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RISK MANAGEMENT IN PINISI RELAXATION USING ANALYTICAL HIERARCHY PROCESS

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Abstract-Pinisi Relaxation is a massage parlor that was established in September 2012, and located in the city of Bandung and Sukabumi. Along with the passage of a new company, there are many events that can cost the company, both in terms of financial and non-financial. To be able to cope with such events, Pinisi Relaxation could use risk management approach, as well as the use of Analytical Hierarchy Process in selecting alternative needed to handle the risks. Risk identification in Pinisi Relaxation divided into business risk, financial risk, operational risk, marketing risk, and human resource risk. All risks will be placed in a risk map that reflects the position of any risks inherent in Pinisi Relaxation. The next process is to mitigate the risks inherent in Pinisi Relaxation through analysis of theory and concepts related to conditions in Pinisi Relaxation. Results of analysis for risk mitigation alternatives will then be selected through the Analytical Hierarchy Process to produce the best alternative to handle the risks. Criteria that must be met to handle the risks in Pinisi Relaxation are divided over the cost, effectiveness, and time, in which each of these criteria have different comparisons. Through the process of the analysis, there would be the alternatives that required by Pinisi Relaxation to handle the risks. Each entity in the company should be able to do the alternatives that have been selected in accordance with their respective duties. In addition, the risk management process should always be reviewed and controlled in order to avoid the things that could cost the company if it the risk treatment doesn't run in an appropriate way.

Keywords: Pinisi Relaxation, Risk Management, Analytical Hierarchy Process

Background

Massage is an activity that already familiar with Indonesian people, either for the purpose of relaxing the body or alternative healing. One of the massage parlors in Indonesia is Pinisi Relaxation, which is located in the city of Bandung and Sukabumi. Pinisi Relaxation was established in September 2012, because this company is quite new the role of the owners of Pinisi Relaxation is still high, the system is still developed and adjusted to the work and business condition. The owners also still facing variety of risks related to massage business. Therefore, companies must be able to know what risks to be faced, analyze, and seek the best solution for every risk inside its company, those processes are summarized in detail in a concept that is risk management. Startup company fail in their first year operation, and 90% of the business failures were due to management inadequacy. Risk management could be a solution for the condition, this will mitigate the risk by find alternatives that capable for each event that could be happening. Further there are some tools that could help the decision making process after identified the risks, which one of them is Analytical Hierarchy Process. This research will use collaboration of Risk Management and Analytical Hierarchy Process to identified and mitigate the business risks at Pinisi Relaxation.

Construct Building

Risk Management

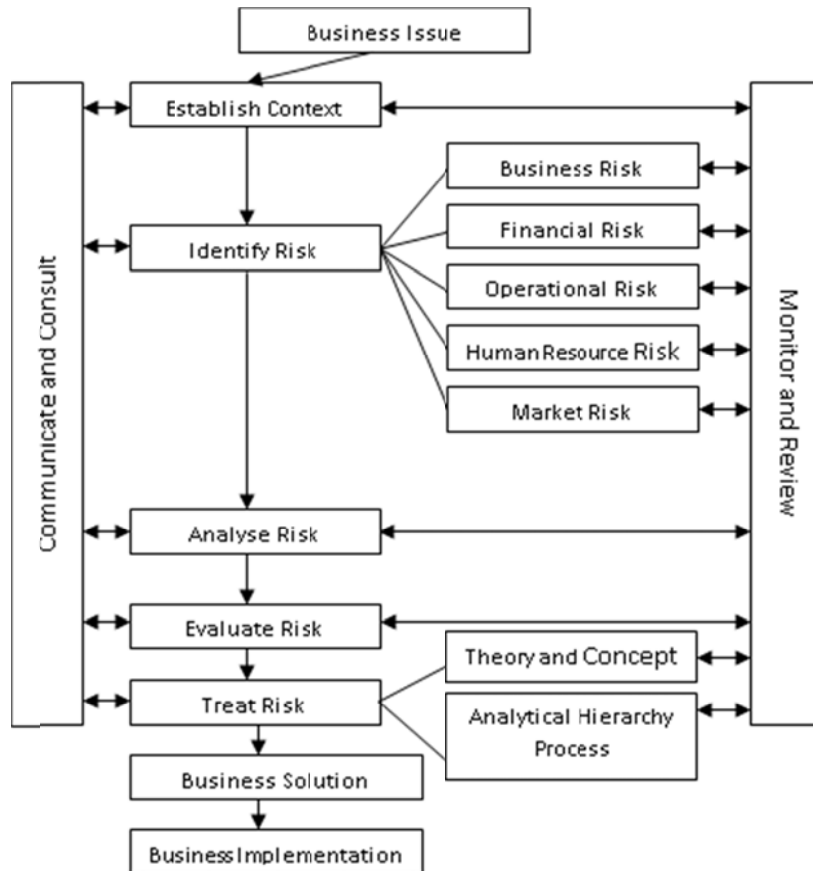
Risk management used as a tool of control and standards that can be used by the company to be able to achieve company's vision and mission. Risks in Pinisi Relaxation divided into five parts, which are business risk, financial risk, operational risk, human resource risk, and marketing risk. On risk management, there is a tool called risk map that are capable to place the risks into its position.

Analytical Hierarchy Process

The author use Analytical Hierarchy Process for risk mitigation selection process to fit the criteria required by the company because Analytical Hierarchy Process could decompose solutions for a problem into some criteria. The basic concept of AHP is the use of pairwise comparison matrix to generate relative weights among criteria. Criteria will be compared with other criteria in terms of how important to the achievement of goals on it (Saaty, 1990)

Methodology

This research use framework AUS/NZ 3460 to become guide for risk management process in Pinisi Relaxation. This use because communications would give the process of risk management easier to be done, especially since Pinisi Relaxation still have a relatively small number of employees and culture that is applied to Pinisi Relaxation’s employees is familial culture.



Result

Based on the observation and interviewed the owners and employees, there are 22 risks that can be possibly happen in Pinisi Relaxation, that are also have its likelihood(L) and impact(I)'s score:

Table 1. Risk Identify in Pinisi Relaxation

No	Risk	L	I	No	Risk	L	I	No	Risk	L	I
1	Demand Risk	5	3	9	Risk of electricity	2	5	16	Risk of sick employees	4	3
2	Capacity Risk	5	2	10	Risk of water discharged	2	4	17	Risk of saturated employee	5	1
3	Reputation Risk	5	4	11	Risk of broken instruments	3	4	18	Risk of employees crime	5	5
4	Social Risk	1	5	12	Risk of unavailability raw materials	4	5	19	Salary risk	2	4
5	Payment risk	4	2	13	Risk of unavailability supporting tools	4	5	20	Risk of hijacked employees	3	3
6	Accounting risk	5	3	14	Risk of room cleanliness	5	1	21	Promotion risk	3	3
7	Liquidity risk	3	5	15	Risk of absent employees	4	2	22	Risk of customer perception	3	2
8	Macroeconomic risk	2	3								

AHP Analysis

From the interview, the comparison for the criteria in Pinisi Relaxation is:

Table. 2. Pairwise Comparison

	Cost	Effectiveness	Time
Cost	1	3	5
Effectiveness	1/3	1	3
Time	1/5	1/3	1

The number obtained because the cost of each alternative is moderately more importance to the effectiveness and strongly more importance to the time needed. The effectiveness criteria is also moderately more importance to the time needed, because the company doesn't need the risk to be handled so quickly if it could be more efficient on handling the risk. The average score after divided from the pairwise comparison is

Table. 3 Average Score After Divided

	Cost	Effectiveness	Time	Normalized Eigenvector
Cost	0.65	0.69	0.56	0.63
Effectiveness	0.22	0.23	0.33	0.26
Time	0.13	0.08	0.11	0.11

The score of λ_{max} from the table is 3.06, and the score of Consistency Index is 0.028. The RI table score for 3 numbers of criteria is 0.56, and the CR score of the table is 0.048. Because the CR score is below 0.1, so the pairwise comparison for Pinisi Relaxation is consistent.

The next step is to evaluate each alternative which is considered to be able to mitigate any risk with a scale from 1 to 5, with a mean level that the greater number, then the alternative gives a better impact for the company. The value of the alternatives will be multiplied with the normalized eigenvector from each criteria, and the highest total score alternative would be chosen to be the

mitigation of the risk. There is also the possibility that a risk have more than one mitigation if they could be performed together and in accordance with the objective of mitigating the risk.

Summary of Alternatives

Each risks has its own alternative to reduce its likelihood, consequences, or both. The alternatives would be further analysed based on its cost, effectivity, and time needed, and would be scored from 1 to 5. The highest score means a better condition for the company, so 5 in cost would mean very cheap, 5 in effectivity would mean vey effective, and 5 in time would mean very fast. The score are written based on the analysis from the authors and from the discussion with owner and employees. The summary of every alternatives that could be taken by the company to reduce risks in Pinisi Relaxation are:

Table 4. Risks Alternatives in Pinisi Relaxation

Risk	Alternatives	Cost	Effectiveness	Time	Weighted Score
Demand Risk	Cooperate with tour agent	4	5	4	4.26
	Price promotion in a certain time	5	3	4	4.37
	Become other company's incentive	3	5	2	3.41
Capacity Risk	Increase room capacity	3	5	5	3.74
	Develop reservation system	5	3	3	4.26
	More comfortable waiting room	4	4	4	4.00
Reputation Risk	Ask customer's body condition	5	4	5	4.74
	Therapist training periodically	4	4	4	4.00
	Tell the impact of treatment to the customers	5	3	5	4.48
Social Risk	Changing the name of the company when something goes wrong	3	5	3	3.52
	Cooperate with the media	4	3	5	3.85
	Relationships with nearby residents	5	4	3	4.52
Payment risk	Provide additional payment methods	5	4	4	4.63
	Upfront payment	5	3	5	4.48
	Double check the price list	5	3	5	4.48
Accounting risk	Manual and computer bookkeeping	5	4	4	4.63
	Daily data online checking	5	4	5	4.74
	The use of accounting software	3	5	5	3.74
Liquidity risk	Weekly payment plan	5	4	5	4.74
	Reserved cash	5	4	5	4.74
	Contract with supplier	4	5	4	4.26
Macroeconomic risk	Periodically increase the price	5	3	4	4.37
	Eliminate unimportant cost	5	4	5	4.74
	Contract with supplier	5	5	4	4.89
Risk of electricity	Buy electricity resource	3	5	5	3.74
	Use devices that do not use electricity	4	2	5	3.59

	Discount when the electricity off	4	3	5	4.48
Risk of water discharged	Buy bigger water reserve	3	5	4	3.63
	Use drinking water	4	4	5	4.11
	Periodically checking water	5	2	4	4.11
Risk of broken devices	Reserve more devices	3	5	5	3.74
	Skip the treatment process	5	2	5	4.22
	Warranty contract with supplier	4	3	3	3.63
Risk of unavailability raw materials	Add safety stock	4	5	5	4.37
	Use substitute raw materials	3	4	5	3.48
	Raw materials checking periodically	5	3	4	4.37
Risk of unavailability supporting tools	Add safety stock	4	5	4	4.26
	Use supporting tools already used	5	4	5	4.74
	Supporting tools checking periodically	5	3	4	4.37
Risk of room fineness	Scheduling and checking of employees room duty	5	4	4	4.63
	Periodically checking the condition of the room	5	4	4	4.63
	Setting standards of cleanliness	5	4	4	4.63
Risk of employee's absent	Fines on employee absenteeism	5	4	4	4.63
	Exchange off schedule	5	5	4	4.89
	Recruite part-time employees	3	4	3	3.26
Risk of sick employees	Provision of healthcare money per month	3	5	5	3.74
	Periodic health checks	3	4	5	3.48
	Provide common medicines for employees	4	3	5	3.85
Risk of saturated employee	Provide entertainment facilities for employees	4	4	5	4.11
	Conduct an annual holiday for all employees	3	5	3	3.52
	Giving training to employees	4	5	4	4.26
Risk of employees crime	Put the customer's valuable things on locker	3	5	5	3.74
	Put the employee charge into the court despite of company	4	3	3	3.63
	Valuable belonging is not company's responsibility	5	4	4	4.63
Salary risk	Increase the percentage variable salary	4	5	5	4.37
	Conduct overtime	4	5	5	4.37
	Adding monthly bonus salary	5	5	4	4.89
Risk of hijacked employees	Contract with the employees	5	3	4	4.37
	Standardize massage technique	4	3	4	3.74
	Get in touch with employees	5	5	3	4.78
Promotion risk	Signpost names and pictures in the street	3	4	5	3.48
	Radio advertisement	3	4	3	3.26
	Cooperate with other business field	5	4	3	4.52
Risk of customer perception	Do the black list of the customer	5	3	5	4.48
	Add the same gender service concept in each media	5	4	5	4.74
	Finish treatment earlier	5	3	5	4.48

From the table above, we could see that one risk could have more than one alternative. The minimum score from all the alternatives is 3.26 which points to radio advertisement and held part-time employees, and the highest score is 4.89 which points to contract with supplier, exchange of schedule, and adding monthly bonus salary.

Conclusion

There are many risks that possibly happen in Pinisi Relaxation. To mitigate the risks, the company could use Analytical Hierarchy Process to choose the best alternative to handle a risk that has the most suitable score that fits with the criteria of the company. The risk also must be handled not only by the owner only, but also by the employees, especially because the employees are the entity that runs the daily operation of the company.

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