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Abstract

This research investigates the influence of career management and organizational commitment on work effectiveness, with competency acting as a moderating variable among employees at PT PLN (Persero) UP3 Padangsidimpuan. Utilizing a quantitative approach with descriptive and causal methods, the study examines the relationships between these factors. Data was collected via questionnaires from all 86 employees of PT PLN (Persero) UP3 Padangsidimpuan between June and August 2025 and analyzed using Partial Least Squares-Structural Equation Modeling (PLS-SEM). The findings offer insights into how strategic career management, organizational commitment, and employee competency can be synergistically designed to foster a conducive, adaptive, and results-oriented work environment, ultimately enhancing work effectiveness within the organization.

Keywords: Career Management, Organizational Commitment, Work Effectiveness, Competency, Moderating Variable, Human Resource Management, PLS-SEM, PT PLN (Persero) UP3 Padangsidimpuan

Background

Work effectiveness is a crucial indicator of an organization's success. In an increasingly dynamic and competitive workplace, every organization is required to have competent, committed human resources capable of optimally performing their duties. Work effectiveness is not only related to achieving company targets, but also to how employees can work efficiently and productively. PT PLN (Persero) UP3 Padangsidimpuan, as a strategic company operating in the energy sector, faces the challenge of ensuring that its employees can work effectively to support the achievement of company goals. As a company that plays a significant role in providing electricity to the public, PLN has a responsibility to maintain continuity of service with the highest quality. Electricity is not only a basic need for the community, but also a key driver for various sectors such as industry, education, and health. Therefore, any disruption in electricity service can have a broad impact on people's lives and the economy as a whole.

In facing these demands, PLN must ensure that each employee has adequate competency and clear career support to achieve their full potential. Effective human resource management encompasses not only training and skills development, but also efforts to increase employee motivation and loyalty through a structured career management strategy. By providing a clear career path, employees can feel valued and more motivated to contribute optimally to the company. Furthermore, PLN also faces challenges from external changes, such as rapid technological developments, evolving government policies, and increasing customer expectations for more reliable and innovative services. These changes require PLN to continue transforming, both in terms of technology and human resources. Employees must be able to adapt quickly to change, making competency a crucial factor in supporting the success of this transformation. Therefore, synergy between career management, organizational commitment, and competency is needed to create high work effectiveness at PT PLN (Persero) UP3 Padangsidimpuan. On the other hand, the rapidly changing business environment, including technological developments, government regulations, and customer expectations, further emphasizes the importance of having superior human resources. Rapid technological developments require companies to continuously improve their employees' technical capacity and adaptability to address automation and digitalization of work processes. Dynamic government policies also require employees who

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not only understand the technical aspects of their jobs but also possess analytical skills regarding the impact of new regulations on company operations. Furthermore, customer expectations for fast, reliable, and innovative service require companies to create a work culture that is responsive to market needs. Employees are required not only to understand their duties but also to continuously adapt to changes. This includes regular skill updates through training, certification, and other competency development. Companies must support this process by providing access to relevant and sustainable self-development opportunities. Therefore, targeted career management, strong organizational commitment, and adequate employee competencies are mutually supportive elements in increasing work effectiveness at PT PLN (Persero) UP3 Padangsidimpuan. Thus, these three elements must be strategically designed to create a conducive, adaptive, and results-oriented work environment. Career management is a crucial factor in boosting employee effectiveness. With effective career management, employees can have a clear view of their career paths, thus increasing their motivation to improve their performance. A clear career path provides employees with an overview of professional development opportunities, which ultimately boosts self-confidence and job satisfaction. Furthermore, effective career management also enables companies to optimally utilize individual potential, which in turn increases overall productivity.

Furthermore, organizational commitment is a key aspect that determines how much employees contribute to achieving the company's vision and mission. This commitment reflects the level of emotional attachment and loyalty employees have to the company. Employees with a high level of commitment tend to demonstrate greater dedication to their duties and responsibilities. They are not only motivated to meet work targets but also have a strong desire to support the company's sustainability and growth. In a dynamic work environment, organizational commitment can be a driving force that helps companies face internal and external challenges. However, the relationship between career management, organizational commitment, and work effectiveness cannot be separated from the role of competency. Employee competency serves as a moderating variable that can strengthen or weaken the influence of career management and organizational commitment on work effectiveness.

Formulation of the problem

Based on the background above, the problem formulation in this research is as follows:

- 1. Does Career Management have a positive and significant effect on Competence at PT PLN (Persero) UP3 Padangsidimpuan?
- 2. Does Organizational Commitment have a positive and significant effect on Competence at PT PLN (Persero) UP3 Padangsidimpuan?
- 3. Does Competence have a positive and significant influence on the Work Effectiveness of PT PLN (Persero) UP3 Padangsidimpuan Employees?
- 4. Does Career Management have a positive and significant effect on Work Effectiveness moderated by Employee Competence at PT PLN (Persero) UP3 Padangsidimpuan?
- 5. Does Organizational Commitment have a positive and significant effect on Work Effectiveness moderated by Employee Competence at PT PLN (Persero) UP3 Padangsidimpuan?

Research purposes

The objectives of this research are:

- 1. To test and analyze the influence of Career Management on Competence at PT PLN (Persero) UP3 Padangsidimpuan.
- 2. To determine and analyze the influence of Organizational Commitment on Competence at PT PLN (Persero) UP3 Padangsidimpuan.
- 3. To test and analyze the influence of Competence on the Work Effectiveness of Employees of PT PLN (Persero) UP3 Padangsidimpuan.
- 4. To test and analyze the influence of Career Management on Work Effectiveness moderated by Employee Competence at PT PLN (Persero) UP3 Padangsidimpuan
- 5. To test and analyze the influence of Organizational Commitment on Work Effectiveness moderated by Employee Competence at PT PLN (Persero) UP3 Padangsidimpuan

Benefits of research

This research is expected to provide the following benefits:

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- 1. Theoretical BenefitsThis research can add insight in the field of human resource management, particularly regarding the influence of career management and organizational commitment on work effectiveness with competence as a moderating variable.
- 2. Practical BenefitsThe results of this study can provide input for the management of PT PLN (Persero) UP3 Padangsidimpuan in designing career development strategies, increasing organizational commitment, and managing employee competencies to improve work effectiveness.

Literature review

Career Management

According to Robbins and Judge (2017), career management is a series of activities designed to help individuals plan, manage, and develop their career paths so they can make optimal contributions to the organization. Meanwhile, according to Greenhaus et al. (2017), career management encompasses organizational efforts to provide training, guidance, and opportunities to support individual career growth.

Career Management Indicators

Career management indicators according to Robbins and Judge (2017), namely:

- 1. Career Planning:Refers to a systematic process that helps individuals determine short- and long-term career goals. This includes recognizing one's potential, identifying opportunities, and developing strategic steps to achieve them
- 2. Career Development:Focuses on efforts to improve individual skills and competencies through training, mentoring, and work experience. The goal is to equip employees to meet current and future job demands.
- 3. Employee Capacity Improvement:Involves providing opportunities for employees to learn and develop, whether through formal education, training, or practical experience, to ensure they have relevant and up-to-date skills.

Organizational Commitment

According to Meyer and Allen (2017), organizational commitment is the level of emotional attachment, loyalty, and identification employees have with the organization. Meanwhile, Luthans (2017) explains that organizational commitment is an employee's strong desire to remain part of the organization and actively participate in achieving its goals.

Organizational Commitment Indicators

Indicators of organizational commitment according to Meyer and Allen (2017):

1. Affective Commitment

Affective commitment refers to an employee's emotional attachment to the organization. Employees with high affective commitment tend to work enthusiastically because they feel proud to be part of the organization. This typically occurs when employees feel that their personal values align with those of the organization.

2. Ongoing Commitment

Continuance commitment relates to employees' awareness of the risks or consequences of leaving the organization. Employees stay not because they want to, but because they perceive significant losses, such as the loss of financial stability or other benefits.

3. Normative Commitment

Normative commitment reflects an employee's sense of moral obligation to remain with the organization. Employees feel obligated to continue contributing because of moral values or because they have received significant support from their previous organization, such as training or education.

Competence

According to Spencer and Spencer (2017), competency is a fundamental individual characteristic related to effective job performance. Meanwhile, Boyatzis (2017) defines competency as a collection of skills, knowledge, and behaviors required to perform tasks optimally.

Competency Indicators

According to Spencer & Spencer (2017), competency indicators include:

- 1. Knowledge: The extent to which employees have a deep understanding of the work being performed.
- 2. Skills: The technical and functional abilities that employees possess to perform tasks effectively.

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- 3. Behavior: Attitudes and ways of acting that support the achievement of desired results in work.
- 4. Work Experience: The level of experience that employees have in the field of work they are working in.

Work Effectiveness

Work effectiveness can be measured by how well an individual achieves organizational goals in a timely manner and with optimal resources. According to Gibson et al. (2017), work effectiveness is the achievement of predetermined results within an organization by utilizing available resources optimally and efficiently. According to Dessler (2017), work effectiveness is the level of employee success in carrying out assigned tasks with results that meet the quality and quantity standards expected by the organization.

Effectiveness Indicators

Work Effectiveness Indicators according to Dessler (2017), including:

- 1. Achievement of Work Goals: The extent to which employees achieve the goals set by the organization.
- 2. Quality of Work: The quality of work results produced by employees is in accordance with established standards.
- 3. Productivity: The amount of output produced by an employee within a specified time.
- 4. Efficient Use of Resources: The ability of employees to use available resources in an efficient manner to achieve goals.

Conceptual Framework

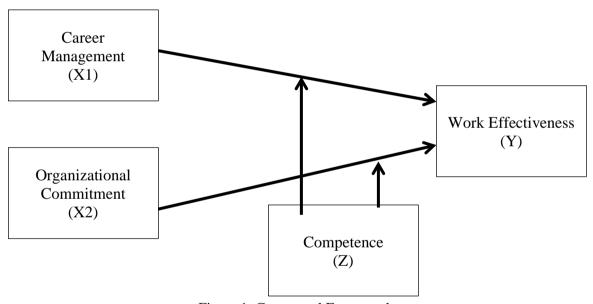


Figure 1: Conceptual Framework

Hypothesis

The hypothesis that can be proposed in this research is:

- 1. Career management has a positive influence on work effectiveness at PT PLN (Persero) UP3 Padangsidimpuan
- 2. Organizational commitment has a positive influence on work effectiveness at PT PLN (Persero) UP3 Padangsidimpuan
- 3. Competence has a positive and significant influence on the Work Effectiveness of PT PLN (Persero) UP3 Padangsidimpuan Employees
- 4. Career Management has a positive and significant effect on Work Effectiveness moderated by Employee Competence at PT PLN (Persero) UP3 Padangsidimpuan
- 5. Organizational Commitment has a positive and significant effect on Work Effectiveness moderated by Employee Competence at PT PLN (Persero) UP3 Padangsidimpuan

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Types of research

This research uses quantitative methods with descriptive and causal approaches. Descriptive research aims to provide an overview of the variables studied, while causal research is used to analyze the causal relationship between the independent variables (career management and organizational commitment), the moderating variable (competence), and the dependent variable (work effectiveness). According to Sugiyono (2017), quantitative methods are used to test hypotheses using statistical analysis tools.

Time and Location of Research

This research was conducted at PT PLN (Persero) UP3 Padangsidimpuan. Data collection took place from June to August 2025.

Population and Sample

Population: The population in this study was all employees of PT PLN (Persero) UP3 Padangsidimpuan, totaling 86 people.

Sample: This study used a saturated sampling technique, where all members of the population were sampled. According to Sugiyono (2017), the saturated sampling technique is used when the population is relatively small so that the entire population can be studied.

Research Data Sources

- a. **Primary Data:**Data obtained directly from respondents through questionnaires that have been designed according to the research variable indicators.
- b. **Secondary Data:** Data obtained from documents, reports, or official sources of PT PLN (Persero) UP3 Padangsidimpuan and related literature.

Data collection technique

Data collection was conducted using a survey method using a structured questionnaire. This questionnaire consists of statements that measure each research variable based on predetermined indicators.

Data Analysis Techniques

The data analysis technique was carried out using Partial Least Squares-Structural Equation Modeling (PLS-SEM), which is operated through SmartPLS software. According to Hair et al. (2017), PLS-SEM is used to analyze the relationship between variables with data that does not have to strictly meet the assumption of normality.

Operational Definition of Variables

According to Sugiyono (2017), a variable is any type of object determined by a researcher to be studied to obtain information about it and then draw conclusions. Operationalization can be done by determining the type, indicators, and scale of each variable in the study. The following is the operational definition of the variables in this study:

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Variables	Definition	Indicator			
Career Management (X1)	Career ManagementAccording to Robbins and Judge (2017), career management is a series of activities designed to help individuals plan, manage, and develop their career paths so they can make optimal contributions to the organization.	Career management indicators according to Robbins and Judge (2017) The indicators selected cover three important aspects in career management, namely: 1. Career Planning: 2. Career Development: 3. Employee Capacity Improvement:			
Organizational Commitment (X2)	According to Meyer and Allen (2017), organizational commitment is defined as the level of emotional attachment, loyalty, and identification of employees with the organization.	Affective Commitment Ongoing Commitment Normative Commitment (Meyer and Allen, 2017)			
Competence (Z)	CompetenceAccording to Spencer and Spencer (2017), competency is a fundamental characteristic of an individual that is related to effective performance in work.	According to Spencer & Spencer (2017), competency indicators include: 1. Knowledge 2. Skills 3. Behavior 4. Work Experience:			
Work Effectiveness (Y)	According to Dessler (2017)defines work effectiveness as the level of employee success in carrying out assigned tasks with results that meet the quality and quantity standards expected by the organization.	Work Effectiveness Indicators: according to Dessler (2017), work effectiveness indicators include: 1. Achieving Work Goals 2. Quality of Work 3. Productivity 4. Efficient Use of Resources			

Test Measurement Model (Outer Model)

Measurement model testing is conducted to assess the validity and reliability of the construct. Hair et al. (2017) stated that the outer model test aims to ensure that the indicators used in the study are able to accurately measure the construct. The stages of this testing include:

- 1. Convergent Validity:Measured using the loading factor value. A loading factor ≥ 0.70 is considered to meet validity requirements.
- 2. Average Variance Extracted (AVE): $AVE \ge 0.50$ indicates that the construct has good convergent validity.
- 3. Discriminant Validity:Measured using the Fornell-Larcker Criterion, where the square root AVE value must be greater than the correlation between constructs.

Reliability Test (SmartPLS)

Reliability tests are conducted to measure the consistency of the measuring instrument. Hair et al. (2017) state that construct reliability can be tested using:

Composite Reliability (CR): A CR value ≥ 0.70 indicates good reliability.

Cronbach's Alpha: A Cronbach's Alpha value ≥ 0.70 indicates that the indicator has good internal consistency.

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Structural Model Test (Inner Model)

Inner model testing is conducted to examine the relationship between latent variables. According to Hair et al. (2017), the stages of inner model analysis include:

- 1. Path Significance:Using t-statistics and p-values. A t-value ≥ 1.96 and p-value ≤ 0.05 indicate a significant relationship.
- 2. Predictive Relevance (Q^2):Using Stone-Geisser's Q^2 to assess the predictive ability of the model. A Q^2 value > 0 indicates the model has predictive relevance.
- 3. Effect Size (f²):Measuring the influence of each independent variable on the dependent variable. An f² value ≥ 0.02 is considered to have a small influence, ≥ 0.15 a medium influence, and ≥ 0.35 a large influence.

PLS-SEM Inner Model Assumptions

PLS-SEM does not require the assumption of normal distribution of the data. According to Hair et al. (2017), several assumptions that must be considered are:

- 1. Data does not have to be normally distributed.
- 2. The model must conform to the theoretical relationship structure.
- 3. A Variance Inflation Factor (VIF) value ≤ 5 indicates the absence of multicollinearity between variables.

SmartPLS Coefficient of Determination (R2) test

The coefficient of determination (R²) is used to assess the ability of independent variables to explain dependent variables. Hair et al. (2017).

Moderating Hypothesis Test (SmartPLS)

Moderation hypothesis testing is conducted to determine whether competence acts as a moderating variable. According to Baron & Kenny (2017), the moderating role can be identified by:

- 1. Adding interactions between independent and moderating variables into the model.
- 2. Using t-statistics and p-values to test the significance of the moderating effect.
- 3. Viewing the direction and strength of the moderating relationship through the interaction coefficient value.

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