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Employee Expectation Analysis using Quality Function Deployment Method

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Abstract:- Human resource is still a major issue for companies to survive in the globalization era. Human resources has major role in every company's activities. While supported by facilities and infrastructure and excessive sources of funds, but without the support of reliable human resources, company activities will not be resolved properly. This indicates that human resource is the key to be considered with all their needs. As the key, human resources will determine the success of the company's activities. The company's demands to acquire, develop and sustain a good human resource quality in keeping up with the ever-changing environmental dynamics. Quality function deployment (QFD) can help company in fulifilling employee demands, and can be used as a guide for the company to understanding their own human resources.

Keywords:- *Quality function deployment, House of quality, Employee satisfaction.*

I. INTRODUCTION

Objective assessment factors are focused on facts that can be measurable in quantity and quality, have presence and so on, while subjective assessment factors tend to be an opinion, such as attitude, personality, adjustment and so forth. Subjective factor such as opinion can be considered if supported with documented events or academical or the assessment will be biased. Based on the statement mentioned in previous sentence, performance assessment must be objective in order to reflect actual feedback in evaluating and measuring employee performance in developing successful work implementation). Quality Function Deployment (QFD) is a powerful tool that helps to define the Voice of the Costumer (VOC). In practical terms, the employee demands can be defined with QFD, with changing VOC into Voice of the Developer (VOD) to deploy better understanding of the employee needs.

This journal focused on the evaluation of employee expectation fulfillment on management policy in the automotive service provider company.

II. RESEARCH METHODOLOGY

A. Evaluation

Evaluation is a careful retrospective assessment of the merit, worth and value of administration, output and outcome of government intervention, which is intended to play a role in future practical situations (Vedung, 1997), while Scriven (1991) explain that evaluation is the process of determining the merit, worth and value of things and evaluations are the products of that process. Evaluation is not the mere accumulation and summarizing of data that are clearly relevant for decision making gathering and analyzing the data that are needed for decision making comprise only one of the two key components in evaluation, a second element is required to get to conclusions about merit or net benefits: evaluative premises or standards. Evaluation has two arms: one in engaged in data gathering, the other collects, clarifies and verifies relevant values and standards Scriven (1991). To implement, list of evaluation policy categories within which we might wish to develop specific policies.

- Planning (divergent / convergent)
- Instrument development
- Data collection, processing
- Data analysis, interpretation
- Reporting and follow up

B. Employee Satisfaction

Handoko (2003) stated job satisfaction is an emotional state of employee in the company which reflects a pleasant feeling toward the job and their work environment. Hasibuan (2001) adds job satisfaction is an attitude that reflects pleasant emotional state and indicates the employee loves their jobs. This attitude reflected by employee morale, discipline and work performance. Based on the definition above, it can be concluded that job satisfaction is the level of employee's feeling toward their work's result, therefore the company should strive for its employee job satisfaction to improve company productivity and performance.

Rivai (2004) suggest there are four factors that affect job satisfaction:

- The job itself, employee job satisfaction can be improved if the company give an interesting, challenging, and rewarding.
- Salary, the amount of salary given by the company is accepted and approved by the employee and employees are more satisfied when they paid fairly.
- Promotion, Promotion given by the company to employees can provide job satisfaction. Promotion can improve the

employee social status, personal achievement and greater income.
- Supervision, the presence of supervision can provide employee with work instructions in order to achieve greater result and work can be quickly resolved.
- Positive work environment makes employee feel good about coming to work and provide extra motivation to sustain them throughout the day, such as a good co-workers, supervisors, cleanliness, the quality of the air and another additional perks or benefit to improve work environment.

Job satisfaction is strongly influenced by the company's management policy, because if management provides an opportunity for its employees to participate in determining the company policy, then the employee will feel satisfied because their aspirations appreciated and recognized by the company.

C. Quality Function Deployment

In 1972, Yuji Akao first put up with the concept of QFD while working for Mistubishi in Kobe Shipyard, which is later adopted by Toyota in 1978. In the early 1980s, QFD was introduced in the United States and gained its popularity around the world. According to Baran (2015), QFD is generally used as customer-oriented quality management and product development methodology in the manufacturing industry. QFD defines the customer involvement in product development process to fulfill their requirements. Organizations must determine the customer perception of value or quality in a product or service, in order to do that company should utilize a structured process to satisfy the customer needs.

Wahyu (1999) stated QFD is a method to translate customer requirement and evaluate the ability of product or service systematically. The structure in which QFD uses to organize information is known as the House of Quality. House of quality (HOQ) is kind of conceptual map to explain the customer expectation and need.Quality function Development (QFD) is related to target design, i.e. (1) applying the attribute into employee satisfaction, and (2) translating employee desires. Changing the attribute from the customer needs to employee needs allow employee expectation to be analyzed with HOQ. Chen and Susanto as cited in Lukman (2016) stated, HOQ can be used to display information about the degree to which employee expectations are being met and the resources that exist to meet those expectations.

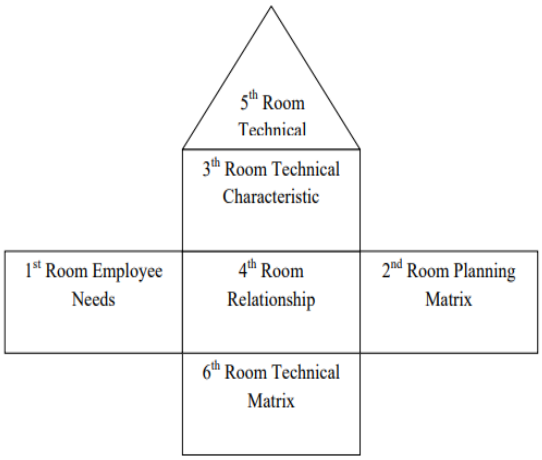

Fig 1:- House of Quality

According to Cohen (1999) in Yosie (2006), QFD separated into six rooms:

- *1st Room*

First room contains a list of all customer needs and expectations that are determined by market's qualitative research. There are several ways to comprehend customer expectation:
- Conduct direct interviews with customer to find out their needs and expectation
- Distributing a questionnaire based on customer expectation regarding the product and services provided by the company.
- Considerate and understand the customer needs by receiving customer suggestion
- Conducting potential customers research, by launching a new product and see the customer responses

- *2nd Room*

The second room contains various pieces of information. First, the qualitative data from the First room should have an impact on the customers in every product. It is important to understand the degree of importance of a product in order to meet customer expectation. Second, the company needs to conduct a performance evaluation of the product and compare it with the competitors. Third, the company needs to set strategic goals for new products. Each product needs to set the target value according to the capabilities of the company's resources e.g. human, production, finance, research and development. Fourth, based on the three points mentioned before, the improvement ratio can be measured. Improvement ratio can be obtained by dividing the company's goal with the condition of the company's product (Widodo, 2003)

- *3rd Room*

The third room contains technical parameter that provides information on how the product and service development team in responding customer needs. In the other word, to define the customer perception of quality and value, the development team must able to gather and integrate the

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Voice of the Customer (VOC). In this case, to interpret the employee needs, the VOC in qualitative and quantitative changed into the Voice of Developer (VOD). Below table is the list of VOD relationship value:

No	Weighting	Remark
1.	5	Very Strong Relationship
2.	3	Strong Relationship
3.	1	Weak Relationship
4.	0	Not Related

Table 1.VOD Relationship Value

- *4th Room*

This room shows the relationship between technical parameter and customers desire, which is already modeled in QFD. The relationship value is indicated in the table by the score (weight) and categories (remark), started from Very Strong Relationship, Strong Relationship, Weak relationship and Not Related.

- *5th Room*

QFD is the key to concurrent engineering, as there are facilities to communicate with each other from the engineering parameters section. This section will map relationships and interdependencies between technical parameters.

- *6th Room*

This section also contains of various information. First, calculate the magnitude of the influence or interrelationship of the technical response and the costumerneeds.Second, the comparison of product and service between the company and the competitors. Third, performance suggestion can be realized after comparing the service or product between the company and competitors. Furthermore the company can set the target value to be achieved in the future.

III. RESULT AND DISCUSSION

Quality Function Deployment is a method used to measure the level of service provided by the company to fulfill employee satisfaction based on the management's policy. Below are the steps of the QFD method through House of Quality (HOQ) room:

A. Employee Needs (1st Room)

The House of Quality first room is filled with employee needs data. Employee needs data will provide a clear picture of company's human resources (HR) policy attribute. The data gathered by interviewing the company's employees presented on table below:

No	Company Policy Attribute	Dimension
1	Working Facility	Tangible
2	Comfortable Working Space	Tangible
3	Cleaness and Good Air Circulation	Tangible
4	No Hazardness Working Tools	Tangible
5	Ergonomical Working Tools	Tangible
6	Standardize Working Hours	Reliability
7	Training and Development	Reliability
8	Fainess Performance Assessment	Reliability
9	Safety and Healthy Regulation	Assurance
10	Health Insurance and Policy	Assurance
11	Personality and Capacity	Assurance
12	Standardize Salary	Assurance
13	Life Insurance	Assurance
14	Standard Operational Procedure	Responsiveness
15	Effective Communication among Superiors	Responsiveness
16	Open Information	Responsiveness
17	Additional benefits (bonuses)	Emphaty
18	Job Promotion	Emphaty
19	Standard Break Time during Working Hours	Emphaty
20	Leaves	Emphaty

Table 2. Employee Needs

From the Employee Needs table above, there are 20 attributes of human resource policy which divided into five dimensions; three attributes of reliability dimension, three attributes of responsiveness dimension, five attributes of assurance dimension, four attributes of empathy dimension, and five attributes of tangible dimension.

B. Importance Employee And Satisfaction Level (2nd Room)

This section will show the *employee importance* and *satisfaction* level data. The data collected through questionnaire from 30 employees in total.

Maheswari&Harwani (2008) argued, every company's policy attribute contained in the employee importance questionnaire scored based on the Mean of Employee Importance and will be interpreted qualitatively. The average value of the employee importance as follows:

- 1,00 – 1,49 Ignorance
- 1,50 – 2,49 Not Importance
- 2,50 – 3,49 Importance
- 3,50 – 4,00 Very Importance

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No	Company Policy Attribute	Mean of Employee Importance	Remark	Priority
1	Working Facility	3,60	Very Importance	1
2	Comfortable Working Space	3,13	Importance	15
3	Cleaness and Good Air Circulation	3,13	Importance	16
4	No Hazardness Working Tools	3,10	Importance	17
5	Ergonomical Working Tools	3,37	Importance	7
6	Standardize Working Hours	3,17	Importance	14
7	Training and Development	3,47	Importance	3
8	Fainess Performance Assessment	3,23	Importance	10
9	Safety and Healthy Regulation	3,50	Very Importance	2
10	Health Insurance and Policy	3,33	Importance	8
11	Personality and Capacity	3,47	Importance	4
12	Standardize Salary	3,20	Importance	11
13	Life Insurance	3,33	Importance	9
14	Standard Operational Procedure	3,03	Importance	18
15	Effective Communication among Superiors	3,43	Importance	5
16	Open Information	2,90	Importance	19
17	Additional benefits (bonuses)	3,20	Importance	12
18	Job Promotion	2,70	Importance	20
19	Standard Break Time during Working Hours	3,40	Importance	6
20	Leaves	3,20	Importance	13

Table 3. Employee Importance Level

Based on the table above, there two categories obtained from the average of employee importance toward human resource policy, they are very importance and importance. There are two very importance attributes in the table, which realized by the employee easiness in obtaining and using all facilities in the company (mean 3,60) and the accommodation of health and safety (mean 3,50). Meanwhile, the rest of the attribute categorized as importance which can be seen in the table 3.

No	Company Policy Attribute	Mean of Employee Importance	Remark	Priority
1	Working Facility	3,60	Very Importance	1
2	Comfortable Working Space	3,00	Importance	17
3	Cleaness and Good Air Circulation	3,17	P	12
4	No Hazardness Working Tools	3,13	P	14
5	Ergonomical Working Tools	3,30	P	7
6	Standardize Working Hours	3,13	P	15
7	Training and Development	3,47	P	3
8	Fainess Performance Assessment	3,13	P	16
9	Safety and Healthy Regulation	3,43	P	4
10	Health Insurance and Policy	3,27	P	9
11	Personality and Capacity	3,50	Very Importance	2
12	Standardize Salary	3,20	P	10
13	Life Insurance	3,33	P	6
14	Standard Operational Procedure	3,17	P	13
15	Effective Communication among Superiors	3,43	P	5
16	Open Information	2,90	P	19
17	Additional benefits (bonuses)	3,20	P	11`
18	Job Promotion	2,70	P	20
19	Standard Break Time during Working Hours	3,30	P	8
20	Leaves	3,00	P	18

Table 4. Employee Satisfaction Level

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Employee Satisfaction Level table above shows attribute number 1 and 11have very satisfied category, while the other attributes categorized as satisfied. The categories are Working facility (mean 3,60) based on the employee easiness in using work facility and personality and capacity (3,50) based on the leader's personality toward the employee.

C. Technical Characteristic (3rd Room)

The third HOQ room includes the technical characteristics data. Technical characteristics data based on the data in the first room which contain the respond of toward the employee needs. Each of these technical characteristics is portrayed with improvement symbol which represent the improvement direction level.

LambangArahPerbaikan	Penjelasan
▲	Maximize Target
●	Optimum Target
▼	Minimize Target

Table 5. Direct of Improvement Symbol

●	●	●	▲	▲	●	▲	▲	●	●	▲	●	●	●
Working tools reliability	Supporting reliability	Standard opertaional procedure (SOP)	Employee recruitment	Working ambience	Working hours	Information system	Leadership and development	Key Performance Indicator (KPI)	Salary scheme	Additional incentive scheme	Operational cost	Security system	Hygienity system

Table 6. Improvement Direction Symbol

From the table above, the dominant symbol appeared from 14 technical characteristic is optimal target which is drawn as circle (•) in the table. Optimal target's symbol appeared nine times, while the maximize target symbol (▲) appeared five times. Based on results, it is indicated the company is paying attention to employee needs. In regard to that matter, there is no negative result in the third room.

D. Relationship Between Employee Needs And Technical Characteristic (4th Room)

Fourth room focused on analyzing the quality of employee needs and technical characteristic relationship, and each of the relationship quality will be scored according to the company performance on fulfilling employee needs. The data was collected through interview, observation and the researchers' comprehension capabilities. The score represented below are subjective and based on the qualitative data collected by the researchers. The relationship quality score is categorized as follow:

- Score 5 : Very strong
- Score 3 : Strong
- Score 1 : Weak
- Score 0 : None

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		TECHNICAL CHARACTERISTICS													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
EMPLOYEE NEEDS	1	3	3	3		1							3		
	2	5	3	3		3	3						3	3	3
	3	3	3	3		3							3		5
	4	3	3	3	3								3		
	5	3	3	3									3		
	6	1	1	3			3							1	1
	7			3	3	1		3	3	3			3		
	8			3		1	3	3	3	5	3				
	9			1	3	3						1	3		
	10			1	3	3						3	3		
	11			3		1	1		3						
	12			3		1				3	3	3	3		
	13				3	3					3	3	3		
	14				3	3	3		3	3			3		
	15					3	1		3	3					
	16			3	1	3	1	3		1					
	17			1	3	3		1	1	3	3	3			
	18			3		1			3	3	1		1		
	19	1	1	1	3	3	5			1				1	
	20			1	3	3	3	3	1	1					

Table 7. Technical Caharcteristis Relationship

E. Technical Correlation Analysis (5th Room)

In the fifth room, House of Quality (HOQ) deals with the technical correlation. The matrix in this section represented in form of symbols describing the relationship value between technical correlations. The technical correlation symbols are shown in below table.

Symbol	Remark
++	Strong Positif
+	Positif
empty	Not Relevance
-	Negatif
- -	Strong negatif

Table 8. Improvement Direction Symbol

The roof matrix below shows that most of characteristic has a positive result. It can be inferred that the relationship between characteristics influences one another. In the other words, many technical requirements are related to each other. Working to improve one requirement may help the company achieve a positive result to the others; on the other hand, if there is an issue of dissatisfaction with one *technical characteristic* it will lead to dissatisfaction on another attribute.

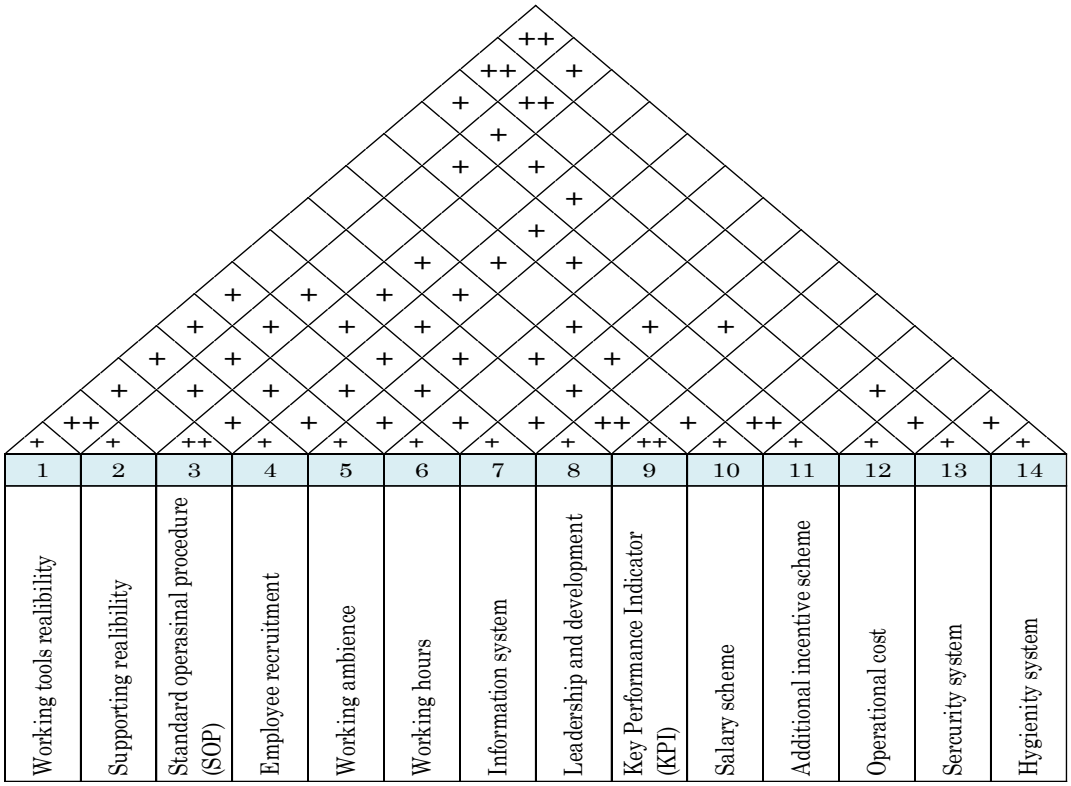

Fig 2:- Correlations of Technical Characteristics

F. Technical Matrix Analysis (6th Room)

Sixth room is a description of the technical characteristic based on the importance level of employee needs as a guide for the company to achieve a greater result in elevating the company productivity. *Technical matrix* is divided into two parts:

- Absolute Importance, obtained by multiplies the *relationship* value in the fourth room with *costumerimportance* value in HOQ second room.
- Relative Importance, obtained by converting *absolute importance* value into the percent (%) form.

No	Technical Characteristic	Absolute Importance	Relative Importance	Prioritas
1.	Working tools reliability	61,82	6,44 %	8
2.	Supporting reliability	55,56	5,79 %	9
3.	Standard opertaional procedure (SOP)	131,83	13,73 %	1
4.	Employee recruitment	91,58	9,54 %	4
5.	Working ambience	116,81	12,17 %	2
6.	Working hours	74,08	7,72 %	6
7.	Information system	41,63	4,34 %	11
8.	Leadership and development	64,39	6,71 %	7
9.	Key Performance Indicator (KPI)	82,74	8,62 %	5
10.	Salary scheme	41,58	4,33 %	12
11.	Additional incentive scheme	42,68	4,45 %	10
12.	Operational cost	111,18	11,58 %	3
13.	Security system	15,96	1,66 %	14
14.	Hygienity system	28,21	2,94 %	13

Table 9. Table of Absolute Importance and Relative Importance

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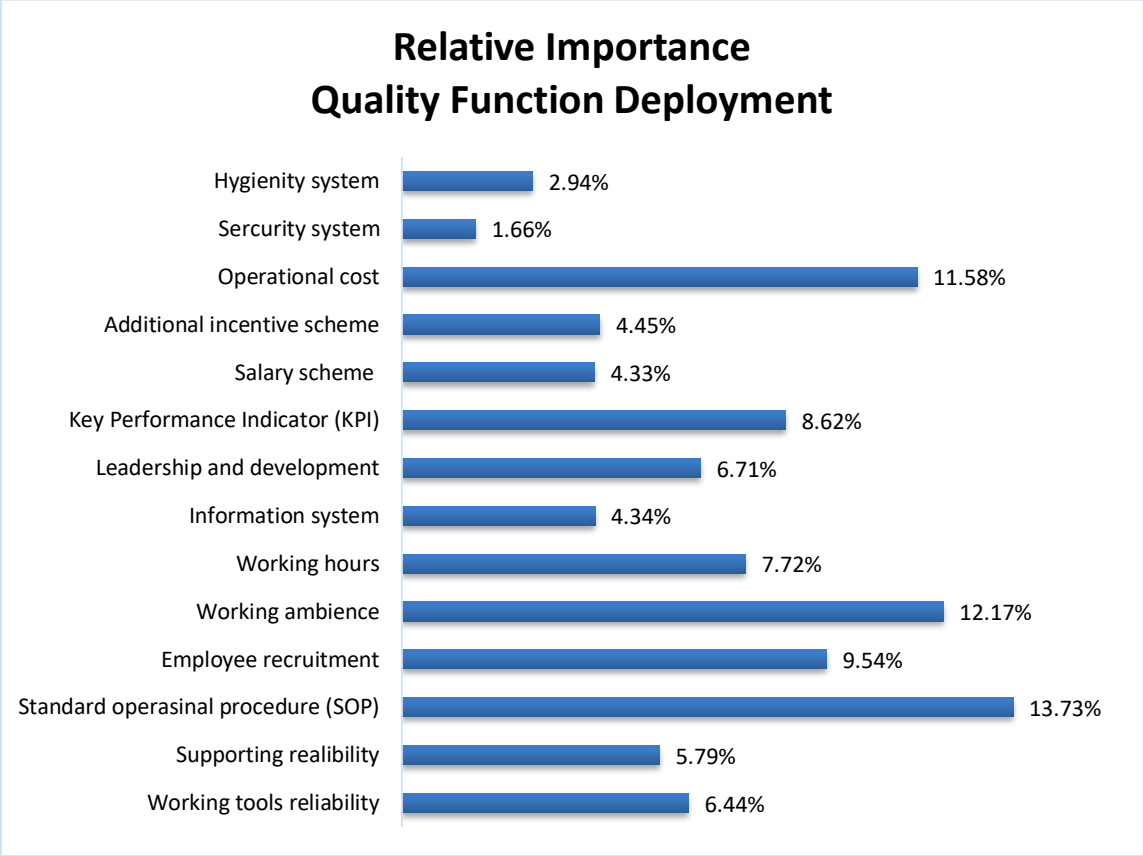

Fig 3:- Showing Relative Importances – Quality Function Deployment

IV. CONCLUSION

The company is one of the foreign companies in Indonesia engaged in the business of the automotive industries, especially in mining vehicles. It's important for the company to have a good employee and the support of the reliable company's management in order to achieve a greater result. A good result can only be achieved if the relationship between the employee and the company is always sustained in good terms. In this research, an attempt was made to evaluate management policy in fulfilling employee needs by using Quality Function Deployment as a tool to assess the employee satisfaction level toward the company's management policy. According to the data, employee was satisfied with the policy shown in the *employee importance* and *employee satisfaction* table. In *employee importance* section there *is the easiness of obtaining and using all facilities* considered as *very important* by the employee, and the others attribute considered *important*. In *employee satisfaction* section there is two categorized as *very satisfied*, there are *the easiness of obtaining and using all facilities* and *the personality and capacity* which based on the leader's personality toward the employee. In *technical characteristics*,there are 5 attributes that reflect the company's technical characteristics; standard operational procedure, working ambiance, operational cost, employee recruitment, and the key performance indicator.

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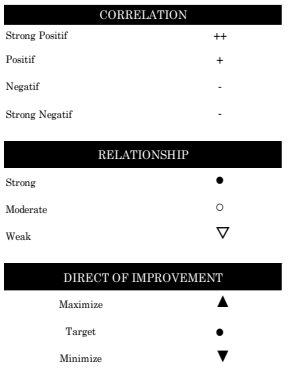

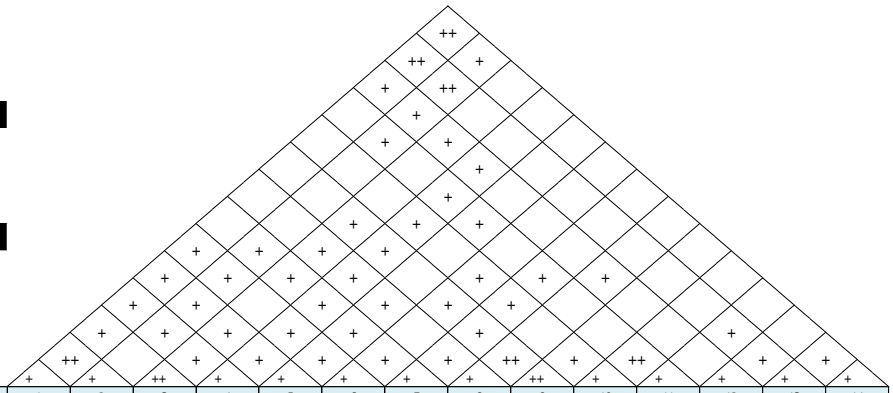

No	Technical Charateristic	Working tools reallibility	Supporting reallibility	Standard operasinal procedure (SOP)	Employee recruitment	Working ambience	Working hours	Information system	Leadership and development	Key Performance Indicator (KPI)	Salary scheme	Additional incentive scheme	Operational cost	Sercurity system	Hygienity system	IMPORTANCE EMPLOYEE	SATISFACTION EMPLOYEE
	Column #	1	2	3	4	5	6	7	8	9	10	11	12	13	14		
1	Working Facility	3	3	3	0	1	0	0	0	0	0	0	3	0	0	3,60	3,60
2	Comfortable Working Space	5	3	3	0	3	3	0	0	0	0	0	3	3	3	3,13	3,00
3	Cleaness and Good Air Sirculation	3	3	3	0	3	0	0	0	0	0	0	3	0	5	3,13	3,17
4	No Hazardness Working Tools	3	3	3	3	0	0	0	0	0	0	0	3	0	0	3,10	3,13
5	Ergonomical Working Tools	3	3	3	0	0	0	0	0	0	0	0	3	0	0	3,37	3,30
6	Standardize Working Hours	1	1	3	0	0	3	0	0	0	0	0	0	1	1	3,17	3,13
7	Training and Development	0	0	3	3	1	0	3	3	3	0	0	3	0	0	3,47	3,47
8	Fainess Performance Assessment	0	0	3	0	1	3	3	3	5	3	0	0	0	0	3,23	3,13
9	Safety and Healthy Regulation	0	0	1	3	3	0	0	0	0	0	1	3	0	0	3,50	3,43
10	Health Insurance and Policy	0	0	1	3	3	0	0	0	0	0	3	3	0	0	3,33	3,27
11	Personality and Capasity	0	0	3	0	1	1	0	3	0	0	0	0	0	0	3,47	3,50
12	Standardize Salary	0	0	3	0	1	0	0	0	3	3	3	3	0	0	3,20	3,20
13	Life Insurance	0	0	0	3	3	0	0	0	0	3	3	3	0	0	3,33	3,33
14	Standard Operational Procedure	0	0	0	3	3	3	0	3	3	0	0	3	0	0	3,03	3,17
15	Effective Communication among Superiors	0	0	0	0	3	1	0	3	3	0	0	0	0	0	3,43	3,43
16	Open Information	0	0	3	1	3	1	3	0	1	0	0	0	0	0	2,90	2,90
17	Additional benefits (bonuses)	0	0	1	3	3	0	1	1	3	3	3	0	0	0	3,20	3,20
18	Job Promotion	0	0	3	0	1	0	0	3	3	1	0	1	0	0	2,70	2,70
19	Standard Break Time during Working Hours	1	1	1	3	3	5	0	0	1	0	0	0	1	0	3,40	3,30
20	Leaves	0	0	1	3	3	3	3	1	1	0	0	0	0	0	3,20	3,00
	ABSOLUTE IMPORTANCE	61.82	55.56	131.83	91.58	116.81	74.08	41.63	64.39	82.74	41.58	42.68	111.18	15.96	28.21		
	RELATIVE IMPORTANCE	6.44%	5.79%	13.73%	9.54%	12.17%	7.72%	4.34%	6.71%	8.62%	4.33%	4.45%	11.58%	1.66%	2.94%		

Fig 4:- House of Quality

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