

Solution 1 – One-way ANOVA

Hypothesis statements:

- 👉 H_0 : Installation TAT for different technologies* is same
- 👉 H_a : Installation TAT for different technologies* is different
- - Type of Modem

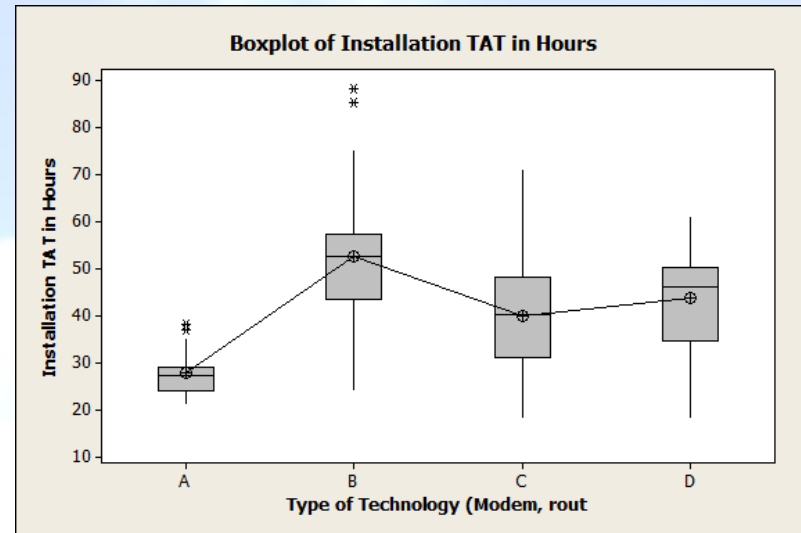


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Solution 1 – One-way ANOVA

Interpretation of Results:

- 👉 Graphical representation of 4 sub-groups used in hypothesis test
- 👉 Visually, there is noticeable difference of performance between 4 sub-groups of technologies
- 👉 However, this has to be validated only with 'P-value' of ANOVA



Solution 1 – One-way ANOVA

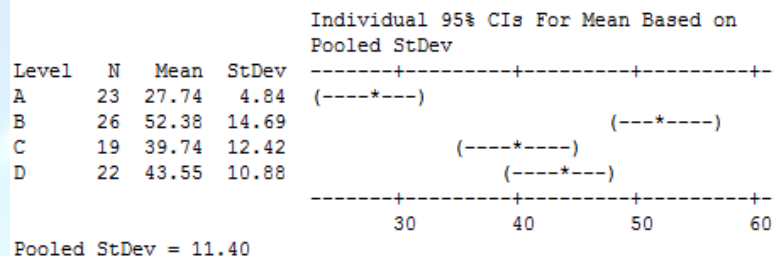
Interpretation of Results:

👉 In this example, we chose 4 groups of different modems (technologies) to check if their availability, installation procedure, etc., impact the installation TAT

One-way ANOVA: Installation TAT in Hours versus Type of Technology (Modem, rout

Source	DF	SS	MS	F	P
Type of Technology (Mode	3	7581	2527	19.46	0.000
Error	86	11170	130		
Total	89	18751			

S = 11.40 R-Sq = 40.43% R-Sq(adj) = 38.35%



Boxplot of Installation TAT in Hours

p-value, $0.000 < 0.05$ (alpha), there is sufficient evidence to conclude that different types of modems have different mean TATs

Solution 2 – One-way ANOVA

Hypothesis statements:

- 👉 H_0 : Installation TAT for different Service Affiliates is the same
- 👉 H_a : Installation TAT for different Service Affiliates is different

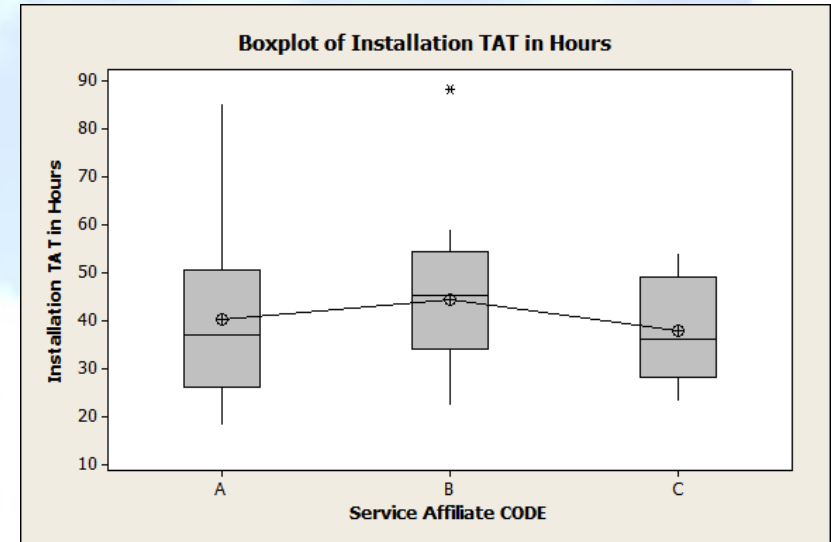


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Solution 2 – One-way ANOVA

Interpretation of Results:

- 👉 Graphical representation of 3 sub-groups used in hypothesis test
- 👉 Visually, there is no noticeable difference of performance between 3 sub-groups of Service Affiliates.
- 👉 However, this has to be validated only with 'P-value' of ANOVA



Solution 2 – One-way ANOVA

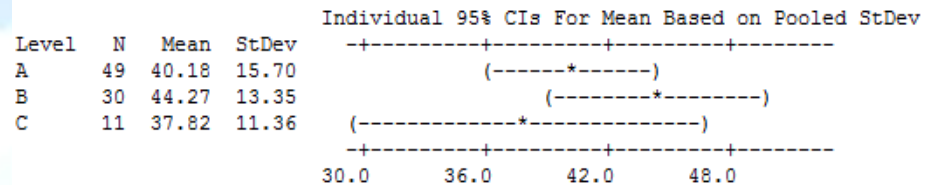
Interpretation of Results:

👉 In this example, we chose
3 groups of different
Service affiliates to check if
their performance impact
the installation TAT

One-way ANOVA: Installation TAT in Hours versus Service Affiliate CODE

Source	DF	SS	MS	F	P
Service Affiliate CODE	2	458	229	1.09	0.341
Error	87	18293	210		
Total	89	18751			

S = 14.50 R-Sq = 2.44% R-Sq(adj) = 0.20%



Pooled StDev = 14.50

Boxplot of Installation TAT in Hours

p-value, $0.341 > 0.05$ (alpha), there is no sufficient evidence to conclude that different service affiliates have different mean TATs

Solution 3 – One-way ANOVA

Hypothesis statements:

- 👉 H_0 : Installation TAT for different teams
within Service Affiliate the same
- 👉 H_a : Installation TAT for different teams
within Service Affiliate is different

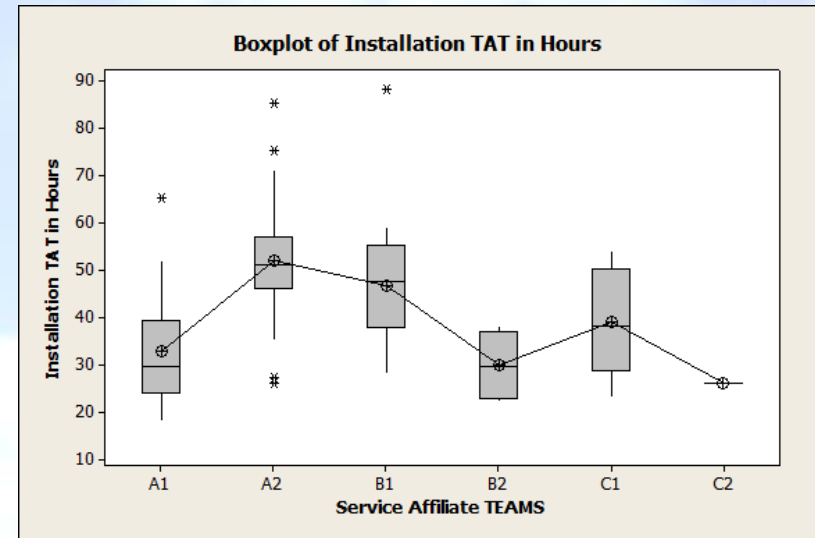


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Solution 3 – One-way ANOVA

Interpretation of Results:

- 👉 Graphical representation of 4 sub-groups used in hypothesis test
- 👉 Visually, there is noticeable difference of performance between 6 different teams within each of the Service Affiliates.
- 👉 However, this has to be validated only with 'P-value' of ANOVA



Solution 3 – One-way ANOVA

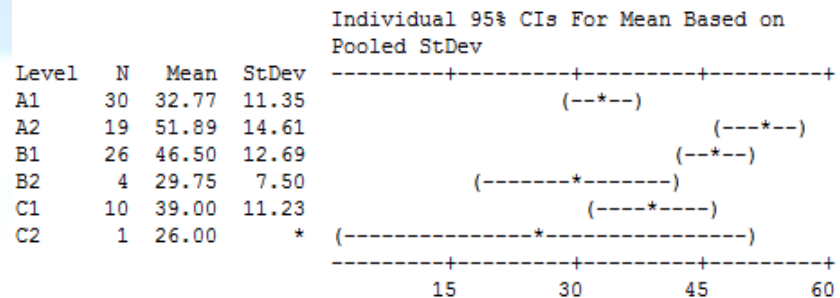
Interpretation of Results:

👉 In this example, we chose 6 groups of different teams of 3 Service affiliates to check if their performance impact the installation TAT

One-way ANOVA: Installation TAT in Hours versus Service Affiliate TEAMS

Source	DF	SS	MS	F	P
Service Affiliate TEAMS	5	5841	1168	7.60	0.000
Error	84	12910	154		
Total	89	18751			

S = 12.40 R-Sq = 31.15% R-Sq(adj) = 27.05%

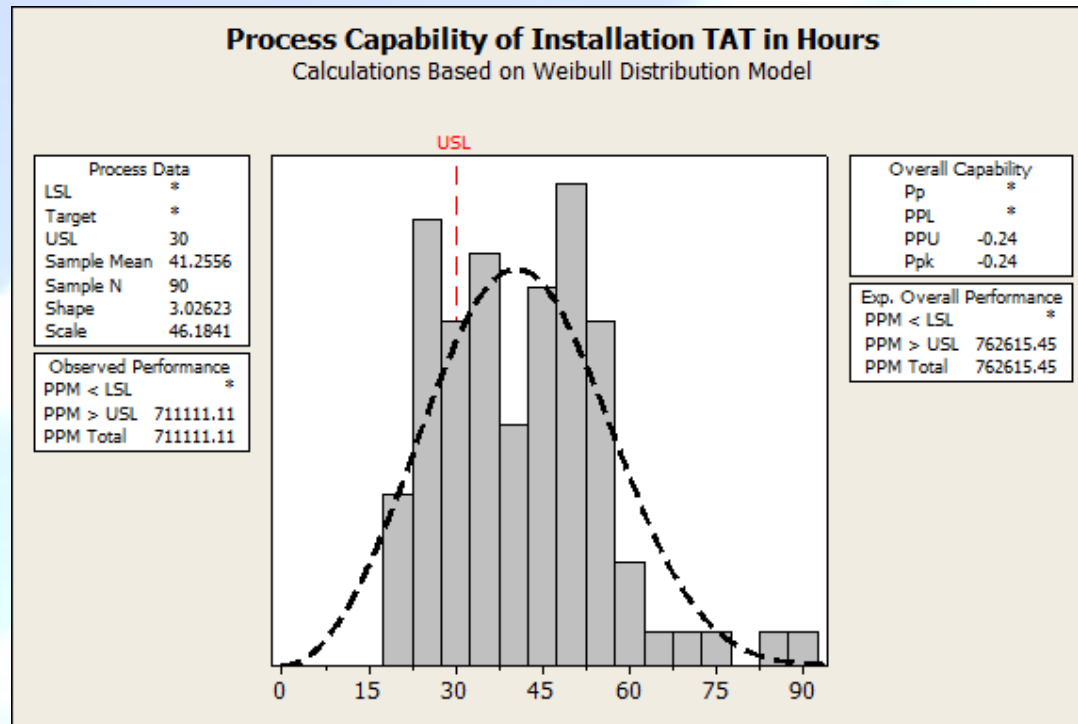


Pooled StDev = 12.40

Boxplot of Installation TAT in Hours

p-value, $0.000 < 0.05$ (alpha), there is sufficient evidence to conclude that different teams within service affiliates have different mean TATs

Solution 1 – Process Capability



Interpretation of Results:

- 👍 Mean, distribution parameter estimates, P_p , P_{pk} , PPU & PPL are given
- 👍 Ppk is -0.24 which is very low
- 👍 Defects or Nearly 76% of data is falling outside USL of 30 hours