

# Employee Turnover Analysis

Incorporating Survival Analysis

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# Employee Turnover Analysis for Manufacturing for the period 1<sup>st</sup> Jan-22 – 15<sup>th</sup> Mar-23

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## Attrition Analysis

Identified the **churn rate** and the reasons that led to employees leaving the organization

## Reconnect Insights

Reconnected with employees via phone **2 – 6 months** after they left the organization in 2022.

Latest addition

## Survival Analysis

Determined the **statistical probability of potential resignations** and identified the **most vulnerable groups**

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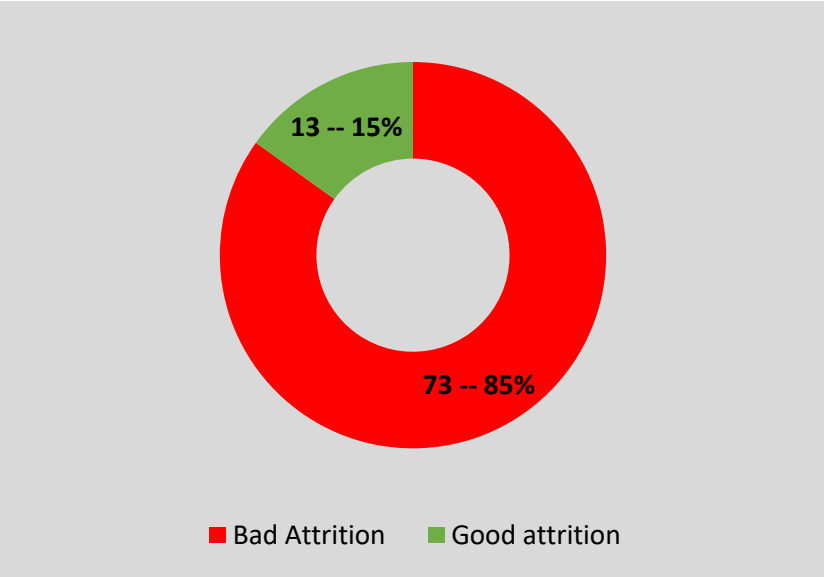
# Agenda

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- Pre-Insights Primer
- Insights of the Attrition Analysis
  - Department and Band Wise
  - Tenure and Reason wise
  - Reasons – Professional Stream Wise
  - Reasons - Management Stream Wise
  - Churn to Industries and Companies
  - Reasons for churn to local companies
  - Regrettable Loss
- Predictive Analysis on Employee Turnover using Employee Engagement Survey 2022 Insights
- Insights after reconnecting with some of the former employees
- Bivariate Analysis of Tenure for Bands and Departments
- Survival Analysis (New addition)
  - Kaplan-Meier Estimator
  - COX Proportional Hazard Models
- Recommendations

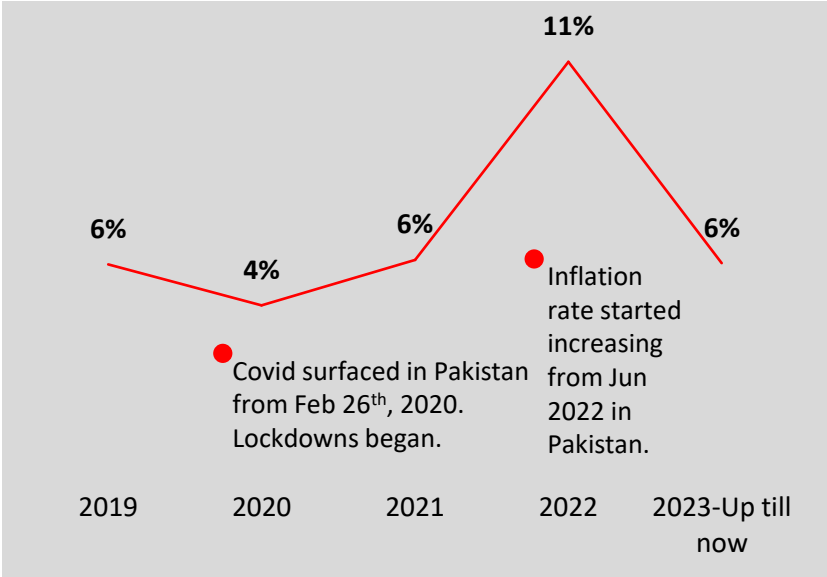
# Pre-Insights Primer (1/2)

## Nature of current attrition



**Good attrition** is when the employee has either received the lowest ranking in the last performance appraisal or was asked to leave owing to any infraction.

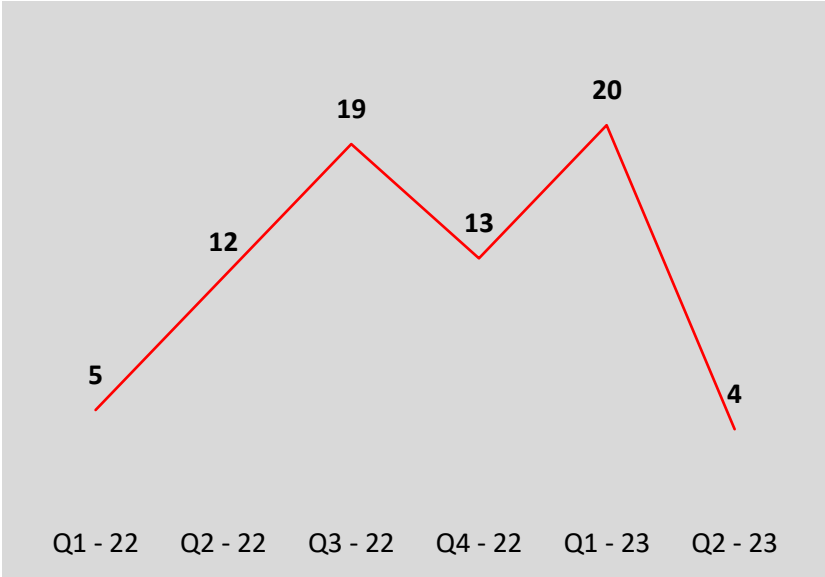
## Bad attrition through the years



2019	2020	2021	2022	2023
22	16	28	49	24

The attrition rate in just 3 months of 2023 is almost **50%** of the entire 2022. This is unprecedented. It's expected that the attrition rate will increase with passing months.

## Count of leavers – quarter wise



Based on the historical trend, it is forecasted that the resignation by the end of this year will be between **27 to 88 more resignations**, considering no relevant interventions are introduced.

**Note:** In the subsequent slides, the focus will be only on the insights drawn from analyzing bad attrition.

# Pre-Insights Primer (2/3)

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Bands in Professional Stream (Lowest to Highest)	Bands in Management Stream (Lowest to Highest)
P3	M1 – Assistant Manager
P4	M2 – Deputy Manager
P5	M3 – Manager
P6 – Supervisor	M4 – General Manager
P7 – Supervisor	-
T3 – Technical Supervisor	-

Performance Appraisal Rating (Lowest to Highest)
Below Expectation
Meets Expectation
Exceeds Expectation
Outstanding

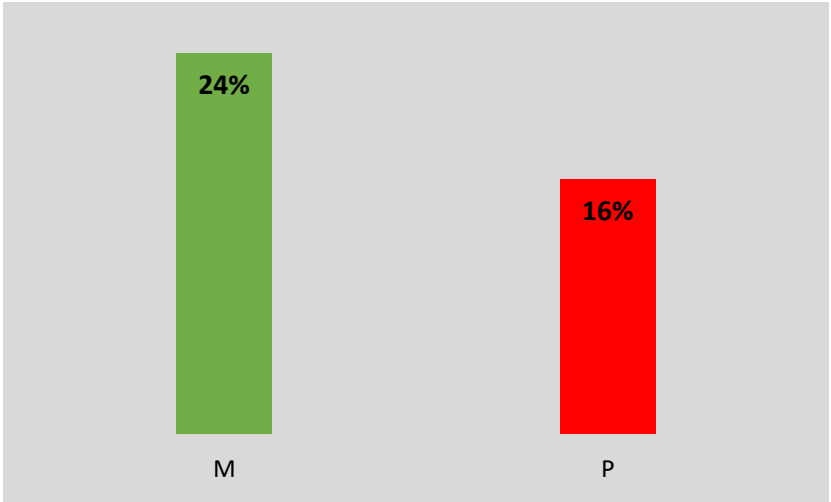
**Note:** The professional stream mostly comprises workers at the plant site.

# Pre-Insights Primer (3/3)

Leavers by band from 2020 – 2023, attrition % contribution for 2022 and 2023

Band	2020	2021	2022	%	2023	%
P3	2	4	9	4	3	12
P4	4	5	17	2	8	4
P5	5	7	8	2	4	4
P6	0	2	2	4	0	0
P7	1	0	1	11	0	0
M1	1	4	1	8	4	31
M2	0	6	9	5	1	8
M3	2	0	2	8	4	17
M4	1	0	0	0	0	0

Band group wise attrition



Out of the **73** resignations from 2022 to up till now, **22** comprise of M-stream employees while **51** comprise of P-stream employees.

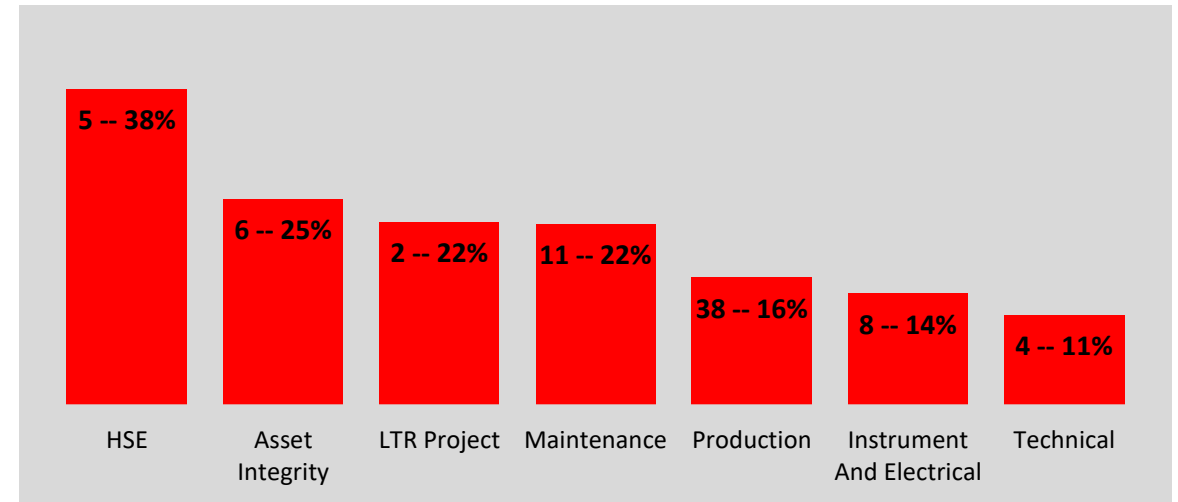
**Note:** In the subsequent slides, focus will be only on the insights drawn from analyzing bad attrition.

# Insights of the Attrition Analysis (1/7) – Department and Band Wise

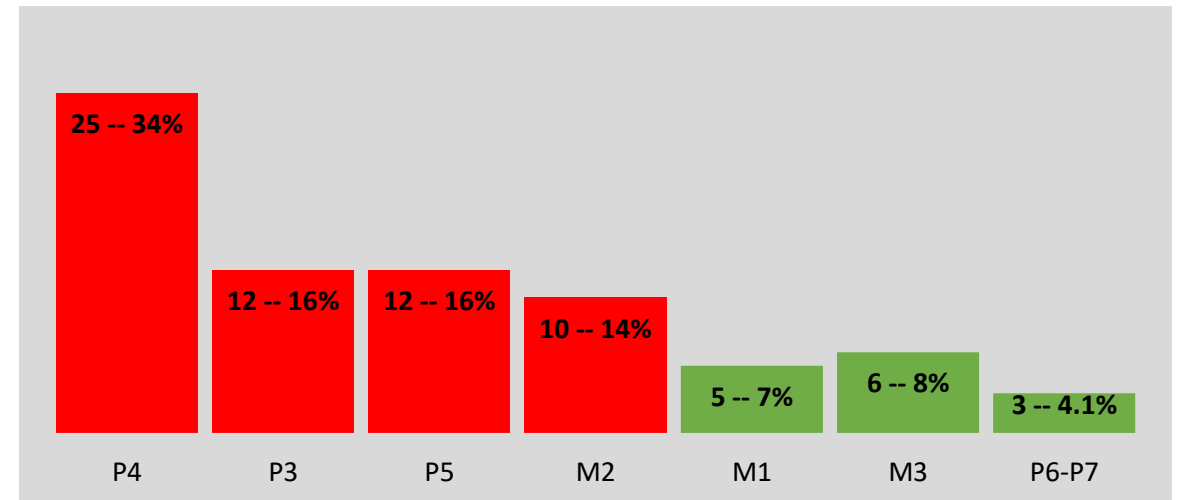
## Overview

- Attrition has been observed in almost all the departments and it is continuing. On an average, there have been **5** resignations every month. It is expected that there will be more resignations in the coming months.
- P3-P5 is the dominant band group with the attrition contribution of **66%**, followed by M1-M2 at **21%**.
- Attrition has jumped from **4%** in 2022 to **8%** in just 5 months for the M3 group. It is expected to increase to up to **11%** within 3 – 4 months.
- Only **3** females have resigned. Two were in the P4 band, while one was in the M2 band. Reason for all three was **relocation either to the hometown or to another city due to marriage or personal reason**.

## Departments



## Bands

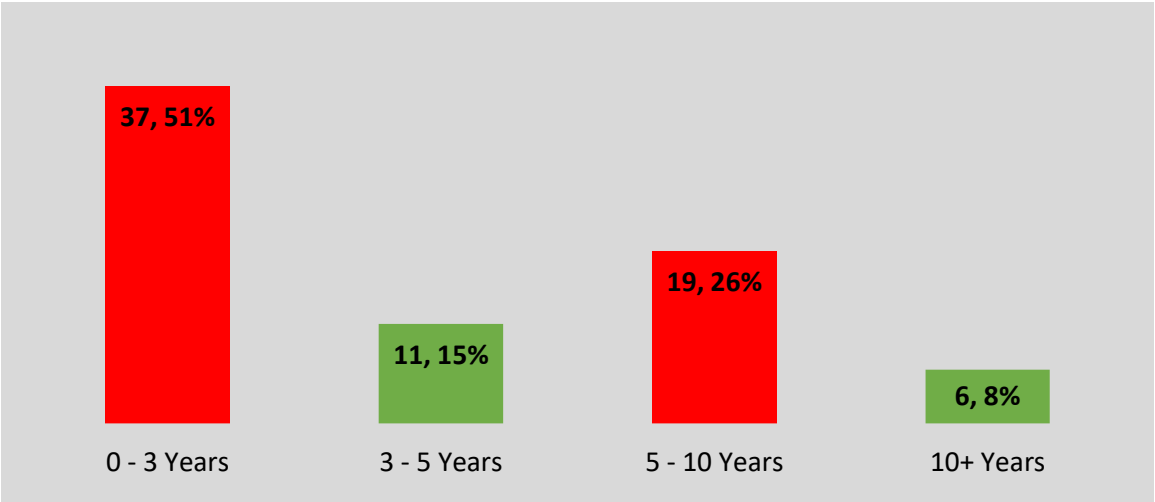


# Insights of the Attrition Analysis (2/7) – Tenure and Reason wise

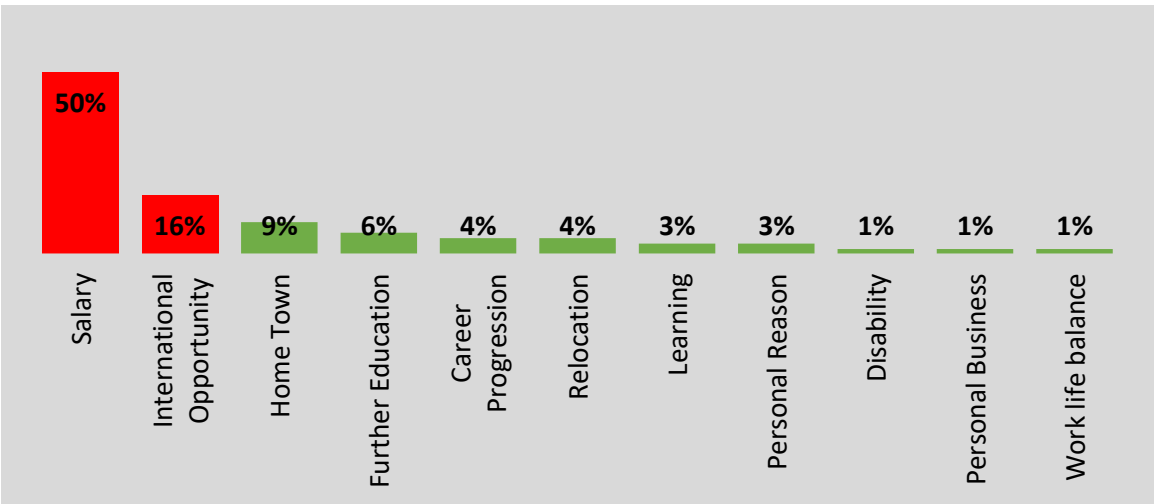
## Overview

- Almost a **quarter of the employees** have left after spending 0 - 1 years with Engro.
- No attrition has been observed amongst employees who have spent more than **15 years with Engro** up till now.
- **Compensation** remains the major reason for leaving the organization with **half of the population** citing this as the primary reason for leaving.
- Increased trend of attrition due to availing **international opportunity** has been observed amongst P3-P5 and M3 band employees this year only. This is expected to increase.

## Tenure



## Reasons



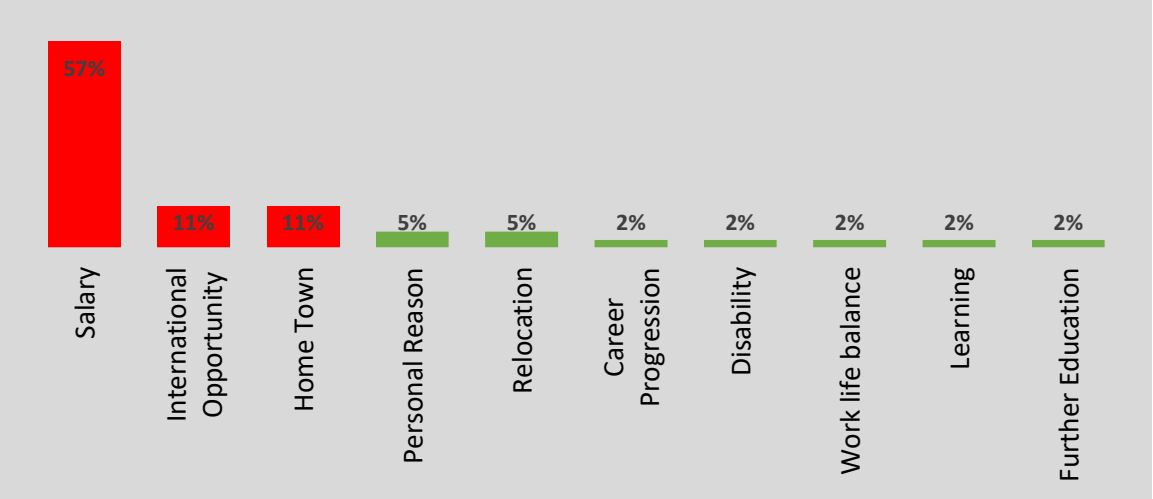


# Insights of the Attrition Analysis (3/7) – Reasons – P Stream

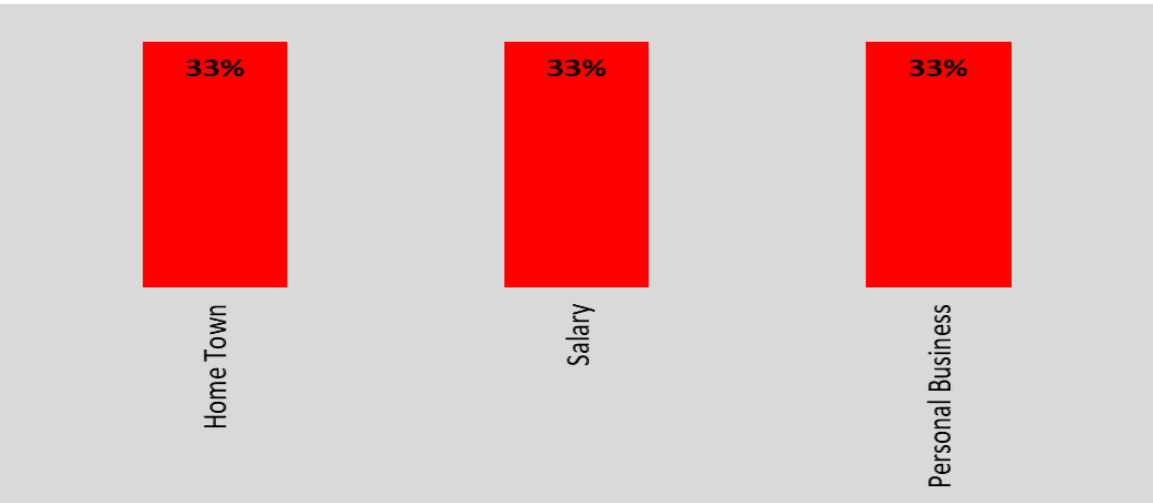
## Overview

- **Compensation** is the dominant reason amongst P3-P5 employees for leaving the organization.
- Reasons of leaving for P6-P7 are insignificant as there have been only **3** resignations from this group, and it accounts to only **4%** of the total attrition.

P3-P5



P6-P7

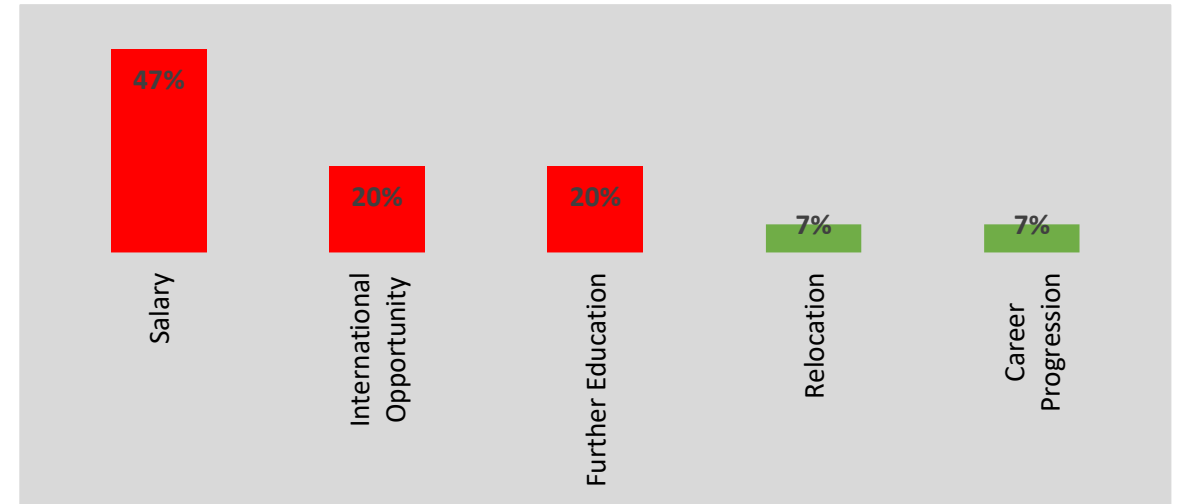


## Insights of the Attrition Analysis (4/7) – Reasons - M Stream

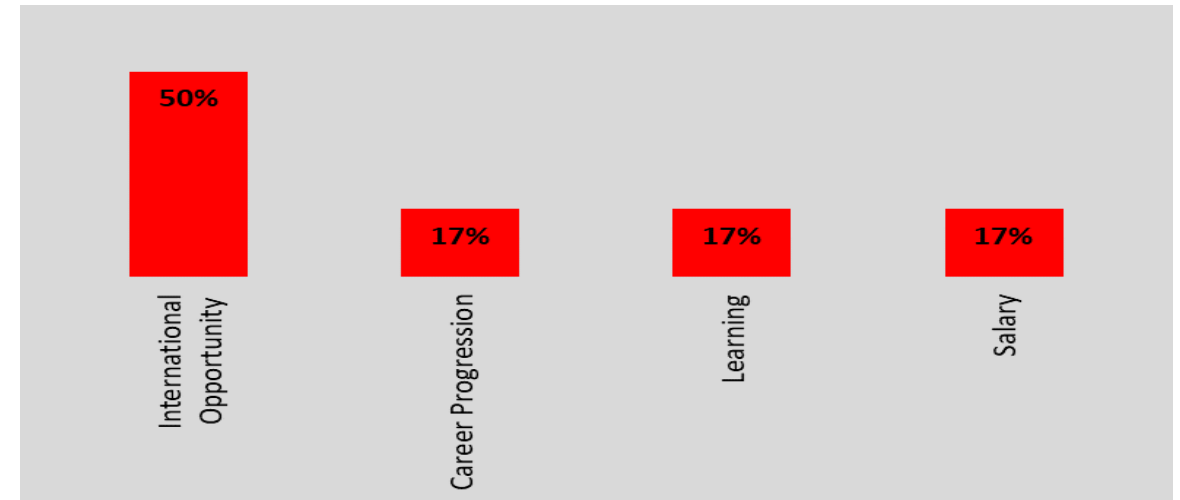
### Overview

- **Compensation and international opportunity** are the dominant reasons amongst M-stream employees for leaving the organization.
- It has been observed that **attrition of M3 has doubled** in just 3 months in 2023 vis-à-vis the entire year of 2022, whereas for M1-M2, it's the same which is a reason of concern considering 9 months are still left.

### M1-M2



### M3



# Insights of the Attrition Analysis (5/7) – Churn to Industries and Companies

## Overview

- Almost **a quarter of employees** have left us to join K-Electric as it's aggressively hiring, followed by Unilever, Pakistan Refinery Limited, and Parco.

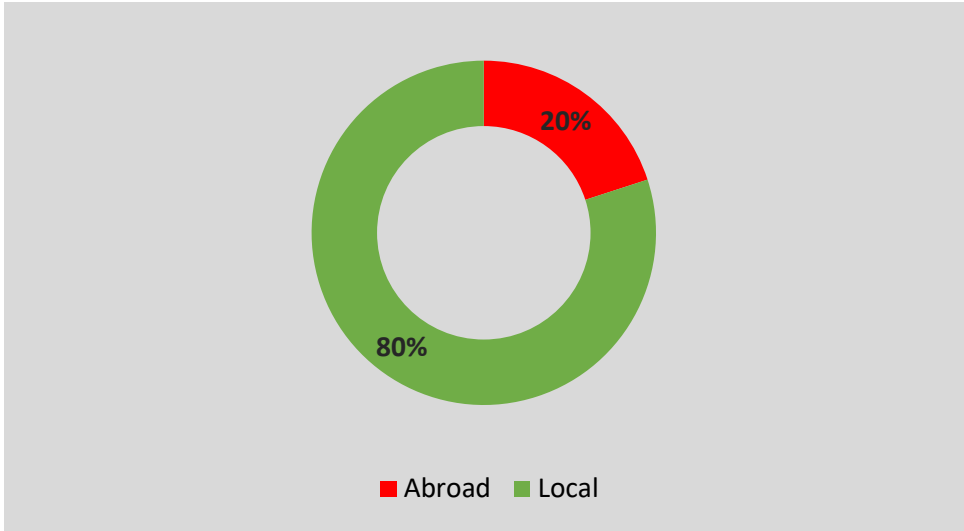
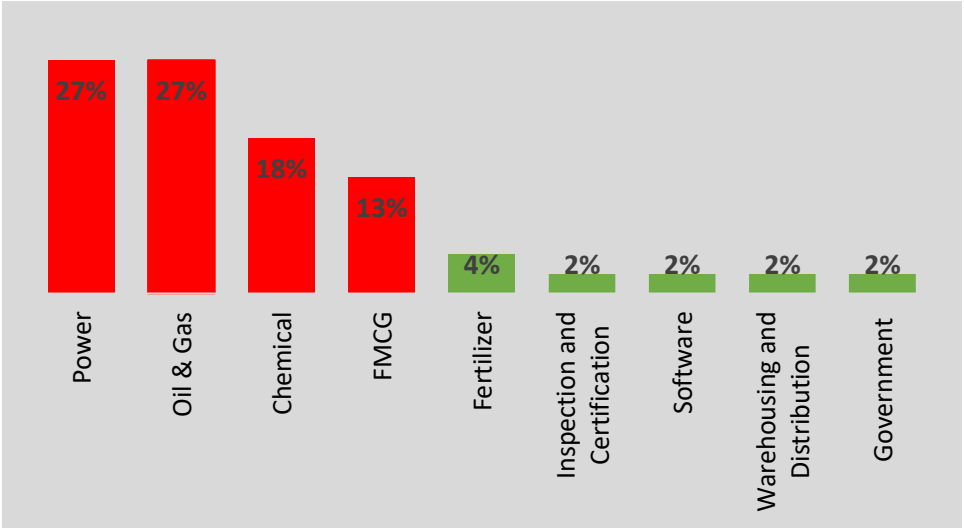
Local companies joined or to be joined:

Midas Safety	Fatima Fertilizer
Lotte	Mol Group
United Energy Pakistan	Hubco
CureMD	P&G
Karachi Hydrocarbon Terminal Limited	Thar Chemicals
Pak Arab Fertilizer	Ismail Industries
Fauji Power Company Limited	Thar Energy Hubco
SGS Pvt Limited	Byco

International companies joined or to be joined:

Basic Chemical Industries Co Saudi	Farabi Petrochemical Saudi
Dugm Refinery	Iraq Power Plant
Emirates National Oil Company	Qatar Petrochemical

## Churn to Industries

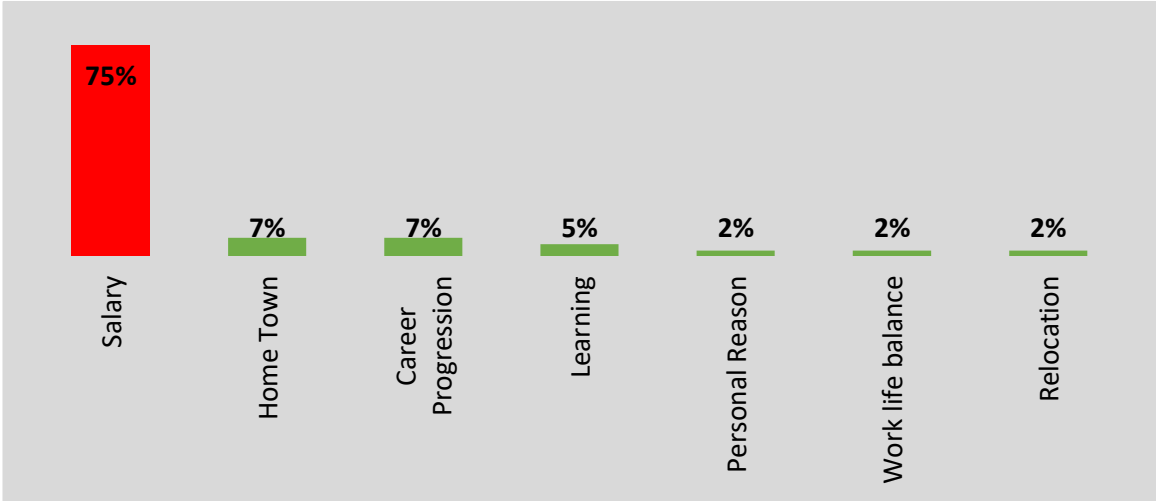


# Insights of the Attrition Analysis (6/7) – Reasons of churn to local companies

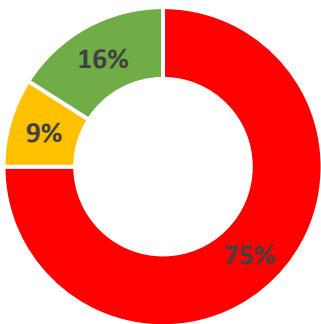
## Overview

- Compensation remains the major reason for the employee churn to local companies with almost **three-quarter of the population** citing this as the primary reason for leaving.
- It is expected that contribution of compensation as a reason of attrition will jump to up to **77%** within 3 – 4 months. This projection is on the conservative side.

Reason of churn to local companies



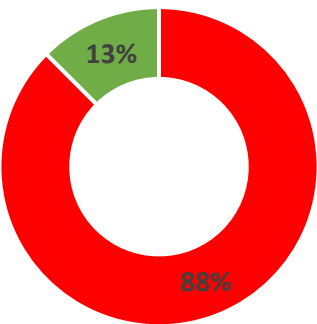
P3-P5



- Other:
- Personal reason
  - Work-life balance
  - Career progression
  - Learning
  - Relocation

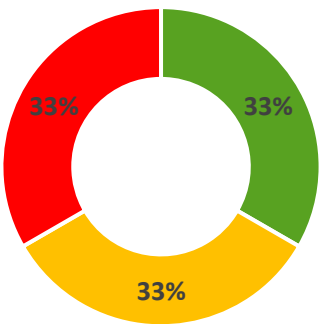
■ Salary ■ Home Town ■ Other

M1-M2



■ Salary ■ Career Progression

M3



■ Learning ■ Career Progression ■ Salary

# Insights of the Attrition Analysis (7/7) – Regrettable Loss

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## Overview

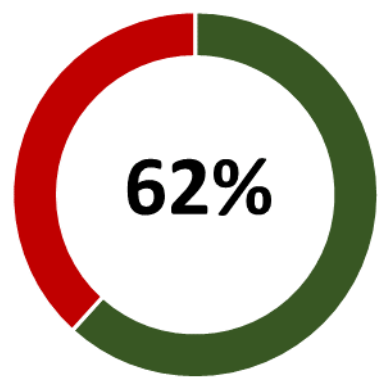
- Among the bad attrition, around **23%** of employees lost were exceptional performers of varying degrees.
- **Critical loss:** Loss of employee(s) with at least two Exceeds Expectation and/or Outstanding ratings in four years.
- **Super-critical loss:** Loss of employee(s) with at least three Exceeds Expectation and/or Outstanding ratings in four years.

## Exceptional performers of varying degrees lost



# Predictive Analysis on Employee Turnover using Employee Engagement Survey 2022 Insights

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153 employees hinted that they do not intend to stay with the company for more than 2 years.

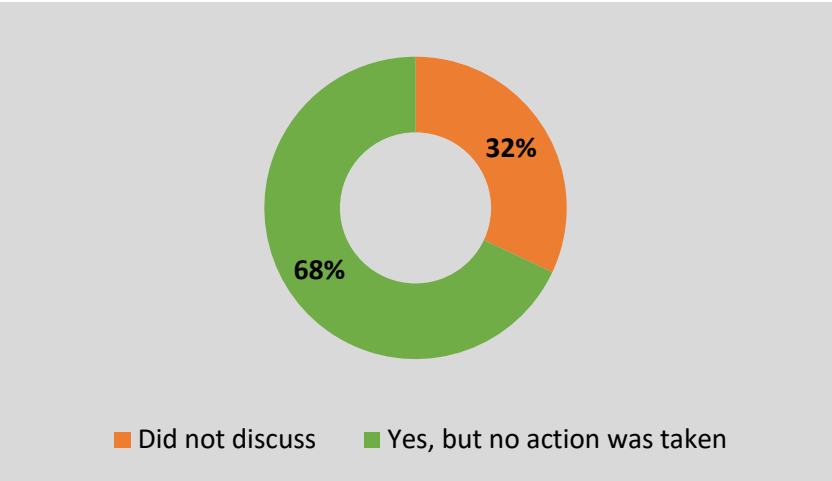
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## *Vulnerable groups at flight risk as per the survey*

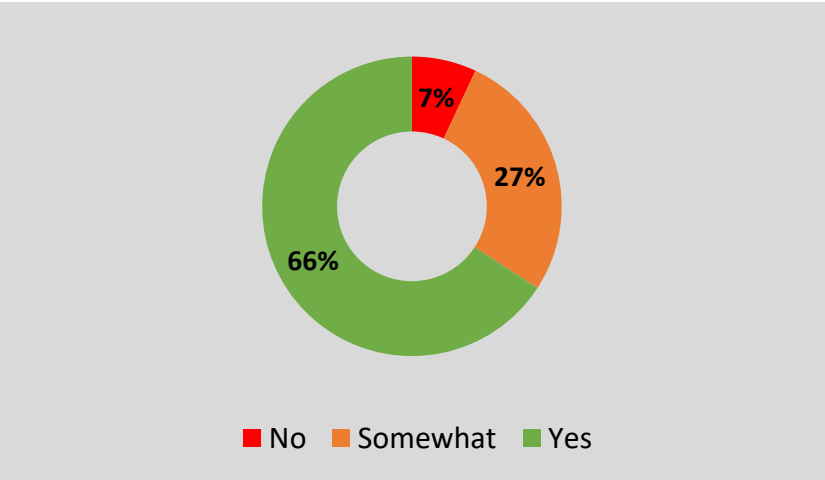
Department	Band	Tenure with Engro	Age Group	Gender
<ul style="list-style-type: none"><li>• Health &amp; Safety</li><li>• Operations</li><li>• Technical</li><li>• Maintenance</li></ul>	<ul style="list-style-type: none"><li>• M1</li><li>• M2</li><li>• P3</li><li>• P4</li><li>• P5</li></ul>	<ul style="list-style-type: none"><li>• 1 – 5 years</li></ul>	<ul style="list-style-type: none"><li>• 20 – 35 years</li></ul>	<ul style="list-style-type: none"><li>• Male</li></ul>

# Insights after reconnecting with the some of the former employees

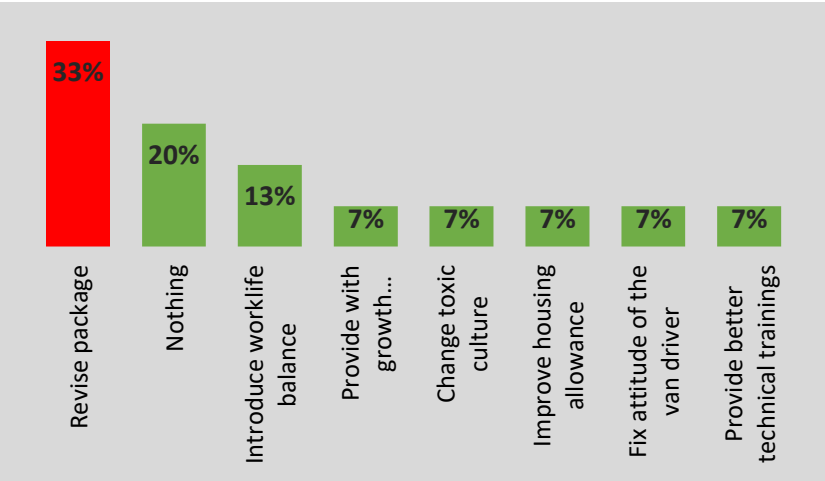
Did you talk to your line manager about it, and did they take any action on it ?



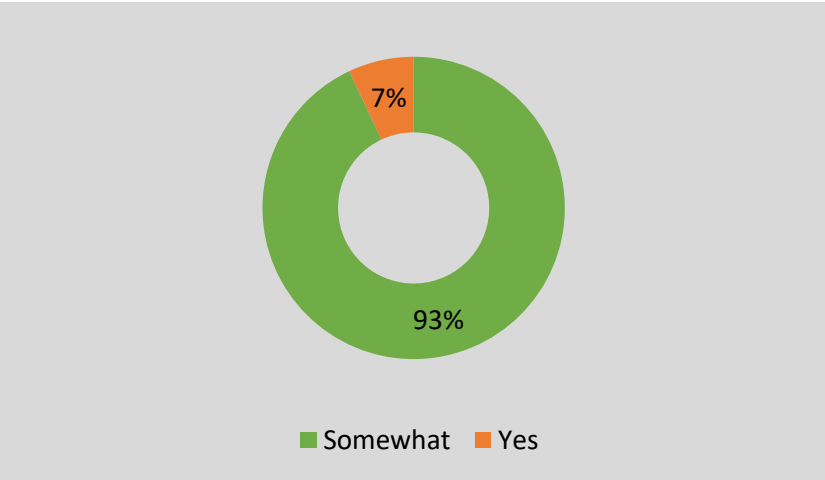
Do you think the company helped you meet your career expectations?



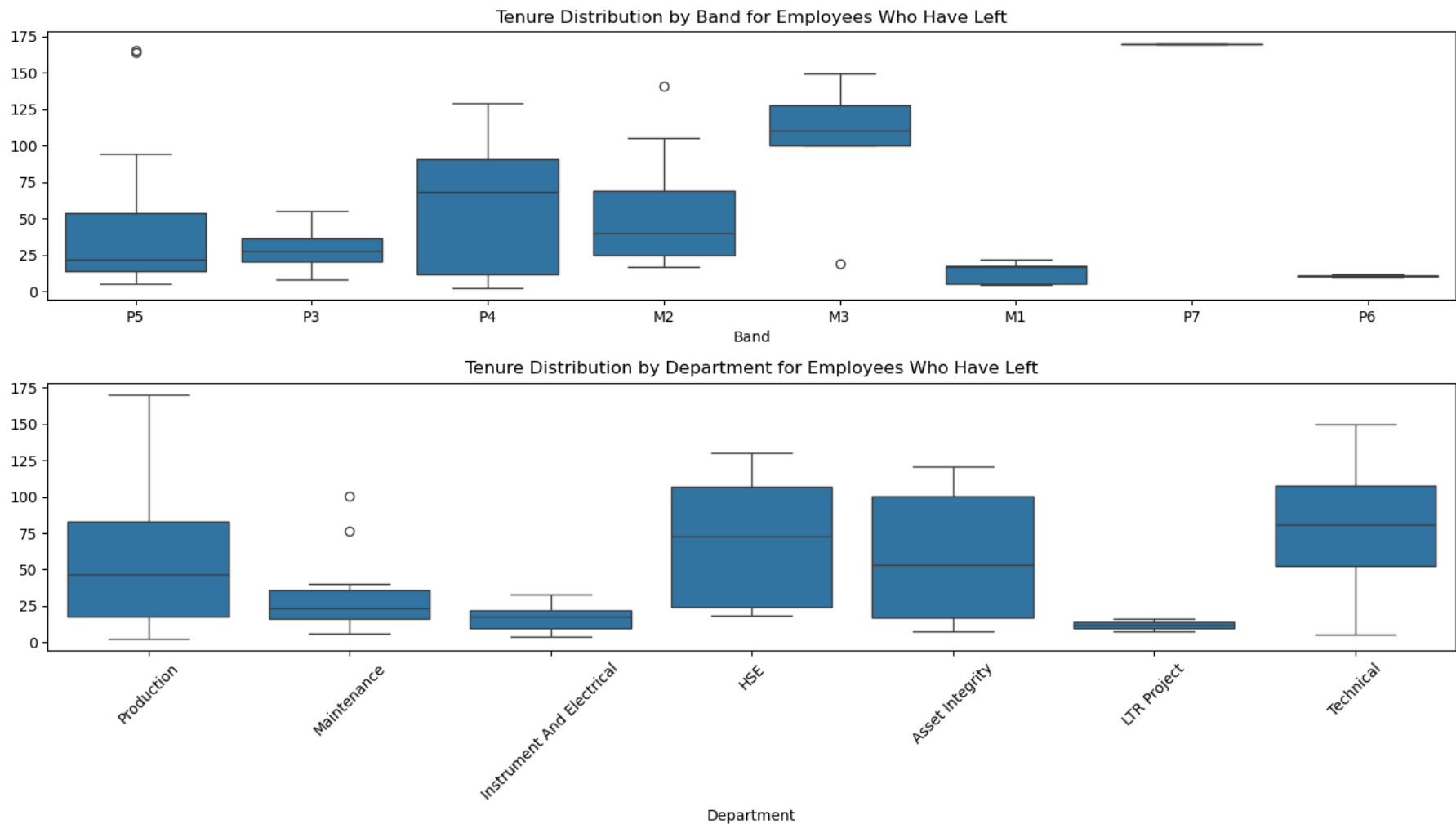
What do you think we may have done to retain you in our company?



Do you think the company helped you meet your learning & development needs?



# Bivariate Analysis of Tenure for Bands and Departments



## Overview

- Among the employees who have left, those in band M1 or assigned to department LTR projects had the shortest tenure.

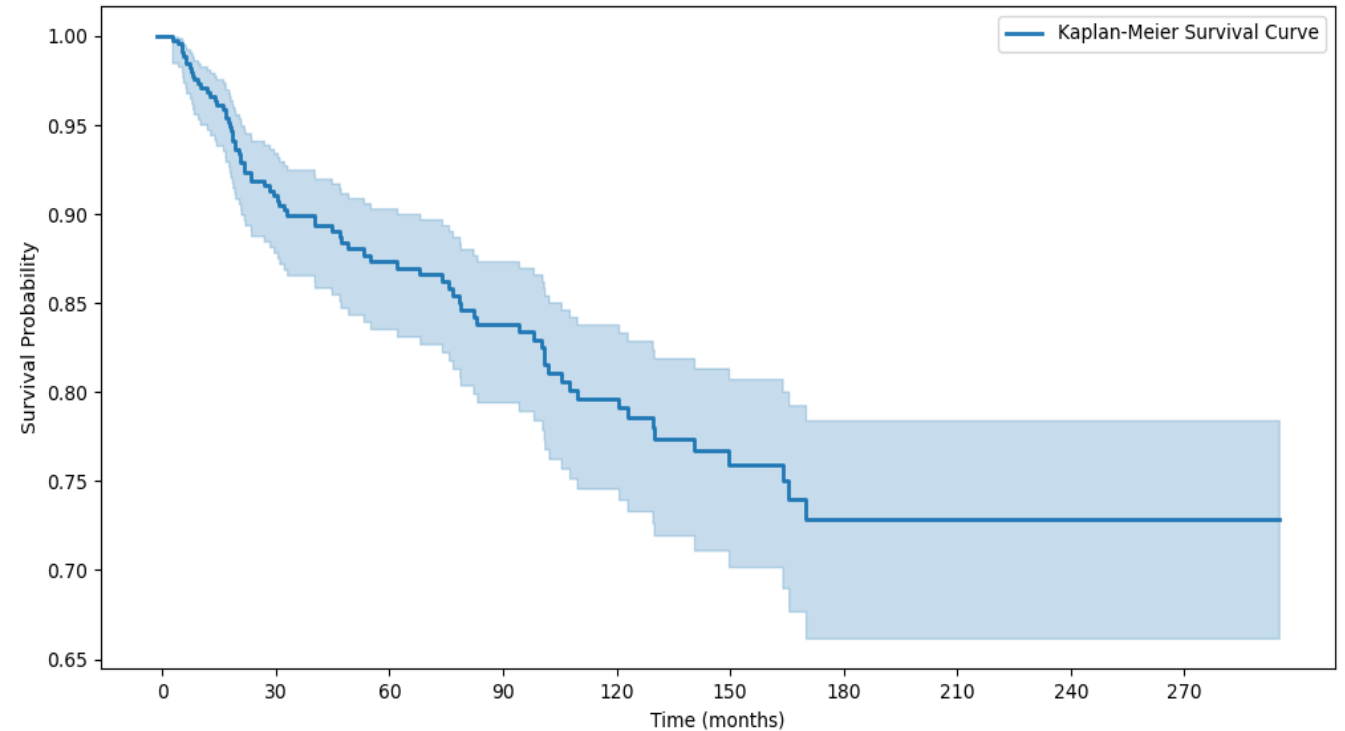


# Survival Analysis (1/3)

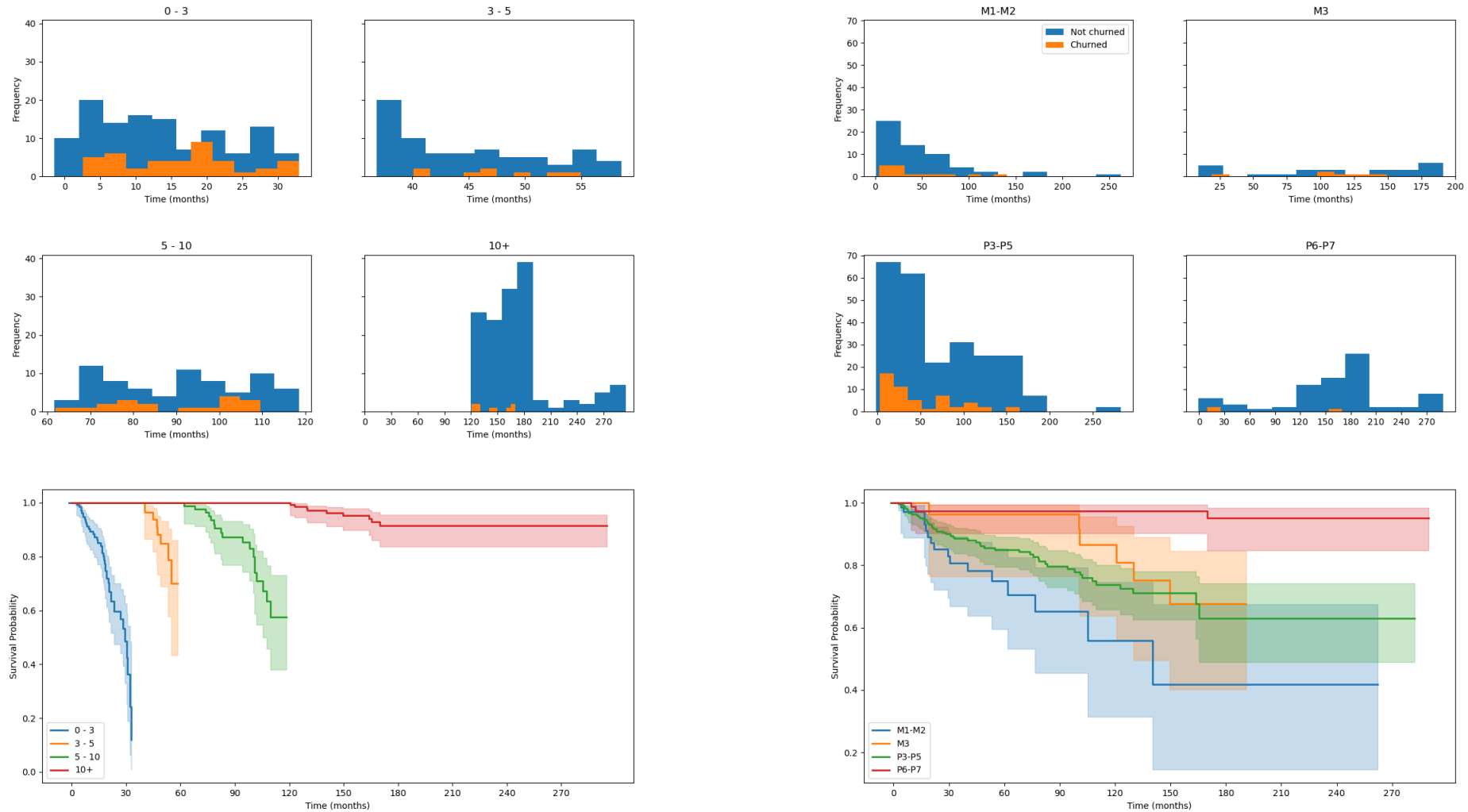
## Overview

- The most vulnerable group of employees with the highest chance of leaving includes those who have spent **0 – 1 years**.
- There is more than a **90%** probability that potential resignations might be from those employees who have been with the company between **0 – 3 years**.

## Statistical probability of employees leaving the company



## Survival Analysis (2/3)



### Overview

- The most vulnerable groups are those with a tenure of 0 – 3 years and grades of M1-M2 and P3-P5

## Survival Analysis (3/3)

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Summary of COX Proportional Hazards Model

	coefficient	p_value
M3	-1.10	0.02907
M4	-18.09	0.99635
P3-P5	-0.41	0.19596
P6-T3	-2.83	0.00001
HSE	0.68	0.26450
Instrument & Electrical	-0.56	0.35064
LTR Project	-0.12	0.89350
Maintenance	-0.01	0.98645
Plant Admin	-17.13	0.99789
Plant Management	-17.76	0.99959
Production	-0.44	0.37610
Technical	-1.00	0.14222

### Overview

- Looking at the coefficients and the low p-values, employees in band groups P6-T3 and M3 seem are less likely to leave the organization.

## Recommendations

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### P3-P5

- Revise salary packages in line with the market.

### M1-M2

- Revise salary packages in line with the market.
- Provide growth opportunities (transfers, rotations, secondments, promotions)

### M3

- Provide growth and development opportunities.
- Revise salary packages in line with the market.