_Report

Acceptance Sampling by Attributes

Task: create a sampling plan for the shipment of 10000 items

Stat -> Quality Tools -> Acceptance Sampling by Attributes
Create Sampling Plan
Measurement type: Go/Mo Go (defective)
Percent defective
Acceptable Quality Level (AQL) =2 - Max percent of nonconforming units that can be considered satisfactory as the process average
Rejectable Quantity Level (RQL or RTPD) = 10 - The level of quality that is unsatisfactory and should be rejected by the sampling plan
Producer's risk, alpha = 0.05 - Probability that a good lot will be rejected by the sampling plan
Consumer's risk, beta = 0.10 - Probability that a bad lot will be accepted by the sampling plan
Lot size = 10000

RESULT:
Sample 65 units. If 3 or more will be defective, reject the entire lot.

Method

Acceptable Quality Level (AQL)	2
Producer's Risk (α)	0.05
Rejectable Quality Level (RQL or LTPD)	10
Consumer's Risk (β)	0.1

Generated Plan(s)

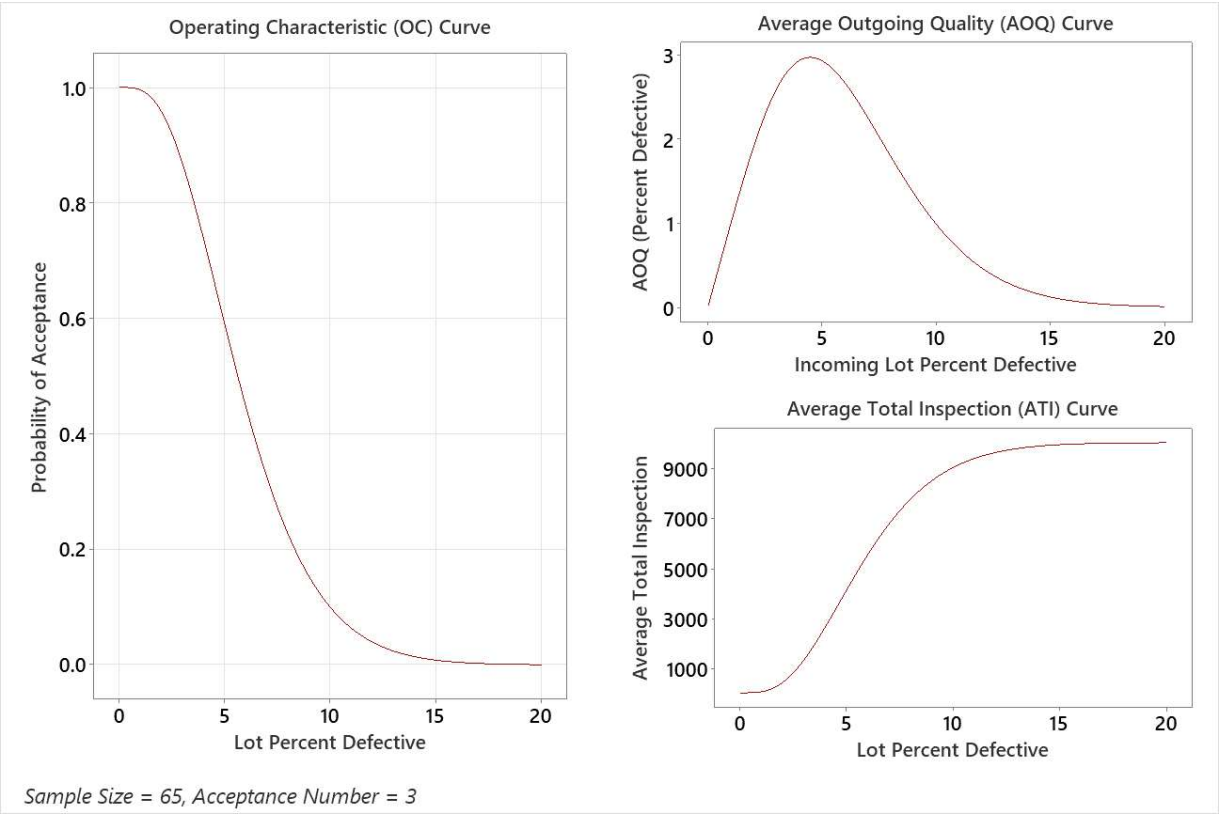
Sample Size	65
Acceptance Number	3

Accept lot if defective items in 65 sampled ≤ 3; Otherwise reject.

Percent Defective	Probability Accepting	Probability Rejecting	AOQ	ATI
2	0.959	0.041	1.905	476.1
10	0.100	0.900	0.989	9010.9

Average Outgoing Quality Limit(s) (AOQL)

AOQL	At Percent Defective
2.971	4.484



Acceptance Sampling by Variables

Task: create a sampling plan for the shipment of 10000 items

Stat -> Quality Tools -> Acceptance Sampling by Variables -> Create/Compare

Measurement type: Go/Mo Go (defective)
Percent defective
Acceptable Quality Level (AQL) =2 - Max percent of nonconforming units that can be considered satisfactory as the process average
Rejectable Quantity Level (RQL or RTPD) = 10 - The level of quality that is unsatisfactory and should be rejected by the sampling plan
Producer's risk, alpha = 0.05 - Probability that a good lot will be rejected by the sampling plan
Consumer's risk, beta = 0.10 - Probability that a bad lot will be accepted by the sampling plan
Lower Spec =1
Upper Spec = 5
Lot size = 10000

RESULTS:
Accept is Z.USL and Z.LSL >= k, otherwise reject

Method

Lower Specification Limit (LSL)	1

Upper Specification Limit (USL)	5
Lot Size	10000
Acceptable Quality Level (AQL)	2
Producer's Risk (α)	0.05
Rejectable Quality Level (RQL or LTPD)	10
Consumer's Risk (β)	0.1

Generated Plan(s)

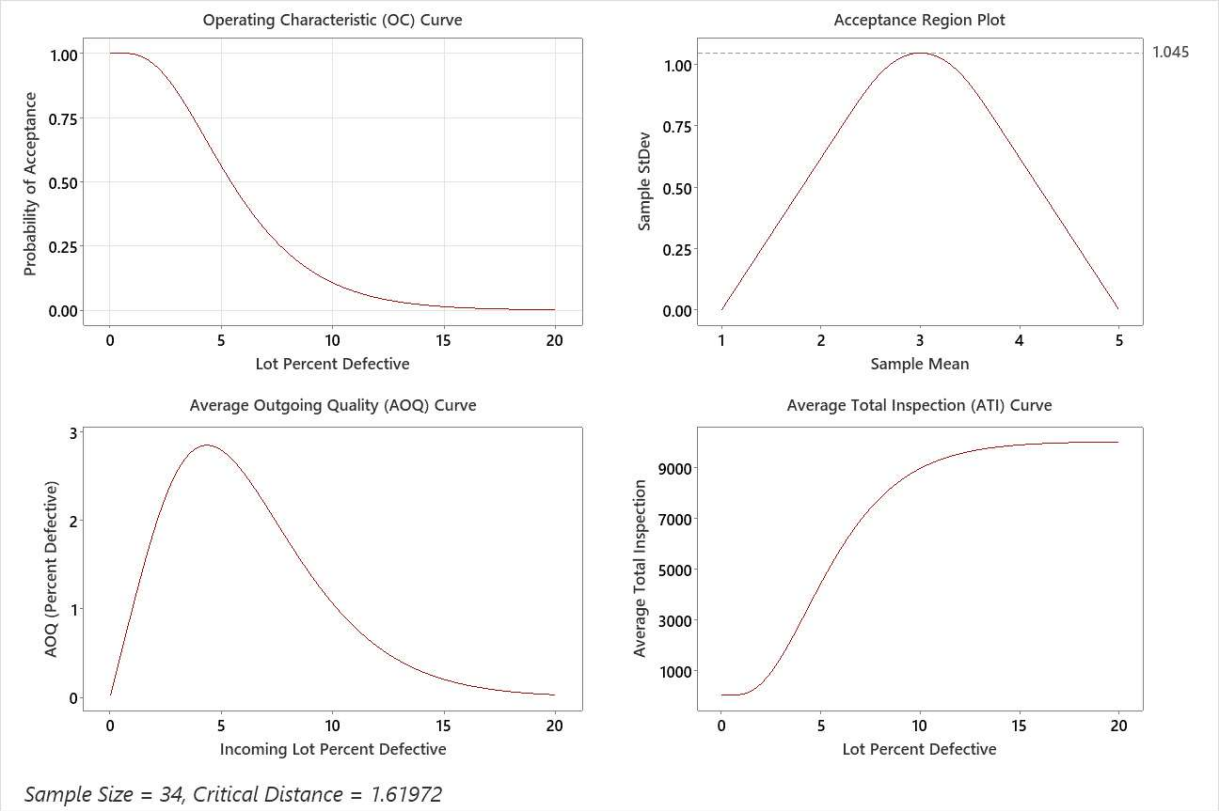
Sample Size	34
Critical Distance (k Value)	1.61972
Maximum Standard Deviation (MSD)	1.04485

Z.LSL = (mean - lower spec)/standard deviation
Z.USL = (upper spec - mean)/standard deviation
Accept lot if standard deviation ≤ MSD, Z.LSL ≥ k and Z.USL ≥ k; otherwise reject.

Percent Defective	Probability Accepting	Probability Rejecting	AOQ	ATI
2	0.954	0.046	1.901	493.3
10	0.106	0.894	1.058	8941.7

Average Outgoing Quality Limit(s) (AOQL)

AOQL	At Percent Defective
2.847	4.353



Sample Size = 34, Critical Distance = 1.61972

Analysis

Stat -> Quality Tools -> Acceptance Sampling by Variables->Accept/Reject lot
Measurement Data: Length
k-value : 1.61972 (see the plan)
Lower Spec =1
Upper Spec = 5
Lot size = 10000

RESULT:
Sample 34
Reject the entire lot

Make Accept or Reject Decision Using Length

Sample Size	34
Mean	1.50810
Standard Deviation	1.55984
Lower Specification Limit (LSL)	1
Upper Specification Limit (USL)	5
Z.LSL	0.325736
Z.USL	2.23863
Critical Distance (k Value)	1.61972
Maximum Standard Deviation (MSD)	1.04485

Decision: Reject lot.