



# Case study3

ZCENCh Bank  
analysis with  
SPSS

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### Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
bankrn	682	100.0%	0	0.0%	682	100.0%
days	682	100.0%	0	0.0%	682	100.0%

### Percentiles

		Percentiles						
		5	10	25	50	75	90	95
Weighted Average (Definition 1)	bankrn	7.00	12.00	21.00	44.50	88.25	139.70	171.70
	days	509.15	592.60	802.00	1070.00	1684.00	2019.70	2104.85
Tukey's Hinges	bankrn			21.00	44.50	88.00		
	days			802.00	1070.00	1684.00		

### Tests of Normality

	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
bankrn	.134	682	.000	.862	682	.000
days	.117	682	.000	.927	682	.000

a. Lilliefors Significance Correction

### Descriptives

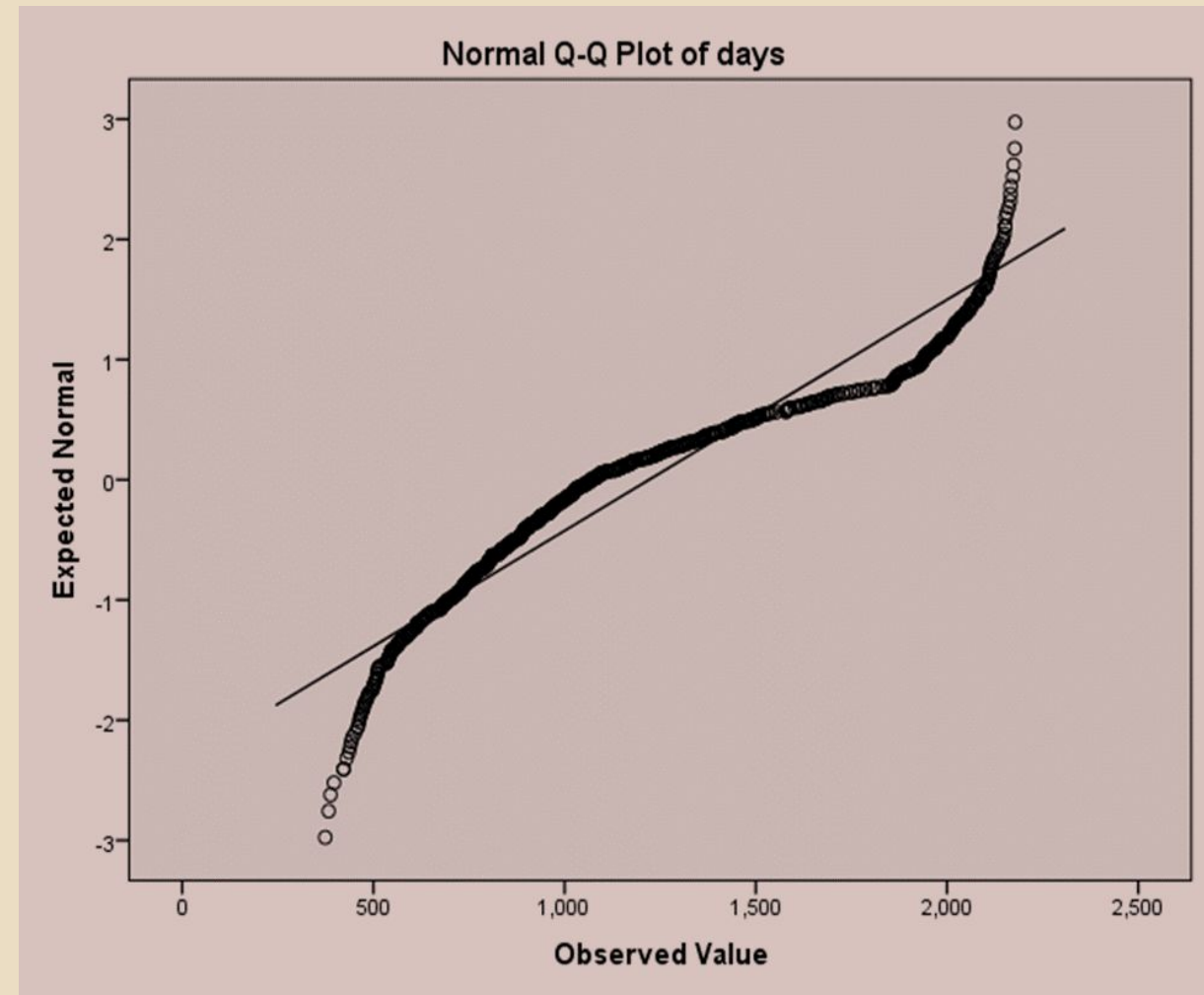
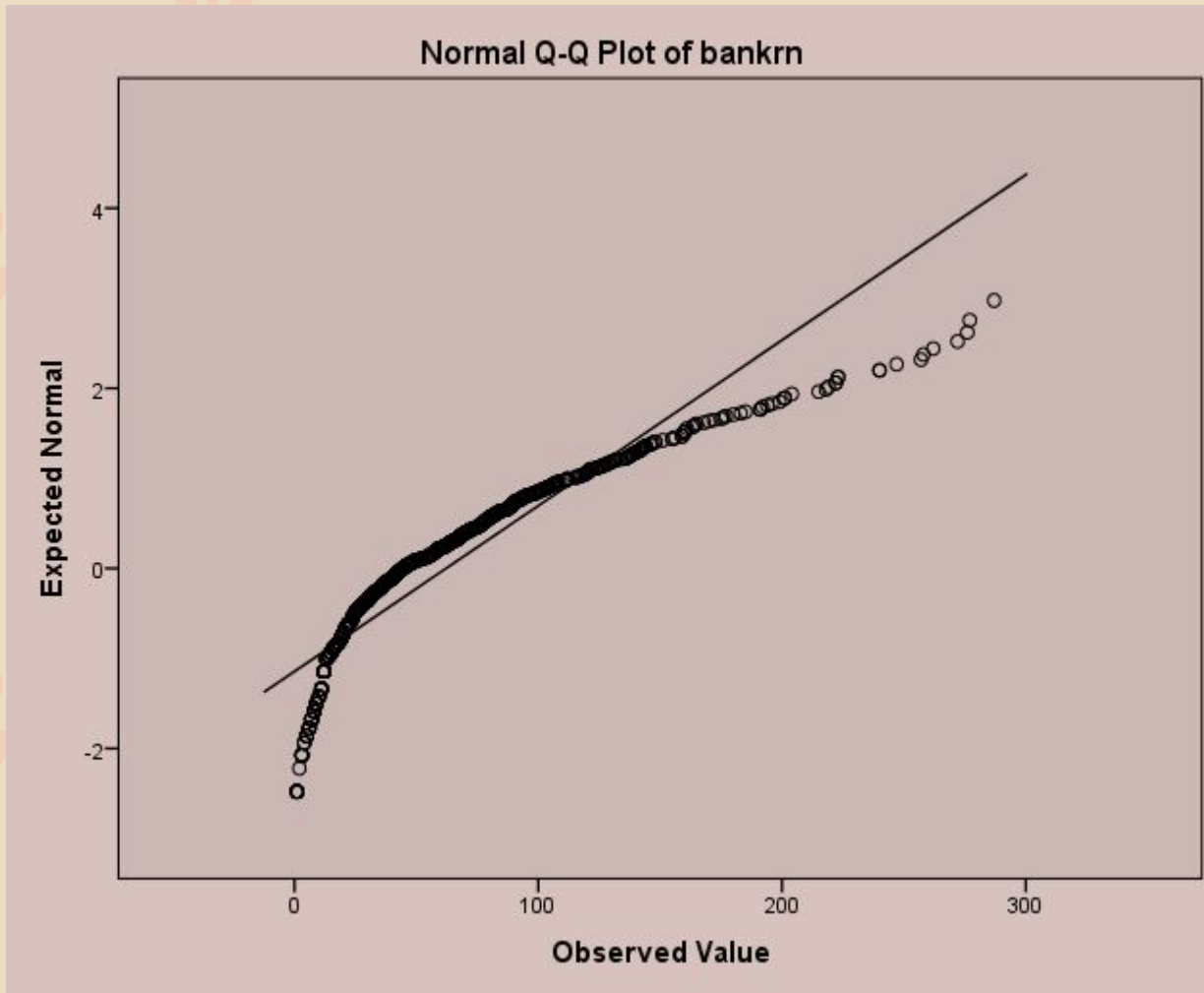
		Statistic	Std. Error
bankrn	Mean	62.18	2.083
	95% Confidence Interval for Mean	Lower Bound 58.09 Upper Bound 66.27	
	5% Trimmed Mean	56.83	
	Median	44.50	
	Variance	2958.181	
	Std. Deviation	54.389	
	Minimum	1	
	Maximum	287	
	Range	286	
	Interquartile Range	67	
	Skewness	1.436	.094
	Kurtosis	2.075	.187
days	Mean	1220.61	19.919
	95% Confidence Interval for Mean	Lower Bound 1181.50 Upper Bound 1259.72	
	5% Trimmed Mean	1211.82	
	Median	1070.00	
	Variance	270588.984	
	Std. Deviation	520.182	
	Minimum	374	
	Maximum	2178	
	Range	1804	
	Interquartile Range	882	
	Skewness	.392	.094
	Kurtosis	-1.133	.187

# Report

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- Since skewness is above 1, the bankrn data is highly skewed.
- Since the skewness is between -0.5 and 0.5,i.e.,0.392, the days data is fairly symmetrical.
- Since the kurtosis is greater than zero for the bankrn data, the distribution has heavier.
- Since the kurtosis is less than zero for days data, the distribution is light tails.
- As the significance(sig) in both the variables is less than 0.05, the data deviates from the normal distribution.

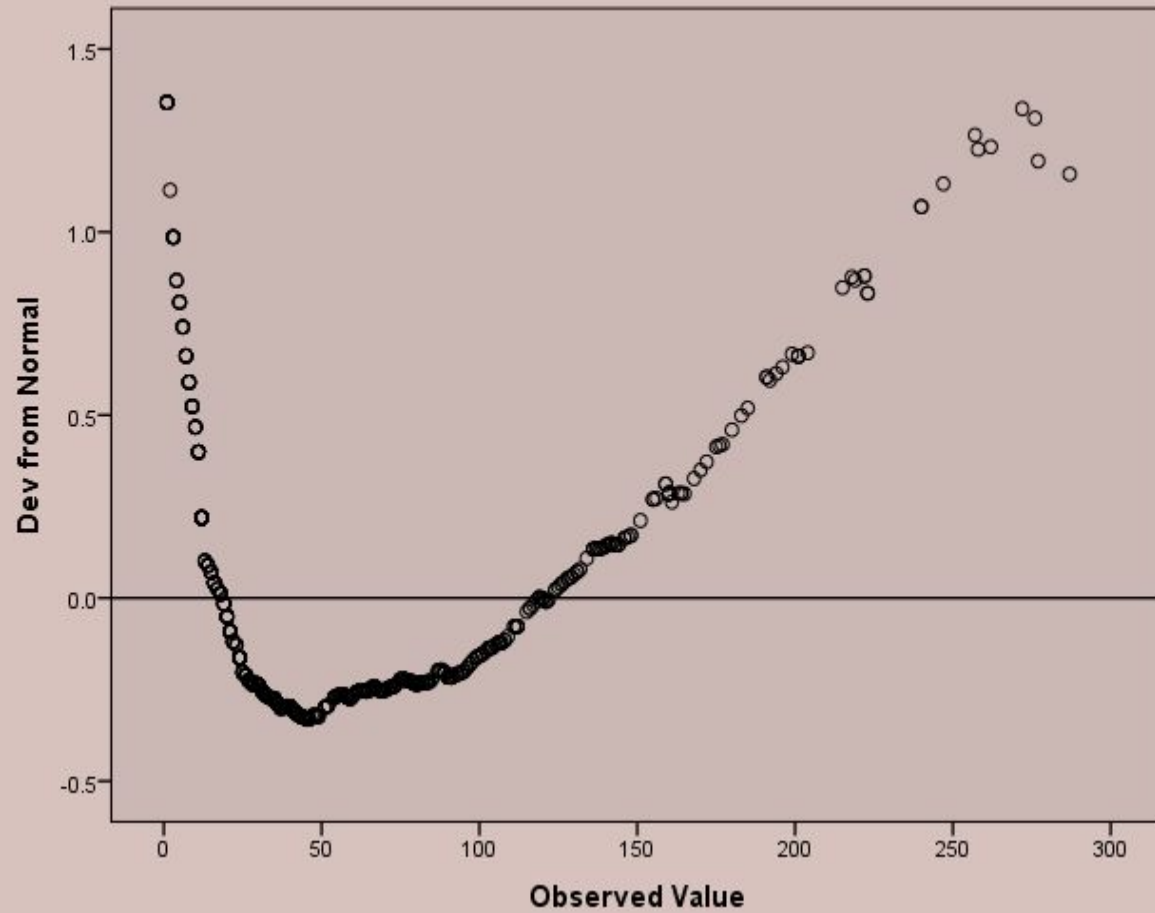
# NORMAL Q-Q PLOTS



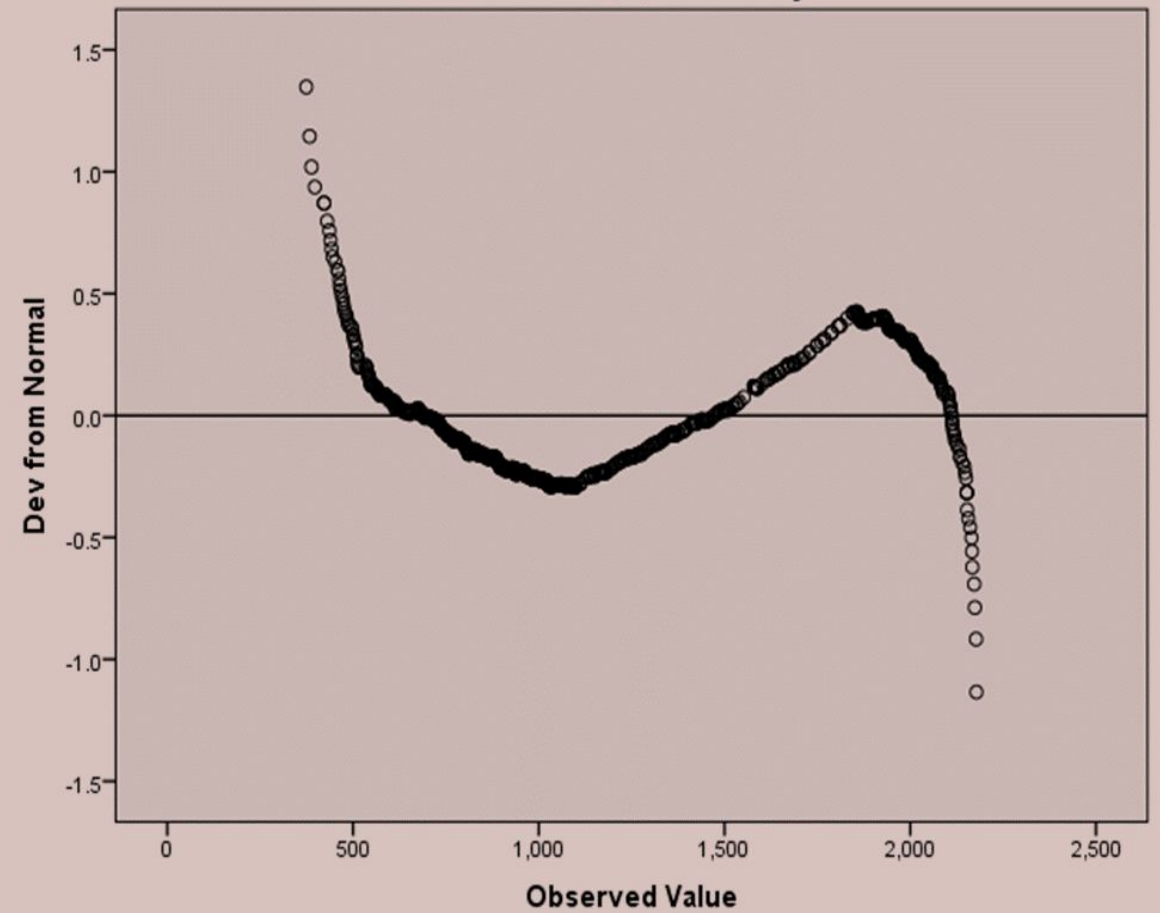
Since the plots are deviated from the normal line, the data is not normalized.

# DETRENDED NORMAL Q-Q PLOTS

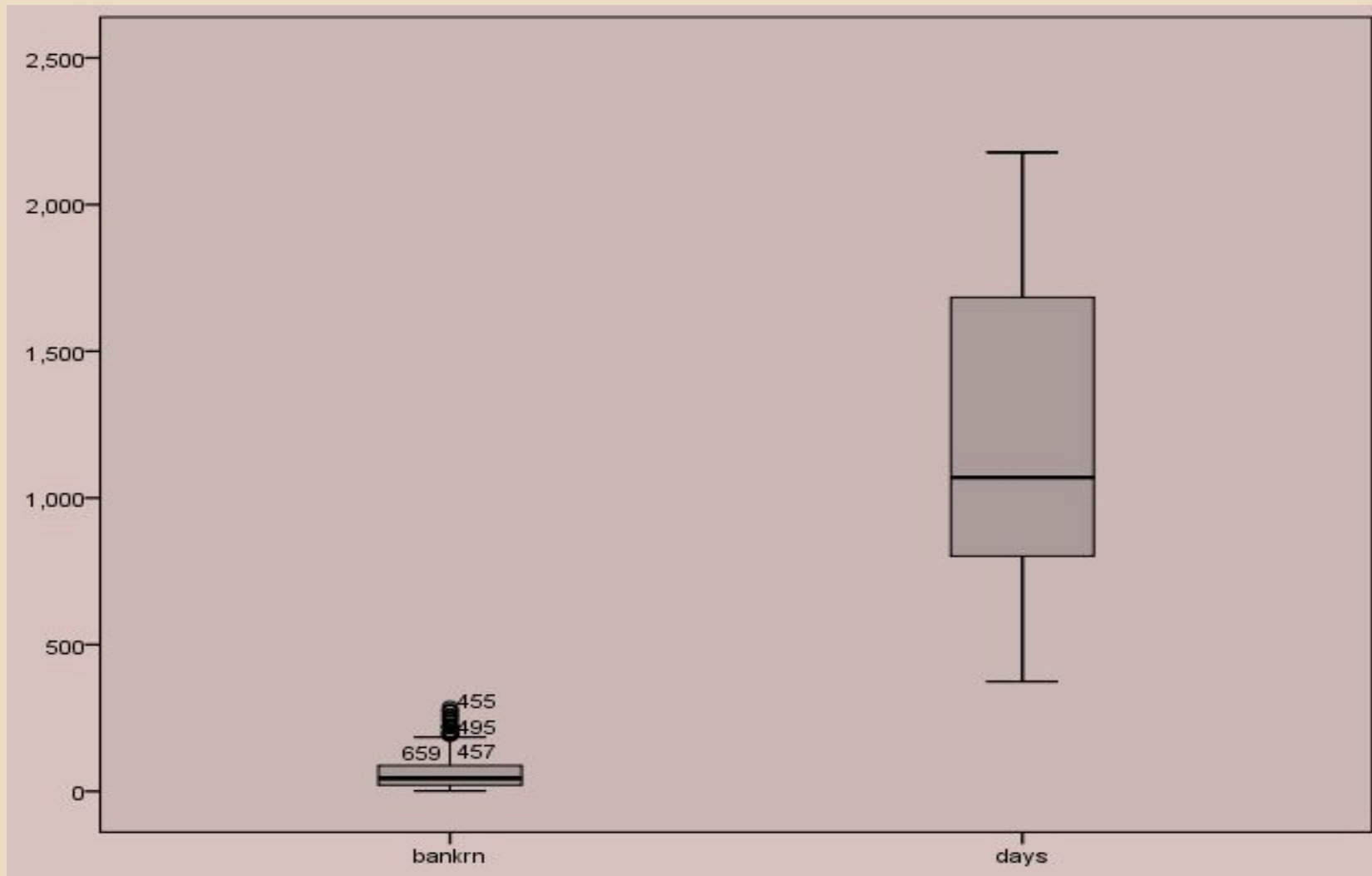
Detrended Normal Q-Q Plot of bankrn



Detrended Normal Q-Q Plot of days

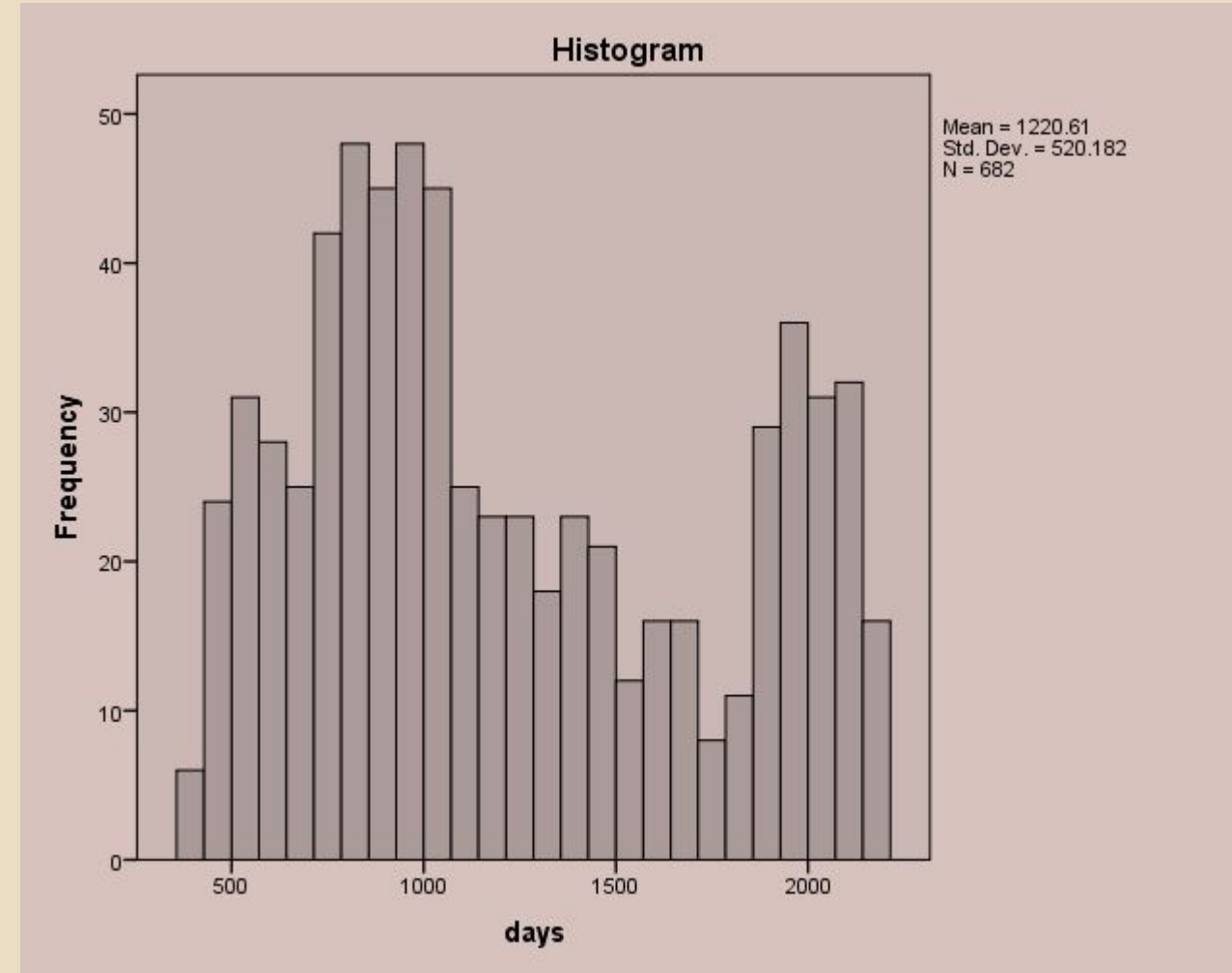
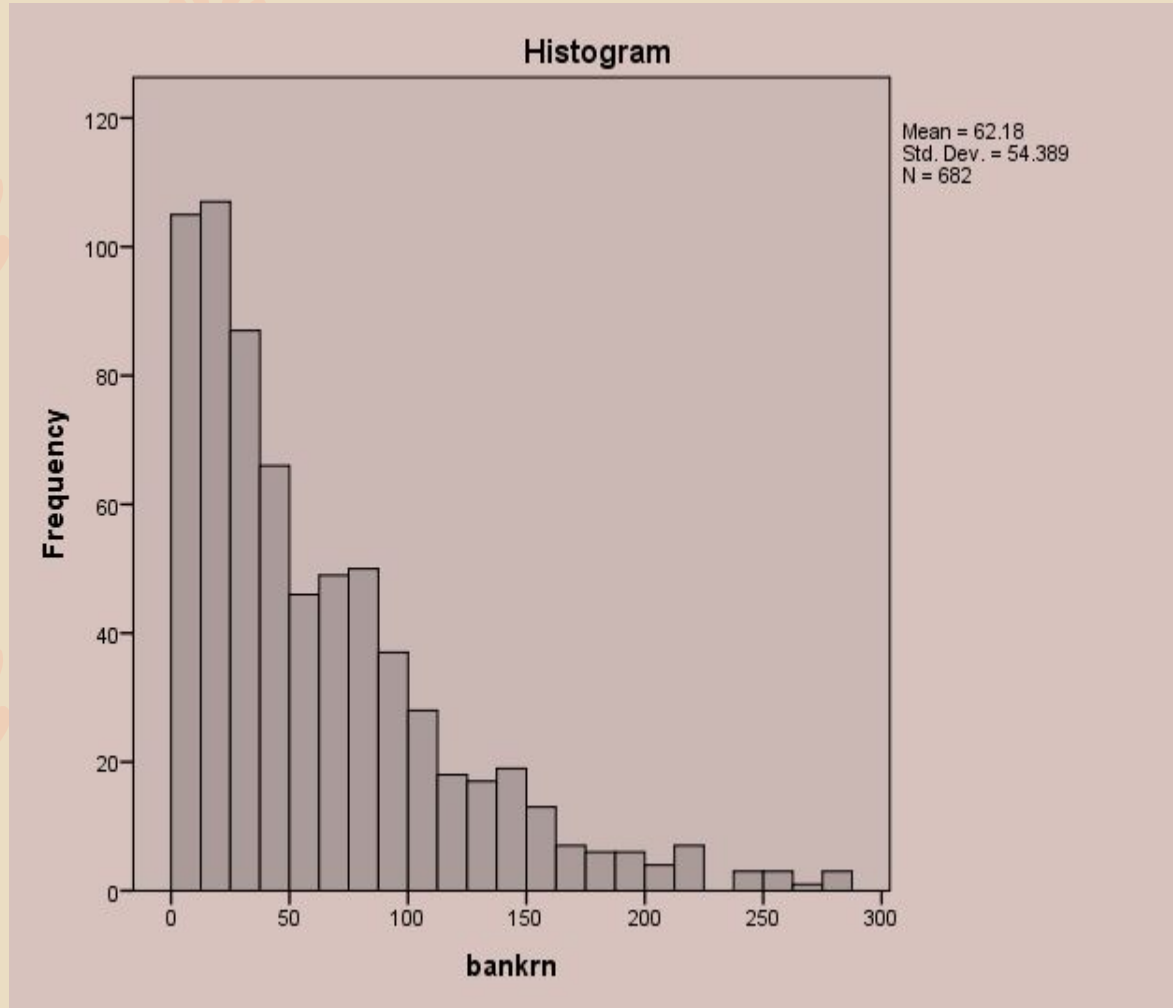


# BOXPLOTS OF THE DATA



There are many outliers in bankrn compared to days as seen in the plots

# HISTOGRAMS OF THE DATA



The graph is not following a bell shaped curve, so the data is not following normal distribution