Applying an Analytical Hierarchy Process for Decision Making Business Strategy in CV. Optik President

Niko Fernando[1], Utomo Sarjono Putro[2]

[1,2]Master of Business Administration, School of Business & Management, Bandung Institute of Technology

ABSTRACT: Vision is one of the vital organs of the human body which has a very fundamental role for life. With good eyesight, this can help people improve their quality of life. The eyeglass market is anticipated to develop over the next several years as a result of a variety of factors, including expanding populations, a demographic shift toward older age groups, and changing lifestyles characterized by a higher reliance on digital gadgets. Of course, the COVID-19 pandemic is also one of the factors that increases eye disease because most people use gadgets in their lives, causing symptoms of digital eye strain. In this way, this is a supporting factor in the development of the optical market. The market is expanding the fastest in the Asia Pacific region, with a growth rate of 13.5%. Offline optical retail stores provide significant promise and value. These physical businesses provide customers with an immersive and tangible shopping experience that is unmatched by internet shopping. To guarantee that customers receive accurate prescriptions and distinctive eyewear options, optometrists and store staff offer customized services like frame fittings, professional eye exams, and expert lens consultations. In actual storefronts, customers may physically try on frames to assess fit, comfort, and style. Trained staff members are available to provide timely assistance. Furthermore, a wide range of eyewear options, including designer brands and niche goods, are usually available in these stores, giving customers the opportunity to peruse and select from a diverse inventory. Furthermore, optical retail stores foster confidence and trust, particularly among those who appreciate in-person interactions or have certain vision needs that necessitate expert guidance. By looking at this market development, the company wants to expand, targeting West Karawang, East Karawang and Cikarang as targets for opening their branches. using the Analytical Hierarchy Process (AHP) method will be able to improve the quality of decision making that will be produced by the company starting from developing criteria and sub-criteria which can ultimately determine the best alternative. The results of this research provide recommendations for new criteria and sub-criteria for the company and also determine which location of the three alternatives the company will provide.

KEYWORDS: Analytical Hierarchy Process, Decision Making Process, Location Selection, MCDM, Retail Optics.

INTRODUCTION

Eyes are a very important part of the body owned by humans. Vision is a primary human need that is useful for interacting with the world around us. It is useful for communicating, carrying out daily activities and also enjoying life (Agustina, 2022).

At least 2.2 billion people struggle with their near or distant eyesight globally. The capacity to see well at various distances can be impacted by a variety of circumstances, whether they are connected to near or distant vision. At least 1 billion of these cases—close to half—involved vision loss that was either preventable or went untreated. The most common method of correcting eyesight is via eyeglasses, followed by contact lenses and vision correction procedures like LASIK. At least 4 billion individuals use glasses worldwide.

The global eyewear market was projected to be worth USD 157.9 billion in 2021. Retail sales of optical products will be $76.5 billion in 2022. The top market participants' continued efforts to acquire new clients and retain existing ones are having a favorable impact on market statistics. The market is expanding the fastest in the Asia Pacific region, with a growth rate of 13.5%. The annual revenue from eyeglasses sales for eye care goods shops is about 10%. Eye care retailers are companies that sell eyewear and offer services including eye exams and consultations. These could include optometrists, eye doctors, optical stores, etc. By 2025, it is expected that the market for eyeglasses would increase to $210.8 billion. By 2030, the market for eyeglasses is expected to be worth USD 323.77 billion, expanding at a compound annual growth rate of 8.4% between 2022 and 2030 (Wire, 2022).

There is still a lot of promise and value in offline optical retail stores. These physical stores give clients a shopping experience that is both tangible and immersive that cannot be matched online. Opticians and store employees provide individualized services,

such as expert lens consultations, frame fittings, and professional eye exams, ensuring that consumers receive precise prescriptions and unique eyewear selections. Customers may physically try on frames in offline stores, evaluate their fit, comfort, and style, and get prompt support from trained employees. Additionally, these shops frequently have a broad selection of eyewear alternatives, including designer labels and specialty items, providing clients the chance to browse and choose from a varied inventory. Furthermore, optical retail establishments promote confidence and trust, especially for people who value face-to-face encounters or have unique visual requirements that call for professional advice. Customer satisfaction and loyalty are increased when problems, such as modifications or repairs, are handled quickly. Also, offline retailers support the neighborhood economy and produce jobs. Even if the retail landscape has changed due to the advent of the digital age, offline optical retail outlets are still essential for offering complete eye care services, improving client experiences, and preserving a physical presence that promotes trust and connection within the community

BUSINESS ISSUE

Based on the wishes of the company leaders who want the company to expand in terms of opening new branches and also because glasses are a primary need for people who need help from glasses themselves so the company is very confident about expanding.

But company leaders caution that it is important to do research in selecting a location, the choice of an ideal location is important for optical retail enterprises planning to build a new branch. The success and profitability of the new branch might be considerably impacted by the location decision. Considerations should be given to variables like accessibility, foot traffic, competition analysis, and target market demographics. Finding a place with a lot of potential consumers and making sure they can see you and get to you easily is the difficult part. Analyzing the market for optical retail outlets might help you avoid certain locations. Additionally, in order to effectively customize product offers and marketing tactics to satisfy client wants, a thorough analysis of local market characteristics, including purchasing power and fashion trends, is essential.

The selection of the location will be essential for CV. Optik President in the early stage because each location has different potential. Due to the limited resources available, CV. Optik President must choose the most promising location for the future growth.

LITERATURE REVIEW

To help the author carry out this research, a literature review was carried out containing: root cause analysis, 5 why's, Multicriteria Decision-making (MCDM), Analytical Hierarchy Process, and Location selection using AHP method.

A. Root Cause Analysis

Root cause analysis can be used as a very helpful tool for everyone, not only limited to the business scope but can be in any scope. (Preuss, 2003) defined root cause as "the deepest underlying cause, or causes, of positive or negative symptoms within any process that, if dissolved, would result in elimination, or substantial reduction, of the symptom". The use of root cause analysis is reactive because root cause analysis can be carried out when a problem has arisen. Root cause analysis is used to find the core of problems that arise, where this tool is very powerful if used well and also root cause analysis can also be a tool for carrying out sustainable improvements.

B. 5 Why's

Since the technique can only be an outline of the process without the goal of the principle, the Five Whys approach is connected to the notion of systematic problem-solving. For this reason, the approach is related to the concept. Therefore, in order to make effective use of the Five Whys technique, there are three important components that must be present: (i) problem declarations that are specific and comprehensive; (ii) complete honesty in the way that questions are answered; and (iii) a willingness to examine and confront concerns. A good general guideline is five. One is usually able to eliminate the layers of symptoms that conceal the root of an issue by asking "why" five times. However, it's also possible to discover that you need to question "why" more or less frequently (Serrat, 2017)

C. Multi-Criteria Decision-Making

Multi-criteria decision-making (MCDM) is one of the key decision-making challenges that seeks to discover the best alternative by considering more than one factor in the selection process. MCDM has a wide range of tools and techniques that can be used in a variety of industries, from banking to engineering design. The purpose of this post is to offer a survey of the MCDM idea, its

applications, major categories, and various approaches. The concluding section offers a wealth of data and statistics about the works that have been published in the MCDM disciplines. This section also includes a list of some of the principal techniques (Taherdoost & Madanchian, 2023)

D. Analytical Hierarchy Process (AHP)

The AHP that was established by (Saaty, The Analytic Hierarchy Process, 1980) is predicated on a mathematical technique that gives points to individual criteria by way of pairwise comparison and weights each of these criteria in its own right. We adhere to the methodology outlined by (Yang & Lee, 1997). According to (Sipahi & Timor, 2010), the hierarchical structure enables systematic breakdown of the intricate overall problem into its component parts while taking into account their interdependencies. As a result, the primary concept of the AHP is to break down a complex problem into its component parts before organizing all of these parts into a useful hierarchical structure. There is only one element, known as the focus, at the top of the hierarchy. It serves as the main goal of the decision-making process. The layers below the focus are all composed of criteria, with each level typically containing five to nine elements.

Determining the primary criteria for the hub selection process based on a review of best practice examples and the scientific literature is one of the essential tasks. In order to complement the results of the literature review, experts are also interviewed for their perspectives. After choosing the criteria that will be used in our decision assistance tool, experts are asked for their estimates on how these criteria will compare when compared in pairs. This process produces a comparison matrix for each stakeholder group taken into account. The consistency of each matrix must be examined prior to utilizing it to choose the preferred site of a midi-hub from a pool of alternative locations (Saaty, The Analytic Hierarchy Process, 1980).

In the end, many hub location choices are assessed using the chosen criteria and taking into account the particular criteria weights for each stakeholder group. For each stakeholder group, this results in a preferred alternative, which serves as decision support for the last decision-making stage.

E. Location Selection using AHP method

Location is one of the most important factors in the retail business, according to (Erbiyik , Ozcan, & Karaboga, 2012). A wellknown real estate mantra is "location, location, location" and this seems to hold particularly true for retail chains as it is cited as one of the most important variable factors affecting "the profitability and sales performance of the management". So, choosing a location for a retail business is very crucial and therefore, before determining a location, it is necessary to carry out in-depth research on the location. In determining a location, of course there are many factors or criteria that are taken into consideration before making a decision in management. This can be solved with the theory of multi-criteria decision making (MCDM) where AHP is part of MCDM and is a very useful tool in decision making. to determine the location because in AHP it is a complete tool starting from determining criteria, sub-criteria and ultimately determining which alternative will be taken as a decision. In AHP, pairwise is a crucial step. Pairwise comparison is a key step in the AHP location model to determine priority weights of location factors and provide a rating for site candidates based on qualitative factors (Yang & Lee, 1997). With all the advantages that AHP has, this tool can help companies develop the results of their decision making into maximum results and in this way, shops in locations that make decisions using AHP are expected to have good performance and be able to achieve or fulfill the targets given by the company.

PROBLEM EXPLORATION

In this way, the company leaders want to change their approach in opening branches, but the company leaders want the expansion to be carried out on the island of Java, because 60% of the population in Indonesia is on the island of Java. The company leader already has 3 desired candidate locations, namely: West Karawang, East Karawang, Cikarang. This location was chosen because it is a location that has high market potential, where this location is a location where a large factory is located. This is a strong reason for the company leaders because one of the company's branches is in a location similar to the 3 locations mentioned previously, and This branch is the best branch with the highest revenue contribution in the company. This location was chosen also because the area is an area with a very high minimum wage so that the people there have high spending power too.

However, the company realized that their knowledge of the market conditions in West Karawang, East Karawang and Cikarang was very limited, causing the company leaders to want the business development division to conduct very in-depth research, so they decided to conduct research with their colleagues who were external to the company to help them. get information about the market

conditions in the area so that the results of the decisions taken are the result of people who are experts and understand the area very well.

A. Rich Picture

Results that carried out from the analysis and interviews with the company owner, it is known that the company owner wants his company to expand, in this case especially to open a new branch because according to the company owner the retail optics market is still very large where customers for retail optics are not limited to any group and any age. With this belief, the company director asked the business development division to research the new branch's location and learn from past mistakes. Thus, the business development division conducts a feasibility study to establish the optimum location for the company's new branch. After choosing the ideal location and getting director approval, the corporation will fund the new branch's opening. The large potential of the retail optical market in Indonesia does not make the company director forget about competitors. The company director said that it is very important to include competitor factors in the business development division's research so that this can be taken into account in making branch location decisions.
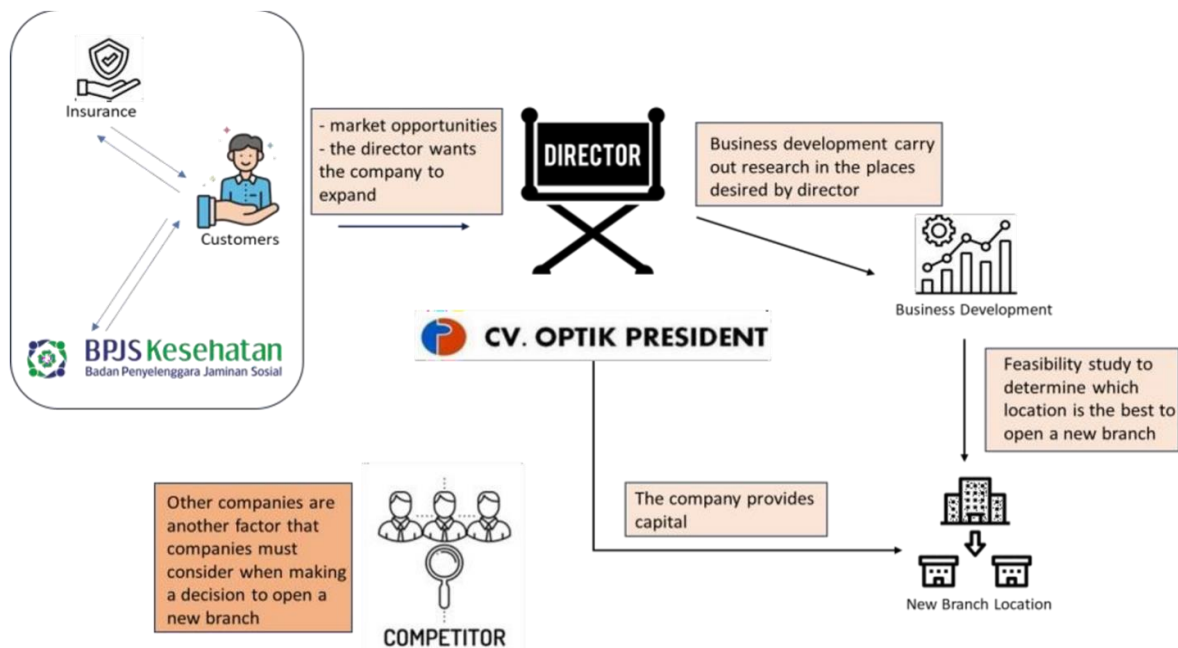
Figure 1. Conceptual Framework

B. 5 Why's

The 5 Whys analysis is used to uncover the fundamental cause of a problem so that the solution is accurate and improves the problem. To identify the company's issues, the author interviews leaders in this 5 Whys investigation. According to discussions with company officials, the fundamental issue with this company was that the prior branch had not been established optimally, therefore it was no longer running and wasting a lot of resources. Why do many branches of the corporation fail to fulfill sales targets, thus the company offers periodic financial injections until it closes them? This arises because sales don't achieve expectations due to low foot traffic from the branch's unplanned location. Not doing enough research and making decisions based on subjective assessments might lead to poor decisions and the branch not meeting business targets. Based on the 5 why's above, root cause analysis found that several previous branches failed because location decisions were made without in-depth research and using subjective judgments, resulting in subjective decision results and failure to meet company targets.
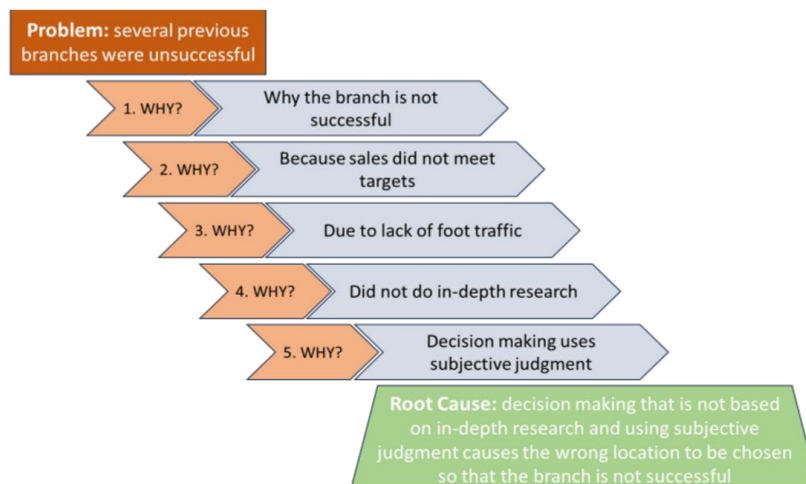
Figure 2. 5 Why's

CONCEPTUAL FRAMEWORK

This conceptual framework presents a methodical way to choose the ideal location for the expansion. where according to (Durvasula, Sharma, & Andrews, 1992) choosing the felicitous location can enable firms to increase their own store performance by making these stores more attractive for potential customers. So, there is a gap that appears between current conditions and ideal conditions, namely that there are no good standards in making decisions about new branch locations. The final result expected from this research is that by closing the gap that occurs, the company can create good standards in making decisions to determine the location of new branches and also the company has good standard criteria and sub-criteria as well so that the expected performance of each new branch opened can meet the company's targets.
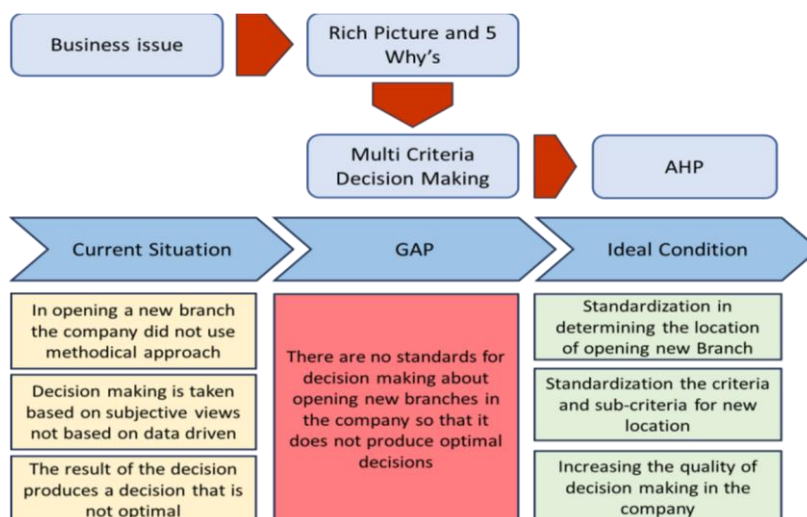

Figure 3. Conceptual Framework

RESEARCH DESIGN

In this research, the author divides this research into 5 stages where these stages are continuous with each other which is visualized in Figure 4.

In this first stage, what the author does is look for or explore business issues from the company that is the object of the research, where this needs to be done to understand the problems that occur in the company so that the final results of this research can provide

appropriate solutions or recommendations for the problems that occur, apart from this. The issue business needs to be developed so that the writer can produce the right research question so that the writer gets clear direction in carrying out this research.

In this second stage the author needs to develop a theoretical foundation and also a conceptual framework. Theoretical foundation needs to be done so that the work on this thesis uses the right theory so as to produce good quality research so this is a very crucial thing in carrying out research. A conceptual framework needs to be carried out so that the author has clear direction in carrying out this research.

The third stage are data collection method and data analysis The data collection method is an explanation of how researchers collect the data needed in this research and further explanation of the data collection. Data analysis is an explanation of how the author analyzes the data that has been collected. In this research, the researcher will use the bpmsg.com tool in processing the data that has been collected.

Fourth stage are consisting of analysis and implementation plan and justification The analysis section is the section that explains the results of data processing that has been carried out and analyzed in order to draw conclusions resulting. The implementation plan and justification section is the section that provides recommendations to the company regarding how to plan the results of this research and the justification needed to validate the beliefs of the author and also the company.

The last stage are the conclusion and recommendation which are expected to answer the needs of the company that is the object of the research.
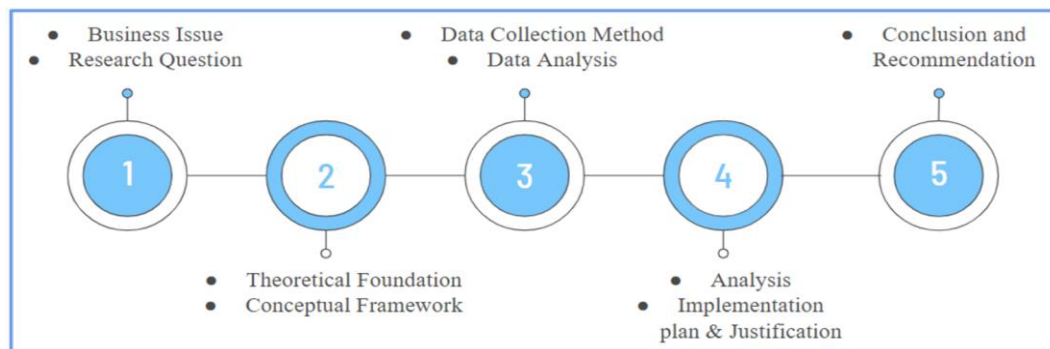

Figure 4. Research Design

DATA COLLECTION METHOD

Data collection is the process of gathering and measuring information on variables of interest, in an established systematic fashion that enables one to answer stated research questions, test hypotheses, and evaluate outcomes (Kabir, 2016). Data collection is a method that is very necessary for the process to collect the necessary data. In this research, the author carried out primary and secondary data collection, this was done so that the objectives of this research could be fulfilled completely.

Primary data is Data that has been collected from first-hand-experience is known as primary data. Primary data has not been published yet and is more reliable, authentic and objective. Primary data has not been changed or altered by human beings; therefore, its validity is greater than secondary data (Kabir, 2016). Primary data collection in this research used two methods, namely in-depth interviews and questionnaires. The questionnaire used in this research is a pairwise comparison, pairwise comparison is a key step in the AHP location model to determine priority weights of location factors and provide a rating for site candidates based on qualitative factors. The procedure focuses on two factors at a time and their relation to each other, so decision makers will be more comfortable to offer relative than absolute preference information (Yang & Lee, 1997). AHP calculations in this thesis use a tool called bpmsg.com, this is a tool developed by Klaus in 2018 through Business Performance Management Singapore. pairwise comparison will be carried out twice, where the first pairwise comparison is carried out to determine the weights of the criteria and sub-criteria, then the second pairwise is carried out, which functions to fill in the pairwise in the alternatives section and all pairwise slices and also the data analysis will use bpmsg.com. Table 1 displays the participants who took part in the pairwise comparison questionnaire.

Secondary data is data collected from a source that has already been published in any form is called secondary data. The review of literature in any research is based on secondary data. It is collected by someone else for some other purpose (but being utilized

by the investigator for another purpose). Secondary data in this thesis was carried out to obtain information regarding AHP, criteria and sub-criteria as well as things that support this thesis

Table 1. Respondent Information

No	Name	Role
1	Nasferi Anwar	Participant; owner of a company that has been in business for more than 30 years
2	Arief Dhaek	Participant; sales person from the largest lens company in Indonesia which has a work area in Jabodetabek and West Java and has more than 15 years of experience
3	Evan	Participant; sales person from one of the largest optical equipment companies in Indonesia which has a work area in Jabodetabek and West Java. has work experience for more than 15 years
4	Imam Aspuri	Participant; manager of one of the optics in Jabodetabek which has 14 branches, and has business experience for more than 10 years
5	Ari Lubis	Participant; sales person from the company, one of the frame companies that is growing very quickly in Indonesia and has a work area in Jabodetabek and West Java. has 5 years work experience.

DATA ANALYSIS METHOD

Data analysis is simply the process of converting the gathered data to meaningful information. Different techniques such as modelling to reach trends, relationships, and therefore conclusions to address the decision-making process are employed in this process (Start , 2006).

AHP calculations in this thesis use a tool called bpmsg.com, this is a tool developed by Klaus in 2018 through Business Performance Management Singapore. A multi-level hierarchical structure of goals, criteria, attributes, and options is achieved by the application of AHP (Saaty, How to make a decision: the analytic hierarchy process, 1994) (Wang, Huang, & Dismukes, 2004). This allows for the separation of a complex problem into its component parts.

For the purpose of determining the level of consistency present in each matrix, the Consistency Ratio is utilized the purpose of determining the level of consistency present in each matrix, the Consistency Ratio is utilized. The size of the matrix determines the appropriate consistency ratio. For instance, the C.R. shouldn't be higher than 0.05 if the matrix is 3 by 3, while it shouldn't be higher than 0.08 if the matrix is 4 by 4. The C.R. shouldn't be higher than 0.1 for matrix sizes greater than 5x5. The assessor's discretion needs to be examined if the C.R. value rises above a predetermined threshold (Saaty, How to make a decision: the analytic hierarchy process, 1994).

CR = CI/RI

CR = Consistency Ratio

CI = Consistency Index; is a measure of deviation from perfect consistency

RI = Random Consistency index; is a measure of deviation from perfect consistency

The Consistency Index (CI) can be determined from

CI = (λ_max - n)/(n - 1)

N = the size of the square matrix

λ_max = the minimum EigenValue of the specific coefficient

Whenever the CR value was either less than or equal to 0.10, the factor was judged to be consistent. On the other hand, if the CR value was larger than 0.10, the factor was regarded as inconsistent. Following this, the scores obtained from the pairwise comparison need to be re-adjusted by computing the coherence ratio of the reasonable (Manowan, Manowan, & Hengmeechai, 2022).

ANALYSIS

Determine and definition of criteria and sub-criteria:

The first step in working on AHP is that we have to understand the problems that occur so that the author knows the problems or needs of the company that is the object of research, that way the author can produce criteria and sub-criteria that are appropriate to the problems that occur so as to provide appropriate research results. In developing the criteria and sub-criteria, the author conducted a literature review and also conducted in-depth interviews with company leaders so that he could produce the criteria and sub-criteria as explained in the table 2.

Table 2. Determine and definition of criteria and sub-criteria

| Criteria	Sub-Criteria	Title	Author	Definition
Market	Market Growth	An AHP Decision Model for Facility Location Selection	Jiaqin Yang and Huei Lee, 1997.	Market growth means that the market size continues to grow from before over time. Market growth is an indicator that shows that the industry or economy is in a healthy condition. so, this also shows that market development is an important indication if a company wants to enter a particular market.
	Clustered Market	location Selection Based on ANP/AHP Approach	C.L. Yang, S.P. Chuang, R.H. Huang, C.C. Tai, 2008.	Clustered market is a market condition where many related or unrelated goods and services are sold
	Competition	location Selection Based on ANP/AHP Approach	C.L. Yang, S.P. Chuang, R.H. Huang, C.C. Tai, 2008.	Competition is a contest or rivalry between players or companies that sell the same goods or services to each other and also target the same customers with the aim of getting more sales, increasing revenue and also increasing market share compared to other competitors.
Consumer Characteristics	Consumer Population			Participant; manager of one of the optics in Jabodetabek which has 14 branches, and has business experience for more than 10 years

Location Qualification	Disposable Income			Participant; sales person from the company, one of the frame companies that is growing very quickly in Indonesia and has a work area in Jabodetabek and West Java. has 5 years' work experience.
	Purchasing power			The amount of products and services that may be purchased with a single unit of currency is referred to as the purchasing power of that currency.
	Rent			The amount of money that must be spent or paid to the owner of the place so that the company can rent the place for a period of at least 1 year.
	Shop Size			how large the area of the shop will be rented by the company
	Employee Recruiting			how easy it is for the company to obtain available human resources.
Community	Housing	An AHP Decision Model for Facility Location Selection	Jiaqin Yang and Huei Lee, 1997	Number of houses in the area
	Business Climate			The professional and financial atmosphere that envelops a sector of the economy or a collection of businesses is referred to as the business climate.
Community	Numbers of Hospital		Company	Number of hospitals in the area
	Numbers of School		Company	Number of schools in the area
	Numbers of Factory		Company	Number of factories in the area

AHP HIERARCHY OF SELECTING BRANCH LOCATION

According to the findings of an in-depth investigation into the criteria and sub-conditions that are appropriate for launching a new branch, a hierarchy was discovered, which is depicted in Figure 5. This hierarchy is broken up into four parts, the first of which is the goals section. The goals of the AHP that will be carried out within this hierarchy are for the selection of regions for the opening of new branches. The criteria, which include the market, consumer characteristics, geographic qualifications, and community, are the subject of the second half of the discussion. There are fifteen sub-criteria that are included in the sub-criteria section, and the visualization of these sub-criteria may be found in that part. The third section consists of the alternative places that have been identified by the corporation. These locations include East Karawang, West Karawang, and Cikarang.
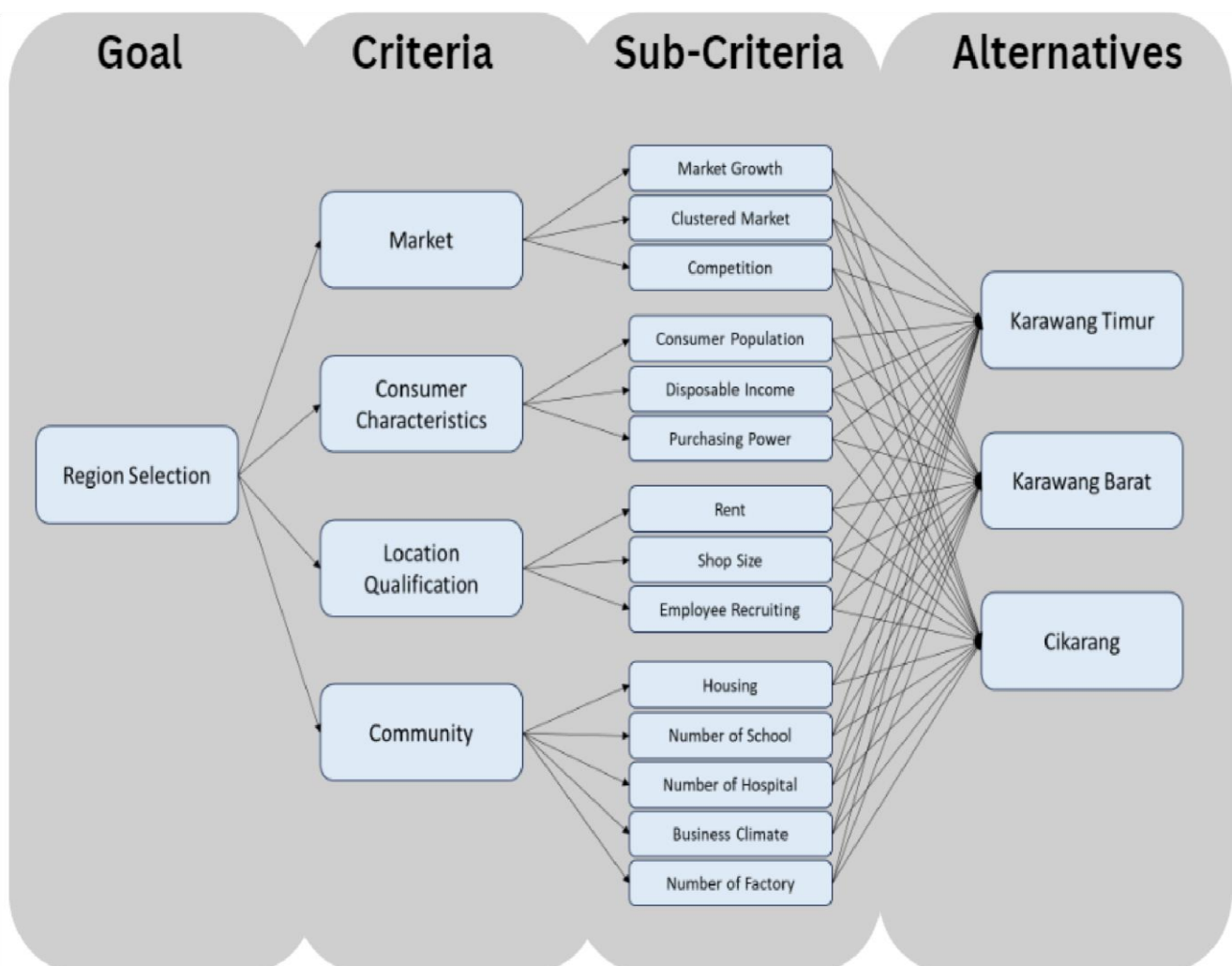
Figure 5. AHP hierarchy of selecting branch location

WEIGTH CALCULATION FOR CRITERIA AND SUB-CRITERIA

The next process is that we need to know the weight for criteria and sub criteria where the results of calculating the local weight and global weight for each criterion and sub-criteria are as shown in Table 3.

Table 3. Weight calculation for criteria and sub-criteria

Level 0 (Goal)	Level 1 (Criteria)	Local Weight Criteria	Level 2 (sub-Criteria)	Local Weight Sub-Criteria	Global Weight
Region Selection	Market	0.22	Market Growth	0.26	5.8%
			Clustered Market	0.14	3.2%
			Competition	0.59	13.0%
	Consumer Characteristics	0.12	Consumer Population	0.51	6.1%
			Disposable Income	0.14	1.7%
			Purchasing Power	0.34	4.2%
	Location Qualification	0.23	Rent	0.40	9.5%
			Shop Size	0.26	6.3%
			Employee Recruiting	0.32	7.7%
	Community	0.42	Housing	0.25	11.0%
			Number of School	0.11	4.8%
			Number of Hospital	0.14	5.9%
			Business Climate	0.13	5.8%
			Number of Factory	0.35	14.9%

Based on the pairwise comparison carried out by experts, the global weights of each sub-criterion were found. The largest weight is owned by the number of factories which has a weight of 14.9% and is followed by competition at 13.0%, then there are housing, rent and also employee recruitment which are in the top five, each of which has a weight of 11.0%, 9.5 %, and also 7.7%. while the other sub-criteria have more or less the same weight, namely in the range of 3% - 6%, where the lowest weight is owned by disposable income which is only 1.7%.

The consistency ratio obtained on the global weight for criteria and sub-criteria is 3.0%, where this value is a very good value and far below the limit value of 10%, so in other words it can be concluded that the pairwise comparison results of the criteria and sub-criteria has high consistency.

WEIGTH CALCULATION FOR ALTERNATIVES

When the weights of the criteria and sub-criteria are known, a second pairwise comparison is carried out which is useful for experts to fill in the pairwise comparison of the available alternatives. After filling in the pairwise comparison in the alternatives section, the consolidated result is obtained which is shown in Table 4

Table 4. Weight calculation for alternatives

Level 0 (Goal)	Level 1 (Criteria)	Local Weight Criteria	Level 2 (sub-Criteria)	Local Weight Sub-Criteria	Global Weight	Karawang Timur	Karawang Barat	Cikarang
Region Selection	Market	0.22	Market Growth	0.26	5.8%	0.15	0.66	0.18
			Clustered Market	0.14	3.2%	0.15	0.64	0.20
			Competition	0.59	13.0%	0.29	0.53	0.17
	Consumer Characteristics	0.12	Consumer Population	0.51	6.1%	0.12	0.72	0.14
			Disposable Income	0.14	1.7%	0.24	0.43	0.32
			Purchasing Power	0.34	4.2%	0.13	0.67	0.18
	Location Qualification	0.23	Rent	0.40	9.5%	0.38	0.18	0.42
			Shop Size	0.26	6.3%	0.16	0.58	0.24
			Employee Recruiting	0.32	7.7%	0.14	0.63	0.22
	Community	0.42	Housing	0.25	11.0%	0.11	0.70	0.18
			Number of School	0.11	4.8%	0.15	0.70	0.14
			Number of Hospital	0.14	5.9%	0.15	0.69	0.15
			Business Climate	0.13	5.8%	0.25	0.65	0.09
			Number of Factory	0.35	14.9%	0.19	0.53	0.27
			Consolidated Result			20,10%	58,20%	21,70%

Based on the pairwise results which were filled in by experts via bpmsg.com and produced the following data where in terms of group results it was found that 13/14 West Karawang received a higher weight than other alternatives, The only small value from consolidated valet obtained by Karawang Bawat is in the location qualification criteria section or in more detail in the rent sub-criteria section. where according to experts, rental prices in West Karawang have higher rental costs compared to the other two alternatives (East Karawang and Cikarang). While Cikarang and East Karawang have almost the same weight, with only a difference of 1.6% or with respective values of 20.10% and 21.70%. for East Karawang and Cikarang while West Karawang has a consolidated result that is much better than the other two alternatives, namely 58.20%

IMPLEMENTATION PLAN

Based on research results for opening new branches using AHP which resulted in recommendations for opening branches in West Karawang that were larger than those in East Karawang and Cikarang. To make the results of this research more perfect, the author proposes an implementation plan that can be carried out by the company. where the implementation plan proposed by the author has received approval from the company. The company is also confident with the results of this research because the company agrees with the specified criteria and sub-criteria and also another thing that makes the company very confident is the company's trust in the experts who are the sources in this research.

Table 5. Implementation Plan

	2024				
	April	Mei	June	July	August
obtain contact approval with the location owner	✔				
carry out store renovations		✔			
open employee recruitment		✔			
employee training		✔	✔		
prepare the inventory assets			✔		
Soft Opening				✔	
Grand Opening					✔
evaluation	✔	✔	✔	✔	✔

The table above is the implementation plan table that the author proposes, namely starting from the company being able to make a contract with the location owner in April so that in May renovation activities can be carried out starting from interior and exterior renovations which will take a full month. In the same month the company can carry out open employee recruitment and immediately carry out training from May to June, this training process takes 1 to two months because it is hoped that when the branch is operational, the employees will have good standards so they can meet the expectations of the employees. customers. because by the end of May it is hoped that the renovation process will be complete, in June the company can make preparations for inventory assets so that in July the branch in West Karawang is ready to be launched and have a Soft Opening. After one month of the soft opening and the employees are used to the workflow and understand their respective duties, then in August the Grand Opening can be held. The most important part to do every month and every stage is evaluation so that the company can quickly resolve problems that arise or will arise in the future.

CONCLUSION AND RECOMMENDATION

Based on the results of the discussion in the previous chapter, it is known that the gap that occurs is that there are no standards in making decisions for opening new branches, which causes these decisions to result in decisions that are not optimal. So, the author suggests using the AHP method in selecting locations because the AHP method is one of the methods used in multi-criteria decision making and this method is the most suitable method for determining locations. so that this can give a recommendation for company on how to improve the decision-making process in selecting a location for a new branch and also the author provides recommendations for criteria and sub-criteria in determining the opening of new branches, which can improve the quality of company decision making which is explained in the Table 2. In order to avoid mistakes that have occurred in the past where companies expanded by opening branches whose opening process did not go through a correct decision-making process, the author suggests that companies can implement a decision-making method using AHP where it is hoped that decision making will be based on research. better, it will result in better decisions where the expansion carried out can meet the targets set by the company so that the company will be able to continue to develop in the future.

The results of the research that has been carried out, which started by finding out about the company's business issues, were developed through problem exploration and carrying out various literature reviews and using AHP as a tool in solving the problems faced. Based on the results of the various processes above, the author recommends that the company open a branch in West Karawang. because based on the results of the consolidated weight of alternatives West Karawang is in the top ranking with a weight of 58.20%, for Cikarang and East Karawang respectively 21.70% and 20.10% where based on these results West Karawang gets a

weight that is twice time larger than the other alternative and also means that overall experts recommend opening a branch in West Karawang.

REFERENCES

1. Agustina, N. (2022, 10 18). *Mata adalah Jendela Dunia*. Retrieved from https://yankes.kemkes.go.id/: https://yankes.kemkes.go.id/view_artikel/1697/mataadalah-jendeladunia#:~:text=Mata%20merupakan%20indera%20pertama%20yang%20akan%20merespon%20dan%20menerima%20informasi.&text=Melihat%20da pat%20membuat%20Anda%20menjadi,jangan%20abaikan%20kesehatan%20mata%
2. Durvasula, S., Sharma, S., & Andrews, J. (1992). *Storeloc: A retail store location model based on managerial judgement.* journal of retailing.
3. Erbiyik , H., Ozcan, S., & Karaboga, k. (2012). *Retail store location selection problem with multiple analytical hierarchy process of decision making an application in Turkey.* Procedia - Social and Behavioral Sciences.
4. Hartono, S. H. (2021, December 22). *Jumlah Pengguna Kacamata Minus Meningkat Selama Pandemi Covid-19*. Retrieved from https://health.grid.id/: https://health.grid.id/read/353056544/jumlah-pengguna-kacamata-minus-meningkat-selama-pandemi-covid-19?page=2
5. Indonesia, K. P. (2019, 5 18). *Pasar Masih Potensial, Kemenperin Fokus Tumbuhkan Industri Kacamata*. Retrieved from https://kemenperin.go.id/: https://kemenperin.go.id/artikel/20718/Pasar-Masih-Potensial,-Kemenperin-Fokus-Tumbuhkan-Industri-Kacamata [5] Kabir, S. M. (2016). Methods of Data Collection. *Research Gata*, 202.
6. Manowan, D., Manowan, V., & Hengmeechai, P. (2022). USING THE AHP METHOD TO EVALUATE LAUNDROMART STORE LOCATION SELECTION: A CASE STUDY IN BANGKOK METROPOLITANT REGION. *ABAC Journal*.
7. Preuss, P. (2003). *School leader's guide to root cause analysis: Using Data to disslove problems.* New York: eye on education.
8. Saaty, T. (1980). *The Analytic Hierarchy Process.* New York: McGraw-Hill.
9. Saaty, T. (1994). How to make a decision: the analytic hierarchy process. *Interfaces*.
10. Serrat, O. (2017). *The Five Whys Technique.* Asian Development Bank 2017.
11. Sipahi, S., & Timor, M. (2010). The analytic hierarchy process and analytical network process : an overview of applications. *Emerald Group Publishing Limited*.
12. Start , S. (2006). Introduction to Data Analysis Handbook Migrant & Seasonal Head Start Technical Assistance Center Academy for Educational Development. *Journal of Academic*, 6-8.
13. Sulistiana, D., & Samoedra, A. D. (2021). Business Plan Kacamata Anti Radiasi EYEPRO. *Jurnal Bisnis, Ekonomi, dan Sains*.
14. Taherdoost, H., & Madanchian, M. (2023). *Multi-Criteria Decision Making (MCDM) Methods and Concepts.* Canada: encyclopedia.
15. VIO. (2023, 3 6). *Ketahui Pentingnya Fungsi Mata Kita Sebagai Indera Penglihatan*. Retrieved from viooptical.com: https://viooptical.com/ketahuipentingnya-fungsi-mata-kita-sebagai-indera-penglihatan
16. Wang, G., Huang, S., & Dismukes, J. (2004). Product-driven supply chain selection using integrated multicriteria decision-making methodology. *International Journal of Production Economics*.
17. Wire, B. (2022, 08 08). *Global Eyewear Market to Reach $323.77 Billion by 2030 - ResearchAndMarkets.com*. Retrieved from https://www.businesswire.com/: https://www.businesswire.com/news/home/20220808005332/en/Global-Eyewear-Market-to-Reach-323.77-Billionby-2030---
18. Yang , J., & Lee, H. (1997). *An AHP decision model for facility location selection.* MCB University press.