

## Analysis of the dominant internal and external factors in the performance of human resources in the precast company

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Received January 04, 2023 | Accepted April 29, 2023 | Published May 09, 2023

### ABSTRACT

The performance of human resources (HR) in a company is one of the determinants of the company's condition in the industry. This can be analyzed based on the dominant factors that support or become the foundation of the company. This study reviews the dominant internal and external factors in PT.BEP company. The research method used is descriptive qualitative with analysis using IPA, Pareto Chart, IFAS-EFAS Matrix, and SWOT. The results showed that internal factors were dominated by ability factors with a processing value of 13.49%, while external factors were dominated by reward factors with a percentage of 16.42%. The results of the SWOT analysis recommend that the strategy that should be implemented is Strength-Opportunity (SO) with IFAS EFAS results in quadrant I with coordinates 1.67;2.34. then PT. BEP is in an advantageous situation because it has good strengths and opportunities and can be optimized by minimizing all weaknesses and threats.

**Keywords:** internal factors; external factors; IPA; IFAS; EFAS.

### INTRODUCTION

The construction service industry is an industry that includes all parties involved in the construction process, including professionals, construction implementers and also suppliers who together meet the needs of industry players. Waiting for the development of the free market in the construction industry, the construction service industry in Indonesia needs to improve the quality of its products as a business strategy in order to continue to exist and be competitive which is in line with research (Sakinah, 2021) which concludes that one of the influences on the success or failure of a product is related to quality of Human Resources (HR). This can be seen from the results of his research which states that Failure Mode Effect Analysis (FMEA) shows the largest component with a Risk Priority Number (RPN) value of 280 which is caused by human factors.

Human resources are very important in carrying out factory work. Internal factors significantly influence HR performance, especially those related to HR attitudes and skills (Purnomo, 2017). Research conducted by (Ochungo & Amollo Odinga, 2019) on infrastructure construction companies in Africa states that clear and effective communication, commitment, good management, availability of human resources, regulation and standardization greatly influence work success. The success of the team or team success is very influential on work success (Longbotham, 2006) which greatly influences motivation and performance are awards and recognition (Rizwan et al., 2014) related to this, research is needed on these important factors, it is hoped that this can be done improving or increasing the performance of human resources, which ultimately impacts the success of the project.

As was the case with the precast concrete factory, PT. Beton Elementindo Perkasa–Pasuruan, based on cursory interviews it appears that the company's performance in terms of human resources or employees has not been maximized. This can occur due to certain factors that occur in each employee, both due to internal and external factors. In line with research conducted by (Sasongko et al., 2017) states that the factors that influence the performance of human resources in factories are internal factors and external factors with the most dominant factors affecting HR performance are external factors with a coefficient of 0.640 . Based on the background above, the author will explore what factors are very influential on the performance of human resources in the precast

factory so that later it can be used as a basis for improving human resource performance in future factory jobs.

## RESEARCH METHODS

### Research Flow

Figure 1. Shows an outline of the steps in compiling a study regarding the influence of internal factors and external factors on the performance of factory employees.

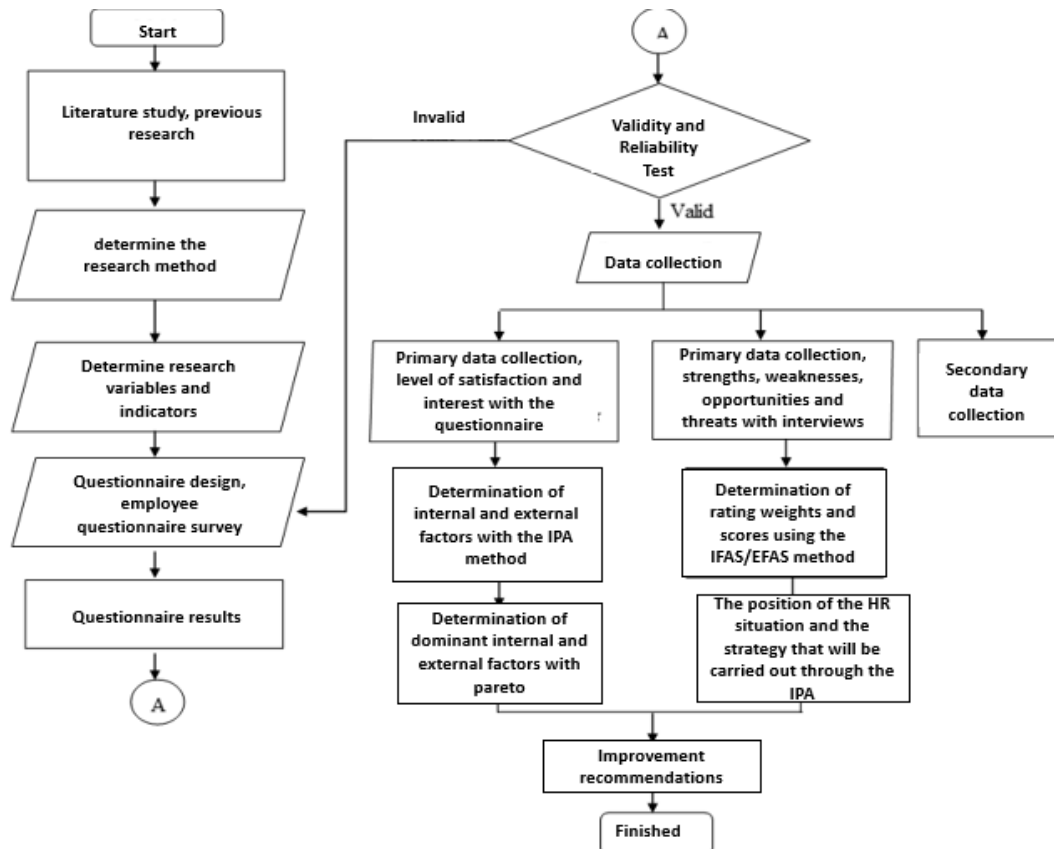


Figure 1. Research Flowchart

## RESULTS AND DISCUSSION

### Importance Performance Analysis (IPA)

The calculation results (IPA) are depicted in a Cartesian diagram. Each attribute is positioned in the diagram based on the average score obtained from the importance level questionnaire shown in Table 1.

**Table 1.** Recapitulation of the average level of importance and implementation questionnaire results

| No | Factor       | Interest | Achievement | Quadrant |    |     |    |
|----|--------------|----------|-------------|----------|----|-----|----|
|    |              | Y        | X           | I        | II | III | IV |
| 1  | [Attitude]   | 3.72     | 4.32        |          |    |     | ✓  |
| 2  | [Skill]      | 4.05     | 4.13        |          | ✓  |     |    |
| 3  | [Knowledge]  | 4.12     | 4.20        |          | ✓  |     |    |
| 4  | [Ability]    | 4.25     | 4.30        |          | ✓  |     |    |
| 5  | [Motivation] | 3.65     | 3.70        |          |    | ✓   |    |

| No      | Factor                | Interest     | Achievement  | Quadrant |    |     |    |
|---------|-----------------------|--------------|--------------|----------|----|-----|----|
|         |                       | Y            | X            | I        | II | III | IV |
| 6       | [Learning]            | 4.04         | 4.10         |          | ✓  |     |    |
| 7       | [Experience]          | 3.91         | 4.00         |          | ✓  |     |    |
| 8       | [Communication]       | 3.55         | 3.63         |          |    | ✓   |    |
| 9       | [Tool]                | 3.50         | 3.20         |          |    | ✓   |    |
| 10      | [Resource]            | 4.17         | 3.73         | ✓        |    |     |    |
| 11      | [Social environment]  | 3.93         | 4.00         |          | ✓  |     |    |
| 12      | [Work colleague]      | 2.86         | 2.83         |          |    | ✓   |    |
| 13      | [Management Attitude] | 4.19         | 4.23         |          | ✓  |     |    |
| 14      | [Award]               | 4.49         | 4.80         |          | ✓  |     |    |
| 15      | [Compensation]        | 4.10         | 4.17         |          | ✓  |     |    |
| Average |                       | <b>3.902</b> | <b>3.952</b> |          |    |     |    |

Priority mapping analysis in this study was conducted on all respondents. From data processing using IBM Statistics 22, images of the IPA Cartesian diagram for all respondents are shown in Figure 3.

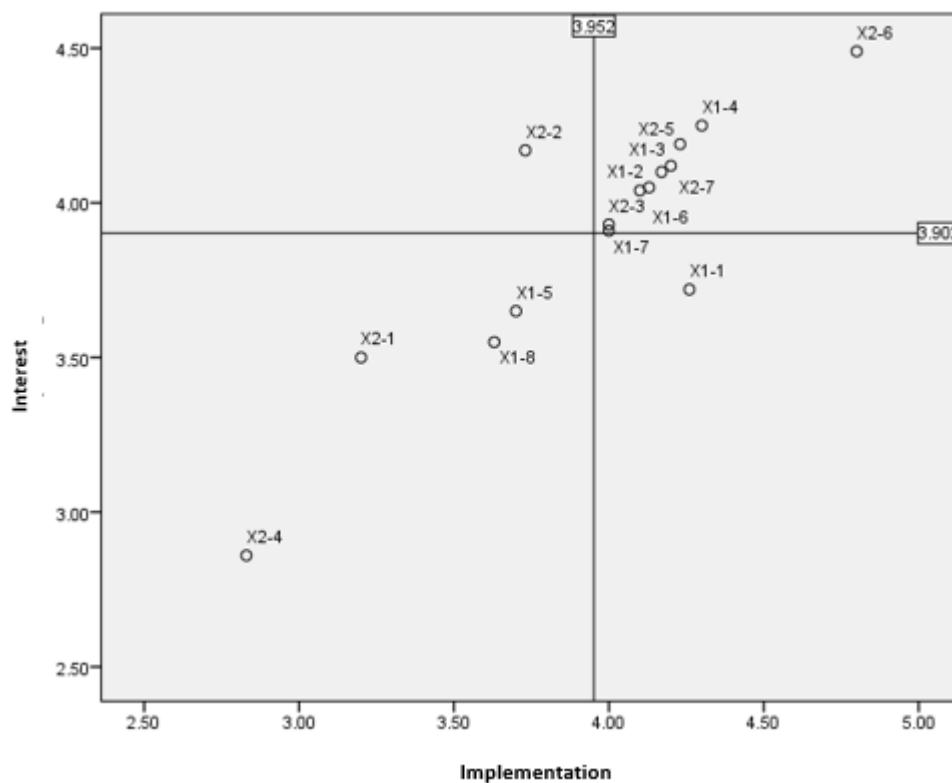


Figure 2. IPA Cartesian diagram

Figure 3 Cartesian diagram above shows that one (1) factor is in quadrant I, nine (9) factors are in quadrant II, quadrant III has four (4) factors, and one (1) factor is in quadrant IV.

Quadrant I shows the factors or attributes that are considered to affect employee satisfaction, including service elements that are considered very important, but management has not implemented them according to the

wishes of employees so that they are disappointed/dissatisfied. The results of the analysis show that there is one (1) factor in quadrant I, namely: (X2-2) Resources. From the results of the analysis it can be concluded that the resource factor of material availability is a very important factor but is lacking in its implementation. So the company must consider this factor as a factor that needs to be improved in its implementation.

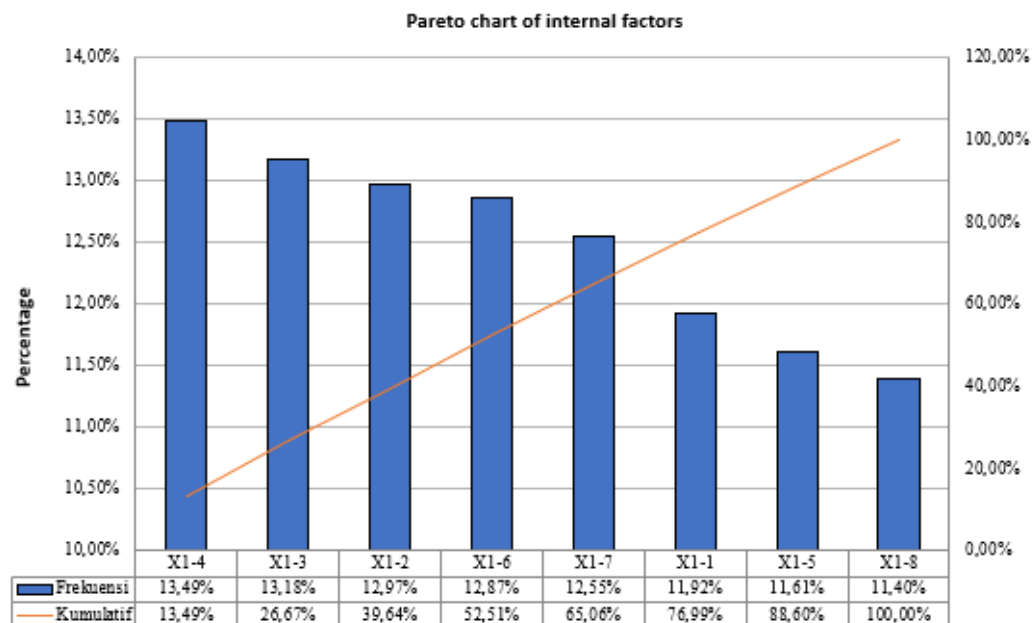
Quadrant II shows the main service elements that have been successfully implemented. For that it must be maintained. Considered very important and very satisfying, therefore PT. BEP must maintain the performance of this factor so that it can continue to get better and continue to meet what the company expects. The results of the analysis show that there are nine (9) factors in quadrant B, namely: X2-6 Award, X1-4 Ability, X1-3 Knowledge, X2-5 Management Attitude, X1-2 Expertise, X2-7 Compensation, X2-3 Environment social, X1-7 Experience. Thus these items need to be maintained and improved by the company

Factors that are in quadrant III show several factors that are less important for the customer. Its implementation by the company is mediocre, considered less important and unsatisfactory, so that PT. BEP does not necessarily provide a focus for improvement for service attributes that are in this quadrant. The following attributes that are in this quadrant include X1-5 Motivation, X2-7 Communication, X2-1 Tools, X2-4 Colleagues. Thus the items above can be ignored / do not have a priority scale of improvement for the company, because the process production at PT. BEP, every worker is always in rolling position, so that communication will automatically be created between all workers and there is good cooperation in the production process.

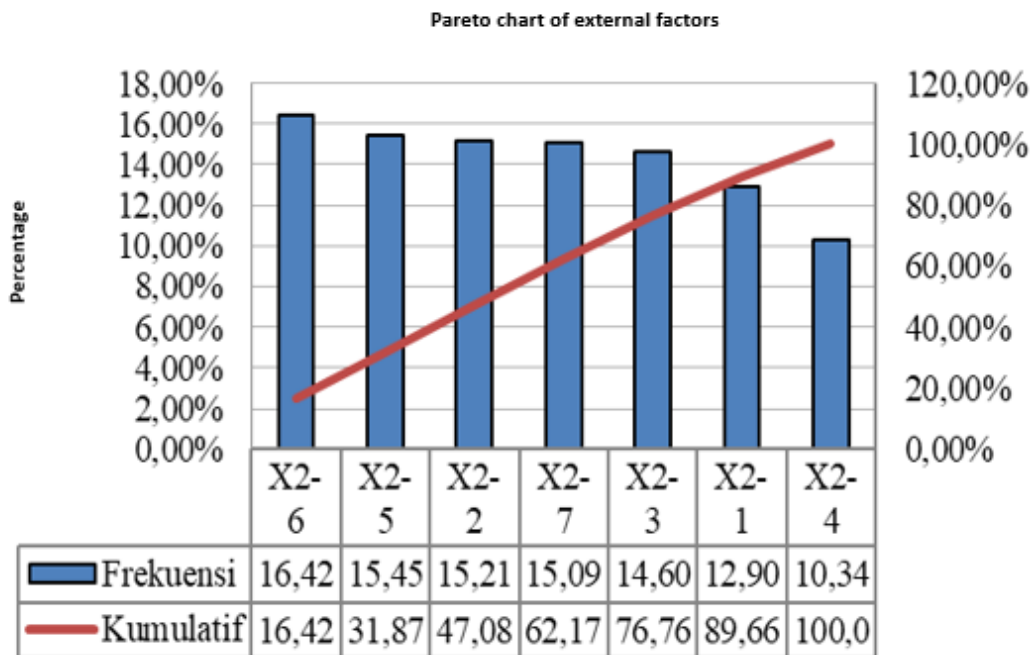
Quadrant IV shows the factors that influence the customer are less important, but the implementation is excessive. Considered less important but very satisfying, so there is no need to focus on factors that are in quadrant IV.

### Pareto Charts

Determination of the dominance of internal and external factors can be determined with a pareto chart, so that it can be determined which factor is the most dominant among these variables. Pareto chart calculation results are shown in Figure 3 for internal factors and Figure 4 for external factors.



**Figure 3.** Internal Factor Pareto Diagram

**Figure 4. Internal Factor Pareto Diagram**

Based on Figure 3 and Figure 4 if adjusted to the 80/20 pareto principle, it can be concluded that the dominant factors affecting employee performance are on the smallest cumulative percentage scale of up to 80%. In line with research conducted by (Alfian & Magdalena, 2018) which analyzes the problem or dominant factor in variables whose cumulative percentage scale reaches 80%. So the authors can conclude the dominant factor in determining employee performance at PT. BEP for internal factors are (1) ability factor (13.49%), (2) knowledge factor (13.18%), (3) skill factor (12.97%), (4) learning factor (12.87%), (5) experience factor (12.55%), (6) attitude factor (11.92%). Whereas external factors consist of (1) appreciation factor (16.42%), (2) management attitude factor (15.45%), (3) resource factor (15.21%), (4) compensation factor (15.09%), (5) social environmental factors (14.24%).

#### Internal Strategic Factors Analysis Summary (IFAS)

Internal factors originating from employees in the form of strengths and weaknesses which are then weighted are calculated based on the level of importance or handling ranging from a scale of 0.00 (not important) to 1.00 (very important) and where the total weight does not exceed a total score of 1.00 is shown in Table 2.

**Table 2. Weight of Internal Factor Analysis Summary**

| No | Strength (S)  | Ratings |   |   |   | Total | Weight | Score<br>(Weight x Ratings) |
|----|---|---------|---|---|---|-------|--------|-----------------------------|
|    |   | 1       | 2 | 3 | 4 |       |        |                             |
| 1  | Ability to use tools  | 0       | 0 | 4 | 6 | 36    | 0.142  | 0.57                        |
| 2  | Knowledge of work methods, SOP implementation, and use of PPE | 0       | 0 | 5 | 5 | 35    | 0.138  | 0.55                        |
| 3  | Expertise in the work being carried out                       | 0       | 3 | 3 | 4 | 31    | 0.122  | 0.37                        |

| No                     | Strength (S)  | Ratings |   |   |                        | Total | Weight | Score              |
|------------------------|---|---------|---|---|------------------------|-------|--------|--------------------|
|                        |   | 1       | 2 | 3 | 4                      |       |        | (Weight x Ratings) |
| 4                      | Learning in keeping up with the latest innovations  | 0       | 2 | 5 | 3                      | 31    | 0.122  | 0.37               |
| 5                      | Experience in the production of precast products  | 0       | 2 | 5 | 3                      | 31    | 0.122  | 0.37               |
| 6                      | Some employees listen to the direction of the production supervisor   | 1       | 3 | 3 | 3                      | 28    | 0.110  | 0.33               |
| Total                  |   |         |   |   |                        | Total | 0.756  | 2.55               |
| No                     | Weakness (W)  |         |   |   |                        |       |        |                    |
| 1                      | There are still some employees who are less motivated in time discipline, using PPE and complying with SOPs | 0       | 0 | 4 | 6                      | 36    | 0.142  | 0.57               |
| 2                      | lack of communication between employees and supervisors   | 2       | 3 | 2 | 3                      | 26    | 0.102  | 0.31               |
| Total                  |   |         |   |   |                        | Total | 0.244  | 0.87               |
| Total internal factors |   |         |   |   | Total internal factors |       | 1.000  | 3.42               |
| S - W                  |   |         |   |   |                        |       |        | 1.67               |

Based on the calculation results of the IFAS matrix, it can be concluded that at the PT. BEP, internally can be said to be in good condition. This can be seen from the total score of 3.42. In the table above it can be seen that the most dominant internal factor is the ability to use tools with a score of 0.57. With the ability of these employees, it is sufficient to increase the quantity of the factory, which is able to fulfill orders of various kinds of precast on time. The second factor is employee knowledge in applying work methods, SOPs, and discipline with a score of (0.56), this employee knowledge can improve production quality according to standards which is also the performance of employees who work with discipline and skill in production so as to produce quality product. The third factor is expertise in the work being carried out, learning in following the latest innovations, and employee experience with a score of (0.37), in this case employees are able to work according to schedule without having to work overtime to fulfill order targets, the next superior factor is the attitude factor that indicated by the attitude of employees in listening to the direction of the production supervisor with a score of (0.33). This shows that this point needs to be improved so that it can at least be on par with the other points.

The main weakness of PT. BEP there are still some employees who are less motivated in time discipline, use of PPE, and in complying with SOPs with a score of 0.57. Due to this lack of motivation, employee productivity is less than optimal because it is considered lacking in utilizing time and work SOPs. The second weakness is the lack of communication between employees and production supervisors with a score of 0.31.

**Eksternal Strategis Factors Analysis Summary (EFAS)**

In calculating the weight of external factors originating from outside the company environment, it is determined based on the level of importance or handling ranging from a scale of 0.00 (not important) to 1.00 (very important) and where the total weight does not exceed a total score of 1.00 is shown in Table 3.

**Table 3.** Weight of External Factor Analysis Summary

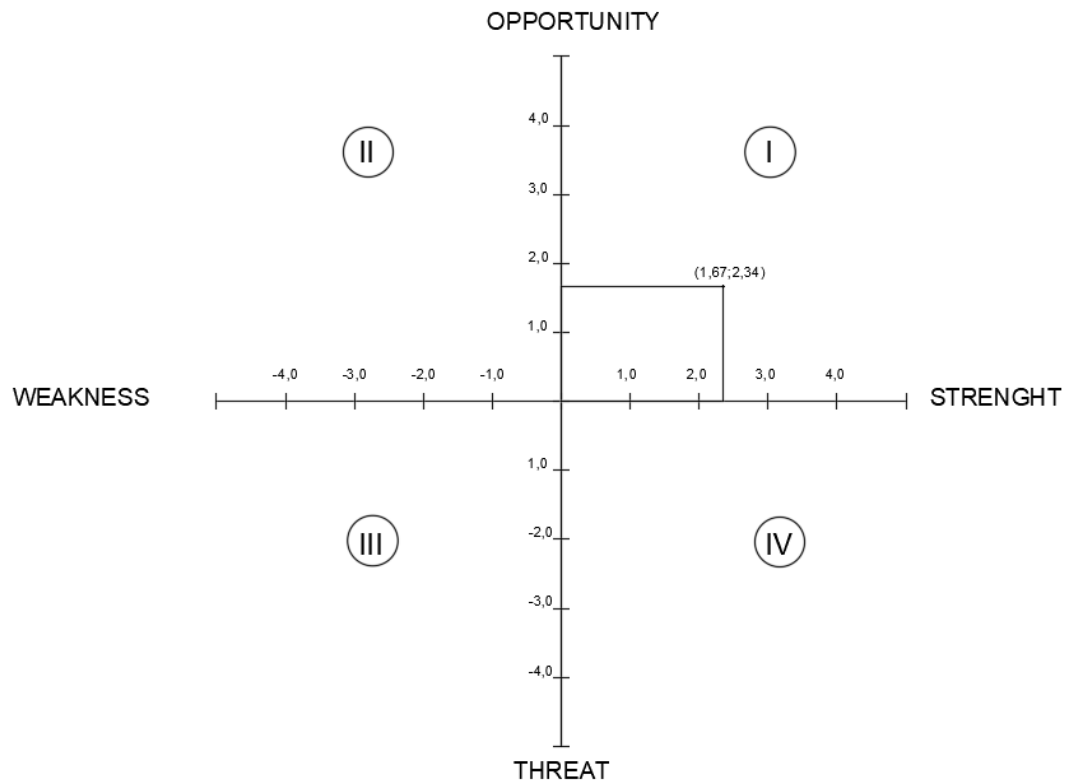
| No                            | Chance (O)                                | Ratings |   |   |    | Total      | Weight       | Score<br>(Weight x Ratings) |
|-------------------------------|---|---------|---|---|----|------------|--------------|-----------------------------|
|                               |   | 1       | 2 | 3 | 4  |            |              |                             |
| 1                             | Awards for exemplary employees            | 0       | 0 | 1 | 9  | 39         | 0.164        | 0.66                        |
| 2                             | There is a clear career path              | 0       | 0 | 0 | 10 | 40         | 0.168        | 0.67                        |
| 3                             | Availability of stable Material Resources | 0       | 0 | 2 | 8  | 38         | 0.160        | 0.64                        |
| 4                             | Compensation for the work of employees    | 0       | 0 | 2 | 8  | 38         | 0.160        | 0.64                        |
| 5                             | good social environment                   | 1       | 1 | 4 | 4  | 31         | 0.130        | 0.39                        |
| <b>Total</b>                  |   |         |   |   |    | <b>186</b> | <b>0.782</b> | <b>3.00</b>                 |
| No                            | <b>Threat (T)</b>                         |         |   |   |    |            |              |                             |
| 1                             | Number of available tools                 | 2       | 2 | 3 | 3  | 27         | 0.113        | 0.34                        |
| 2                             | Employee cooperation in groups            | 2       | 4 | 1 | 3  | 25         | 0.105        | 0.32                        |
| <b>Total</b>                  |   |         |   |   |    | <b>52</b>  | <b>0.218</b> | <b>0.66</b>                 |
| <b>Total external factors</b> |   |         |   |   |    | <b>238</b> | <b>1.000</b> | <b>3.65</b>                 |
| <b>O - T</b>                  |   |         |   |   |    |            |              | <b>2.34</b>                 |

Based on the calculation results of the EFAS matrix, it can be concluded that at the PT. BEP, externally can be said to be in good condition. This can be seen from the total score of 3.65. In the table above it can be seen that the most dominant external factor is the awarding of exemplary employees with a score of 0.67. Every appreciation given by superiors to employees can improve HR performance. The second factor is the clarity of the career path with a score of (0.66). The third factor is good communication between employees & there is compensation from management for the work of employees with a score of (0.64), and the next factor is a good social environment factor with a score of (0.39). The main threat to PT. BEP the number of inadequate availability of tools with a score of 0.34. The second weakness is the cooperation of employees in groups with a score of 0.32.

**Strengths, Weaknesses, Opportunities, and Threads (SWOT)**

The SWOT quadrant graph or Cartesian diagram is a presentation of the results of IFAS and EFAS calculations. The point on the Y axis shows the internal factor (IFAS) while the point on the X axis

shows the value of the external factor. Then a meeting line is drawn between the two. Figure 3 shows the position or position of IFAS and EFAS at PT. BEP.



**Figure 5.** Cartesian diagram of IFAS and EFAS

The quadrant calculated by EFAS and IFAS is the SO quadrant (Strength and Opportunity quadrant). The value obtained from IFAS is (1.67) obtained from the difference between strength and weakness which lies on the SWOT quadrant axis. The value of EFAS is 2.34) obtained from the difference between opportunity and threat which is located on the ordinate axis of the SWOT quadrant. The position is located in quadrant I with coordinates (1.67; 2.34) then PT. BEP is in an advantageous situation because it has good strengths and opportunities and can be optimized by minimizing all weaknesses and threats. Even though the company is in a favorable condition, when viewed from the EFAS value which is greater than IFAS, this indicates that the influence of external factors is more dominant than internal factors, so the company needs to reconsider so that the influence of internal factors can be further enhanced by providing support. which supports.

## CONCLUSION

Determination of the dominant internal and external factors that affect HR performance in a company can be determined through the IPA, Pareto, IFAS, and EFAS methods. The results of the analysis carried out at PT. BEP Shows that the dominant factors in the results of the Science analysis are 9 dominant factors that are in quadrant I of the IPMA map, including: X2-6 Awards, X1-4 Capability, X1-3 Knowledge, X2-5 Management Attitude, X1-2 Expertise, X2 -7 Compensation, X2-3 Social environment, X1-7 Experience. If these results are compared with the results of the Pareto analysis, it is found that the most dominant factor in the internal factor is the ability factor with a percentage of 13.49%. As for external factors, the dominant factor is the reward factor of 16.42%. This is also continuous in the IFAS and EFAS analysis shown in the SWOT Cartesian diagram which shows that the company PT.BEP is in a favorable condition, this is shown by the results of the difference in O-T of 1.67 and S-W of 2.34 which is formed in quadrant I .

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