

Share & Care

Doc Ref. : S & C – S / 002

SMART



A Supplemental e-magazine from Sri Padhmam
Consultancy & Training Reaching 25,000 + subscribers

Objective of this initiative :

To disseminate the knowledge to many &
to create an interest to implement the knowledge !



CONTACT INFORMATION

 support@sripadhmam.com

 +91 99621 17222

 www.sripadhmam.com



For free circulation only



Six Sigma tools & techniques :

Box plot analysis



A V Manivannan (AVM)
Founder & Managing partner

Six sigma

Statistical

Tools & Techniques



A V Manivannan (AVM)
Founder & Managing partner

A quick tour



Doc. ref. String : SPCT / T & T / 002



Objective of this initiative

- Customers' demands are sky-rocketing
- Quality standards are re-defined in every walk of our business
- Even a Six sigma initiative to meet out the raising demands, may not help us, unless and until the tools & techniques are mastered !
- The quick tour, through this document may provide you a better insight on the Statistical tools & techniques.

Practice them appropriately and become more & more competent !

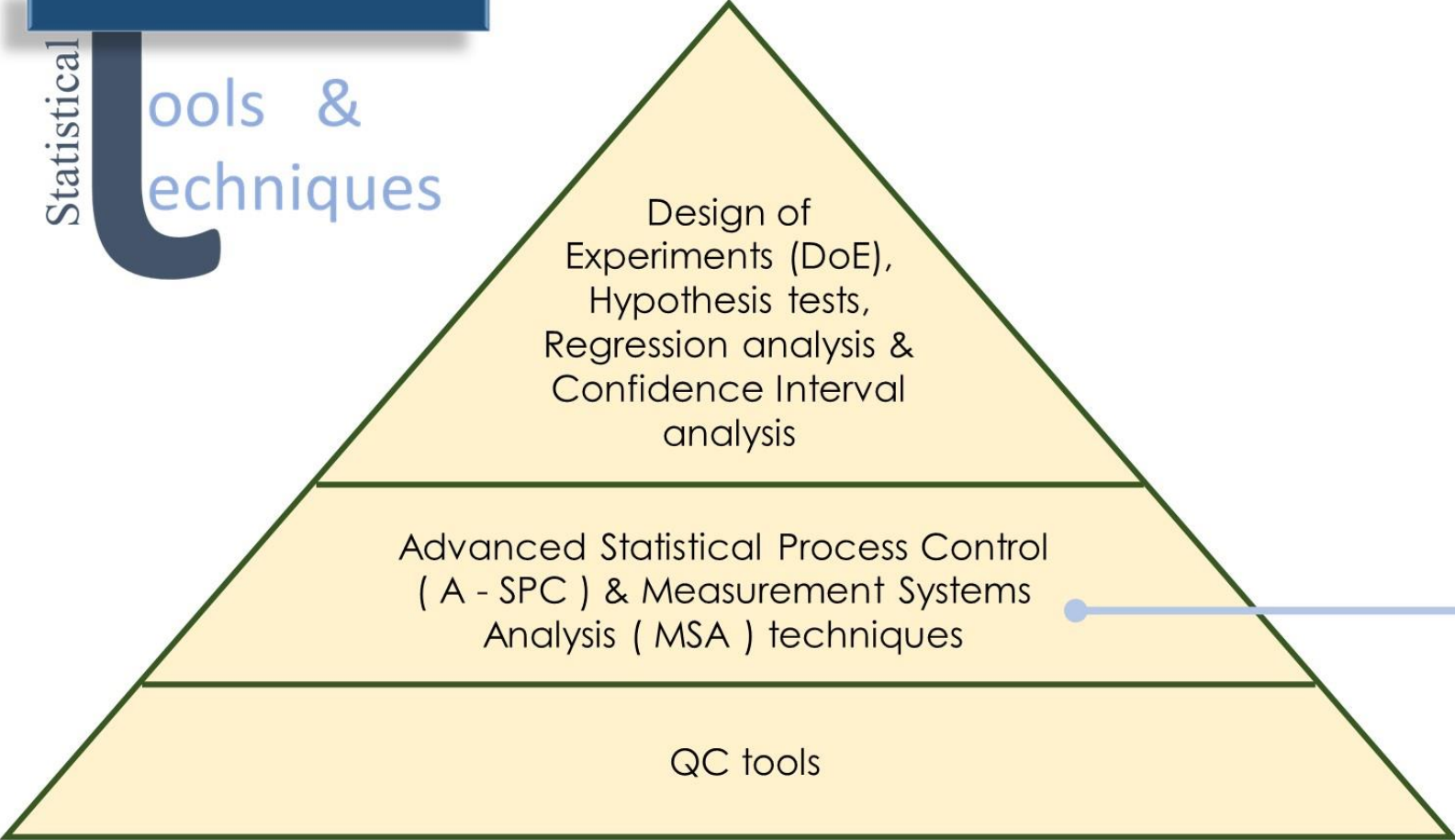
Best wishes !!



Competent employees available in the organizations

Six sigma

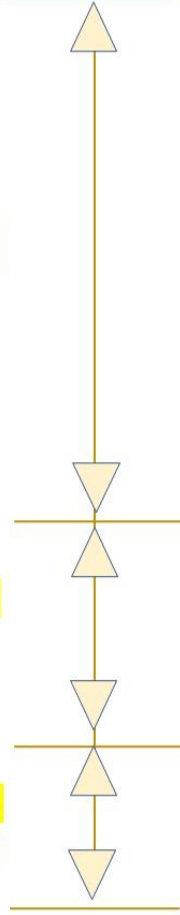
Statistical tools & techniques



5 % of the employees can do !

15 % of the employees can do !

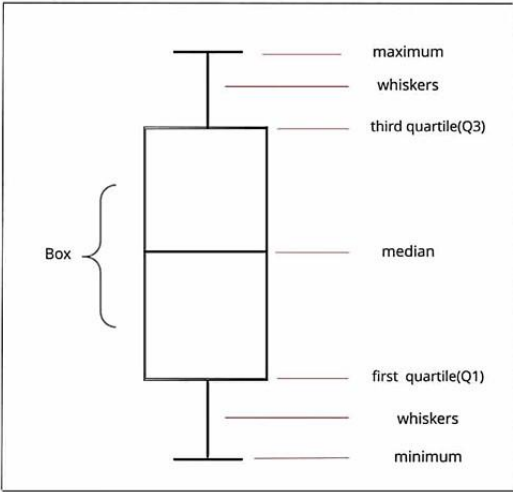
30 % of the employees can do !



Source of inspiration : IIT, Kharagpur survey

Box plot analysis

Typical appearance



An intellectual property of Sri Padhmam



John Tukey

Contributor(s)

To understand the data distribution nature, when the data points are relatively less (n typically 15)

Purpose

Applied as ..

Re-active	
Pro-active	
For both	<input checked="" type="checkbox"/>

Clue generation	<input checked="" type="checkbox"/>
Validation	
Optimization	
(Benefits) Retainment	

Box plot analysis

Continues....

By the way of construction :

1. Vertical &
2. Horizontal

By the way of conclusions :

1. Shape
2. Spread (Size) &
3. Location

Mostly applied during....

D	M	A	I	C
Define	Measure	Analyse	Improve	Control

An intellectual property of Sri Padhmam

1. Based on Median Statistics (\tilde{x})
2. One set of data (typically n as 15 minimum) shall be analysed
3. More than one set of data (multiple sets) shall be analysed and compared to each other
4. A sub tools of Histogram
5. Can be constructed for Attribute as well Continuous data
6. In Excel and MiniTab we shall create this tool

Types

Salient six features

DMAIC linkage

Box plot analysis

Continues....

- ✓ Better collect the data and construct by hand (not to use any software at the beginning)
- ✓ May use Excel or MiniTab, once the skill is gained
- ✓ Must learn how to determine Q1, Q2, \bar{x} , and outliers

Manual construction	Using MS office Excel *	Using MiniTab software *
<ul style="list-style-type: none"> • Easy ! • Better to perform manually in the beginning stages of learning 	Insert → Chart → Box plot	Graph → Box plots

* Version to version, some changes are possible

Tips to use

Our experience

- ❖ Hand-held for many teams, in the past one decade
- ❖ Used in many QCC projects, during our mentoring
- ❖ Also reviewed in some DoE projects
- ❖ Teams mostly found it difficult to interpret & explain to others
- ❖ A powerful tool, unknown to most & undermined many of the times !

An intellectual property of Sri Padhmam

Other name (s)

Disclaimer

- Knowing the tools & techniques is only a knowledge addition
- This initiative would have added some knowledge, but does not guarantee competence enhancement
- For becoming a competent person, one must work at least 10,000 hours, dedicatedly !
- We wish the same from the learners !



The approach to master the tools & techniques !

An intellectual property of Sri Padhmam

Design of Experiments (DoE), Hypothesis tests, Regression analysis & Confidence Interval analysis

Advanced Statistical Process Control (A - SPC) & Measurement Systems Analysis (MSA) techniques

QC tools

Direction to learn & implement

Note :

Better to target for 'Lean' Six sigma, instead of Six sigma

CONTACT INFORMATION

 support@sripadhmam.com

 +919962117222

 www.sripadhmam.com