CHAPTER I
INTRODUCTION

This chapter contains the background of research on evaluating drug suppliers at RSI Ibnu Sina West Sumatra, problem formulation, research objectives, problem limitations, and writing systematics.

1.1   Background

Technology development provides great convenience and benefits both in data processing and information presentation for agencies and companies. Every company will strive as optimally as possible to increase productivity, efficiency, fast service, and create new innovations to survive in the market. In addition to productivity and efficiency that need to be improved, companies must also know and understand what consumers should need. It aims to get maximum profit and reduce expenses keep the company competitive (Ariani & Dwiyanto, 2013). Suppliers, manufacturers, distributors, retailers, and customers are essential in creating cheap, quality, and fast products. This explanation then gave birth to a new concept, namely Supply Chain Management (Pujawan, 2017).

Supply Chain Management (SCM) is a set of approaches applied to efficiently integrate suppliers, production centers, warehouses, distribution centers, and sellers to deliver the correct quantity of goods, at the right time, to the right location at minimum cost (Suparno, 2004). SCM is closely related to the raw material cycle from suppliers to operational activities in the company, continuing to distribute to consumers. An important point on which SCM is based is to focus on reducing ineffectiveness and optimizing value in the relevant supply chain (Arif, 2018).

One factor that determines a company's success is its suppliers. The selection of the right supplier can guarantee the availability of production raw

materials so that the production track is always maintained. In addition, the selection of suppliers is also crucial to increase the competitiveness of the company in the market (Kurniawati et al., 2013a). Supplier selection is a multi-criteria problem where each criterion has a different level of importance and information about the criteria cannot be precisely known. In this case, the selection of suppliers based on the lowest price is no longer efficiently used, since other criteria such as the tightness of time and the number of deliveries also determine the level of consumer satisfaction (Wang et al., 2004).

Improper selection of suppliers can disrupt operational activities in a company. If the supplier is less responsible and does not respond to the fulfillment of the company's request, it will cause a problem, such as a stockout or the length of lead time (Önut et al., 2009). The supplier selection process is not only carried out in companies that produce goods, but the supplier selection process is also carried out by several government agencies such as hospitals and pharmacies.

Hospitals are health service institutions that provide health services efficiently. The hospital has at least three public facilities: emergency, outpatient, and pharmacy. According to Regulation of the Minister of Health of the Republic of Indonesia Number 56 of 2014 concerning Hospital Classification and Licensing in Chapter II Article 3, paragraph 1 explains that hospitals established and organized by the government are technical implementation units of government agencies whose primary duties and functions are in the health sector or other government agencies. General hospitals are classified A, B, C, and D based on the ministerial regulations above.

The Ibnu Sina Islamic Hospital in West Sumatra began with the establishing of the West Sumatra Islamic Hospital Foundation (YARSI) in Padang on January 31, 1969. This foundation aims to improve optimal health for all people regardless of differences in religion, position, skin color, and origin. On October 30, 1969, RSI Ibnu Sina Bukittinggi was established at Jl. Dr. Rivai and Jl. Yos Sudarso Bukittinggi. Then followed by the establishment of RSI Ibnu Sina Padang Panjang,

RSI Ibnu Sina Padang, RSI Ibnu Sina Payakumbuh, RSI Ibnu Sina Simpang Empat, RSI Ibnu Sina Panti, and Yarsi Mentawai Health Center. In addition to establishing hospitals, YARSI West Sumatra also established several other business units, such as the School of Nursing Education, Mohammad Natsir University, Swalayan Masyithah, and PT Radio Yarsi Citra Mandiri.

In the last two years, there has been an increase in the number of patients at Ibnu Sina Hospital, for example, at Ibnu Sina Bukittinggi Hospital. Based on an interview conducted with the Head of the Medical Record Installation, it is known that there is an increase in the number of inpatients and outpatients. The increase in the number of outpatients can be seen in **Figure 1.1.**
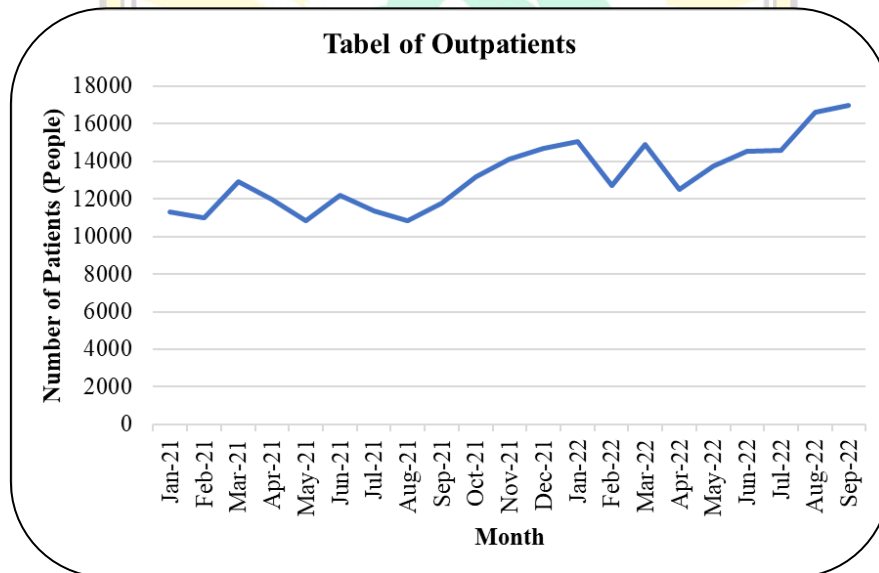

Figure 1. 1 Number of Outpatients of RSI Ibnu Sina Bukittinggi
Source: (RSI Ibnu Sina Bukittinggi, 2022)

Figure 1.1 shows fluctuations in the number of outpatients at RSI Ibnu Sina Bukittinggi from 2021 to 2022. Outpatients increased from 11,315 people to 16,979 people. Inpatients also experienced fluctuations from 2021 to 2022. An increase in the number of inpatients can be seen in **Figure 1.2.**
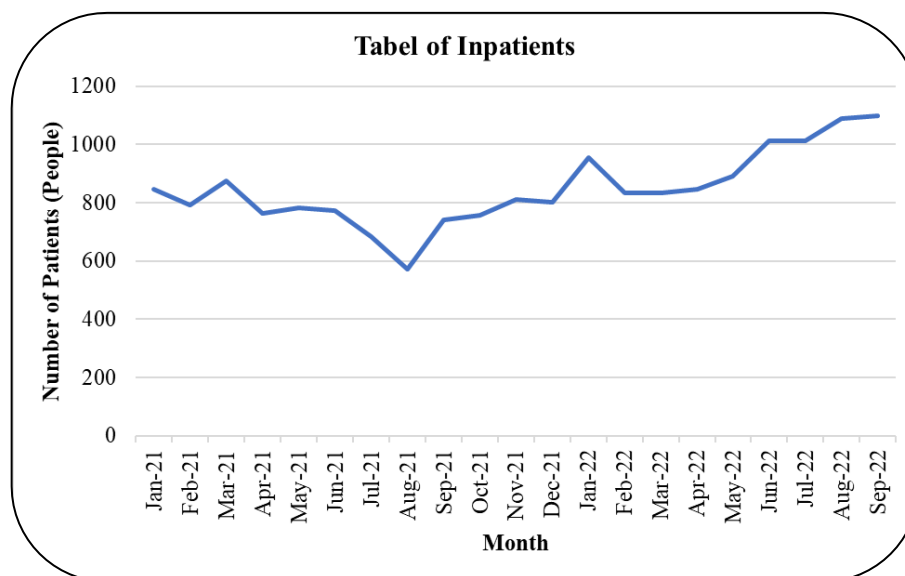
Figure 1. 2 Number of Inpatients of RSI Ibnu Sina Bukittinggi
Source: (RSI Ibnu Sina Bukittinggi, 2022)

The number of inpatients also fluctuated, where the number of patients increased from 848 people to 1098 people. The number of outpatients and inpatients at RSI Ibnu Sina Bukittinggi has increased the drug demand. RSI Ibnu Sina West Sumatra has a pharmaceutical installation that provides all the needs of patients and doctors in the form of drugs. Various companies supply drugs that are in pharmaceutical installations. The list of drug suppliers and the number of types of drugs supplied by each supplier can be seen in **Table 1.1.**

Table 1. 1 List of Drug Supplier at RSI Ibnu Sina West Sumatera Pharmaceutical Installations in 2022

No	Name of Supplier	Type of Drugs	Number of Drugs Type (Units)
1	PT. BERNOFARM	Generic	22
2	PT. DEXA MEDICA	Generic	38
3	PT. HEXPHARM	Generic	56
4	PT. KIMIA FARMA	Generic	58
5	PT. NOVELL	Generic	54
6	PT. PHAROS	Generic	35
7	PT. PROMED	Generic	11
8	PT. QUANTUM NUSATAMA	Generic	26

Table 1.1 List of Drug Supplier at RSI Ibnu Sina West Sumatera Pharmaceutical Installations in 2022 (Continue)

No	Name of Supplier	Type of Drugs	Number of Drugs Type (Units)
9	PT. DEXA MEDICA	Patent	68
10	PT. SANBE FARMA	Patent	147
11	PT. LANDSON	Patent	30
12	PT. KALBE FARMA	Patent	121
13	PT. NOVELL	Patent	31
14	PT. BERNOFARM	Patent	37
15	PT. FERRON PAR PHARMACEUTICALS	Patent	27
16	PT. CENDO	Patent	133
17	PT. OTSUKA	Patent	36
18	PT. FAHRENHEIT	Patent	22
19	PT. LAPI LABORATORIES	Patent	18

Table 1.1 shows the suppliers, types of drugs, and the number of drugs supplied. According to an interview with the head of the RSI pharmaceutical installation at Ibnu Sina Bukittinggi (2022), it is known that the tender process for drugs was carried out for all RSI Ibnu Sina in West Sumatra. The objective of this comprehensive tender process for all RSI Ibn Sina locations is to reduce overall procurement costs and secure more substantial price discounts from suppliers. The hospitals that participated in the tender process consisted of RSI Ibnu Sina Bukittinggi, RSI Ibnu Sina Padang, RSI Ibnu Sina Payakumbuh, RSI Ibnu Sina Padang Panjang, RSI Ibnu Sina Panti, and RSI Ibnu Sina Simpang Empat. RSI Ibnu Sina West Sumatra conducts supplier evaluations at the end of each month. In the evaluation process, each supplier's performance and the problems experienced by suppliers are recorded. Towards the conclusion of each year, a tender process is conducted to determine which suppliers will provide medicines in the upcoming year.

In determining suppliers, it is necessary to pay attention to the criteria in their selection. The main criteria in determining the supplier of drugs are price, quality, service, delivery, supplier profile, and overall personnel capabilities

(Forghani et al., 2018). Cost is the financial value of a product or service, whether it includes the purchase price of raw materials, the price of semi-finished materials, and the price of finished products obtained from suppliers to consumers. Cost criteria are essential in supplier selection as they are directly related to hospital profits. Suppliers offering competitive prices can help reduce operational costs to increase hospital margins (Immanuel et al., 2022). Quality refers to the quality of raw, semi-finished, and finished materials offered by suppliers to consumers. The quality of the drug is a critical factor directly related to the safety and effectiveness of patient treatment. The selection of suppliers who can guarantee the quality of drugs with appropriate certifications and licenses is essential to maintain the integrity of drugs (Forghani, Sadjadi, & Farhang Moghadam, 2018). Delivery refers to the accuracy of the number of goods supplied, the timeliness of delivery, and the suitability of orders with those supplied. Delivery is essential in supplier selection because they maintain stock availability and maintain service quality (LEBLEBİCİOĞLU & KESKİN, 2021). Services refer to the service suppliers provide to consumers, such as quick response to complaints, easy contact, and direct assistance if consumers have problems. This criterion is essential because good service will be related to patient satisfaction and how suppliers deal with problems experienced by the hospital (Immanuel et al., 2022). Supplier profile is an essential criterion in supplier selection because this will provide information about the reputation, ability, and suitability of the supplier with the hospital (Manivel & Ranganathan, 2019).

Supplier selection is one of the strategic activities if the supplier supplies necessary items and is used in long-term activities (Hasiani et al., 2021). Decision Makers must be objective in choosing suppliers. Decisions should not be intuitive or subjective, and based on experience alone, there is no straightforward selection procedure or method based on general criteria (Syahputra, 2016). The primary purpose of the supplier selection process is to reduce risk and maximize buyer value. This is because by conducting supplier evaluations, companies can improve the performance of suppliers and produce high-quality products (Muhammad et al., 2020).

Following an interview with the head of drug procurement at RSI Ibnu Sina Bukittinggi, it was revealed that a recurring issue is the frequent occurrence of drug stockouts. Data on drugs stock out at the RSI Ibnu Sina Bukittinggi Pharmaceutical Installation are presented in **Table 1.2.**

Table 1. 2 Data of Drug Stockout at RSI Ibnu Sina West Sumatra Pharmaceutical Installation in 2022

No	Drugs Name	Month
1	Cetirizine Sirup	
2	Clonidine Tablet	
3	Metformin 500 mg	June
4	Miconazole Cream	
5	Furosemide Injeksi	
6	Salofalk 250	
7	Isosorbide Dinitrate (ISDN) 5 mg	
8	Paracetamol Infus	July
9	Clonidine Tablet	
10	Combivent Nebu	
11	Hct Tablet	
12	Cefixime Sirup	August
13	Propylthiouracil (PTU)	
14	Dopamine Injeksi	
15	Metformin 500 mg	
16	Levofloxacin 500 mg	
17	Amoxicillin Sirup	
18	Domperidone Sirup	
19	Clonidine Tablet	September
20	Isosorbide Dinitrate (ISDN) 5mg	
21	OBH Sirup	
22	Salbutamol 2 mg	
23	Ciprofloxacin 500 mg	
24	Metformin 500 mg	
25	Metformin 850 mg	
26	Acyclovir 400 mg	
27	Ketoprofen 100 mg	
28	Amlodipine 5 mg	October
29	Levofloxacin 500 mg	
30	Metronidazole Infus	
31	Clonidine Tablet	
32	Betamethasone Cream	

Table 1.2 Data of Drug Stockout at RSI Ibnu Sina West Sumatra Pharmaceutical Installation in 2022 (Continue)

No	Drugs Name	Month
33	Furosemide Tab	October
34	Isoniazid 300 mg	
35	Galvus Tablet	November
36	Verapamil 80 mg	
37	Hydrochlorothiazide Tablet	
38	PPD *I*njeksi	
39	Rethapyl SR	
40	Salofalk 250 mg	
41	Ketoconazole krim	December
42	Metformin 500 mg	
43	Metformin 850 mg	
44	Amlodipine 5mg	
45	Furosemide tablet	
46	Acyclovir Cream	
47	Betamethasone Cream	
48	Isoniazid	
49	Diazepam 2 mg	

Based on an interview with the Head of Drug Procurement of RSI Pharmaceutical Installations, Ibnu Sina Bukittinggi, it is known that the cause of the stock out of this drug is due to delays in drug delivery and incorrect delivery of the type and quantity of drugs. The average delay in drug delivery is two to three days. This is undoubtedly a problem for the hospital because it will result in unmet patient needs. These unmet patient needs have caused various complaints because pharmaceutical installations' services need to be more satisfactory.

Choosing the right supplier will have a significant effect on reducing stock out. This is because, first, reliable and quality suppliers will meet demand promptly. Second, suppliers who have responsive service quality will respond to hospital requests and problems quickly and precisely. Third, the right supplier will send drugs quickly to anticipate the lack of drug supply in the hospital. Fourth, suppliers with reasonable inventory reserves will positively impact hospitals when there is unexpected demand. Fifth, suppliers with good inventory planning and management will reduce the impact of stock out on hospitals. In addition to the

frequent occurrence of stockouts, the price of drugs from each supplier differs, and the prices offered by suppliers are higher than those in the e-catalog. Data on the recapitulation of drug prices from several suppliers can be seen in **Table 1.3.**

Table 1. 3 Recapitulation of Drug Price Differences at RSI Ibnu Sina Pharmaceutical Installation, West Sumatera 2022

No	Drugs Name	Suppliers	Price	
1	Betason	Dexa	Rp	42,000
		Lapi	Rp	13,000
		Berno Ethical	Rp	55,000
2	Granon	Dexa	Rp	115,000
		Landson	Rp	90,000
		Novell	Rp	38,000
3	Lacidofil	Dexa	Rp	5,000
		Kalbe	Rp	7,167
		Lapi	Rp	7,000
4	LAZ 30 MG / 20	Dexa	Rp	13,500
		Kalbe	Rp	15,000
		Berno Ethical	Rp	12,000
		Lapi	Rp	14,000
5	Propofol	Dexa	Rp	95,000
		Kalbe	Rp	31,000
		Novell	Rp	85,000
6	Lanpepsa	Landson	Rp	66,000
		Kalbe	Rp	60,000
		Lapi	Rp	18,500
7	Vectrin Tab	Dexa	Rp	45,000
		Landson	Rp	50,000
		Kalbe	Rp	45,000
8	Megabal	Sanbe Erthical	Rp	1,660
		Landson	Rp	2,450
		Kalbe	Rp	2,800
		Berno Ethical	Rp	1,800
		Lapi	Rp	2,100

A more complete recapitulation of price differences is shown in **Appendix A**. This price difference influences the selling price of drugs at RSI Ibnu Sina West Sumatra. Procurement parties are often faced with the problem of selecting suppliers. For example, some suppliers excel in price but need help with shipping.

Supplier evaluation is needed by pharmaceutical installations of RSI Ibnu Sina West Sumatra. This is because pharmaceutical installations cooperate with many suppliers of drugs. So far, there are no clear criteria for determining drug suppliers in the RSI Ibnu Sina West Sumatera pharmaceutical installations. Therefore, it is necessary to determine the criteria and proposed mechanism in the supplier's selection at the RSI Ibnu Sina West Sumatra.

1.2   Problem Formulation

The research aims to address the issue of supplier selection at RSI Ibnu Sina West Sumatra to choose high-performing suppliers, thus mitigating frequent drug stockouts, delivery delays, and medication delivery errors.

1.3   Research Objectives

The objectives of this research are:
1.   Determine the criteria for selecting drug suppliers at RSI Ibnu Sina West Sumatra.
2.   Determine the weight of criteria for selecting drug suppliers at RSI Ibnu Sina West Sumatra.
3.   Propose a mechanism for supplier selection at RSI Ibnu Sina West Sumatra.

1.4   Research Scopes

The limitations of the problem in this research are data on the types of drugs and drug suppliers of RSI Ibnu West Sumatra in 2022 and historical data on the performance of suppliers at RSI Ibnu Sina Bukittinggi.

1.5   Outline of Report

The systematics of writing on this final project is as follows:

CHAPTER I **INTRODUCTION**

This chapter contains the background of research on supplier evaluation, problem formulation, research objectives, problem limitations, and writing systematics.

CHAPTER II **LITERATURE REVIEW**

This chapter outlines theories relating to the selection of drug suppliers. The theory includes supply chain management, pharmaceutical industry supply chain, supplier performance evaluation, supplier criteria selection, Fuzzy Method, Delphi Method, and *Analytical Hierarchy Process* (AHP) Method.

CHAPTER III **RESEARCH METODOLOGY**

This chapter contains the systematic stages carried out in the research. The stages carried out consist of an introduction, literature study, problem formulation, method selection, numerical data, data processing, proposed mechanism, analysis, and closing.

CHAPTER IV **DATA COLLECTION AND SUPPLIER SELECTION**

This chapter contains data collection and stages in data processing regarding selecting drug suppliers in RSI Ibnu Sina West Sumatra.

CHAPTER V **ANALYSIS**

This chapter contains an analysis of the results of data processing, which consists of an analysis of supplier selection criteria, an analysis of the results of weighting criteria, and an analysis of supplier evaluation mechanisms.

CHAPTER VI **CONCLUSION AND SUGGESTION**

This chapter provides conclusion from research on selecting drug suppliers in RSI Ibnu Sina West Sumatra and suggestions for further research.