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Data Management and Dashboard Visualization for Talent Management at KVC Industrial Supplies Sdn Bhd

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ABSTRACT

This technical report details an analytical and data management study conducted at the Talent Management Department of KVC Industrial Supplies Sdn Bhd. The study aims to improve the efficiency of human resource processes by streamlining data handling for staff leave reports, employee system updates, and overtime claim calculations. To achieve this, raw organizational data underwent extensive cleaning processes, which included filtering, removing redundant columns, and standardizing variables. Interactive dashboards were subsequently developed using Microsoft Excel and Microsoft Power BI to visualize staff leave performance and medical leave trends. Furthermore, Excel-based logical formulas, specifically the MATCH function, were utilized to cross-reference and update large datasets of active employee names across multiple corporate systems (HealthMetrics and Ramco). The analysis demonstrates that applying proper data cleaning techniques and automated formula matching significantly reduces manual workload and minimizes human error in claim calculations. Overall, the integration of data visualization tools empowers the management to execute data-driven decisions, such as introducing attendance-based reward systems, thereby optimizing talent management operations.

Keywords: Dashboard visualization, Data cleaning, KVC Industrial Supplies, Microsoft Power BI, Talent management.

INTRODUCTION

KVC Industrial Supplies Sdn Bhd is a leading industrial supplier in Malaysia, founded in 1989. Headquartered in Bangi, Selangor, the organization operates more than 20 sales offices nationwide and employs approximately 600 associates to serve over 6,000 active customers. The company's operations are diversified across four main pillars: Original Equipment Manufacturing (OEM), Maintenance, Repair and Operating Supplies (MRO), and Specialist for Building and Verticals in Utilities and Infrastructure.

The Talent Management Department at KVC handles a comprehensive scope of human resources processes designed to attract, develop, motivate, and retain high-performing employees. This department is divided into three primary teams: compensation and benefits, talent acquisition, and training and development. Managing a large workforce generates substantial amounts of documentation and raw data, particularly concerning employee leave applications, medical claims, and overtime tracking.

To optimize these processes, analytical tasks were executed within the compensation and benefits team. The primary challenges addressed in this study include the manual processing of raw leave data, the tedious cross-referencing of active staff names across different corporate systems (Ramco, Kaizen, and HealthMetrics), and the manual calculation of overtime claims. By leveraging data cleaning techniques and visualization software, this study intends to demonstrate how data analytics can streamline human resource operations and support evidence-based management decisions.

THE PROPOSED METHOD

Data Cleaning and Dashboard Creation

To analyze the performance of the staff through leave reports, raw data provided by the management required preliminary cleaning. Unnecessary columns (such as "Leave Application No") were deleted, and fragmented data was consolidated; for instance, the "From Session" and "To session" columns were combined into a single "Session" column. Following the data cleaning phase, Pivot Tables were constructed in Microsoft Excel to organize the variables. Two distinct dashboards were developed: a general leave dashboard using Microsoft Excel and a specific medical leave dashboard utilizing Microsoft Power BI. For the Power BI dashboard, the data was filtered strictly for "Medical Leave" prior to exporting the dataset into the software.

Staff List Matching Using Excel Formulas

The company requires annual system updates to ensure separated or suspended staff are removed from the active roster across the Ramco and HealthMetrics systems. To avoid manual line-by-line comparison, both datasets were sorted alphabetically. An Excel logical formula, =ISNUMBER(MATCH(A2,B2,0)), was implemented to automate the cross-referencing process as shown in Table 1. The formula generated a "TRUE" outcome for matched active staff and a "FALSE" outcome for unmatched names, allowing the team to quickly filter and identify resigned or suspended employees.

Table 1

The used formulas and its results.

Formula	First name	Second name	Outcome
=ISNUMBER(MATCH(A2,B2,0))	Adam	ADAM	TRUE
=ISNUMBER(MATCH(A3,B3,0))	Said	AZAM	FALSE

Overtime and Claim Categorization

The final operational task involved processing monthly claim, leave, and overtime forms. Overtime hours required systematic calculation and separation into distinct classes based on the working conditions. The data was classified into Normal Overtime (NOT), Public Holiday (PH8), Public Holiday Overtime (POT), Rest Day (RD8), and Rest Day Overtime (RDT) as shown in Table 2. Once categorized, the data was manually keyed into a standardized Microsoft Excel overtime report to calculate the final payroll values.

Table 2

Details on the Situation and their Classes

Situation	Classes
Overtime on weekdays (Mon-Sat)	Normal Overtime (NOT)
Works on Public Holiday	Public Holiday (PH8)
Overtime on Public Holiday (After 8hr)	Public Holiday Overtime (POT)
Works on Rest Day (Sun)	Rest Day (RD8)
Overtime on Rest Day (After 8hr)	Rest Day Overtime (RDT)

EVALUATION AND RESULTS

Dashboard Insights

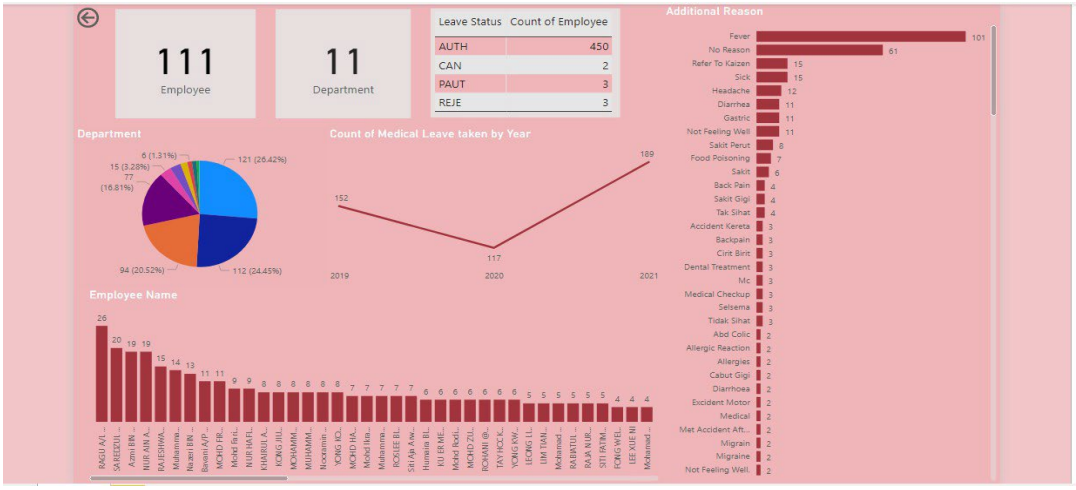
The implementation of the dashboards provided the management with clear, visual insights into staff performance and leave trends as shown in Figure 1 and Figure 2. By analyzing these dashboards, the department was able to formulate actionable solutions to reduce high leave frequencies, such as proposing monthly rewards for staff members who maintain perfect attendance. The successful deployment of the Power BI dashboard proved its viability as a reporting tool for upper management presentations.

Figure 1

Dashboard using Microsoft Excel

Figure 2

Dashboard using Microsoft Power BI



Efficiency in Staff Data Management

Applying the MATCH formula significantly improved the efficiency of updating the staff database. By filtering the results to display only the "FALSE" outcomes, the dataset was immediately narrowed down to the targeted unmatched employees as shown in Figure 3. This systematic approach saved a substantial amount of time compared to manual checking, highlighting the necessity of frequent and automated data cleaning for large organizations.

Figure 3

The list name after filter

Name_HealthMetrics	Name_Ramco	FILTER
ABDUL HAFIZ BIN SUHAILI		FALSE
AHMAD SOLLEHIM BIN SUHAIMY		FALSE
	AHMAD SHAIFUL AZRI BIN AZEMAN	FALSE
AHMAD WAFI BIN LATIP		FALSE
AK AHMAD QUSYAIRI BIN AK OMAR		FALSE
AMIRUL SYAZNY BIN JAMIL		FALSE

Overtime Report Standardization By systematically categorizing the overtime hours into established classes (NOT, PH8, POT, etc.) before data entry, the compensation and benefits team successfully structured a uniform overtime report as shown in Figure 4 While the process still required manual data entry from hardcopy forms, organizing the data into distinct logical classes minimized the risk of human error during payroll calculations.

Figure 4

The overtime report

Payset	Employee Name	Assign. N	Pay Element Code	Pay Element Descr	Value Typ	Value	Numbering in hardco
R - ALL employee	K5	TAY Hock Leng	1	NP_NOT	NP_NORMAL OT	Hours	1	1
R - ALL employee	K5	Mohd Azhar BIN ABDULLA	1	NP_NOT	NP_NORMAL OT	Hours	13.5	2
R - ALL employee	K5	TAN KIAN LEE	1	NP_NOT	NP_NORMAL OT	Hours	47	3
R - ALL employee	K5	TAN KIAN LEE	1	NP_PH8	NP_PUBLIC HOLIDAY	Hours	8	3
R - ALL employee	K7	EDZRA NUR BIN AMRAN	1	NP_PH8	NP_PUBLIC HOLIDAY	Hours	7.5	4
R - ALL employee	K4	MOHD FIRDAUS BIN YUSO	1	NP_NOT	NP_NORMAL OT	Hours	42.5	5

CONCLUSION

The industrial training assignments conducted at KVC Industrial Supplies Sdn Bhd underscore the critical importance of data cleaning and analytical tools in human resources. Ensuring data correctness is the foundational step; without it, algorithms and dashboard outcomes become fundamentally unreliable, even if they visually appear correct. The transition from manual data processing to automated formula matching and Pivot Table utilization drastically reduced the time required to manage large staff databases.

Furthermore, exploring advanced visualization software like Microsoft Power BI allowed for a more dynamic interpretation of employee leave behaviors. To further improve operational efficiency, it is recommended that the Talent Management department explores digitalizing their hardcopy claim and overtime forms. Integrating a centralized digital input system would eliminate manual key-in errors and directly feed clean data into the analytical dashboards, maximizing the department's productivity and data accuracy.

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