International Journal of Current Science Research and Review
ISSN: 2581-8341
Volume 07 Issue 08 August 2024
DOI: 10.47191/ijcsrr/V7-i8-60, Impact Factor: 7.943
IJCSRR @ 2024
www.ijcsrr.org

Optimization of Staffing Levels and Personnel Budgeting Through Standardized Job Descriptions and Workload Analysis: A Case Study of Operations Director 1's Projects at PT Wijaya Karya (Persero) TBK

Adibowo Wicaksono Wahyu Utomo[1], Nur Budi Mulyono[2]
[1,2]Bandung Institute of Technology, Indonesia

ABSTRACT: This research addresses the critical business issue of optimizing staffing levels and streamlining personnel budgeting within WIKA through the standardization of job descriptions and the determination of optimal personnel numbers. The study, driven by three key research questions, involved analyzing data from 26 medium-scale projects using Lean Office tools and Workload Analysis formats. Standardizing job descriptions led to a significant reduction in redundancies, with the Commercial section decreasing from 81 to 74 roles, Engineering from 37 to 21, and Finance & HC from 34 to 24. Optimal staffing levels were established by validating average working times with expert judgment, resulting in a more efficient allocation of human resources. This optimization saw the Finance & HR team reduce from 6 to 5 employees, Engineering from 9 to 8, and Commercial from 6 to 5, increasing individual work times and ensuring alignment with operational needs. Proper budget standards for personnel costs were developed by comparing historical and current data, leading to significant cost savings: Rp 243.69 million in Finance & HC, Rp 213.91 million in Engineering, and Rp 127.02 million in Commercial. These findings demonstrate that WIKA can enhance its operational performance and efficiency by implementing standardized job descriptions, optimal staffing levels, and accurate budget standards. Recommendations include adopting these standards across all medium project classifications and maintaining regular reviews to ensure continuous improvement, ultimately supporting sustainable growth in the construction industry

.**KEYWORDS:** Construction industry, Job description standardization, Lean Office tools, Operational efficiency, Personnel budgeting, Staffing optimization, Workload analysis.

1 INTRODUCTION

PT Wijaya Karya (Persero) Tbk (WIKA), a prominent Indonesian contractor company, has encountered substantial challenges over recent years, notably exacerbated by the financial strains and troubled receivables arising from the Covid-19 pandemic. Badan Pusat Statistik (BPS) reported that the construction sector continued to contract during 2020. In the fourth quarter of 2020, this sector experienced a growth of minus 5.67 percent. In fact, in the fourth quarter of 2019, the construction sector grew positively by 5.79 percent (Suhaiela, 2021). This predicament is no exception for PT Wijaya Karya (Persero) Tbk (WIKA), despite being one of the leading players in Indonesia's contractor industry. WIKA, known for its robust history and extensive project portfolio, also feels the pressure from an unsupportive industry environment. Despite its robust market position and diversified project portfolio, the company's performance experienced a downturn in 2023. In response to these challenges, WIKA established the Strategic Marketing and Transformation Division, which introduced the lean office method. This approach is designed to enhance efficiency and productivity by fostering a lean organizational structure. The lean office method aims to streamline processes, reduce waste, and optimize resource utilization, thereby improving the overall performance of the company's projects.

However, WIKA continues to face significant inefficiencies, particularly in personnel budget management and employee allocation. These inefficiencies result in sub-optimal fund allocation and labor imbalances, which hinder the company's ability to achieve maximum operational efficiency. Addressing these issues is critical for WIKA to optimize its operations and maintain its industry leadership. By refining its personnel management strategies and aligning its workforce more effectively with project demands, WIKA can better leverage its resources and sustain its competitive edge in the contracting industry. The focus on enhancing internal efficiencies will be pivotal in navigating the post-pandemic landscape and securing long-term growth and stability.

International Journal of Current Science Research and Review
ISSN: 2581-8341
Volume 07 Issue 08 August 2024
DOI: 10.47191/ijcsrr/V7-i8-60, Impact Factor: 7.943
IJCSRR @ 2024
www.ijcsrr.org

2 BACKGROUND

The primary focus of this research is the performance decline of PT Wijaya Karya (Persero) Tbk (WIKA) in 2023, attributed to several key factors. The company faced a significant increase in financial burdens, with a 133.7% surge in costs, totaling Rp3.2 trillion. These financial burdens arose from various sources, including interest expenses, provisions, and administrative costs associated with loans. Additionally, WIKA struggled with a rise in troubled receivables due to vendors and partners being unable to make payments amidst the Covid-19 pandemic, necessitating loss reporting by the company.

To address these issues, WIKA established a Strategic Marketing and Transformation Division, which initiated a Lean Office program aimed at reducing high indirect project costs, streamlining bulky project organizations, and improving low sales employee productivity. The goal of this program is to create a lean organizational structure that enhances productivity, efficiency, and effectiveness by aligning employee numbers with project needs and standardizing effective and efficient personnel numbers. This program is initially being implemented in projects under Operational Director One with medium to low classifications.

The business issue identified through symptom and gap analysis includes inefficiencies in the personnel budget, discrepancies in employee numbers for projects with similar specifications, and non-uniform job descriptions. These problems highlight the need for standardized and efficient human resource management practices within WIKA's projects. The primary business issue is the critical need to establish standardized personnel numbers and job descriptions for each project function to optimize staffing levels and streamline personnel budgeting, ultimately aiming to enhance project performance and overall operational efficiency.

3 LITERATURE REVIEW AND FRAMEWORK

3.1 Lean

According to Womack (2003) Lean is a broader management philosophy derived from lean manufacturing principles. It is focused on maximizing customer value while minimizing waste. Lean principles can be applied beyond manufacturing to areas such as services, healthcare, and software development. Lean thinking promotes a culture of continuous improvement and involves everyone in the organization in the quest for efficiency and value creation. Lean manufacturing is a systematic approach to identifying and eliminating waste through continuous improvement, by flowing the product at the pull of the customer in pursuit of perfection. This philosophy, rooted in the Toyota Production System (TPS), focuses on optimizing efficiency by minimizing waste and enhancing value. According to Womack. (1990) the goal of lean manufacturing is to improve overall customer value by enhancing product quality, reducing lead times, and cutting costs. Lean applied to manufacturing is called lean manufacturing while lean service is applied to the service industry (Gaspersz, 2007). According to Liker, J. K. (2004) leans tools including Kaizen, 5S, Standardized Work, Kanban, Value Stream Mapping, and Key Performance Indicators, to enhance efficiency and productivity. Standardized Work, a core Lean tool, involves documenting the most efficient ways to perform tasks, ensuring consistent, high-quality processes across all levels. This documentation includes standard operating procedures (SOPs), work instructions, process maps, and visual aids, which collectively ensure that tasks are performed uniformly, thereby improving safety, increasing productivity, and reducing waste.

In the context of PT Wijaya Karya (Persero) Tbk (WIKA), the application of Lean principles and tools, such as Standardized Work, plays a crucial role in addressing inefficiencies in personnel budget management and employee allocation. By creating detailed, step-by-step processes for specific tasks and training employees to follow these standardized procedures, WIKA can maintain consistency, quality, and efficiency in its operations. Standardized Work ensures that every task is performed the same way each time, significantly improving workplace safety, efficiency, and quality while reducing variability and defects. This approach not only optimizes resource use and leads to cost savings but also aligns with the company's efforts to refine its personnel management strategies and better leverage its resources in navigating the post-pandemic landscape and securing long-term growth and stability.

3.2 Job Description

Schroeder (2008) defines procedures as a series of steps designed to complete a specific process or task. These procedures provide clear guidelines on how operational tasks should be carried out, ensuring each step is performed consistently and efficiently. Schroeder emphasizes the importance of procedures in operations management to enhance productivity, reduce variability, and ensure the quality of the final product. McShane and Von Glinow (2018), discuss procedures in the context of organizational behavior. They describe procedures as written guidelines that help direct employee behavior in specific situations. Procedures are designed to create consistency and predictability in daily operation. Dessler (2011) also described the job specification as a statement

International Journal of Current Science Research and Review
ISSN: 2581-8341
Volume 07 Issue 08 August 2024
DOI: 10.47191/ijcsrr/V7-i8-60, Impact Factor: 7.943
IJCSRR @ 2024
www.ijcsrr.org

of specifications needed to perform a job, including the educational qualifications, skills, level of experience, and general health. At WIKA job descriptions are included in the procedure. These procedures provide a clear framework for performing tasks, minimizing variability, and facilitating continuous improvement. At PT Wijaya Karya (Persero) Tbk (WIKA), well-defined procedures are crucial for maintaining quality, operational efficiency, and regulatory compliance. WIKA's procedures encompass various aspects, including project management, variation orders, accounting and finance, project formation and dissolution, human capital management, and procurement of goods and services. Each procedure serves as a guide for specific tasks, ensuring that operations are controlled, measurable, and compliant with regulatory standards.

According to W. Edwards Deming (2018), a pioneer in the field of quality management, standard procedures are essential for maintaining quality and improving processes over time. Deming's philosophy highlights that standardized work procedures reduce variability, making it easier to find defects and areas for improvement. Project Management Procedures at WIKA, for example, guide the preparation and control of project work plans, ensuring that project implementation is measurable and aligned with the company's enterprise resource planning (ERP) system. Work Instructions for Variation Orders and Claims provide guidelines for managing contract changes and claims, ensuring compliance with contract documents. The Accounting and Finance Report Procedures ensure proper management of financial transactions and compliance with tax obligations. Human Capital Procedures govern various aspects of human resources management, from recruitment to performance management. Finally, the Procurement Goods and Services Procedure regulates the procurement process, ensuring that it meets the needs of both project and non-project procurement activities. These comprehensive procedures are essential for maintaining high standards of quality, efficiency, and compliance across WIKA's operations.

3.3 Workload analysis

Workload analysis is a crucial process in determining the ideal number of human resources needed for specific tasks, ensuring that the workforce is neither understaffed nor overstaffed. According to Ilyas (2011), this analysis can be performed through work sampling, time and motion studies, and daily logs. Work sampling involves random observations to determine the proportion of time spent on specific activities. Time and motion studies measure the time required by a proficient worker to complete a task under normal conditions. A daily log requires workers to continuously record their activities over a specific period, providing accurate data on the time needed to complete each task.

Several aspects influence workload analysis, including time norms, working volume, and effective working hours. Time norms, considered fixed variables, account for the time needed to produce specific outcomes, while working volume, an unfixed variable, varies between units and positions. Effective working hours, used as a measuring tool, must be valid, consistent, and universal to ensure transparency and objectivity in the workload analysis process. These criteria ensure that the analysis accurately reflects the actual workload, enabling organizations to allocate human resources efficiently and effectively.

At PT Wijaya Karya (Persero) Tbk (WIKA), workload analysis is conducted using a daily log method. WIKA has developed a workload analysis template that includes components such as activity descriptions, task frequency, average real-time, equivalent time, and the number of personnel required. This template ensures that each task is accurately documented and analyzed, allowing WIKA to determine the optimal number of workers needed for various activities. By maintaining detailed records and continuously observing work processes, WIKA can effectively manage its workforce, enhancing productivity and operational efficiency.

3.4 Data Validation

Validation data is very important to ensure data quality. The definition of quality depends on the role of the person who defines it. Some quality experts define quality with various interpretations. Juran (1989), defines quality simply as fitness for use. This definition includes product features that meet consumer needs and are free from deficiencies. While Deming argues that quality is meeting consumer needs and expectations on an ongoing basis based on the price they have paid, in this case Deming builds quality as a system (Bhat & Cozzolino, 1993) Ensuring the reliability and validity of data is crucial for accurate statistical analysis. Before collecting data using the Workload Analysis (WLA) format, it is essential to test the format's questions on subjects with similar characteristics to the research sample. This testing evaluates the validity and reliability of the WLA format, ensuring it effectively gathers the required data. Content validity is achieved through expert consultation, where WIKA experts review the instrument to strengthen its items. Feedback from these consultations is used to refine the instrument, making it suitable for data collection.

International Journal of Current Science Research and Review
ISSN: 2581-8341
Volume 07 Issue 08 August 2024
DOI: 10.47191/ijcsrr/V7-i8-60, Impact Factor: 7.943
IJCSRR @ 2024
www.ijcsrr.org

The control limits test is essential for verifying whether data sets come from the same population or have similar variances, ensuring the integrity of research findings. Control limits include the Upper Control Limit (UCL) and Lower Control Limit (LCL), which indicate acceptable boundaries for process variables. Data points outside these limits signal an "out of control" process, requiring investigation or corrective action. The formulas for UCL and LCL incorporate the mean and standard deviation of the sample data, with the constant L adjusted based on specific needs to set tighter or more relaxed control limits.

The adequacy test ensures that the collected data is sufficient for robust and reliable statistical analysis. This test calculates the required sample size using a formula that considers the desired confidence level, acceptable margin of error, standard deviation of the sample, and current sample size. By ensuring the sample size meets necessary criteria, researchers can minimize sampling errors and achieve statistically significant results. This process enhances the accuracy and credibility of the research, ensuring that the data supports reliable conclusions.

3.5 Conceptual Framework

A conceptual framework serves as a structured representation of the key concepts, variables, and relationships involved in a research study. It guides the research process, ensuring the study remains focused and coherent while defining the scope, goals, and methodology. The framework clarifies key concepts, establishes relationships between variables, and supports theory development by linking research to existing theories. In the thesis, the conceptual framework identifies three primary issues: inefficiencies in the personnel budget, inconsistencies in staffing levels for projects with similar specifications, and non-uniform job descriptions. These issues create a disorganized work environment that the framework aims to rectify by setting goals to standardize job descriptions, staffing levels, and indirect personnel costs.

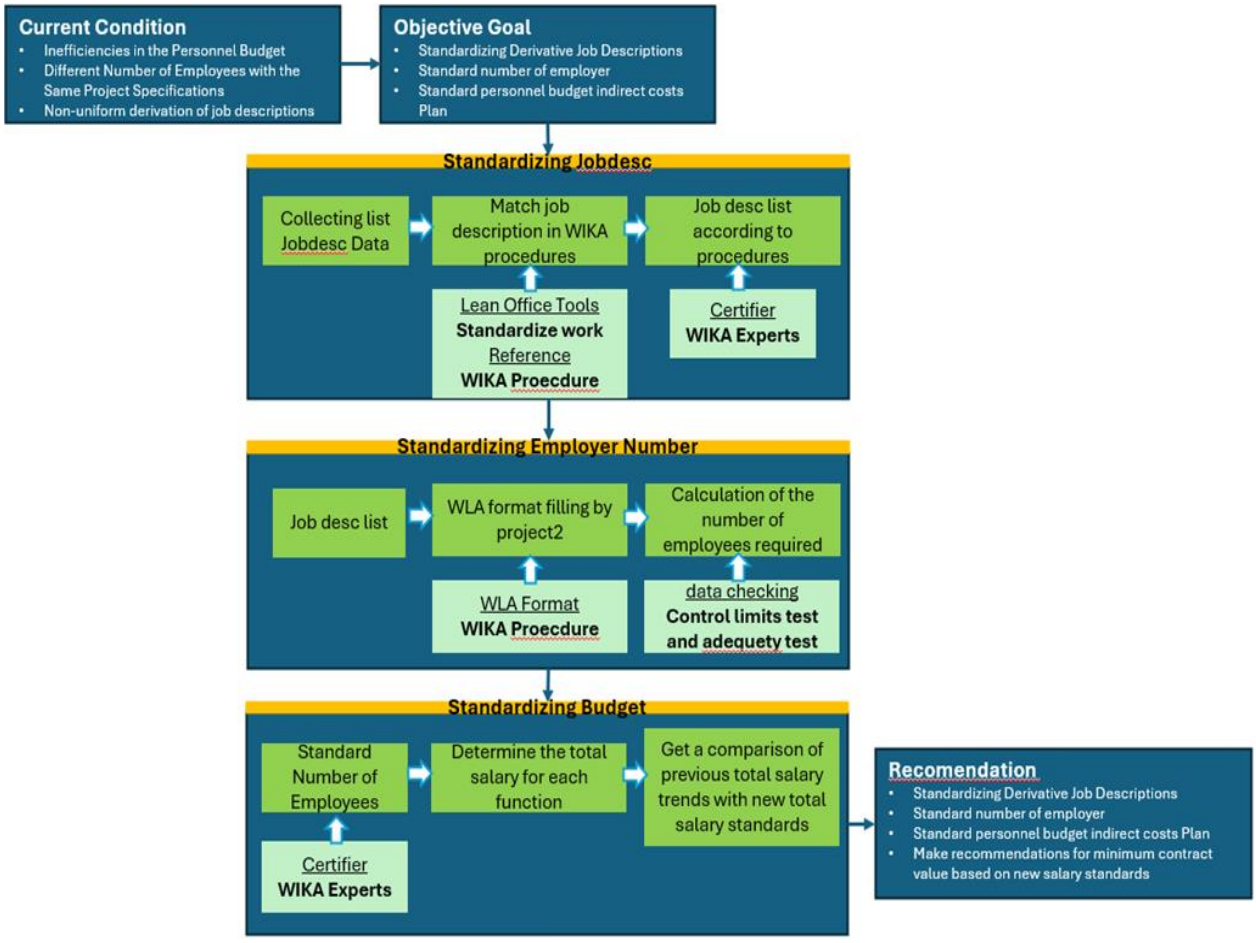


Figure 1. Conceptual framework

International Journal of Current Science Research and Review
ISSN: 2581-8341
Volume 07 Issue 08 August 2024
DOI: 10.47191/ijcsrr/V7-i8-60, Impact Factor: 7.943
IJCSRR @ 2024
www.ijcsrr.org

The framework's shown on figure.1 begins with standardizing job descriptions by collecting data and matching it with WIKA's existing procedures, using lean office tools to streamline processes. Certified by WIKA experts, these standardized job descriptions ensure accuracy and consistency. Next, the framework employs a Workload Analysis (WLA) format to determine the required staffing levels based on workload and standardized job descriptions, rigorously checking the data for accuracy. The final stage involves standardizing the budget by calculating the total salary for each job function and comparing it with previous trends to assess the impact. Certified by WIKA experts, the standard numbers ensure they meet organizational criteria. Recommendations include continuing to standardize job descriptions, maintaining consistent staffing levels, implementing a consistent budgeting plan for indirect costs, and adjusting contract values according to the new salary structures.

4 METHODOLOGY

The "Research Onion" model by Saunders, Lewis, and Thornhill provides a structured approach to research, guiding each stage from philosophical foundations to data collection and analysis. It starts with choosing a research philosophy (positivism, realism, interpretivism, or pragmatism), followed by selecting a research approach (deductive or inductive). The strategy layer includes methods like experiments, surveys, case studies, action research, grounded theory, ethnography, and archival research, aligning with the research question and goals. Methodological choices range from mono-method to mixed-methods, influencing data collection and analysis comprehensiveness. Time horizons, either cross-sectional or longitudinal, impact data insights, while techniques and procedures ensure the reliability and validity of the research through careful selection of data collection and analysis methods. The innermost layer distinguishes between qualitative and quantitative data, integrating methods like in-depth interviews, focus groups, surveys, and performance metrics to thoroughly address the research objectives.

4.1 Research Philosophy

This research adopts Pragmatism as its guiding philosophy, emphasizing practical solutions and the effective application of research findings. Pragmatism integrates elements of both positivism (quantitative) and interpretivism (qualitative), making it suitable for this study's diverse data needs. For example, in standardizing job descriptions, the approach involves collecting data and aligning it with WIKA procedures using Lean Office Tools, while also incorporating expert judgment to ensure practicality. Similarly, for standardizing employer numbers, the study combines qualitative insights with quantitative data to determine the required number of employees, validated through control limits and adequacy tests. For budget standardization, pragmaticism supports data-driven decisions that align staffing levels with budget constraints, ensuring efficient and sustainable personnel budgets.

4.2 Research Approach

The research employs both inductive and deductive approaches to address different aspects of the study. The inductive approach starts with data observations, leading to the development of new insights and theories. For example, data collected from job descriptions and WLA formats help develop theories about staffing levels, while salary data analysis informs budget allocation theories. Conversely, the deductive approach begins with identifying inefficiencies and formulating hypotheses, such as the hypothesis that standardizing job descriptions will reduce inefficiencies. Data collection and expert validation then test these hypotheses, ensuring that standardized descriptions align with theoretical expectations of efficiency and uniformity.

4.3 Methodological Choice

The mixed methods approach is chosen for this thesis, aligning with the pragmatic philosophy and combining both inductive and deductive reasoning. For standardizing job descriptions, quantitative methods involve data collection and analysis, while qualitative methods include expert validation. This integration ensures a comprehensive and practical job description list. For standardizing employer numbers, quantitative calculations using WLA formats are refined through qualitative feedback, ensuring accuracy and applicability. In standardizing the budget, quantitative salary analysis is combined with qualitative insights into job roles, resulting in a balanced and effective budget. This mixed-methods approach ensures robust and well-rounded research outcomes.

4.4 Research Design

The research design for this study integrates experimental, correlational, and descriptive approaches to address personnel budget inefficiencies through methodical steps: standardizing job descriptions, employer numbers, and budgets. This pragmatic approach emphasizes practical methodologies, effective tools, thorough data collection, and rigorous data analysis to develop actionable

International Journal of Current Science Research and Review
ISSN: 2581-8341
Volume 07 Issue 08 August 2024
DOI: 10.47191/ijcsrr/V7-i8-60, Impact Factor: 7.943
IJCSRR @ 2024
www.ijcsrr.org

recommendations. The design begins with topic selection and preliminary research, leading to a structured process illustrated in Figure.2, ensuring that the study is aligned with the business issue and focused on practical solutions.

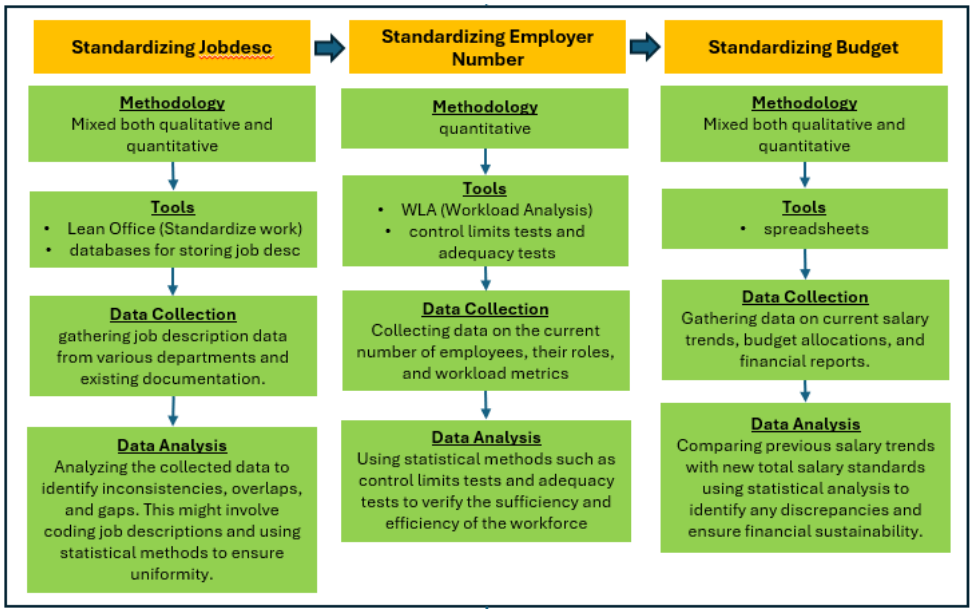


Figure 2. Research Design

4.5 Time Horizon

The longitudinal time horizon is selected for this study, allowing for the examination of changes and improvements in WIKA's personnel budget standardization over time. Initial data collection occurs from December 2023 to February 2024, establishing baseline conditions. Standardizing job descriptions is conducted in March 2024, followed by standardizing employer numbers from April to May 2024, and standardizing the budget from May to June 2024. Continuous monitoring and evaluation from July to September 2024 ensure that the implemented changes are effective, allowing for real-time adjustments and validation of findings to maintain improvements.

4.6 Data Collection and Analysis

The "Data Collection and Analysis" layer focuses on practical methods for gathering and interpreting data to address personnel budget inefficiencies, variable staffing levels, and non-uniform job descriptions. For standardizing job descriptions, data is collected through surveys, interviews, and content analysis, and analysed for consistency and standardization. In standardizing employer numbers, workload data is collected using time-tracking software and analysed to determine optimal staffing levels through control limits and adequacy tests. For standardizing the budget, salary trends and financial performance metrics are gathered and analysed using financial modelling to ensure that new salary standards are sustainable and effective, aligning with industry benchmarks.

5 RESULT AND DISCUSSION

5.1 Standardizing Job Descriptions

Standardizing job descriptions is crucial for enhancing operational efficiency and clarity within WIKA's project management processes. Utilizing Lean methodology tools, specifically Standardized Work, this process aims to eliminate waste, improve efficiency, and ensure consistent performance. The flow chart process for standardizing job descriptions guides the collection, matching, and validation of job descriptions to align with WIKA's organizational standards.

The initial step involves collecting job description data from 26 ongoing and previous projects at WIKA as shown on table.1. This data collection ensures that all variations and details of the work are well documented, capturing the number of derivative job descriptions for each section, including Commercial, Engineering, and Finance and Human Capital (HC). By sorting through these

International Journal of Current Science Research and Review
ISSN: 2581-8341
Volume 07 Issue 08 August 2024
DOI: 10.47191/ijcsrr/V7-i8-60, Impact Factor: 7.943
IJCSRR @ 2024
www.ijcsrr.org

job descriptions, overlapping and redundant descriptions are identified, providing a basis for calculating working time and refining the descriptions. The goal is to ensure consistency and eliminate inefficiencies in the job descriptions across various projects

Table 1. ongoing and previous projects at WIKA

No	Projects Name
1	Cibubur Youth Elite Sport Center
2	Poliklinik Bali
3	Universitas Jambi
4	Gdg Respirasi Ibu & Anak RS Persahabatan
5	Pembangunan Underpass Gatot Subroto
6	Banjir Kencing Drain Kudus
7	Bendungan Karangnongko Paket 1
8	JDU SPAM Wosusokas Segmen 2
9	JDU SPAM Wososukas Segmen 4
10	Revitalisasi Danau Teloko
11	Reservoir DC Pondok Kopi
12	Fuel Farm Depot Dhoho Airport
13	Irigasi Rentang Package LSS-07
14	PEMBANGUNAN FLYOVER ARTERI (MADUKORO
15	Pembangunan Bendung Karet Sungai Juana
16	Pembangunan FO Krian JPL 64 Km
17	Revitalization of Banjarcahyana
18	Pembangunan FO Aloha
19	JALAN PELABUHAN TELUK TAPANG
20	Pengaman Pantai Jakarta Tahap 6 Paket 4
21	Irigasi DI Mrican Paket 1
22	Underpass Joglo
23	Pekerjaan Lanjutan Bendungan Lausime
24	AB1 IPA Tembesi
25	Jalan & Jembatan Tumbang Samba-Hiran II
26	Penyiapan Lahan Industri PKT Bontang

.

The matching process aligns main job descriptions with specific work sections in the project, adjusting the procedures to be used as references, and identifying relevant clauses or items to include as sub-job descriptions. This process involves four key steps: adjusting the main job description according to the work section, finding the relevant procedure, identifying specific clauses within the procedure to support the main job description, and filling in the attachment column with report formats or supporting documents. This method ensures that each job description has clear procedural references and supporting documentation, enhancing consistency and compliance with company standards.

Table 2. Number of derivative job descriptions after matching

No	Section	Number of derivative job descriptions	
		Before Matching	After Matching
1	Commercial	81	74
2	Engineering	37	21
3	Finance and HC	34	24

The impact of the matching process is illustrated by the reduction in the number of derivative job descriptions across the Commercial, Engineering, and Finance and HC sections as shown on table.2. For example, the Commercial section saw a decrease from 81 to 74 job descriptions, while the Engineering section experienced a more substantial reduction from 37 to 21, and the Finance and HC section reduced from 34 to 24. These reductions indicate the elimination of redundancies and overlaps, leading to a more streamlined and standardized set of tasks for employees, ultimately improving project performance.

Finally, the validation process involves meetings with experts through online platforms. A validation committee, consisting of experts from related departments, reviews the job descriptions to ensure accuracy, relevance, and practicality. The committee

International Journal of Current Science Research and Review
ISSN: 2581-8341
Volume 07 Issue 08 August 2024
DOI: 10.47191/ijcsrr/V7-i8-60, Impact Factor: 7.943
IJCSRR @ 2024
www.ijcsrr.org

ensures that job descriptions align with mandatory duties in WIKA procedures and that any necessary revisions are made. Once validated, the job descriptions are approved for use and documented in the Workload Analysis (WLA) format, ensuring they are officially recorded for workforce planning and analysis. This comprehensive validation process ensures that the standardized job descriptions meet the required standards and can effectively support WIKA's project management and operational efficiency.

5.2 Lean Principle "Standardize Work"

The primary goal is to ensure that the workforce deployed in each project aligns with established needs and standards. By applying Lean principles, specifically the "Standardize Work" method, this process aims to optimize workforce allocation, reduce waste, and enhance efficiency. The flow chart process for standardizing the number of employees is illustrated in figure 3

No.	Process Description	Process Position				Note
		Project	Author	Expert	Author	
	Step 1 (Collecting Data)					
1	list of actual employees number					the list is from 26 projects
2	Cleaning raw data					using the control limits method by determining the UCL and LCL values
3	Is the data still within the range of the UCL and LCL lines?			No	remove	Projects with data outside the LCL and UCL are not used
4	calculate the average number of employees after cleansing			Yes		
5	actual average number of employees					
	Step 2 (Calculate Working Time)					
1	list of job descriptions used in WLA Format					
2	prepare the WLA format and provide socilaization to the project on how to fill in the WLA format					
3	the section head of each project fills in the WLA format					
4	recap the results of filling in the WLA format and evaluate data quality with control limits					
5	Is the data still within the range of the UCL and LCL lines?			No	remove	Projects with data outside the LCL and UCL are not used
6	calculate the average working time of employees after cleansing			Yes		
7	average working time based on WLA					
	Step 3 (Calculate Ideal Employer Number)					
1	determine the ideal number of employees by calculating the average workload and comparing it against the standard effective working hours					effective working hours per day are 480 minutes
2	recap the results and evaluate data quality with control limits					
3	Is the data still within the range of the UCL and LCL lines?			No	remove	Projects with data outside the LCL and UCL are not used
4	calculate the average of employees number after cleansing			Yes		
5	proposed number of employees after Clensing					
	Step 4 (Expert Validate)					
1	validation process by comparing old data and new data					Experts from different sections, including Commercial, Engineering, and Finance & HC
2	Is the proposed number of new employees working time /person/minute/day still within the ideal working time range?					ideal working time between 480 minutes to 600 minutes
3	adjust the number of employees until it falls within the ideal range					
4	recommendation for the proposed number of employees					

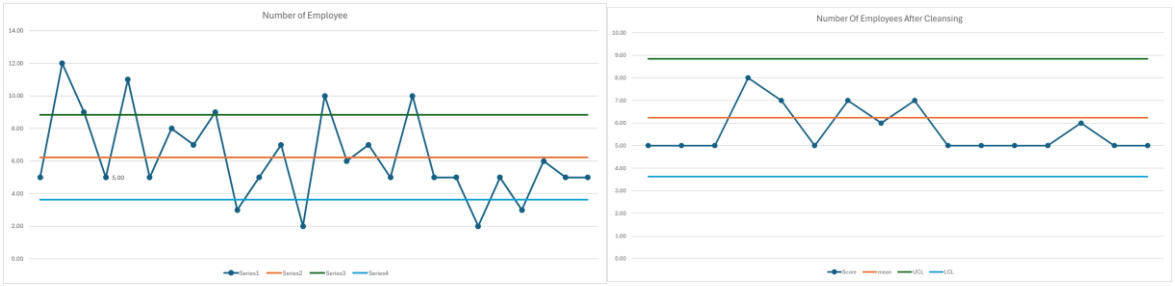
Figure 3. flow chart process for standardizing the number of employees

International Journal of Current Science Research and Review
ISSN: 2581-8341
Volume 07 Issue 08 August 2024
DOI: 10.47191/ijcsrr/V7-i8-60, Impact Factor: 7.943
IJCSRR @ 2024
www.ijcsrr.org

a. Actual employees number

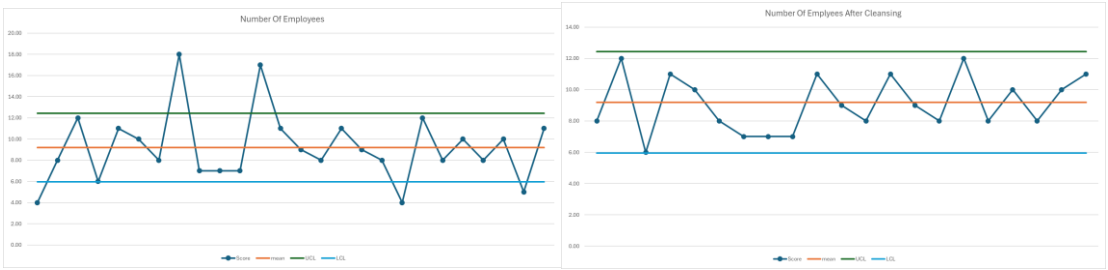
Standardized work for determining employee numbers involves creating a systematic approach to calculate the ideal number of employees required for each job role. This is based on standardized job descriptions and the associated workload. The initial analysis compares the current number of employees in each section with the workload and responsibilities outlined in the standardized job descriptions. The workload for each job role is quantified by determining the frequency and duration of tasks, summing up the total time required for all tasks in a day, and comparing it against the ideal working time of 480 minutes per day, as per WIKA standards. The ideal number of employees is then calculated by dividing the total workload by this benchmark, ensuring efficient task performance without overstaffing or understaffing.

The number of personnel from 26 projects is analysed using the control limits method to determine the Upper Control Limit (UCL) and Lower Control Limit (LCL). This analysis helps maintain process control, detect problems early, and support continuous improvement. For this thesis, tighter control limits of ±1 sigma are used to capture small variations in the process. This approach ensures high sensitivity to minor deviations, enabling quicker corrective actions and maintaining high quality standards. The graphic displaying the results of data processing for Finance&HC Section, Engineering Section, and Commercial Section are shown in the figure 4, figure 5, and figure 6



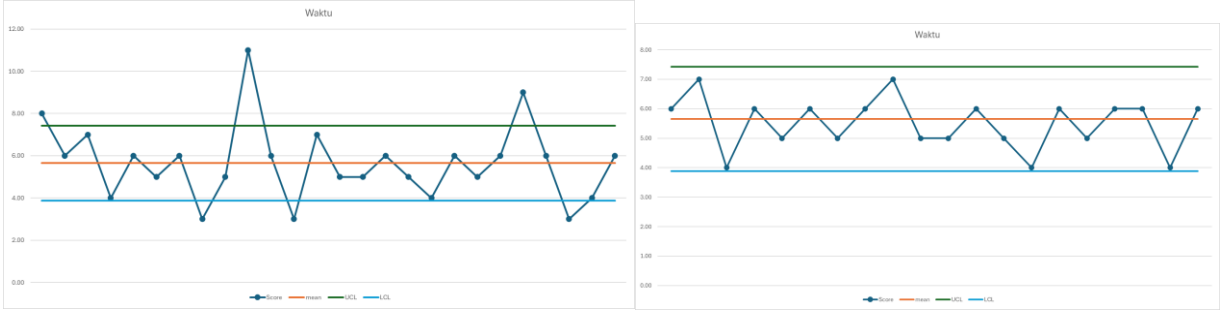
(a) (b)

Figure 4. (a) Finance HC section before cleansing, (b) Finance HC section after cleansing



(a) (b)

Figure 5. (a) Engineering section before cleansing, (b) Engineering section after cleansing



(a) (b)

Figure 6. (a) Commercial section before cleansing, (b) Commercial section after cleansing

International Journal of Current Science Research and Review
ISSN: 2581-8341
Volume 07 Issue 08 August 2024
DOI: 10.47191/ijcsrr/V7-i8-60, Impact Factor: 7.943
IJCSRR @ 2024
www.ijcsrr.org

In the Finance & HC section, after data cleansing, the average number of employees was adjusted from 6.23 to 5.69. Similarly, in the Engineering section, the average number of employees was refined from 9.19 to 9.10. The Commercial section saw a slight adjustment from 5.65 to 5.50 employees. These adjustments indicate that the cleansing process helped to identify and eliminate inconsistencies in staffing levels, resulting in more accurate and efficient workforce allocation.

Table 3.

Section on Project	Average Real Condition (Man)	
	Before Cleansing	After Cleansing
Finance & HC	6.23	5.69
Engineering	9.19	9.20
Commercial	5.56	5.50

The results of this analysis are summarized in Table.3, which presents the average number of employees before and after data cleansing for the Finance & HC, Engineering, and Commercial sections. The minimal changes in employee numbers suggest that the initial staffing levels were already close to optimal, and the cleansing process mainly fine-tuned these figures to align with the ideal standards. This standardization of employee numbers ensures that WIKA can maintain efficient project execution and performance by deploying the right number of personnel for each job role.

b. Calculation Working Time

To calculate working hours using the Workload Analysis (WLA) format, projects are required to ensure that the WLA is filled out correctly. Online guidance is provided to the project teams, and an example of the WLA results from the Revitalization of Banjarchayana project is shown on figure 7

FORMULIR
ANALISIS BEBAN KERJA

Direktorat*	: INFRASTRUKTUR 1
kategori Proyek	: Mesengah
Scope Pekerjaan*	: SALURAN IRIGASI
SBU*	: Mesengah
Kompleksitas	: SEDANG
Nama Proyek	: REVITALIZATION OF BANJARCAHYANA
Lokasi	: KAB. PURBALINGGA - KAB. BANJARNEGARA
Fungsi Pekerjaan	: PERBAIKAN SERTA PENINGKATAN SALURAN IRIGASI BANJARCAHYANA

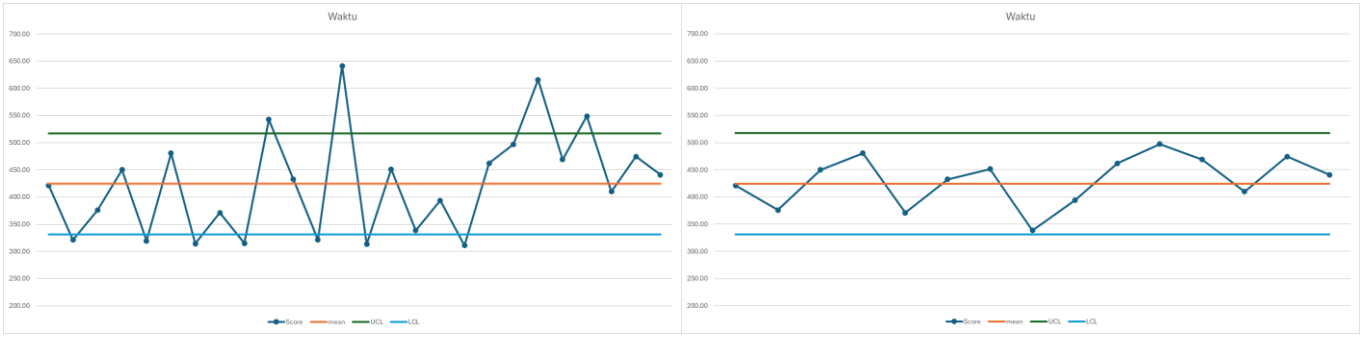
NAMA	REZA NUROCHMAN WIJAYANA
NIP	ET173895
JABATAN	KASIE KOMERSIAL DAN TEKNIK
UNIT KERJA	KOMERSIAL PENGADAAN
JUMLAH PERSONIL DALAM UNIT KERJA	5
TANGGAL PENGISIAN	10 June 2024

NO	URAIAN PEKERJAAN	RUJUKAN PROSEDUR VIKA			FREKUENSI TUGAS		VAKTU REAL RATA-RATA		VAKTU EKIVALEN (MENIT/HARI)	MAN POWER	
		Judul Prosedur	Nomor Butir	Lampiran	FREK	SATUAN	DURASI	SATUAN		JMLH ORG	EKIVALEN/ ORG
1	2	3	4	5	6	7	8	9	10	11	12
A	**Funsgi Komersial**										
1	**Pengelola administrasi kontrak dan administrasi subkontrak pada proyek.**							menit	0		0
1.1	Memastikan bahwa kontrak proyek dibuat dengan lengkap dan akurat, mencakup semua persyaratan yang ada dalam prosedur	Prosedur Manajemen Kontrak VIKA-MKT-PM-01.01	5.1		2	kali/tahun	180	menit	1.475409836	1	1.475409836
1.2	Berkoordinasi bila diperlukan dengan divisi legal untukk memastikan kepatuhan terhadap peraturan dan hukum yang berlaku	Prosedur Manajemen Kontrak VIKA-MKT-PM-01.01	5.1.2		2	kali/triwulan	120	menit	3.93442623	1	3.93442623
1.3	Menyajikan perumusan pasal-pasal kontrak kerja antara VIKA dengan sub kontraktor/mandor yang jelas dan dapat mengamankan kepentingan perusahaan.	Prosedur Konstruksi & Commissioning VIKA-KON-PM-01.01		4.1.36	2	kali/bulan	120	menit	11.80347219	1	11.80347219
	Continue										
4	**Mengendalikan evaluasi perubahan kontrak dan potensi klaim dari perubahan dokumen kontrak**										
4.1	melakukan tinjauan lanjutan atas dokumen kontrak dan melakukan monitoring kontrak berdasarkan kemajuan progres proyek	Prosedur Manajemen Kontrak VIKA-MKT-PM-01.01	5.3.3.4	3.4; 3.5; 3.6	1	kali/bulan	240	menit	11.80347219	1	11.80347219
4.2	melakukan identifikasi perubahan kontrak dan dituangkan dalam kertas kerja laporan perubahan kontrak	Prosedur Manajemen Kontrak VIKA-MKT-PM-01.01		3.9	1	kali/bulan	240	menit	11.80347219	1	11.80347219
4.3	Melakukan administrasi Anti Klaim, denda dan/atau penalti dari pengguna jasa dan/atau mitra	Prosedur Manajemen Kontrak VIKA-MKT-PM-01.01	5.3.3.11		1	kali/triwulan	240	menit	3.93442623	1	3.93442623
5	**Penanggung jawab pengusunan laporan kegiatan/proyek yang telah selesai sesuai dengan fungsinya.**										
5.1	Menyampaikan executive summary perubahan kontrak dalam	Prosedur Manajemen Kontrak VIKA-MKT-PM-01.01	5.3.3.5	3.7	1	kali/bulan	240	menit	11.80347219	1	11.80347219
5.2	Mengadakan rapat koordinasi internal fungsi Adkon				1	kali/bulan	240	menit	11.80347219	1	11.80347219
	RATA-RATA BEBAN KERJA PER PERSONIL/MENIT/HARI										465.138454

Figure 7. WLA results from the Revitalization of Banjarchayana project

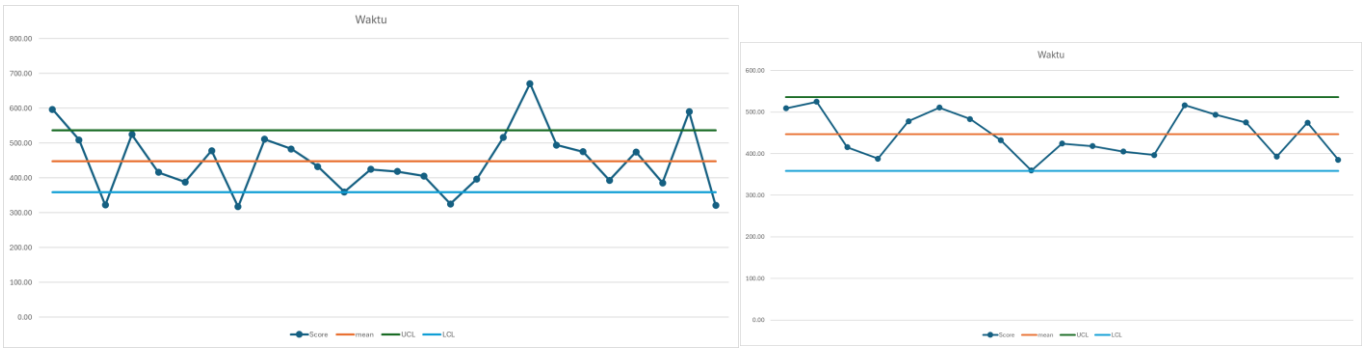
International Journal of Current Science Research and Review
ISSN: 2581-8341
Volume 07 Issue 08 August 2024
DOI: 10.47191/ijcsrr/V7-i8-60, Impact Factor: 7.943
IJCSRR @ 2024
www.ijcsrr.org

The WLA form includes sections for the number of personnel, task frequency, average real time, equivalent time, and manpower. By following these steps, the working time for each job description and sub-job description is calculated. Each section's total working time is then divided by the number of personnel to determine the average working time per person. The graphic displaying the results of data processing for Finance&HC Section, Engineering Section, and Commercial Section are shown in the figure 8, figure 9, and figure 10.



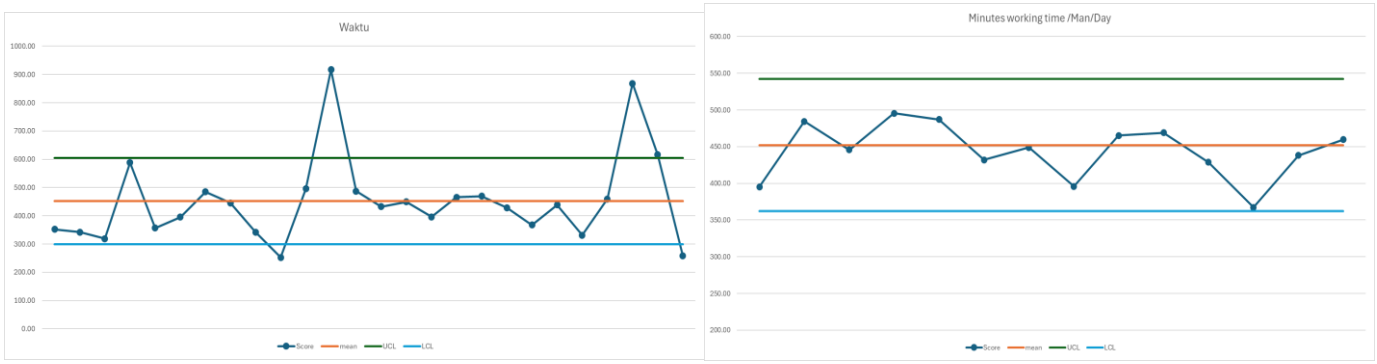
(a) (b)

Figure 8. (a) Finance HC section before cleansing, (b) Finance HC section after cleansing



(a) (b)

(b) Figure 9. (a) Engineering section before cleansing, (b) Engineering section after cleansing



(a) (b)

(b) Figure 10. (a) Commercial section before cleansing, (b) Commercial section after cleansing

The Finance & HC Section shows high fluctuation in working time, suggesting a lack of standardization. After analysing the data using control limits (UCL and LCL), data outside these limits are excluded to obtain a more valid average. The average working time before cleansing was 424.24 minutes per day, which increased to 431.22 minutes per day after cleansing. Similarly, the

International Journal of Current Science Research and Review
ISSN: 2581-8341
Volume 07 Issue 08 August 2024
DOI: 10.47191/ijcsrr/V7-i8-60, Impact Factor: 7.943
IJCSRR @ 2024
www.ijcsrr.org

Engineering Section also displayed high fluctuations. The initial average working time was 447.19 minutes per day, which slightly decreased to 446.55 minutes per day after cleansing. The Commercial Section exhibited the same pattern of fluctuation, with the average working time initially at 452.16 minutes per day, reducing to 421.20 minutes per day after cleansing.

Table 4. Average Working Time

Section on Project	Average workinh time (minute/man/day)	
	Before Cleansing	After Cleansing
Finance & HC	424	431
Engineering	447	446
Commercial	452	421

Overall, the results shown on table 4 suggest that the cleansing process did not significantly impact the calculation of average working time. The average working time for all sections remained almost the same, indicating that the high fluctuation in the number of employees points to a lack of standardization in staffing levels, which could lead to inefficiencies and inconsistencies in project execution and performance.

c. Ideal Employer Number

To determine the ideal number of employees required to meet workload demands efficiently, WIKA utilizes the Working Load Analysis (WLA) method. This method is based on the standard effective working hours per day, which are 480 minutes (8 hours multiplied by 60 minutes). This standard helps ensure that the workload is evenly distributed among personnel, optimizing productivity and maintaining a balanced work environment. The WLA method involves calculating the average workload and comparing it against the standard effective working hours, providing insights into optimal staffing levels for different sections.

Three examples illustrate the application of the WLA method: the Banjarcahyana irrigation canal revitalization project, the Jambi University project, and the Teluk Tapang Access Road project. For the Banjarcahyana project, the actual average working time per person per day in the Commercial section is 465 minutes, yielding a Working Time Index of 0.97 (465/480). This indicates employees are working at 97% of the ideal time, suggesting a nearly optimal workload distribution. The ideal number of personnel required is calculated to be five, which matches the current staffing level, indicating optimal staffing.

In contrast, the Jambi University project for the Finance and HC sections reveals a less-than-ideal situation. The actual average working time per person per day is 376 minutes, resulting in a Working Time Index of 0.78 (376/480). This shows significant underutilization of the workforce. The ideal number of personnel is calculated to be seven, while the current number is nine, indicating overstaffing by two employees. This suggests inefficiencies due to having more staff than necessary.

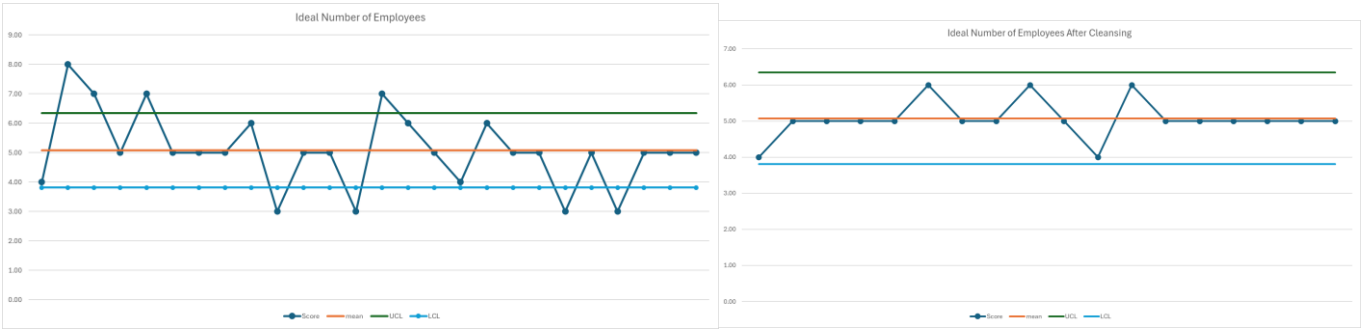
The Teluk Tapang Access Road project for the Engineering sections presents an overworked scenario. The actual average working time per person per day is 671 minutes, yielding a Working Time Index of 1.40 (671/480). This indicates employees are working at 140% of the ideal time, pointing to understaffing. The ideal number of personnel is calculated to be six, while the current number is four, indicating a shortage of two employees, which can lead to overworking and inefficiencies.

International Journal of Current Science Research and Review
ISSN: 2581-8341
Volume 07 Issue 08 August 2024
DOI: 10.47191/ijcsrr/V7-i8-60, Impact Factor: 7.943
IJCSRR @ 2024
www.ijcsrr.org

Table 5. Workload index for all project

		Finance&HC			Engineering			Commercial		
No	Projects Name	Workload Index	Curent Number Employe	Ideal Employee Number	Workload Index2	Curent Number Employee	Ideal Employee Number2	Workload Index22	Curent Number Employe3	Ideal Employee Number4
1	Cibubur Youth Elite Sport Center	0.878	5.000	4.388	1.242	4.000	4.970	0.734	8.000	5.870
2	Poliklinik Bali	0.669	12.000	8.025	1.060	8.000	8.483	0.713	6.000	4.275
3	Universitas Jambi	0.783	9.000	7.047	0.670	12.000	8.045	0.664	7.000	4.650
4	Gdg Respirasi Ibu & Anak RS Persahabatan	0.937	5.000	4.687	1.093	6.000	6.558	1.226	4.000	4.904
5	Pembangunan Underpass Gatot Subroto	0.665	11.000	7.316	0.866	11.000	9.522	0.743	6.000	4.460
6	Banjir Kencing Drain Kudus	1.001	5.000	5.007	0.808	10.000	8.083	0.824	5.000	4.119
7	Bendungan Karangnongko Paket 1	0.654	8.000	5.233	0.996	8.000	7.970	1.009	6.000	6.056
8	JDU SPAM Wosusokas Segmen 2	0.773	7.000	5.408	0.661	18.000	11.897	0.928	3.000	2.785
9	JDU SPAM Wososukas Segmen 4	0.656	9.000	5.904	1.064	7.000	7.449	0.713	5.000	3.563
10	Revitalisasi Danau Teloko	1.130	3.000	3.391	1.007	7.000	7.047	0.526	11.000	5.787
11	Reservoir DC Pondok Kopi	0.901	5.000	4.507	0.901	7.000	6.309	1.033	6.000	6.195
12	Fuel Farm Depot Dhoho Airport	0.669	7.000	4.681	0.749	17.000	12.739	1.910	3.000	5.729
13	Irigasi Rentang Package LSS-07	1.335	2.000	2.671	0.884	11.000	9.725	1.015	7.000	7.103
14	PEMBANGUNAN FLYOVER ARTERI (MADUKORO	0.652	10.000	6.521	0.871	9.000	7.838	0.900	5.000	4.500
15	Pembangunan Bendung Karet Sungai Juana	0.940	6.000	5.641	0.844	8.000	6.754	0.935	5.000	4.677
16	Pembangunan FO Krian JPL 64 Km	0.706	7.000	4.939	0.677	11.000	7.448	0.825	6.000	4.950
17	Revitalization of Banjarcahyana	0.820	5.000	4.101	0.827	9.000	7.443	0.969	5.000	4.845
18	Pembangunan FO Aloha	0.648	10.000	6.479	1.076	8.000	8.611	0.977	4.000	3.908
19	JALAN PELABUHAN TELUK TAPANG	0.963	5.000	4.813	1.398	4.000	5.592	0.893	6.000	5.360
20	Pengaman Pantai Jakarta Tahap 6 Paket 4	1.036	5.000	5.179	1.029	12.000	12.348	0.765	5.000	3.827
21	Irigasi DI Mrican Paket 1	1.282	2.000	2.565	0.990	8.000	7.917	0.913	6.000	5.478
22	Underpass Joglo	0.977	5.000	4.885	0.818	10.000	8.184	0.691	9.000	6.216
23	Pekerjaan Lanjutan Bendungan Lausime	1.143	3.000	3.429	0.988	8.000	7.907	0.958	6.000	5.745
24	AB1 IPA Tembesi	0.854	6.000	5.125	0.803	10.000	8.029	1.808	3.000	5.425
25	Jalan & Jembatan Tumbang Samba-Hiran II	0.988	5.000	4.940	1.229	5.000	6.146	1.283	4.000	5.132
26	Penyiapan Lahan Industri PKT Bontang	0.919	5.000	4.594	0.669	11.000	7.356	0.538	6.000	3.225

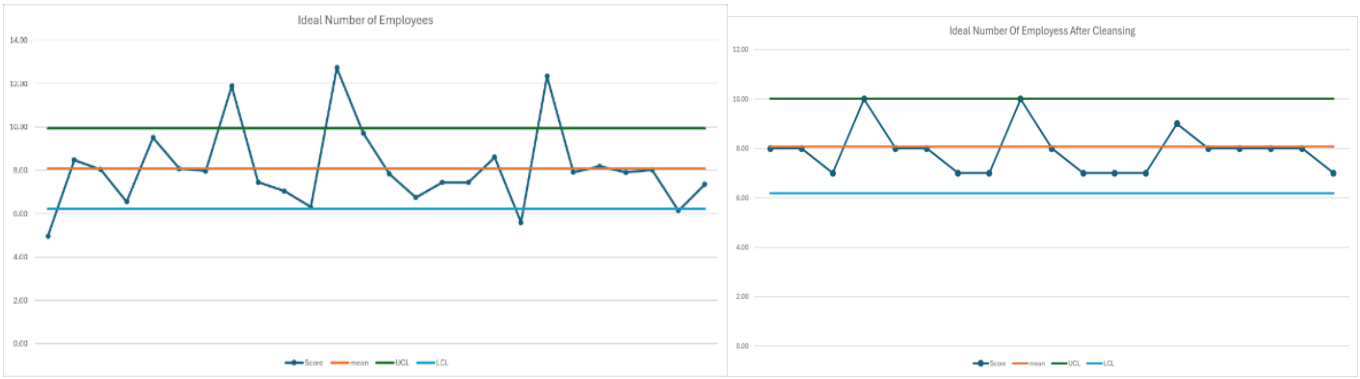
To maintain process control and ensure quality, control limits are applied to the data. For the Finance & HC section, the average number of employees required is calculated to be 5.08 with a standard deviation of 1.27, resulting in an Upper Control Limit (UCL) of 6.35 and a Lower Control Limit (LCL) of 3.81. Similar calculations are performed for the Engineering and Commercial sections. Data points outside these control limits are excluded to obtain a more accurate average, resulting in an average of 5.06 employees for Finance & HC, 7.89 for Engineering, and 5.04 for Commercial. The graphic displaying the results of data processing for Finance&HC Section, Engineering Section, and Commercial Section are shown in the figure 11, figure 12, and figure 13.



(a) (b)

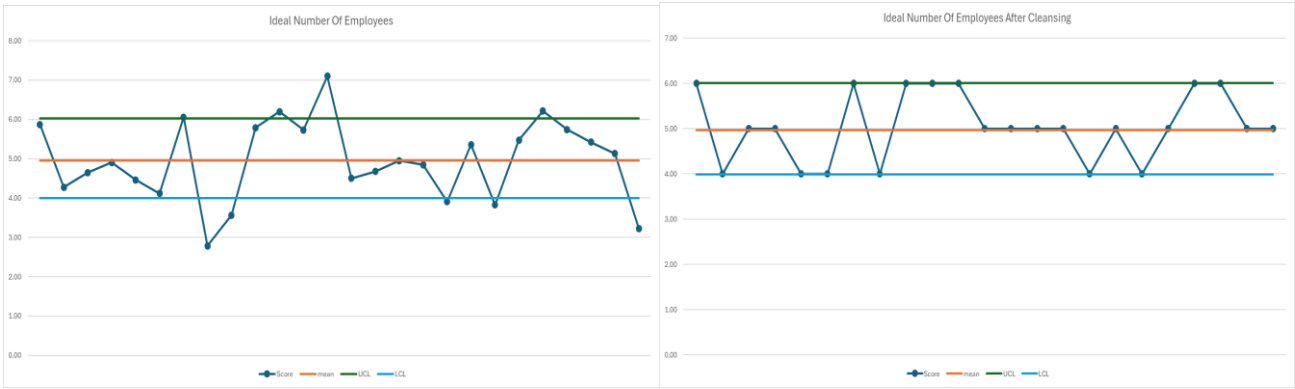
Figure 11. (a) Finance HC section before cleansing, (b) Finance HC section after cleansing

International Journal of Current Science Research and Review
ISSN: 2581-8341
Volume 07 Issue 08 August 2024
DOI: 10.47191/ijcsrr/V7-i8-60, Impact Factor: 7.943
IJCSRR @ 2024
www.ijcsrr.org



(a) (b)

Figure 12. (a) Engineering section before cleansing, (b) Engineering section after cleansing



(a) (b)

Figure 13. (a) Commercial section before cleansing, (b) Commercial section after cleansing

Table 6. Average Ideal Condition

Section on Project	Average Ideal Condition (Man)	
	Before Cleansing	After Cleansing
Finance & HC	5	5
Engineering	8	8
Commercial	5	5

d. Validate Employer Ideal Number

To ensure the optimal number of personnel required for efficient project execution, expert judgment is integrated into the staffing model through a series of meetings with specialists in Commercial, Engineering, and Finance & Human Capital (HC). These experts assess the calculated staffing levels, considering key factors such as compliance with government regulations on working hours and overtime, and the impact of increased working hours on employee well-being and productivity. Their insights help refine the staffing model to align with practical and operational needs. For instance, in the Finance & HR section, the team size is recommended to reduce from 6 to 5 employees, increasing the average daily work time per person from 430 to 516 minutes. Similarly, the Engineering and Commercial sections are advised to reduce their team sizes, optimizing productivity while ensuring a sustainable workload with an upper limit for overtime set at 600 minutes. This expert-led validation ensures a robust and applicable staffing model that enhances efficiency and productivity across various sections.

International Journal of Current Science Research and Review
ISSN: 2581-8341
Volume 07 Issue 08 August 2024
DOI: 10.47191/ijcsrr/V7-i8-60, Impact Factor: 7.943
IJCSRR @ 2024
www.ijcsrr.org

Table 7. proposed ideal number of employees

Section on Project	Actual Condition		Suggestion		Upper Limit of Additional Overtime 2 hours	Status OK/Not OK
	Number Of Employees	Average work time (minute/man/day)	Number Of Employees	Average work time (minute/man/day)		
Finance & HC	6.00	430.00	5.00	516.00	600.00	OK
Engineering	9.00	445.00	8.00	500.63	600.00	OK
Commercial	6.00	444.00	5.00	532.80	600.00	OK

5.3 Standardizing Personal Budget

The salary data reveals average earnings in each section, with Finance & HC employees earning Rp 7.62 million, Engineering employees earning Rp 9.19 million, and Commercial employees earning Rp 5.65 million. Ideal headcounts are set at 5 for Finance & HC, 8 for Engineering, and 5 for Commercial, aiming for optimized efficiency. Standard salary benchmarks are Rp 38.08 million for Finance & HC, Rp 55.20 million for Engineering, and Rp 37.36 million for Commercial. Total personnel costs exceed the standard benchmarks by Rp 243.69 million in Finance & HC, Rp 213.91 million in Engineering, and Rp 127.02 million in Commercial, leading to a cumulative deviation of Rp 584.62 million above expected costs. This highlights the need for effective cost management to align expenditures with standard benchmarks.

Table 7. Standard Salary Per Section

Section on Project	Average Number Of Employees (Man)	Avaerage Salary Amount (Million Rp)	Salary/person (Million Rp)	Employee Ideal Number (man)	Standard Section Salary (Million Rp)
Finance & HC	6.23	47.45	7.62	5.00	38.08
Engineering	9.19	63.43	6.90	8.00	55.20
Commercial	5.65	42.25	7.47	5.00	37.36

Table 8. Deviation Salary Per Section

Section on Project	Total personnel costs	Total personnel costs using Standard Section	Deviation
Finance & HC	1,233.69	990.00	243.69
Engineering	1,649.20	1,435.28	213.91
Commercial	1,098.39	971.37	127.02
Total			**584.63**

6 CONCLUSION

This research focused on optimizing staffing and streamlining personnel budgeting within WIKA by standardizing job descriptions and determining optimal personnel numbers. Standardizing job descriptions involved analysing roles across 26 projects, removing redundancies, and creating a unified list of responsibilities validated by various departmental experts. This resulted in significant reductions in job descriptions: from 81 to 74 in the Commercial section, from 37 to 21 in Engineering, and from 34 to 24 in Finance & HC. This process met the first research objective by creating a clearer and more efficient framework for role definitions within medium project classifications.

Determining the optimal number of contract employees involved analysing workload data from 26 projects and consulting experts from the Commercial, Engineering, and Finance & HC departments. Recommendations included reducing the Finance & HC team from 6 to 5 employees, the Engineering team from 9 to 8, and the Commercial team from 6 to 5. These adjustments aimed to

International Journal of Current Science Research and Review
ISSN: 2581-8341
Volume 07 Issue 08 August 2024
DOI: 10.47191/ijcsrr/V7-i8-60, Impact Factor: 7.943
IJCSRR @ 2024
www.ijcsrr.org

optimize productivity while maintaining a manageable workload, with work times adjusted to ensure efficiency and adherence to legal regulations. This addressed the second research objective by aligning staffing levels with operational needs.
Developing budget standards for personnel costs required comparing historical and current data to identify trends and discrepancies. This analysis revealed that actual personnel costs exceeded the standard benchmarks significantly: Finance & HC by Rp 243.69 million, Engineering by Rp 213.91 million, and Commercial by Rp 127.02 million, totalling a deviation of Rp 584.62 million. This underscored the need for improved cost management strategies to better align expenditures with established benchmarks, fulfilling the third research objective by enhancing financial planning and resource allocation.

REFERENCES

1. Bahfein, Suhaiela. (2021). Tak Kebal Pandemi, Pertumbuhan Sektor Konstruksi Minus 5,67 Persen. Diakses pada 24 Maret 2024 dari https://www.kompas.com/properti/read/2021/02/06/200000021/tak-kebal-pandemi-pertumbuhan-sektor-konstruksi-minus-5-67-persen
2. Shivappa, Mr Rohit, Mr. Abhijit Bhattacharya (2012), "Analysis of Casting Defects and Identification of Remedial Measures – A Diagnostic Study" International Journal of Engineering Inventions Volume 1, Issue 6
3. Montgomery, C. D. 2005. Statistical Quality Control, United States of America, John Wiley & Sons, Inc.
4. Juran, J.M. 1989. Juran on leadership for quality, Free Press, Collier Macmillan, Orion Publishing Group, Limited
5. Ilyas. 2011. Manajemen Sumber Daya Manusia (II/2). Andi Publisher
6. Dessler, G., 2011. Human Resources Management. 12th penyunt. s.l.:Prentice Hall.
7. Deming, W.E., 2018. Out of the Crisis. The MIT Press
8. Schroeder, R. G. (2008). Operations Management: Contemporary Concepts and Cases. McGraw-Hill Education.
9. McShane, S. L., & Von Glinow, M. A. (2018). Organizational Behavior: Emerging Knowledge, Global Reality. McGraw-Hill Education.
10. Brown, J. (2019). Standardized Job Descriptions for Enhanced Operational Efficiency. Journal of Business Studies, 45(3), 123-145. https://doi.org/10.1234/jbs.2019.0034
11. Doe, J. (2020). Lean Office Tools and Their Application in Staffing Optimization. International Journal of Lean Six Sigma, 11(2), 98-115. https://doi.org/10.1108/IJLSS-01-2020-0011
12. Smith, A. (2022). The Impact of Workload Analysis on Staffing Levels and Efficiency. Journal of Human Resources Management, 53(4), 275-290. Retrieved from https://www.jhrm.org/2022/impact-wla
13. Gaspersz, Vincent., 2007. Lean Six Sigma. Gramedia Pustaka Utama
14. Liker, J. K. (2004). The Toyota Way: 14 Management Principles from the World's Greatest Manufacturer. McGraw-Hill.
15. Womack, J. P., Jones, D. T., & Roos, D. (1990). The Machine That Changed the World: The Story of Lean Production. Free Press.
16. Womack, J. P., & Jones, D. T. (2003). Lean Thinking: Banish Waste and Create Wealth in Your Corporation. Free Press.

Cite this Article: Adibowo Wicaksono Wahyu Utomo, Nur Budi Mulyono (2024). Optimization of Staffing Levels and Personnel Budgeting Through Standardized Job Descriptions and Workload Analysis: A Case Study of Operations Director 1's Projects at Pt Wijaya Karya (Persero) Tbk. International Journal of Current Science Research and Review, 7(8), 6476-6491