

# Mining Case Study

Applying Analytical Techniques



Mining

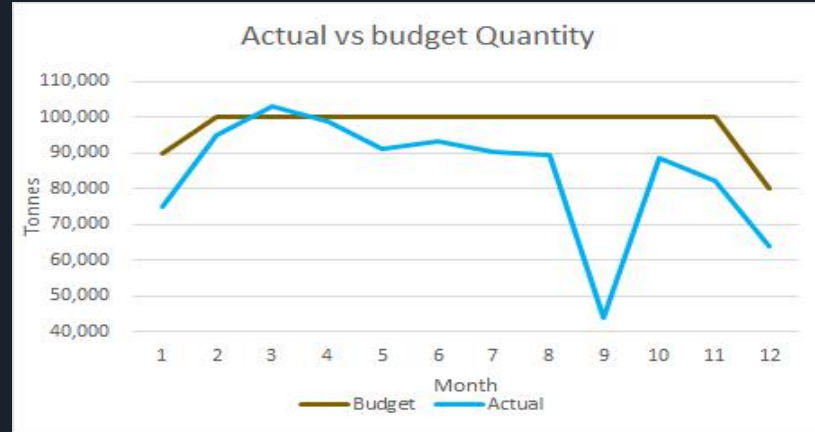
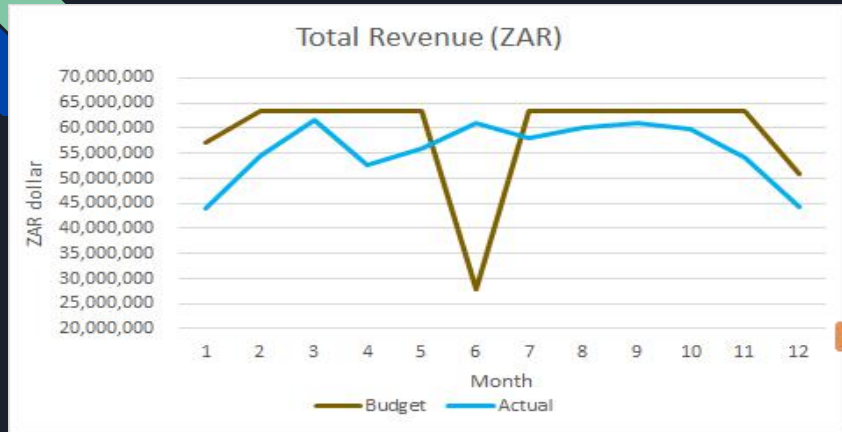


# Open-Pit Mining Case Study

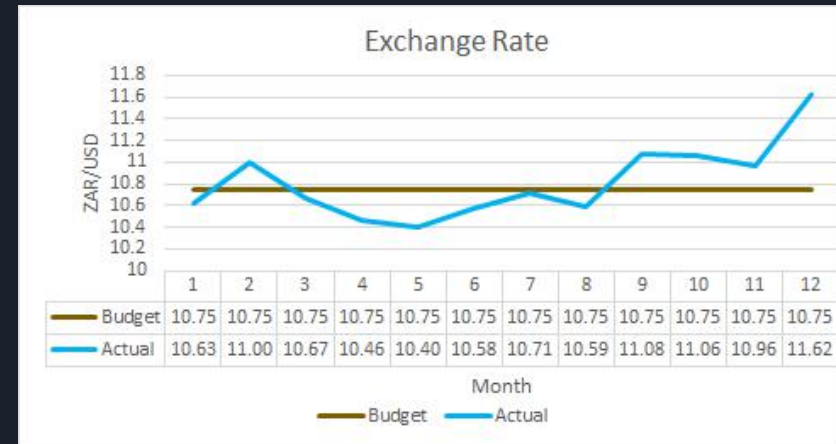
Tran Thanh Thuy Tien - S3575956

# Reason 1+2: Exchange rate & Production

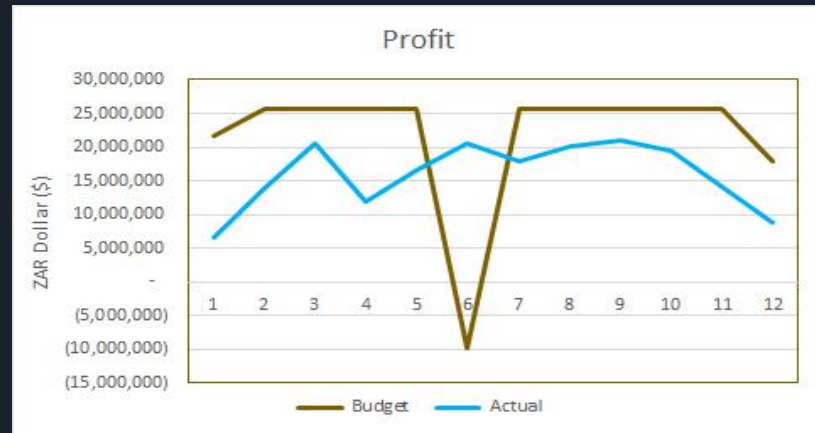
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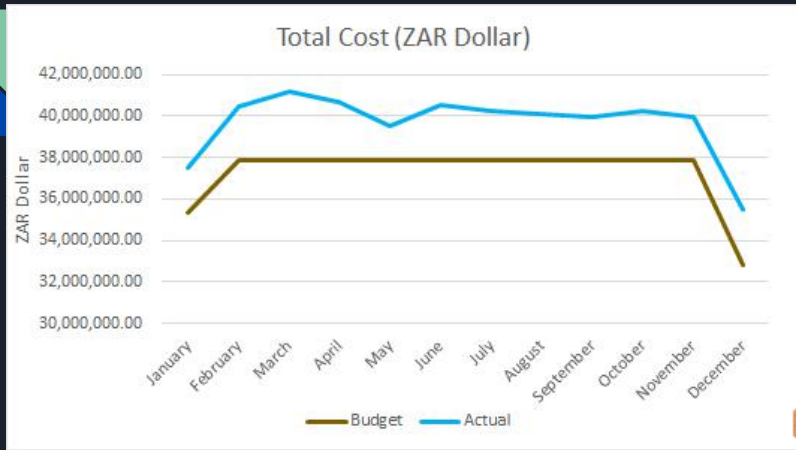
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# Reason 3: Total Cost vs Cost per unit

Resulted from a fall in September of the actual quantity

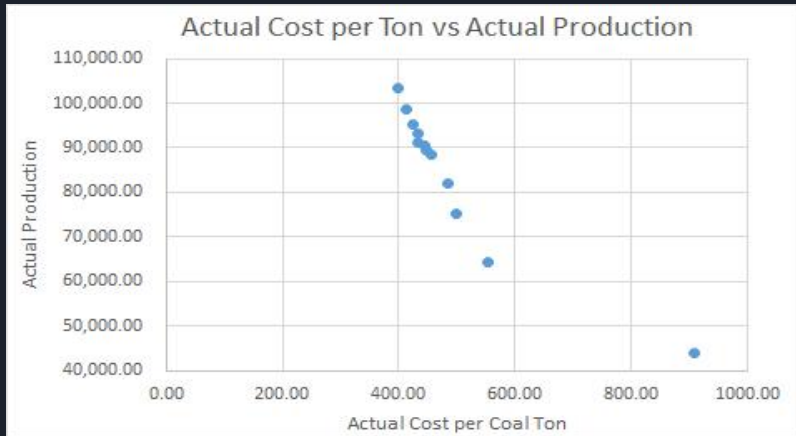
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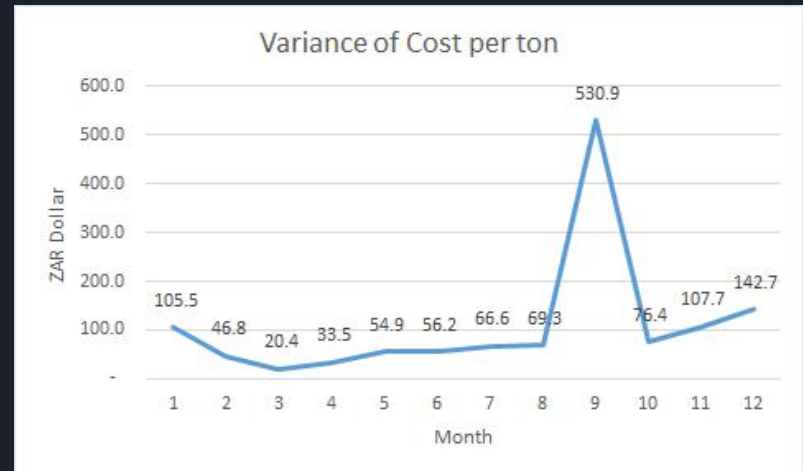
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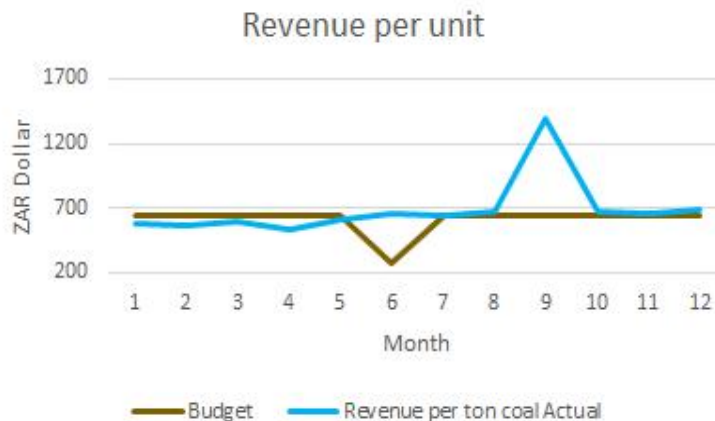


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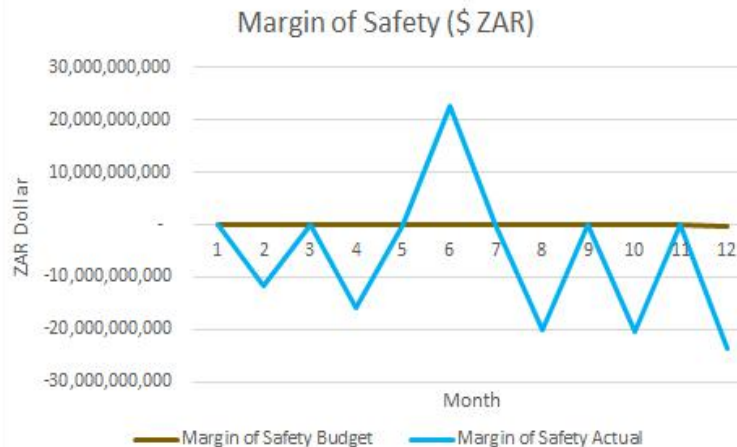


# Revenue per unit & BEP

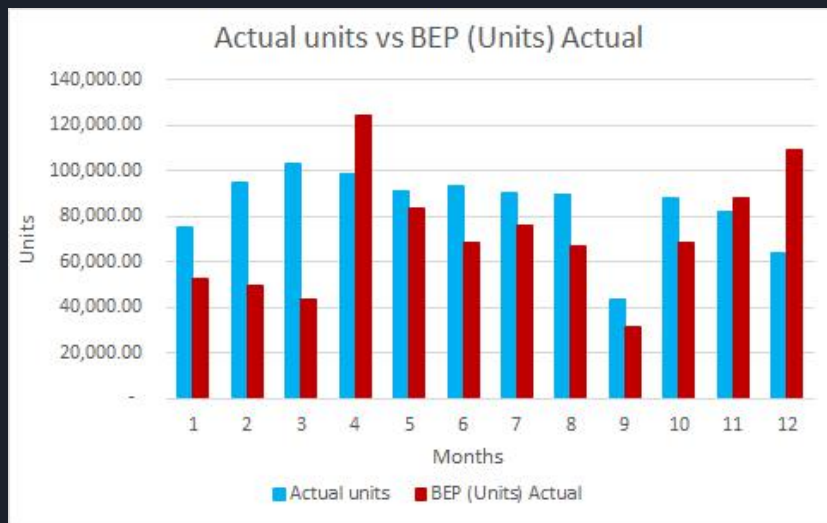
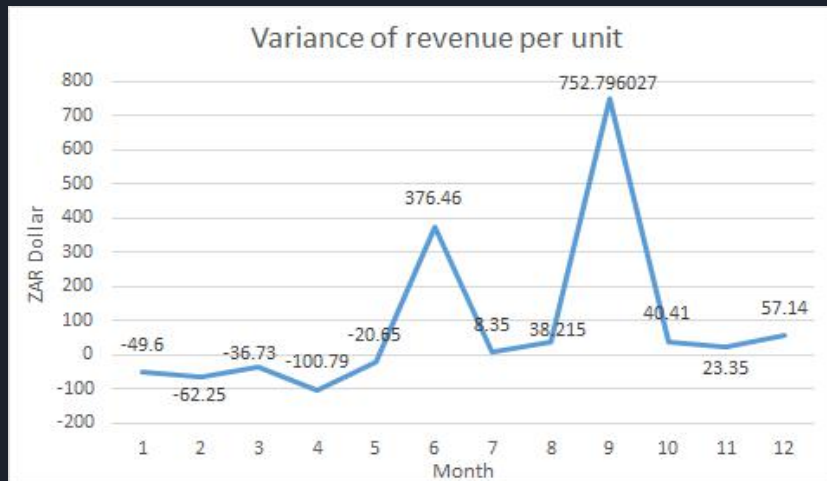
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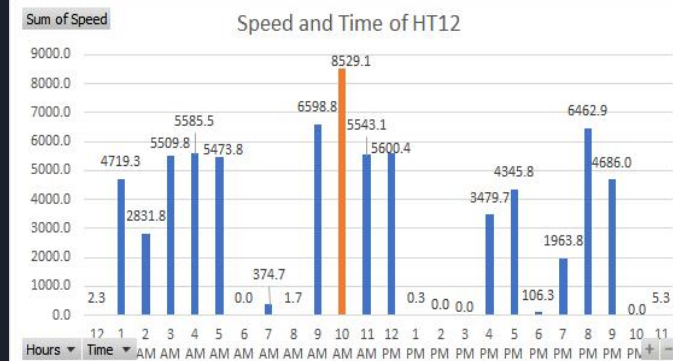
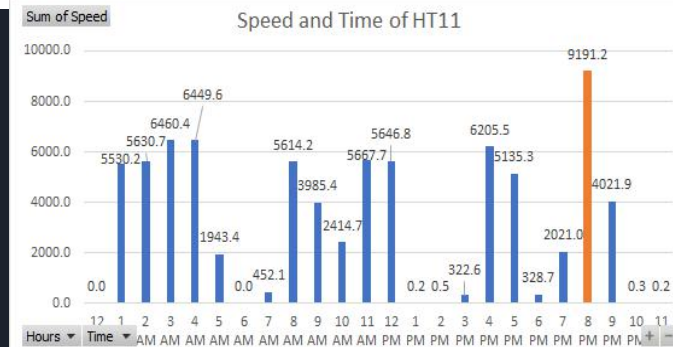
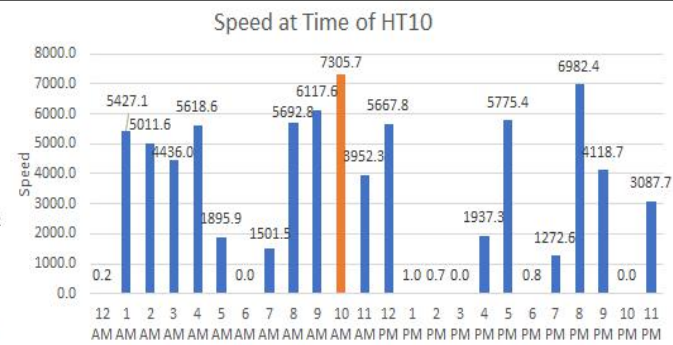
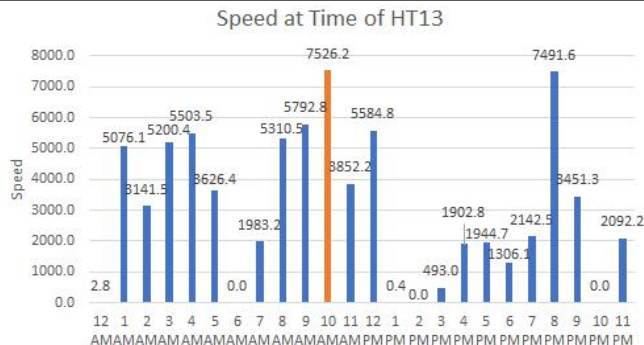
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# Speed & Time



Sum of Speed	Column Labels				
Row Labels	HT10	HT11	HT12	HT13	Grand Total
6 AM	0	0	0	0	0
2 PM	0.737496	0.4743684	0	0	1.2118644
3 PM	0	322.6480596	0	492.96285	815.6109096
10 PM	0	0.3187152	0	0	0.3187152
Grand Total	0.737496	323.4411432	0	492.96285	817.1414892

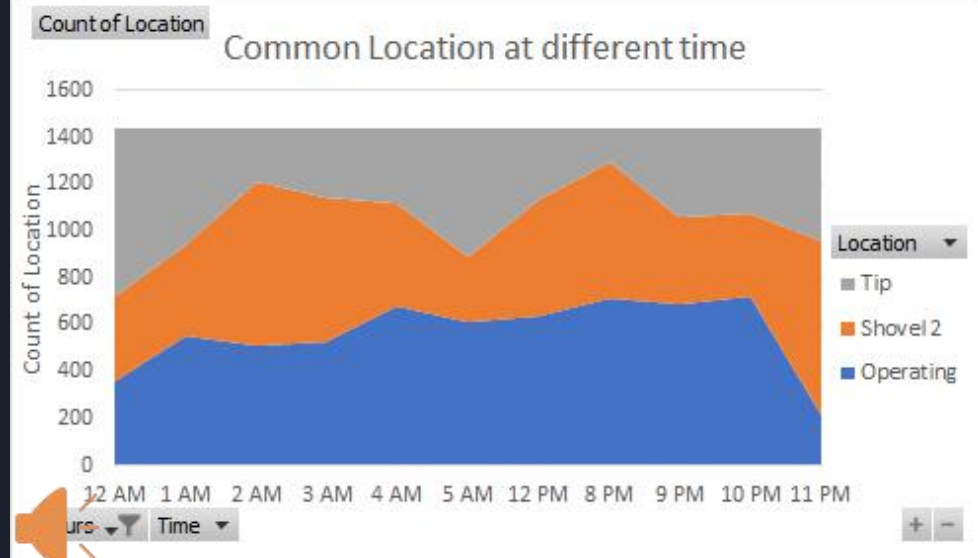


# Time & Locations

Location	Hours
Operating	11 PM
Shovel 2	12 AM
Tip	12 PM
Hard park	2 AM
Service area	2 PM
Workshop	3 AM
	3 PM
	4 AM



Count of Location	Location	Hours	Time	Hard park	Operating	Service area	Shovel 2	Tip	Workshop	Grand Total
Grand Total				2846	12111	1846	7979	8005	337	33124



Location	Truck
Hard park	HT10
Operating	HT11
Service area	HT12
Shovel 2	HT13
Tip	
Workshop	

Sum of Speed	Truck	Location	Hours
Hours	Time	HT13	Grand Total
7 AM			0.0000
Grand Total			0.0000

Truck	Location	Hours
HT11	Operating	7 AM
HT13	Service area	<1/0/1900
HT10	Shovel 2	>1/0/1900
HT12	Tip	1 AM
	Workshop	1 PM
		10 AM

# Location & Cycle per truck

Locations with no speed

Sum of Speed		Location								
Truck	Months	Period	Hard park	Operating	Service area	Shovel 2	Tip	Workshop	Grand Total	
HT10	Nov		106.9347744	42325.13447	68.6888568	9756.243227	1157.257807		53414.25913	
	Dec			17897.13195		3979.969772	512.310024		22389.41175	
HT10 Total			106.9347744	60222.26642	68.6888568	13736.213	1669.567831		75803.67089	
HT11	Nov		260.8820208	40036.97601	202.9516704	9164.376551	1155.074958	188.114706	51008.37592	
	Dec			20519.69203		4718.243873	776.4088428		26014.34475	
HT11 Total			260.8820208	60556.66804	202.9516704	13882.62042	1931.483801	188.114706	77022.72067	
HT12	Nov		233.3316024	37445.4554	47.733282	8766.081551	1205.304235		47697.90607	
	Dec			19262.7726		4309.231183	550.4966496		24122.50043	
HT12 Total			233.3316024	56708.228	47.733282	13075.31273	1755.800885		71820.4065	
HT13	Nov		246.3730344	40355.06023	82.9273068	9143.630356	1046.188998	0	50874.17992	
	Dec			17915.082		4079.494429	556.079724		22550.65615	
HT13 Total			246.3730344	58270.14223	82.9273068	13223.12478	1602.268722	0	73424.83608	
Grand Total			847.521432	235757.3047	402.301116	53917.27094	6959.121239	188.114706	298071.6341	

Location	Truck
Hard park	HT10
Operating	HT11
Service area	HT12
Shovel 2	HT13
Tip	
Workshop	

Sum of Speed		Truck		
Hours	Time	HT13	Grand Total	
7 AM		0.0000	0.0000	
Grand Total		0.0000	0.0000	

Truck	Location	Hours
HT11	Operating	7 AM
HT13	Service area	<1/0/1900
HT10	Shovel 2	>1/0/1900
HT12	Tip	1 AM
	Workshop	1 PM
		10 AM

Number of cycle per truck

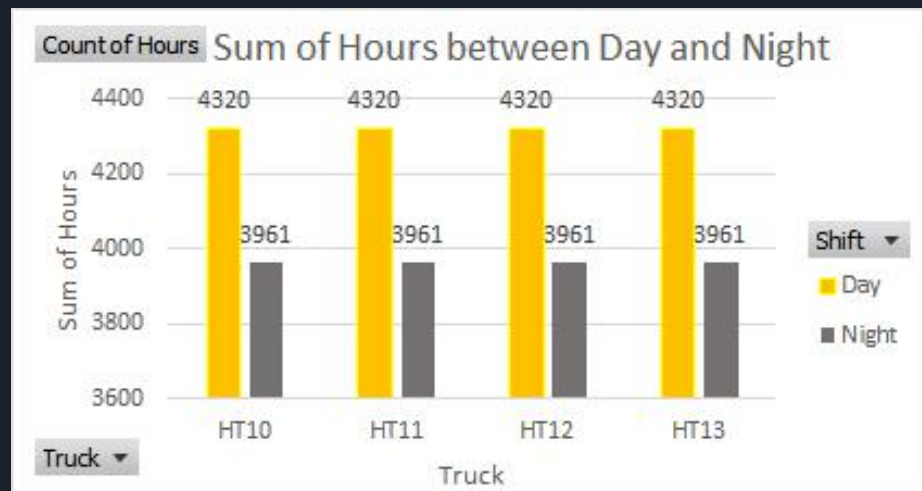
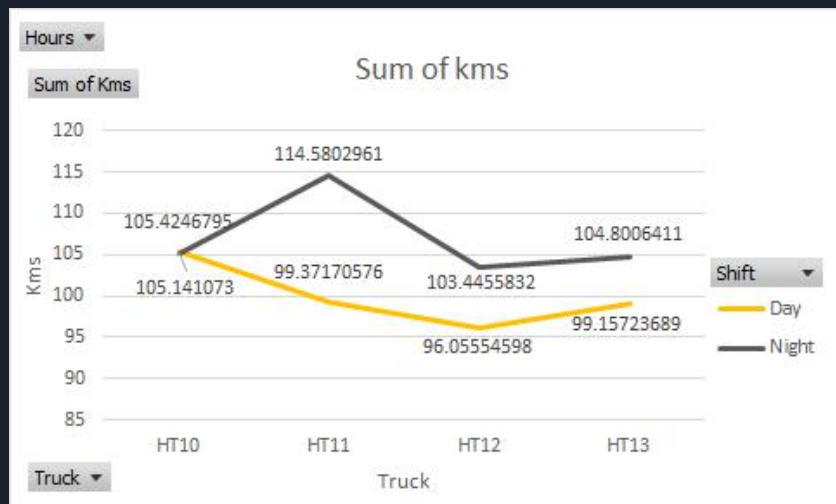
		Truck				
		HT10	HT11	HT12	HT13	Grand Total
Sum of End of cycle		14	19	19	18	70



# SHIFT & TRUCK



Day shift has less kms but trucks spend more hours than Night shift.





# RECOMMENDATIONS

## For truck efficiency,



- Reduce unnecessary waiting time + Avoid trucks waiting at the same time -> **cost arise**.
- Allocate more Kms in Night shift -> **Reduce cost of travelling time**.
- Cooperation with production team to estimate time of each production stage done such as Shovel, and **allocate truck arrived there as the time finished** of the process **to minimize waiting time for trucks**.
- Allocate trucks at different locations at the same time to create a smooth process.

## For financial aspect,



### First scenario:

- Collect reliable & right data + avoid bias assumption.
- Embrace reality and do not exaggerate data.

**Second scenario:** aimed to reduce and avoid unexpected cost such as salaries, other mining FC.



**Third scenario:** Conduct a research team to have the market analysis in order to embrace a change of global trade.

