in a company or organization to run the business it does. Organization must have a goal to be achieved by the organizational members (Niati et al., 2021). Development is a change towards improvement. Changes towards improvement require the mobilization of all human resources and reason to realize what is aspired (Shah et al, 2020). The development of human resources is a process of changing the human resources who belong to an organization, from one situation to another, which is better to prepare a future responsibility in achieving organizational goals (Werdhiastutie et al, 2020).

With the problems described in the management of faecal sludge, it can be seen that currently, there are still challenges and failures in the sub-system of faecal sludge transportation. In the transportation system, the organization that manages the services and transportation of faecal sludge greatly influences the system components in the IPLT, especially related to transportation and disposal rates. Reusing products resulting from sewage treatment by IPLT affects the disposal and reuse system.

For this reason, there is a solution to overcome this problem by approaching each segment of both managers and customers in the service chain and optimizing the LLTT program that has been targeted by the Central Government and is currently being implemented in Deli Serdang. The approach to getting a solution is targeted at investigating the suitability of LLTT practices from the perspective of managers and customers with predetermined dimensions, namely the INTQUAL dimension, which pays attention to technical aspects, public relations aspects, NSPK aspects, institutional and financial aspects and the SERVQUAL dimension which pays attention to tangibility, reliability, assurance aspects. Responsiveness and empathy are seen from the customer's perspective.

## **II. Research Method**

This research uses a mixed method approach, namely by combining quantitative and qualitative approaches in data collection and analysis.

### **2.1 Data Collection Method The data**

Collection strategy is qualitatively by using interviews and quantitatively by using an instrument in the form of a questionnaire. The sampling technique used was purposive sampling. The questionnaire was compiled using 78 samples with the Yamane Equation and a margin of error of 10% (Ariola, 2006).

### **2.2 Questionnaire Testing Method**

Stages of Questionnaire Testing are carried out by testing the validity and the reliability test.

#### **1. Test Validity**

Testing the validity of the question items in the questionnaire aims to determine whether the indicators can describe each of these variables. The indicators that have passed the validity test with SPSS are all indicators except R5 and NSPK5.

## 2. Reliability

Test Reliability test is how big the degree of the test consistently measures the measured target [6]. The indicators that have passed the reliability test with SPSS are all indicators except R5 and NSPK5.

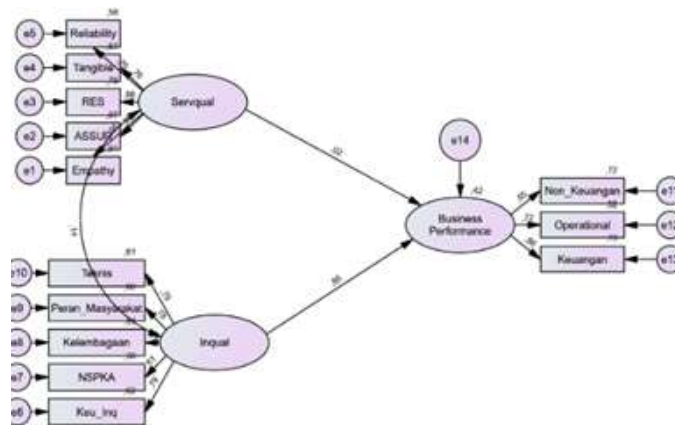
## 3. Test of Model Fit (*Goodness of Fit*)

The suitability of the overall model (overall fit model) must be analyzed first before analyzing the hypothesis. This is done to ensure that the model can see the causal effect (Hair et al., 2010). In the model formed, it is stated that the model is accepted, and a good fit is indicated by the fulfilment of IFI, NFI, and PCMINDF.

## 4. Hypothesis

Hypothesis testing is done by comparing the p-value with a confidence level (alpha) of 5% ( $\alpha = 0.05$ ). From the two hypotheses, the accepted hypothesis is that INTQUAL affects Business Performance.

The models accepted in this study are as follows.

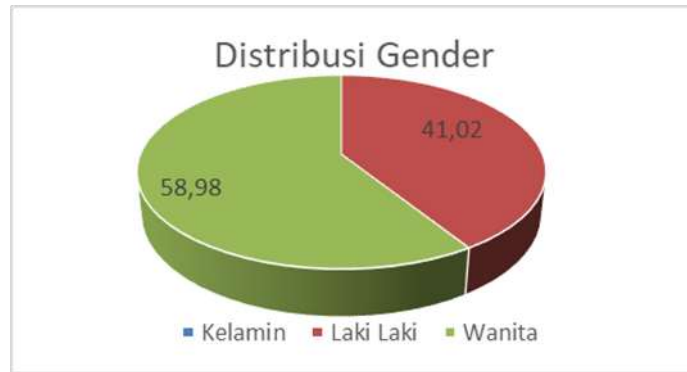


**Figure 1. Accepted Model**

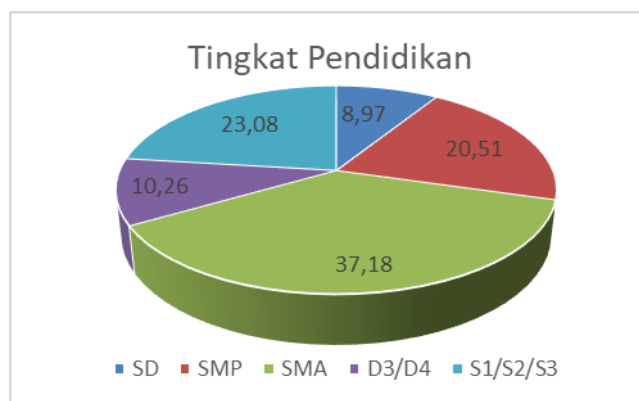
## III. Result and Discussion

### 3.1 Customer Characteristics

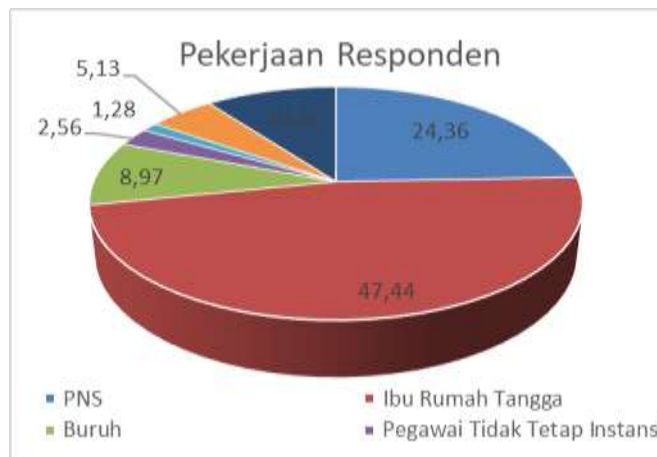
From data processing, it was found that respondents in terms of customers were dominated by women (58.98%) with an educational background dominated by high school (37.18%) and then followed by junior high school (20.51%). Referring to the literature that education affects attitudes or behaviour and is directly related to one's understanding, it can be interpreted that customer understanding of LLTT is currently not good enough. In addition, it was also found that the economic level of customers is still relatively low, namely, 43.19% earning less than the minimum wage (< Rp. 1,000,000). This will undoubtedly affect a person's ability to pay levies on LLTT. Customer description can be seen in Figure 2, Figure 3, Figure 4, Figure 5



**Figure 2.** Gender distribution of respondents (LLTT customers)



**Figure 3.** Education level of respondents (LLTT customers)



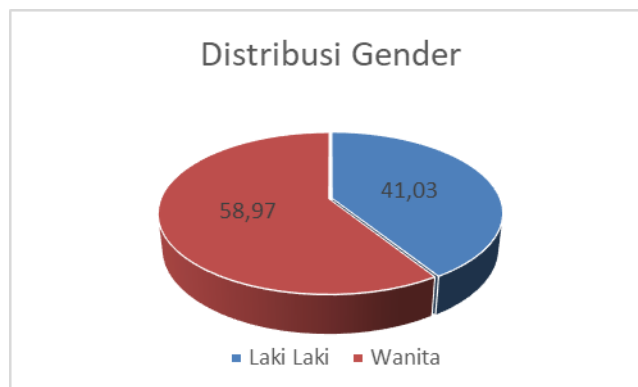
**Figure 4.** Respondents' occupations (LLTT customers)



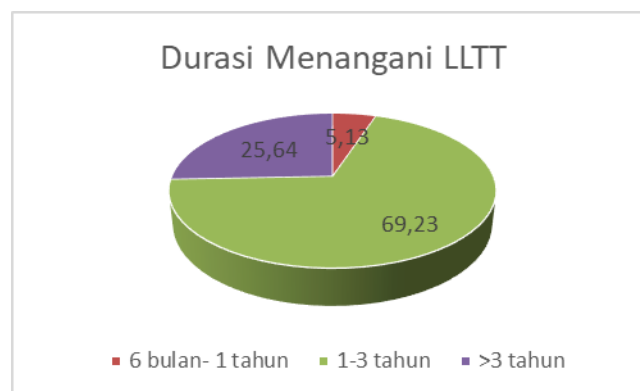
**Figure 5.** *Income Average per month Respondents (LLTT Customers)*

### 3.2 Characteristics of Managers and Implementers

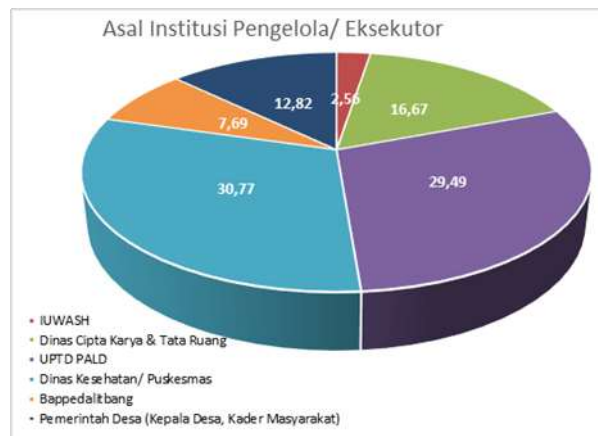
The description of managers is obtained from the questionnaire and can be seen in Figure 6, Figure 7 and Figure 8. From the data processing, it was found that the respondents in terms of customers were dominated by men (64.10%), and the agency's origin was from several related agencies. The level of experience also affected the credibility of the respondent's answers. From the data, it was found that 74 managers had experience with the level of handling LLTT  $\geq$  one year.



**Figure 6.** *Gender distribution of respondents (managers and executors)*



**Figure 7.** *Duration of handling respondent's LLTT (managers and executors)*



**Figure 8.** *Origin of the respondent's institution (managers and executors)*

### 3.3 Availability of proper facilities and willingness to subscribe

This section will explain related to the use of facilities for storage of faeces and sub-systems of treatment or distribution used in wastewater, especially faeces. Furthermore, in this section, the feasibility of the LLTT components that must be owned by the community is also included, for example, the feasibility of a septic tank. From the results of research on community groups as LLTT customers, it was found that

- Respondents used private toilets (100%)
- Some respondents did not meet the provisions of an impermeable septic tank. This can be seen from the last desludging time before being served by LLTT; there were 49 customers out of 78 customers who sucked septic tanks >5 years from the last desludging when served by LLTT.

Furthermore, the community's willingness to vacuum regularly was also asked, and it turned out that 55.12% of respondents stated that they would carry out periodic vacuuming. This is quite good and shows that customers already have a willingness to pay and understand the benefits of LLTT. However, some do not plan to be vacuumed regularly (10.27%) and are hesitant (34.61%). 42.85%, other reasons such as the septic tank is never complete, and others (28.58%).

### 3.4 Identification of dimensions that affect LLTT's business performance

In this study, two dimensions were tested by looking at the p-value of AMOS. P value states that the declared independent variable has an error rate on the dependent variable.

#### 1. Analysis of p-value

From the two dimensions obtained, it was found that the INTQUAL dimension, which is a management aspect such as Technical Aspect, NSPK, Customer Relations, Institutional, and Financial, is the most significant dimension affecting Business Performance which is indicated by p-value = 0, while the SERVQUAL dimension according to the results of statistical processing, it was found that the relationship between the SERVQUAL dimension was less significant to the Business Performance LLTT(p-value = 0.831)

#### 2. Direct Effect Analysis

From the INTQUAL Dimension, it is also found that the dominant influence can be seen from the direct effect presented by AMOS. From this test, the INTQUAL



dimension can be directly influenced by Technical (1.101) and then followed by Finance (1,000), Institutional (0.999), Public Relations (0.894), and NSPK (0.647)

Furthermore, the direct effect of INTQUAL on Business Performance and the three indicators (financial, non-financial, and operational) on Business Performance. Moreover, it was found that:

INTQUAL provides a relatively high direct effect (0.646) compared to SERVQUAL (0.022)

Financial, Non-financial, and Operational provide a direct effect on Business Performance, with the highest direct effect value, namely Finance (0.857) and followed by Non-Financial (0.847) and Operational (0.723)

Thus, it can be concluded that the most significant and influential dimension of LLTT's business performance is INTQUAL.

### **3.5 Dimensions that affect LLTT's business performance.**

In this study, two dimensions were tested by looking at the p-value of AMOS. P value states that the declared independent variable has an error rate on the dependent variable.

From the direct effect and p-value analysis, it can be concluded that the dimension that most influences Business Performance is INTQUAL, viewed from an internal or management perspective. The INTQUAL dimension influenced by the management perspective consists of technical aspects, NSPK, Customer Relations, Finance and Institutions.

#### **a). Technical Aspects**

Determination of technical or operational feasibility so that if it is not analyzed correctly, it will be fatal for the company in its journey in the future [7]. Referring to the following statement, the technical aspects referred to in LLTT are the operating pattern, the desludging schedule pattern, the availability of desludging infrastructure, the division of service zones, and the availability of supporting facilities and infrastructure.

#### **b) Aspects of Customer**

Relations Customer relationship is a holistic approach to identifying, acquiring, and retaining the most valuable customers for the company through an integrated set of tools, facilities, and capabilities [8]. Customer relationship management is essentially establishing a mutually beneficial long-term relationship with customers. The importance of this long-term relationship has been recognized in various areas of market management, including industrial marketing or business a business [9] and service marketing [10]. By referring to this, what is meant by the customer relationship aspect is how managers market services and manage long-term relationships with customers.

#### **c) Financial**

Aspect The financial aspect is managing incoming fund sources, expenditures, and others.

#### **d) Aspects of NSPK**

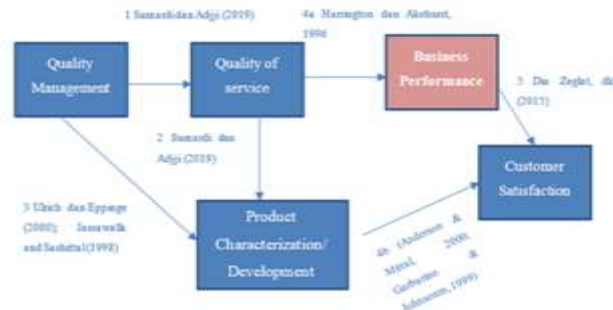
NSPK includes Norms, Standards, and Criteria Procedures. One of its purposes is to explain details or fixed standards regarding repetitive work activities carried out in an organization.

#### **e) Institutional**

Aspect The institutional aspect relates to the explanation of the responsibilities of the Regency/City government to manage sewage services as well as the availability of institutions needed to manage sewage services and disseminate information to the community.

### 3.6 Relationship between INTQUAL and Business Performance

INTQUAL or related dimensions in internal management can be related to business performance. The relationship can be shown in Figure.



**Figure 9.** Relationship of INTQUAL, Product Development and Business Performance

From the data processing results, it can be concluded that INTQUAL plays an essential and significant role in achieving Business Performance. It is also stated that "Management has a positive impact on quality of service", then continued with Quality of service has a positive impact on product characteristics.

Or value of service". The literature also adds that services that have value or character affect the level of customer satisfaction, and the level of customer satisfaction is very influential on Business Performance. In other words, the manager has a role in forming a service with the correct value proposition. The manager is the main contributor in establishing a service character that sells in the market so that it will trigger the level of customer satisfaction and will certainly improve the business performance of an LLTT service.

### 3.7 General Definition of Business Performance Improvement

Strategy Business strategy is felt to be very important for the sustainability of a business, where the company's strategy is used to cope with changing demands from the external and internal environment.

### 3.8 Recommendations for LLTT Business Performance Improvement Strategies

Referring to Figure 2 that in achieving Business Performance, efforts are carried out using an internal management approach or management is carried out through product development.

Product development is developing original products, improved products, product modifications, and new brands through the company's product development efforts. In determining a product development strategy, there are several stages carried out.

#### 1. Product Analysis

Product is anything that can be offered by a producer to be requested, sought, purchased, used or consumed by the market to fulfil the needs or desires of the relevant market. Products delivered include physical goods, services, personal, organizational and ideas. [15]

#### 2. Market

Analysis Market analysis is an analysis carried out by companies to market their products; the market here includes the economic, social, cultural, demographic and technological environment, which will affect the company's market determination. The



main markets for LLTT products include Deli Serdang and its surroundings. Moreover, the main target is a household that has a septic tank.

### 3. Product Development Strategy Plan.

Product development is developing original products, improved products, product modifications, and new brands through the company's product development efforts.

### 3.9 Stages of product development strategy plan

In managing the product development process, the author uses the traditional product life cycle, starting from the development stage to the maturity stage in Figure 9.



**Figure 10.** *Product life cycle*

Referring to In managing the product development process, the author uses the traditional product life cycle, namely starting from the development stage to the maturity stage, which shows the product cycle, given several strategies in product development. The strategies offered are product/service technical strategy, pricing strategy and ease of payment, development and marketing strategy, and promotion.

#### 1. Product technical

strategy Product/service technical strategy can be divided into several stages, namely the introduction stage, the growth stage, and maturity. Product strategy can be achieved by:

##### A) Product Quality

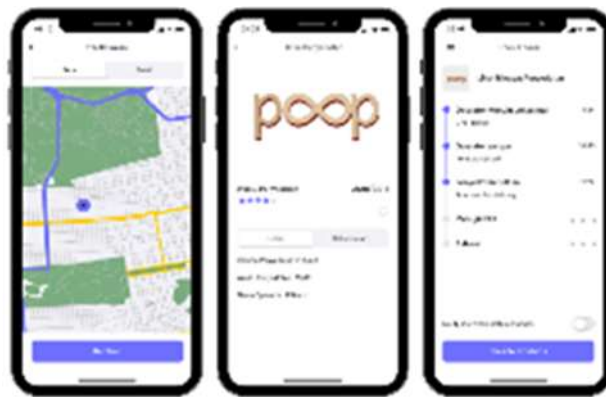
Improvement Product quality improvement can be obtained by taking into account the technical aspects, namely:

- Establishment of a community with an impermeable septic tank. One component of the LLTT that must be achieved is seen from the physical condition of the septic tank. With the current grant septic tank program in several locations in Deli Serdang, especially in the research location, the feasibility of the quality of the septic tank is better than before the Septic Tank Grant program. So that it can be directly explained that the septic tank, which is a component of the LLTT aspect, if it is feasible and fulfilled, then the technical aspect component will also be fulfilled, and of course, it will also affect the assessment of business performance.
- Increase in the number of desludging fleets and improvement of desludging infrastructure. From the interview results, it was found that the current condition of the excreta trucks is not sufficient to meet the service area of Deli Serdang. Therefore, several fleets and desludging facilities are required. This is also related to the achievement of service coverage so that it can be reached more widely and meet the service target of up to 100% in Deli Serdang Regency.

##### B) Adding new features and providing additional services or product guarantees. Based on the questionnaire tested, the assessment of LLTT services does not yet have supporting facilities such as Support System Infrastructure (Customer Information System).

Therefore we need an improvement in services equipped with customer information systems. From the results of questionnaires to customers, it is also stated that until now, the community has not been provided with facilities to submit complaints/suggestions and direct contact facilities to managers. Communication from customers to managers is still limited to physical visits to the UPTD PALD office. Seeing this, an additional service is needed to achieve Business Performance:

- Equipped with a customer information system as a facility that can be provided by the public to provide complaints or suggestions for the services provided. The customer information system is displayed in Figure 10



**Figure 11.** Recommendations for information systems in the form of a mobile app

- Implementing a warranty system on the services provided. The application of the warranty can be made, for example, a 14-day warranty after vacuuming. Providing guarantees will contribute to the level of consumer confidence.

## 2. Pricing Strategy and Ease of Payments

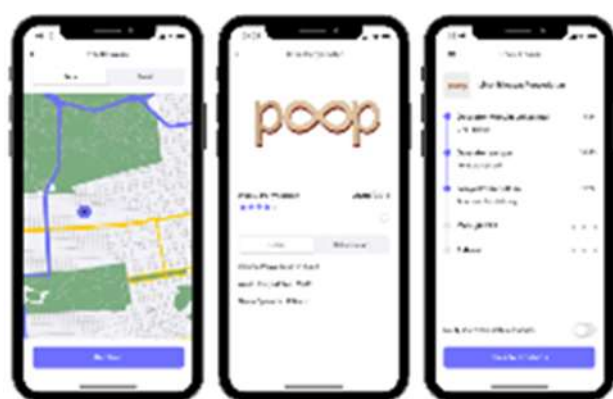
Pricing and ease of payment are one way to get revenue and, at the same time, are part of managing the financial aspect, which is an indicator of INTQUAL. In this case, because the market for LLTT in Deli Serdang is dominated by low-income people, the price-fixing must be adjusted to a rate that is not too high. When compared from Lubuk Pakam Subdistrict, Labuhan Deli Subdistrict and Hamparan Perak Subdistrict, it was found that there was a difference in price fixing carried out, namely in Lubuk Pakam Subdistrict, the price determination was under the formed Perda, which was Rp. in Labuhan Deli and Hamparan Perak sub-districts the quoted rate is IDR 10,000 per week. Directly, retribution is a financial aspect as a source of income for LLTT, and it is urgently needed a pricing and payment method that can facilitate the community. The recommended pricing and payment methods are as follows.

### A. Pricing

Looking at the respondents' answers, it was found that Rp. 10,000,- per week is easier to do than Rp. 300.000- per suction. Pricing should be adjusted to the level of income. Having their toilet with a septic tank, urban households are willing to pay IDR 50,578 per month while rural households only IDR 12,062 [16]. Therefore, the tariff determination is still under regulations, and the level of the community's ability is .10,000 per week.

### B. Payment Method

Looking at the respondents' answers, it was found that the ease of payment and the sustainability of payments in Deli Serdang are very suitable to be applied to the "Healthy Arisan Fund." Through the artisan of healthy funds, the amount of the tariff is much smaller than the payments, which amount to more than hundreds of thousands. So it can be recommended that the mixed payment method through the artisan of healthy funds is for low-income people while quoting the LLTT retribution fund is directly suitable for people in housing and non-permanent residents and not registered as members of the "Healthy Arisan Fund".



*Figure 12. Short Term Recommendations*

### 3. Development and Marketing Strategy Development

Moreover, marketing is one way to reach a broader market and, at the same time, increase the number of new customers.

- A. Improvement of Institutional Aspects. Based on the study, the involvement of the private sector in the transportation of sewage sludge has taken place in all research cities. However, it is limited to demand services, so the collaboration with IPLT operators is only on sewage disposal. Of the several options available, the authors recommend that practical cooperation be implemented in the form of a Service Contract, which is a type of cooperation that is generally not capital intensive; the private sector procures and operates infrastructure while the Government is the infrastructure provider.

- B. Improved Customer Relationship Management.

Currently, the relationship with customers in counselling and complaint resolution has not been routinely carried out and has not been scheduled. Therefore, it is necessary to improve customer relationship management, which can be done in the form of regular promotions at these locations so that people understand more about the importance of LLTT and make it possible to increase the number of new customers.

- Improved human resources for community cadres and managers of the Healthy Arisan Fund

Based on in-depth interviews, it was found that the management of the healthy artisan fund is played by several cadres who are local people whose educational background is

limited to high school education and even their level of knowledge of LLTT. Seeing the educational background and level of understanding of the cadres, which is still low, an increase in human resources is needed so that the cadres can understand LLTT and can pass the information on to the community.

- Regular counselling to customers is carried out.

Seeing the educational background of customers still limited to junior high and high school, it is necessary to promote LLTT to the public. The promotion that is currently running in the study areas mainly relies on direct socialization through cadres from the Puskesmas/Health Office and is also assisted by the Managers of the Health Fund Arisan. However, this is not optimal because there are still many people who do not understand and have not been reached. So, recommendations for providing counselling can be made through online social media. Social media such as Instagram, Facebook, and WhatsApp are considered adequate and have a broad reach; the cost of promotion can be cut.

#### IV. Conclusion

This study aims to identify the conformity of the practice of Scheduled Sludge Services (LLTT) in several areas in Deli Serdang and analyze the factors that affect LLTT's business performance. This study found that there are still some aspects that are not feasible in fulfilling LLTT with the principle of safe sanitation according to regulations. This will undoubtedly affect LLTT's business performance, so an approach to the dominant factor that most influences LLTT's business performance is needed, namely an approach from a management perspective by looking at the INTQUAL dimensions (Technical Aspects, Public Relations Aspects, NSPK Aspects, Institutional Aspects, Institutional Aspects). The recommendations given for improving business performance are product development strategies.

#### References

- Abfertiawan, MS (2019): Study of Existing Condition of Local Domestic Wastewater Management System in Denpasar City, *Journal of Environmental Science*, 17(3), 443.<https://doi.org/10.14710/jil.17.3.443-451>
- Bakir, HA, (2001), Sustainable Wastewater Management for Small Communities in the Middle East and North Africa, *Journal of Environmental Management*, 61, 319-328
- Blackburn, Robert A., Mark Hart, and Thomas Wainwright 2013. Small Business Performance: business, strategy and owner-manager characteristics. *Journal of Small Business and Enterprise Development*. Vol. 20 No. 1, 2013pp. 8-27
- Gronroos, C (1990), *Service Management and Marketing*, Lexington Books, Lexington, MA.
- Kasmir and Jakfar, (2003). *Business Feasibility Study*. Date. Bogor
- Kotler and Keller. (2009). *Marketing Management*. Volume I. 13th Edition. Jakarta: Erlangg
- MA.Hakansson, H. (1982), *International Marketing and Purchasing of Industrial Goods: An Interaction Approach*, John Wiley & Sons, Chichester.
- Niati, D. R., Siregar, Z. M. E., & Prayoga, Y. (2021). The Effect of Training on Work Performance and Career Development: The Role of Motivation as Intervening Variable. *Budapest International Research and Critics Institute (BIRCI-Journal)*:

- Humanities and Social Sciences, 4(2), 2385–2393.  
<https://doi.org/10.33258/birci.v4i2.1940>
- Nusair, K. (Khal), & Kandampully, J. (2008). The antecedents of customer satisfaction with online travel services: A conceptual model. *European Business Review*, 20(1), 4–19.
- Parkinson, J., Lüthi, C. Walther D. (GIZ). (2014) Sanitation21 – A Planning Framework for Improving City-wide Sanitation Services. IWA, Eawag-Sandec, GIZ
- Shah, M. M., et al. (2020). The Development Impact of PT. Medco E & P Malaka on Economic Aspects in East Aceh Regency. *Budapest International Research and Critics Institute-Journal (BIRCI-Journal) Volume 3, No 1, Page: 276-286.*
- Skadi, Soetarlinah. (2000). *Prepare and Evaluate Research Reports*. Jakarta: UI-Press
- Soeparman and Suparmin. (2002). *Disposal of Feces and Liquid Waste*. Jakarta: UGC.
- Strande, M. Ronteltap, and D. Brdjanovic. (2014). *Faecal Sludge Management*.
- Sumardi, S., & Fernandes, AAR (2020). The influence of quality management on organization performance: Service quality and product characteristics as a medium. *Property Management*, 38(3), 383–403. <https://doi.org/10.1108/PM-10-2019-0060>
- Watekhi, W., Hartono, D., & Dewi, RK (2011). Analysis of Willingness to Pay for Clean Water and Household Sanitation in Indonesia. *Indonesian Journal of Economics and Development*, 12(1), 1–14. <https://doi.org/10.21002/jepi.v12i1.282>
- Werdhiastutie, A. et al. (2020). Achievement Motivation as Antecedents of Quality Improvement of Organizational Human Resources. *Budapest International Research and Critics Institute-Journal (BIRCI-Journal) Volume 3, No 2, Page: 747-752.*
- Wolfe, MT., Dull, SF., and Stephens, T (2000), “Divide and Conquer,” *Andersen Consulting Outlook*, No. 2
- Ziegler, D., Ekinci, Y., & Lockwood, A. (nd). Service quality and Business Performance. *Handbook of Hospitality Marketing Management*, 28.