

Building A Model of Measurement, Assessment of Potential and Job Competence in Human Capital Development



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ABSTRACT: The rapid development of industries in the era of globalization and digital transformation has positioned human capital as a strategic asset in achieving organizational competitiveness. This study aims to develop a measurement model for potential and competency among supervisors at PT Garam to support targeted human capital development. Using a qualitative case study approach, data were collected through Focus Group Discussions (FGD), psychometric tests, managerial simulations, and interviews, with 79 supervisors (BOD-3) as the subjects.

The study established two measurement weightings: an initial 50% potential and 50% competency distribution, later refined to 30% potential and 70% competency using the Delphi method to better align with organizational needs. Analysis using Z Graph mapped employees into four quadrants based on their potential and competency levels. The results revealed that 2.6% of employees were classified as high potential and high competency (Quadrant I), while 40.26% were below the standard and required significant development (Quadrants III and IV).

Key findings identified areas for improvement: analytical thinking, systematic work, motivation, and interpersonal communication. The Training Need Analysis (TNA) highlighted critical gaps and informed the design of customized training programs. The study emphasizes the value of integrating qualitative and quantitative approaches for human capital assessment and proposes applying Z Graph to visualize competency gaps, facilitating strategic decision-making.

This research contributes to both theory and practice by offering an adaptive measurement model and strategic recommendations for continuous human capital development. Future research could explore the scalability of this model across different organizational contexts and industries.

KEYWORDS: human capital, potential and competency measurement, Z Graph, Training Need Analysis (TNA), PT Garam

I. INTRODUCTION

Globalization, digitalization, and increasingly competitive competition have changed the way organizations manage human resources (HR) (Verbeke & Hutzschenreuter, 2021). In this context, Human Capital becomes a strategic factor that not only supports the sustainability of the organization but also creates long-term competitive advantage (Skare & Soriano, 2021). Human Capital includes the abilities, skills, and knowledge of individuals who are assets of the organization in facing global challenges. In Indonesia, this challenge is very much felt in PT Garam, a state-owned company that plays a strategic role in meeting national salt needs (Luo, 2021). In this context, the effectiveness of Human Capital is crucial to maintaining the company's competitiveness amidst industry dynamics and changes in the business environment (Autio et al., 2021).

One of the main issues faced by PT Garam is the gap in potential and competence at the supervisor level (BOD-3). Based on the latest measurement results, 96% of supervisor employees are still below the expected standard. This level includes a crucial role in the company's operations because they are the link between top management policies and implementation in the field (Dhar et al., 2022). This phenomenon indicates the need for a more targeted and measurable HR management strategy to ensure that supervisors have adequate capabilities to carry out their strategic roles.

Previous research has shown the importance of measuring Human Capital as a basis for determining HR development strategies. Xu and Li (2020) found that Human Capital quality has a significant positive correlation with organizational and economic growth. However, specific research on the development of potential and competency measurement models, especially those relevant to production-based organizations such as PT Garam, is still limited. He & Tang, (2021) emphasized that in Indonesia, organizations

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often do not have integrated tools or models to evaluate Human Capital comprehensively. This results in a significant gap between HR potential and organizational needs.

The urgency of this research is increasing because organizations such as PT Garam must immediately address the gap in employee competency and potential to remain competitive, especially in facing industry dynamics and digital transformation. This study not only aims to measure and evaluate the potential and competency of supervisors, but also provides a technology-based approach through the Z Graph application to visualize the existing gap. Naqvi et al., (2021) noted that visual analysis technology like this can be key to better strategic decision making.

As the object of research, supervisors at PT Garam have unique characteristics. They are employees who fill the BOD-3 position, which is a layer of operational management with the responsibility of implementing top management policies and ensuring operational performance. Therefore, their role is very important in determining the success of the implementation of the company's strategy. Given the importance of this role, evaluating their potential and competence becomes very relevant to ensure alignment between individual capabilities and organizational needs. In this context, the study focuses on answering how PT Garam can build a suitable potential and competence measurement model for supervisors to align with the established standards. In addition, the study also discusses specific aspects of potential and competence that need to be developed to support the effectiveness of this position. In addition, this study explores how weighting between potential and competence can be applied flexibly to support data-based training needs analysis. Technologies such as the Z Graph application are the main focus for understanding and visualizing the gap between employee achievements and organizational standards, thus producing relevant strategic recommendations for better Human Capital development. With this structured approach, the study is expected to provide relevant solutions to improve supervisor performance at PT Garam as well as being a strategic reference for other organizations facing similar challenges.

II. THEORITICAL REVIEW

Model Concept in Research

A model is a systematic and structured description used to explain interrelated concepts (Schwalbe & Finzel, 2024). According to Govindan et al., (2021), a model is a representation of a theory that allows visualization of interactions between variables. Models can be narrative, procedural, or mathematical descriptions, designed to facilitate understanding of a particular phenomenon. Models are also used as tools to translate theory into practice, both in simulations and structured measurements (Delgado & Oyedele, 2021).

In the context of this research, the model used is a procedural model to measure potential and competence in developing Human Capital at PT Garam. The procedure in this model involves identifying organizational needs, measuring potential and competence, and analyzing gaps to determine development strategies. This is in line with (Naqvi et al., 2021), which states that procedural models provide systematic steps to achieve measurable and well-defined goals.

Human Capital

Human Capital refers to the abilities, skills, and knowledge possessed by individuals, which contribute to productivity and the creation of economic value (Abu-Shawish et al., 2021). Abbas et al., (2024) define Human Capital as the strategic capital of an organization, which includes education, training, and professional initiatives to enhance individual capabilities. According to Goldin, (2024), Human Capital is a combination of education, experience, and competence that drives organizational performance. In a dynamic business environment, Human Capital plays an important role in driving innovation and competitiveness of companies. Sedyastuti et al., (2021) emphasized that the value of Human Capital is reflected in the combination of knowledge, skills, and energy possessed by employees. Thus, the development of Human Capital must be a strategic priority in modern organizations.

The Role of Human Capital in Organizations

Human Capital plays a central role in creating competitive advantage in organizations. Dirani et al., (2020) stated that Human Capital is the main resource in developing intellectual capital and innovation. This role includes strategic resource management, transformation and change, management of organizational infrastructure, and employee contribution to achieving organizational goals (Cherif, 2020). In this study, the role of Human Capital is focused on developing employee potential and competence to support organizational sustainability (Vrontis et al., 2023).

Human Capital Measurement

Human Capital measurement is needed to assess the effectiveness of HR management strategies and employee contributions to achieving organizational performance (Al-Qudah et al., 2020). Amjad et al., (2021) identified six main elements in this

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measurement, namely communication of expectations, gap identification, feedback, rewards, resource allocation, and performance evaluation. In this study, the measurement was carried out through the Assessment Center approach which includes measuring aspects of employee potential and competence (Haldorai et al., 2022).

Competence

Competence is the capacity that a person has to meet job demands (Verma et al., 2022). According to Amjad et al., (2021), competence includes knowledge, skills, and behaviors that are relevant to job duties. Competence not only reflects technical abilities, but also includes values and attitudes that support the achievement of optimal work results (So et al., 2021).

Competence Characteristics

Saadvandi et al., (2024) identified five main competency characteristics, namely:

Motives: Driving factors that influence a person's actions.

Traits: Basic traits that influence responses to certain situations.

Self-Concept: Values and attitudes held by individuals.

Knowledge: Specific information relevant to the field of work.

Skills: Ability to carry out certain tasks.

In this study, competency measurement was carried out to identify the level of employee ability that supports job success (Takdir et al., 2023).

Potential

Potential is the ability or power possessed by an individual, which can be developed to achieve greater results (Werdhiastutie et al., 2020). Potential includes intelligence, work methods, work potential, social relationships, and personality.

Potential Measurement

Potential measurement is carried out through psychological tests, interviews, and group simulations (Li et al., 2021). Avelino, (2021) stated that human intelligence consists of various types, such as logical-mathematical, linguistic, interpersonal, and intrapersonal intelligence. This measurement method is designed to identify aspects of potential that support individual and organizational development.

Assessment Center

Assessment Center is a behavior-based assessment method that uses various evaluation techniques, such as simulations and interviews. According to (Grgic et al., 2020), Assessment Center has a high level of reliability in assessing employee competence and potential. This method includes measuring cognitive aspects, technical abilities, and personal characteristics that are relevant to the position (Najafzadeh et al., 2021).

Training Need Analysis (TNA)

Training Need Analysis (TNA) is a systematic approach to identifying training needs in an organization (Cotes & Ugarte, 2021). Markaki et al., (2021) stated that TNA includes organizational, job, and individual analysis to ensure the relevance and effectiveness of training. In the context of this study, TNA is used to develop recommendations for HR development based on the results of measuring potential and competence.

III. RESEARCH METHODS

Research Design

This study uses a qualitative approach with a case study design at PT Garam. The focus of the study is on the development of a measurement model and assessment of the potential and competence of supervisor-level employees as part of the development of Human Capital. This study is explorative and applicable, aiming to identify, measure, and formulate a model that is relevant to the needs of the organization.

Research Subjects

The subjects of the study were employees at the supervisor level at PT Garam. This level was chosen because it has a strategic role in bridging top management policies with operational implementation in the field. The main focus is on measuring potential and competence, which includes knowledge, skills, and work attitudes.

Data Collection Process

Data was collected through the following methods:

1. Observation: Observing employee task implementation to understand the work context and job characteristics.

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2. Focus Group Discussion (FGD): Discussion with management and the Human Capital team to determine potential and competency standards, measuring instruments, and passing thresholds.
3. Assessment Center: Involving a series of tests, such as psychological tests, managerial simulations, interviews, and other tests, to evaluate employee potential and competency.
4. Documentation: Using official company documents, such as job descriptions and competency dictionaries, to ensure the suitability of the developed model with the needs of the organization.

Research Stages

The research was conducted through the following stages:

1. Job Level Identification

Determine the supervisor level as the subject of measurement and set potential and competency standards based on job characteristics.

2. Preparation of Potential and Competency Standards

These standards are prepared based on the results of the FGD, using data from job descriptions, job characteristics, and employee competency dictionaries.

3. Implementation of Assessment Center

The assessment process is carried out using various measuring instruments, such as psychological tests, simulations, and interviews, to obtain data on individual potential and competency.

4. Data Analysis with the Z Graph Application

The assessment result data is analyzed using the Z Graph application, which maps the measurement results on two axes: the X axis for potential and competency attributes, and the Y axis for the standard achievement scale. This analysis provides a clear visualization of the gap between the measurement results and the established standards.

5. Gap Mapping and Determination of Training Need Analysis (TNA)

The gaps identified through the Z Graph are analyzed to determine priority development areas. Areas marked as red zones indicate training needs (TNA) to improve competencies or potentials that do not yet meet standards.

Development and Training

Based on the TNA results, training and development programs are designed to reduce the existing gaps. This training includes improving technical, managerial skills, and other aspects relevant to job needs.

Data Analysis Techniques

Data were analyzed using qualitative and quantitative approaches with the following steps:

1. Qualitative: Thematic analysis of FGD results and interviews to understand employee competency and potential patterns.
2. Quantitative: Processing assessment data using the Z Graph application to produce potential and competency gap visualizations.
3. Data Triangulation: Combining results from various data sources to ensure the validity and reliability of the findings.

Data Validation and Reliability

To ensure validity and reliability, the following steps were taken:

1. Content validation through discussions with experts and PT Garam management.
2. Measurement reliability was tested through an initial Assessment Center trial on a small group.
3. Consistency of assessment results was verified by repeating the process at different times.

Research Output

The results of the study are expected to produce a model that:

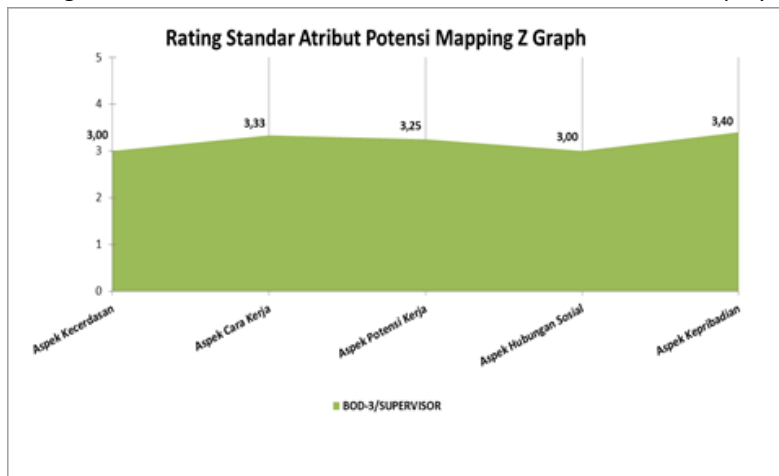
1. Provides clearly defined potential and competency measurement standards.
2. Provides gap visualization that facilitates the identification of training needs.
3. Provides strategic recommendations for the development of Human Capital at PT Garam.

IV. RESULTS AND DISCUSSION

The novelty or findings of this research are mapping by conducting qualitative and quantitative measurements and assessments of Potential and Competence by producing employee Capacity Building. For people who are not familiar with reading employee assessment results through the Assessment Center, it will be very easy to interpret the assessment results if using this Z Graph

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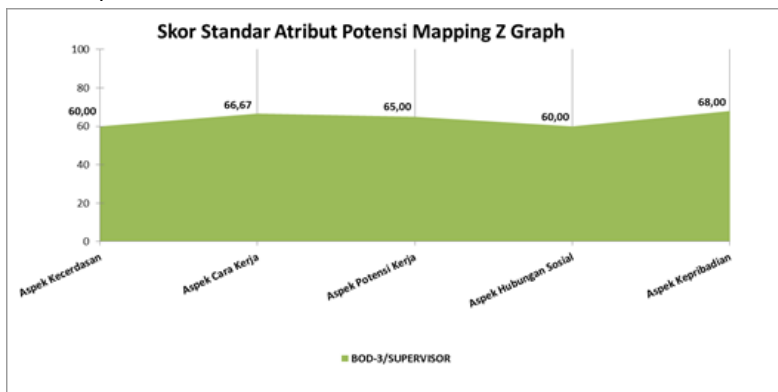
Application, because the visual display easily distinguishes the red color indicated between the Potential and Competence standards that have been set against the results of the measurement and assessment of employee potential and competence.



Source: Researcher (2023)

Image: Z Graph Standard for Potential Measurement and Assessment Based on Rating

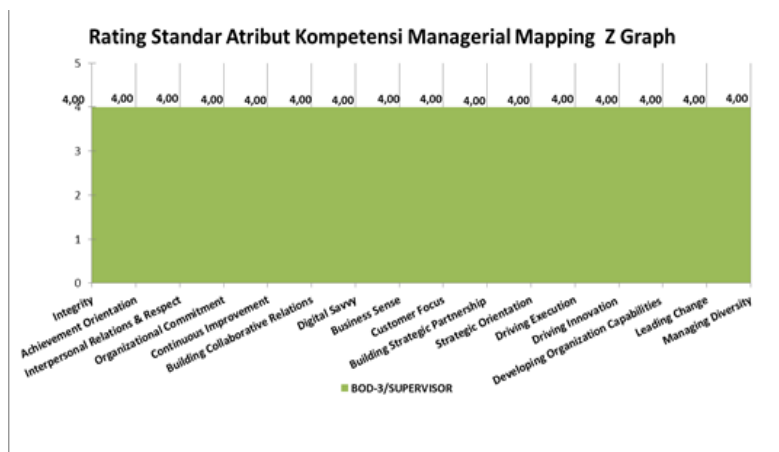
Measurement standards and potential assessment based on ratings, so to find out the role of the aspect dimensions, weighting must be carried out on each aspect.



Source: Researcher (2023)

Image: Z Graph Standard Measurement and Potential Assessment Based on Scores

The weighting results show that the personality aspect has the highest weight compared to other potential aspects, meaning that this aspect is considered the most important compared to other aspects for the Supervisor (Board of Directors/BOD-3) job level standard.



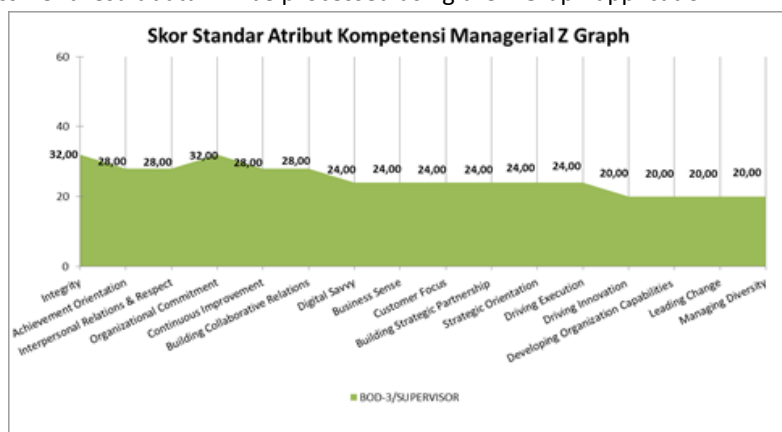
Source: Researcher (2023)

Image: Z Graph of Competency Measurement and Assessment Standards Based on Ratings

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Competency measurement and assessment standards based on ratings, to determine the role of competency aspect dimensions, weighting is carried out on each aspect.

The measurement and assessment standards for competencies are based on the ratings above as the basis for implementing the assessment and the assessment result data will be processed using the Z Graph application.



Source: Researcher (2023)

Image: Z Graph of Competency Measurement and Assessment Standards Based on Scores

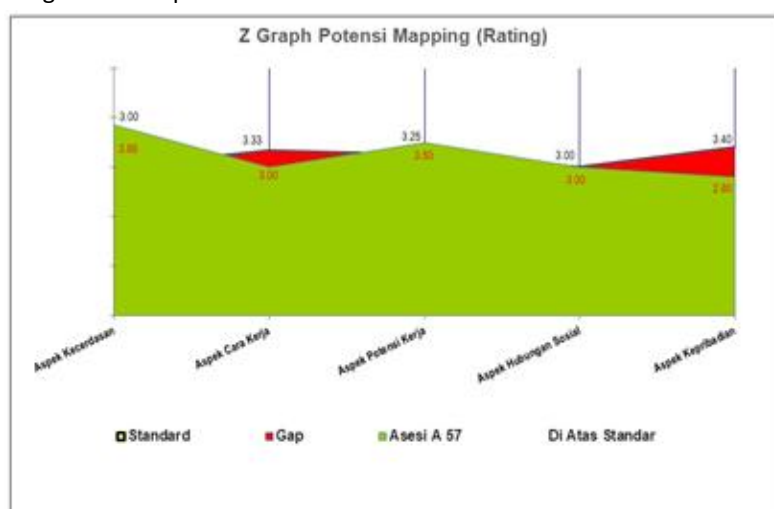
The integrity and organizational commitment aspects have a high weight compared to other aspects, meaning that these two aspects are considered important compared to other aspects for the Supervisor (Board of Directors/BOD-3) job level standards.

Based on the weighting above, it can be seen that the integrity and organizational commitment aspects have a high weight compared to other aspects, meaning that these two aspects are considered important compared to other aspects for the Supervisor (Board of Directors/BOD-3) job level standards.

The Z Graph application has never been used in previous studies. The resulting diagram is in the form of 2 (two) achievement lines, namely the potential and competence standards that have been set and the measurement and assessment results line of employee potential and competence in the form of an up and down line like the letter Z which researchers call the Z Graph or Z Graph.

The development of Novelty mapping using the Z Graph application will make it easier for anyone to read the results of individual capacity measurements and assessments, both potential and competence, compared to reading descriptive psychogram data. The results of the measurement and assessment of each employee's Potential and Competence based on ratings and scores have been mapped until a picture appears for development in each aspect that is measured and assessed.

Each employee will receive the development references needed to meet the job requirements standards in an organization or company. Employee development which is Human Capital in an organization or company can be done through activities that focus on self-development through training, human resource development, self-awareness or employee motivation which is the development of Capacity Building Human Capital.

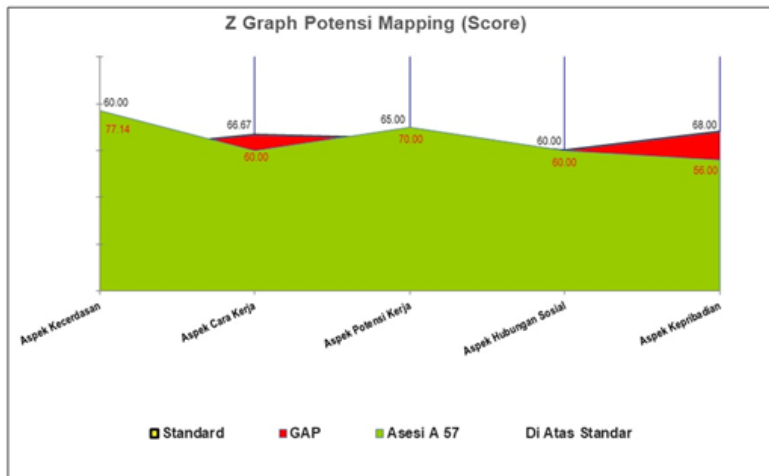


Source: Researcher (2023)

Image: Z Graph of Measurement Results and Assessment of Potential Aspects Based on Ratings

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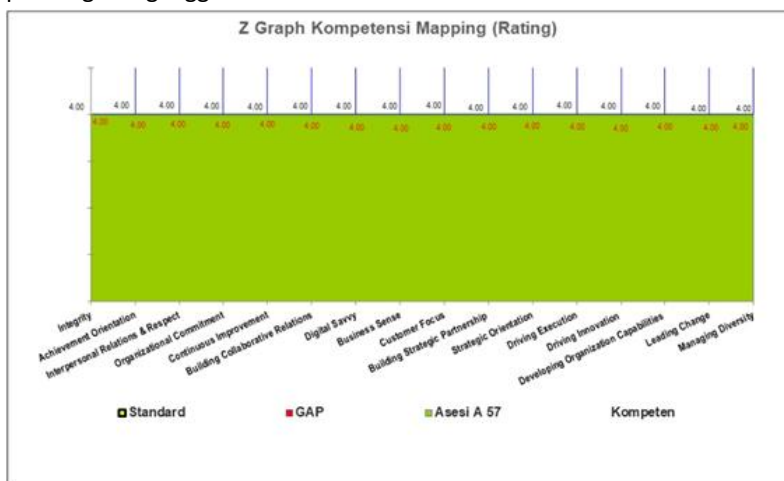
Comparison between the established measurement standards and potential assessments compared to the results of the measurement and potential assessments.



Source: Researcher (2023)

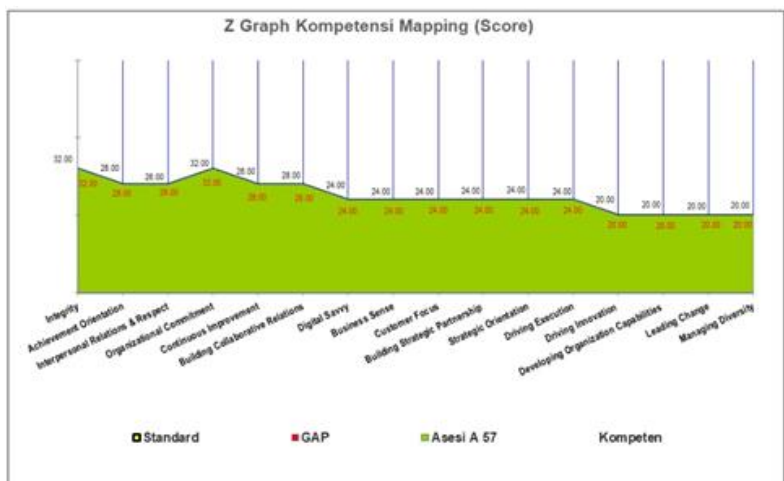
Image: Z Graph of Measurement Results and Potential Assessment Based on Scores

The role of interest in each aspect, the role of aspect interest can be seen from the increasing score on the Z-Graph Application, meaning the role of the aspect is getting bigger.



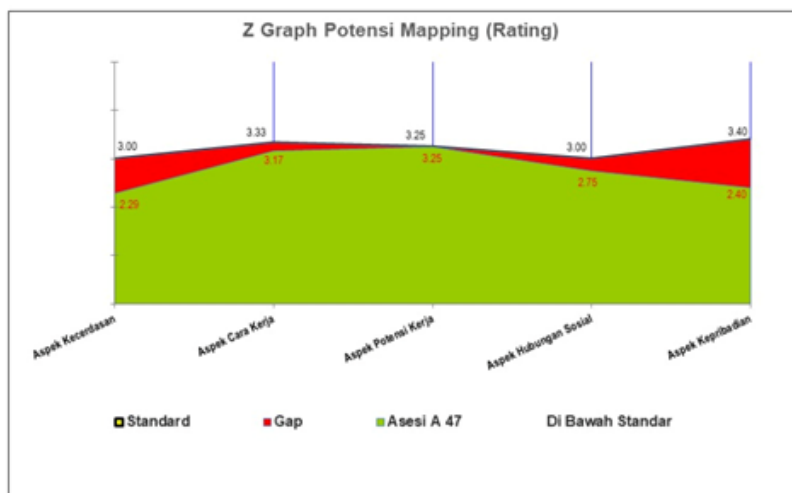
Source: Researcher (2023)

Image: Z Graph of Competency Measurement and Assessment Results Based on Ratings



Source: Researcher (2023)

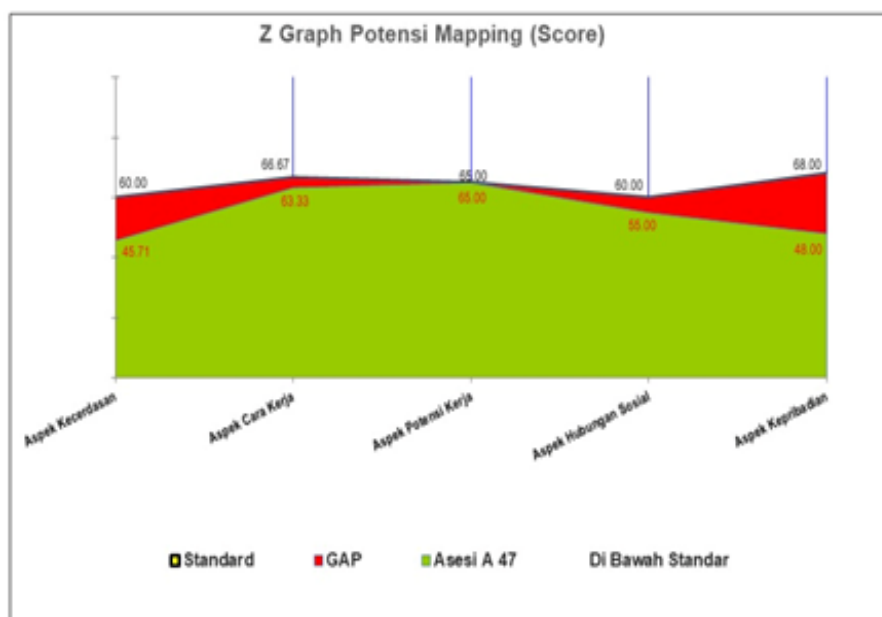
Image: Z Graph of Competency Measurement and Assessment Results Based on Scores



Source: Researcher (2023)

Image: Z Graph of Competency Measurement and Assessment Results Based on Ratings

All aspects measured, namely Integrity, Achievement Orientation, Interpersonal Relations & Respect, Organizational Commitment, Continuous Improvement, Building Collaborative Relations, Digital Savvy, Business Sense, Customer Focus, Building Strategic Partnership, Strategic Orientation, Driving Execution, Driving Innovation, Developing Organizational Capabilities, Leading Change, and Managing Diversity, have met the company's standards with appropriate values on a scale of 4.00 without any difference or gap (0.00). This shows that employees have achieved the set standards. However, to improve the excellence and performance of the organization, further development can still be carried out so that the results achieved exceed company standards, making Human Capital superior and ready to face future challenges.

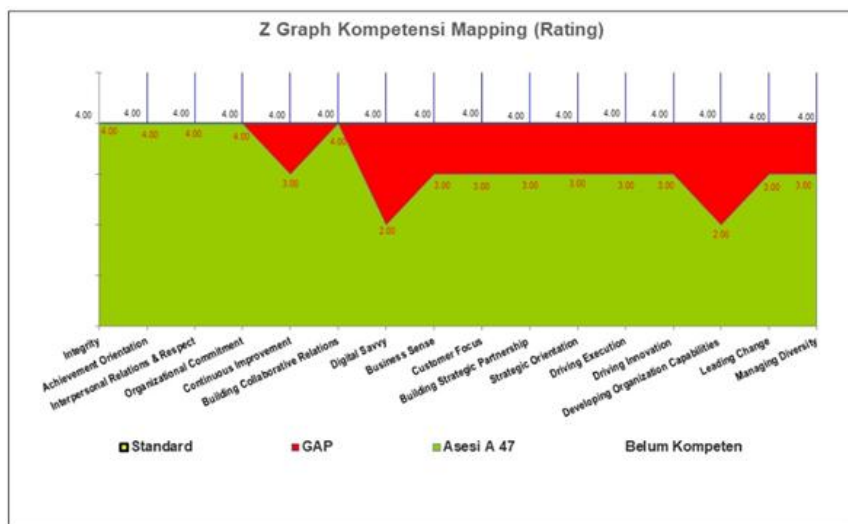


Source: Researcher (2023)

Image: Z Graph of Competency Measurement and Assessment Results Based on Scores

The results of the Z Graph analysis show a negative gap in several aspects of employee potential compared to company standards. The aspects of Intelligence (-0.71), Working Method (-0.17), Social Relations (-0.25), and Personality (-1.00) have values below the set standards, indicating the need for development in these aspects to achieve company standards. Meanwhile, the Work Potential aspect has met the standard with a gap of zero (0.00), although further development is still recommended. The red color produced in the Z Graph marks areas that require special attention for improvement, so that employees can achieve or exceed company standards.

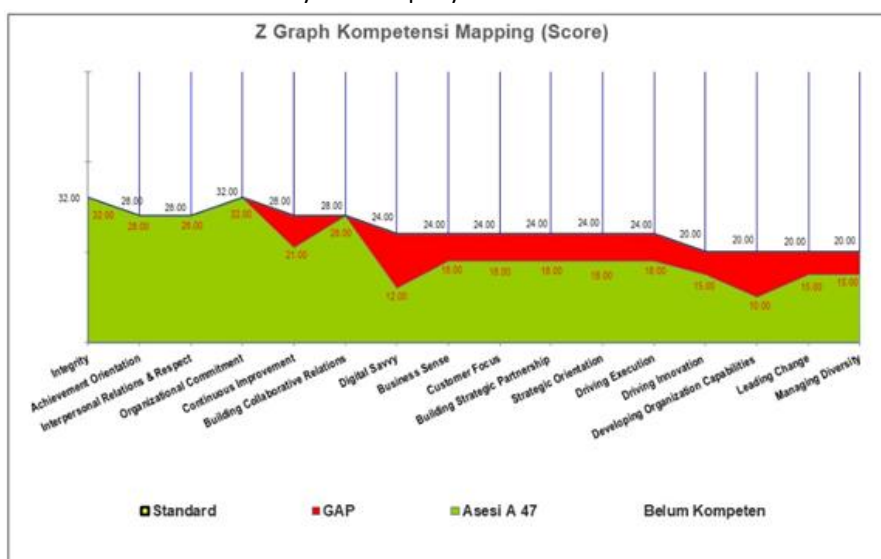
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Source: Researcher (2023)

Image: Z Graph of Competency Measurement and Assessment Results Based on Ratings

The mapping results using the Z Graph application show that most aspects of employee competency are below company standards with varying negative gaps. Aspects such as Integrity, Achievement Orientation, Interpersonal Relations & Respect, and Building Collaborative Relations have met the standards with a gap of zero (0.00). However, other aspects such as Continuous Improvement (-1.00), Digital Savvy (-2.00), Business Sense (-1.00), and Developing Organization Capabilities (-2.00) require special attention for development. These aspects with negative gaps indicate the need for targeted training and development to improve employee competency to reach or exceed the standards set by the company.



Source: Researcher (2023)

Image: Z Graph of Competency Measurement and Assessment Results Based on Scores

The mapping results using the Z Graph application show that most aspects of employee competency are below company standards with varying negative gaps. Aspects such as Integrity, Achievement Orientation, Interpersonal Relations & Respect, and Building Collaborative Relations have met the standards with a gap of zero (0.00). However, other aspects such as Continuous Improvement (-1.00), Digital Savvy (-2.00), Business Sense (-1.00), and Developing Organization Capabilities (-2.00) require special attention for development. These aspects with negative gaps indicate the need for targeted training and development to improve employee competency to reach or exceed the standards set by the company.

This study measures the fit between job competency and individual potential to ensure proper placement in the organization. Potential is an individual's ability that can still be developed, while competence includes the ability to carry out work correctly based on knowledge, skills, and attitudes. Potential assessment is carried out through psychological measuring instruments such as intelligence tests and inventories, while competence is assessed based on behavioral evidence through the Assessment Center

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(AC) method. The AC method involves various techniques, such as psychological tests, interviews, and simulations, which are carried out by several assessors to minimize bias. This method is considered the most reliable for assessing competence and predicting individual behavior accurately.

DISCUSSION

POTENTIAL AND COMPETENCY MEASUREMENT MODEL

This study develops a measurement model that integrates Potential and Competency to evaluate Human Capital at the supervisor level at PT Garam. Potential reflects an individual's innate abilities that can be developed, while competency reflects specific skills and knowledge relevant to the position. To determine the measurement standard, this study initially applied a weighting of 50% potential and 50% competency, which was then adjusted based on the results of the analysis with a weighting of 30% potential and 70% competency, according to the needs of the organization.

The results of the initial evaluation with a weighting of 50:50 showed:

- Total average score: 719.67.
- Final standard score: 359.83.

These data indicate that the majority of employees are still below the passing threshold, indicating the need for adjustments in the weighting approach.

Measurement Results with Various Weightings

Weighting of Potential 50% and Competence 50%

In this initial weighting, the results showed:

- Above standard: 2 people (2.60%).
- Meeting standard: 44 people (57.14%).
- Below standard: 31 people (40.26%).

Although most employees meet or are close to the standard, the proportion who are below the standard remains significant. This indicates the need for a more focused development strategy.

WEIGHTING POTENTIAL 30% AND COMPETENCE 70%

After going through focus group discussions (FGD) using the Delphi method, the weighting was changed to 30% potential and 70% competence to reflect the needs of the organization that emphasizes more technical aspects. The results were:

- Above standard: 2 people (2.60%).
- Meets standard: 44 people (57.14%).
- Below standard: 31 people (40.26%).

This change in weighting did not show a significant increase in the proportion of employees who were above standard, but rather reflected the need for technical competence in supervisory positions.

Use of the Delphi Method in Determining the Model

The Delphi method was used to reach consensus between the Human Capital team and assessors regarding the best weighting. This process involved several rounds of discussion considering assessment data and the strategic needs of the organization. The final decision was to use a weighting of 30% potential and 70% competence, which was agreed upon as the most relevant approach to support HR development at PT Garam.

USE OF THE DELPHI METHOD IN MODEL DETERMINATION

The Delphi method was used to reach consensus between the Human Capital team and assessors regarding the best weighting. This process involved several rounds of discussion considering the assessment data and the strategic needs of the organization. The final decision was to use a weighting of 30% potential and 70% competence, which was agreed to be the most relevant approach to support HR development at PT Garam.

ORGANIZATIONAL CAPACITY BASED ON TRAINING NEED ANALYSIS (TNA)

The results of the analysis show that the majority of employees need development in various aspects of potential and competence. By using the Z Graph application, the gap between the assessment results and the passing standards is visualized to determine priority areas for development.

1. Intelligence Aspect:

- o Needs development: 16 people (21%).
- o No need for development: 61 people (79%).

The analysis shows that development is needed especially in analytical skills and logical thinking.

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2. Work Method Aspect:

- o Needs development: 28 people (36%).
- o No need for development: 49 people (64%).

Development needs are focused on work accuracy and perseverance.

3. Work Potential Aspect:

- o Needs development: 24 people (31%).
- o No need for development: 53 people (69%).

Work motivation and stability are priorities in the development of this aspect.

4. Social Relationship Aspect:

- o Needs development: 13 people (17%).
- o No need for development: 64 people (83%).

Development needs were identified in interpersonal communication and adjustment.

5. Personality Aspect:

No participants needed development in this aspect, indicating good personality stability among employees.

Adjustment of Tolerance on Passing Standard

To accommodate employees with scores close to the standard, this study proposes the application of a 5%-10% tolerance on the passing threshold. With this approach:

- A new category of “Meets Standard” is introduced for employees whose scores are close to the passing standard.
- This process results in an increase in the proportion of employees in the “Meets Standard” category, although the “Below Standard” category remains significant.

The final results with a 10% tolerance are:

- Above standard: 2 people (2.60%).
- Meets standard: 20 people (25.97%).
- Below standard: 55 people (71.43%).

This study confirms that an integrative approach between potential and competence is very relevant in developing Human Capital. The weighting of 30% potential and 70% competence reflects the need for higher technical competence in supervisor positions. However, the results show that the majority of employees still need significant development, especially in terms of intelligence, work methods, and work potential. The use of the Z Graph application provides added value in visualizing the gap, thus facilitating the Training Need Analysis (TNA) process. In addition, adjusting tolerances to the passing standards helps identify employees who need light development to achieve passing.

Implications

Implications for Theory

This study enriches academic understanding by integrating qualitative (narrative) and quantitative (numerical) approaches in assessing potential and competency using the Assessment Center method. The Z Graph application offers an innovative tool for visualizing and analyzing Capacity Building, bridging gaps in Human Capital development research.

Implications for Practice

The findings provide practical benefits for PT Garam and similar organizations. The assessment of potential and competency facilitates mapping employee capabilities and identifying Capacity Building opportunities. Using the Z Graph application, gaps in performance are easily visualized with red markers, guiding targeted Training Need Analysis (TNA). This supports informed decisions in recruitment, promotion, rotation, and training to enhance employee capabilities.

The approach ensures that Human Capital strategies align with organizational goals, offering a clear understanding of employee strengths and areas for improvement. It simplifies decision-making for workforce development while addressing specific organizational challenges.

Policy Implications

For PT Garam, this study provides actionable insights for developing data-driven policies in Human Capital management. The Z Graph application helps aggregate employee assessments, offering a holistic view of workforce capabilities. This supports strategic planning for recruitment, promotion, and training, ensuring readiness to meet Industry 4.0 challenges and global competition.

Research Limitations

This study focuses on supervisors (BOD-3), excluding other organizational levels. Broader application in other contexts or organizations may require additional refinement, such as standardized competency dictionaries and consensus on job-specific competency standards.

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RECOMMENDATIONS

1. HR Development Strategy:

Focus on technical competency-based training and potential enhancement, with a data-based approach.

2. Improvement of the Assessment Model:

The use of tolerance in the passing standard must continue to be adjusted to the needs of the organization.

3. Implementation of Data-Based TNA:

TNA must be the main tool in designing training programs to reduce identified gaps.

4. Use of Technology:

The use of the Z Graph application must be expanded to support more comprehensive gap analysis in the future.

REFERENCES

- 1) Abbas, A., Ekowati, D., Suhariadi, F., & Anwar, A. (2024). Human capital creation: a collective psychological, social, organizational and religious perspective. *Journal of Religion and Health*, 63(3), 2168–2200.
- 2) Abu-Shawish, R. K., Romanowski, M. H., & Amatullah, T. (2021). Policy borrowing and developing knowledge economies in GCC countries: A critique from a Human Capital Theory perspective. *Asia Pacific Education Review*, 22, 77–88.
- 3) Al-Qudah, S., Obeidat, A. M., Shrouf, H., & Abusweilem, M. A. (2020). The impact of strategic human resources planning on the organizational performance of public shareholding companies in Jordan. *Problems and Perspectives in Management*, 18(1), 219.
- 4) Amjad, F., Abbas, W., Zia-Ur-Rehman, M., Baig, S. A., Hashim, M., Khan, A., & Rehman, H.-. (2021). Effect of green human resource management practices on organizational sustainability: the mediating role of environmental and employee performance. *Environmental Science and Pollution Research*, 28, 28191–28206.
- 5) Autio, E., Mudambi, R., & Yoo, Y. (2021). Digitalization and globalization in a turbulent world: Centrifugal and centripetal forces. *Global Strategy Journal*, 11(1), 3–16.
- 6) Avelino, F. (2021). Theories of power and social change. Power contestations and their implications for research on social change and innovation. *Journal of Political Power*, 14(3), 425–448.
- 7) Cherif, F. (2020). The role of human resource management practices and employee job satisfaction in predicting organizational commitment in Saudi Arabian banking sector. *International Journal of Sociology and Social Policy*, 40(7/8), 529–541.
- 8) Cotes, J., & Ugarte, S. M. (2021). A systemic and strategic approach for training needs analysis for the International Bank. *Journal of Business Research*, 127, 464–473.
- 9) Delgado, J. M. D., & Oyedele, L. (2021). Digital Twins for the built environment: learning from conceptual and process models in manufacturing. *Advanced Engineering Informatics*, 49, 101332.
- 10) Dhar, B. K., Harymawan, I., & Sarkar, S. M. (2022). Impact of corporate social responsibility on financial expert CEOs' turnover in heavily polluting companies in Bangladesh. *Corporate Social Responsibility and Environmental Management*, 29(3), 701–711.
- 11) Dirani, K. M., Abadi, M., Alizadeh, A., Barhate, B., Garza, R. C., Gunasekara, N., Ibrahim, G., & Majzun, Z. (2020). Leadership competencies and the essential role of human resource development in times of crisis: a response to Covid-19 pandemic. *Human Resource Development International*, 23(4), 380–394.
- 12) Goldin, C. (2024). Human capital. In *Handbook of cliometrics* (pp. 353–383). Springer.
- 13) Govindan, K., Shaw, M., & Majumdar, A. (2021). Social sustainability tensions in multi-tier supply chain: A systematic literature review towards conceptual framework development. *Journal of Cleaner Production*, 279, 123075.
- 14) Grgic, J., Lazinica, B., Schoenfeld, B. J., & Pedisic, Z. (2020). Test–retest reliability of the one-repetition maximum (1RM) strength assessment: a systematic review. *Sports Medicine-Open*, 6, 1–16.
- 15) Haldorai, K., Kim, W. G., & Garcia, R. L. F. (2022). Top management green commitment and green intellectual capital as enablers of hotel environmental performance: The mediating role of green human resource management. *Tourism Management*, 88, 104431.
- 16) He, A. J., & Tang, V. F. Y. (2021). Integration of health services for the elderly in Asia: A scoping review of Hong Kong, Singapore, Malaysia, Indonesia. *Health Policy*, 125(3), 351–362.
- 17) Li, L., Liu, W., Dong, H., Gui, Q., Hu, Z., Li, Y., & Liu, J. (2021). Surface and interface engineering of nanoarrays toward advanced electrodes and electrochemical energy storage devices. *Advanced Materials*, 33(13), 2004959.
- 18) Luo, Y. (2021). New OLI advantages in digital globalization. *International Business Review*, 30(2), 101797.
- 19) Markaki, A., Malhotra, S., Billings, R., & Theus, L. (2021). Training needs assessment: tool utilization and global impact.

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BMC Medical Education, 21(1), 310.

- 20) Najafzadeh, M., Homaei, F., & Farhadi, H. (2021). Reliability assessment of water quality index based on guidelines of national sanitation foundation in natural streams: Integration of remote sensing and data-driven models. *Artificial Intelligence Review*, 54(6), 4619–4651.
- 21) Naqvi, R., Soomro, T. R., Alzoubi, H. M., Ghazal, T. M., & Alshurideh, M. T. (2021). The nexus between big data and decision-making: A study of big data techniques and technologies. *The International Conference on Artificial Intelligence and Computer Vision*, 838–853.
- 22) Saadvandi, M., Abbasi, E., Biemans, H., Zarafshani, K., & Farhadian, H. (2024). Identifying characteristics of a competence-based agricultural higher education system: a literature review. *The Journal of Agricultural Education and Extension*, 30(2), 297–316.
- 23) Schwalbe, G., & Finzel, B. (2024). A comprehensive taxonomy for explainable artificial intelligence: a systematic survey of surveys on methods and concepts. *Data Mining and Knowledge Discovery*, 38(5), 3043–3101.
- 24) Sedyastuti, K., Suwarni, E., Rahadi, D. R., & Handayani, M. A. (2021). Human resources competency at micro, small and medium enterprises in Palembang Songket industry. *2nd Annual Conference on Social Science and Humanities (ANCOSH 2020)*, 248–251.
- 25) Skare, M., & Soriano, D. R. (2021). How globalization is changing digital technology adoption: An international perspective. *Journal of Innovation & Knowledge*, 6(4), 222–233.
- 26) So, K. K. F., Wei, W., & Martin, D. (2021). Understanding customer engagement and social media activities in tourism: A latent profile analysis and cross-validation. *Journal of Business Research*, 129, 474–483.
- 27) Takdir, S. D., La Ode, A., & Novitasari, Y. I. (2023). The influence of competence and independence as well as individual characteristics on audit quality at the Kendari city inspectorate. *Russian Journal of Agricultural and Socio-Economic Sciences*, 133(1), 74–82.
- 28) Verbeke, A., & Hutzschenreuter, T. (2021). The dark side of digital globalization. *Academy of Management Perspectives*, 35(4), 606–621.
- 29) Verma, P., Kumar, V., Mittal, A., Gupta, P., & Hsu, S. C. (2022). Addressing strategic human resource management practices for TQM: the case of an Indian tire manufacturing company. *The TQM Journal*, 34(1), 29–69.
- 30) Vrontis, D., Christofi, M., Pereira, V., Tarba, S., Makrides, A., & Trichina, E. (2023). Artificial intelligence, robotics, advanced technologies and human resource management: a systematic review. *Artificial Intelligence and International HRM*, 172–201.
- 31) Werdhiastutie, A., Suhariadi, F., & Partiwij, S. G. (2020). Achievement motivation as antecedents of quality improvement of organizational human resources. *Budapest International Research and Critics Institute-Journal (BIRCI-Journal) Volume*, 3, 747–752.



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