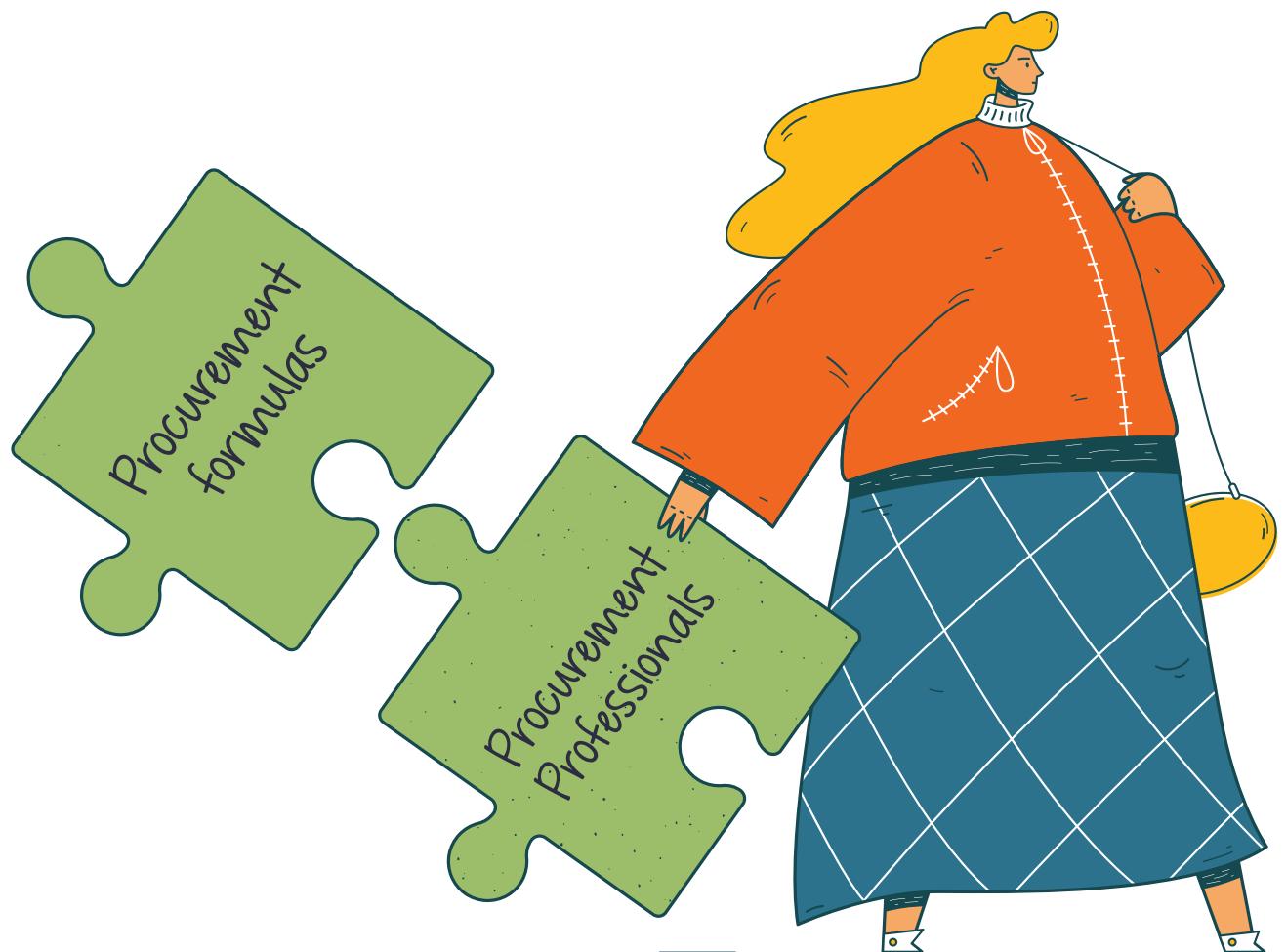


50 Procurement **FORMULAS**





DISCOVER THE SECRET TO SMARTER PROCUREMENT WITH OUR **FORMULA GUIDE!**



1. Economic order quantity formula

$EOQ = \sqrt{\frac{(2 \times \text{Annual usage} \times \text{Order cost})}{\text{Holding cost per unit}}}$

2. Material cost variance formula

Material cost variance =
(Standard price - Actual price) x Actual quantity



3. Procurement perfect order rate

(Number of on-time, correct quantity, and quality orders / Total number of orders) x 100



4. Actual procurement cost savings

(Quantity Purchased x (Previous Invoiced Price - Latest Negotiated Price))



5. Lost opportunity in savings from non-compliance

Total potential savings - Actual savings captured



6. Purchase price variance formula

$PPV = (\text{Standard price} - \text{Actual price}) \times \text{Quantity purchased}$





7. PO cost variance rate

$((\text{Total invoiced cost} - \text{Total PO cost}) / \text{Total PO cost}) \times 100$ (Positive variance indicates that the actual invoiced cost was higher than the PO cost, while a negative variance indicates that the actual invoiced cost was lower than the PO cost.)



8. Supplier performance score-card formula

Score = (Quality rating x Delivery rating x Responsiveness rating x Cost rating) $^{(1/4)}$



11. Purchase requisition cycle time formula

Cycle time = Time taken for PR approval + Time taken for PO creation + Time taken for delivery
 (Note: This is good to establish a standard by item or category. Performance needs to be measured based on expected time, so once a standard is established the metric should measure variance to standard)



9. Total cost of ownership formula

TCO = Purchase price + Maintenance costs + Operating costs + Disposal costs**** (Note: Provided that operating costs include all transportation, import/export, and/or vat fees as appropriate)



12. Achievable lead time reduction

$((\text{Original lead time} - \text{new lead time}) / \text{Original lead time}) \times 100 \times (1 - \text{Percentage of unattainable reduction})$ (Note: Percentage of unattainable reduction is the percentage of the lead time reduction that is deemed unattainable due to factors beyond the control of the procurement team, such as external suppliers, shipping times, or regulatory requirements)



13. Purchase order cycle time formula

Cycle time = Time taken for PO approval + Time taken for goods receipt + Lead Time



10. Procurement ROI variance

$((\text{Total savings} - \text{Target savings}) - \text{Total costs}) / \text{Total costs} \times 100$



14 . Inventory turnover rate formula

Inventory turnover rate =
 $\frac{\text{Cost of goods sold}}{\text{Average inventory value}}$

15. Reorder point formula

Reorder point = (Average daily usage x Lead time) + Safety stock



16. Purchase price index formula

PPI = (Current price / Base price) x 100



19. Days sales outstanding formula

DSO = (Accounts receivable / Annual revenue) x 365



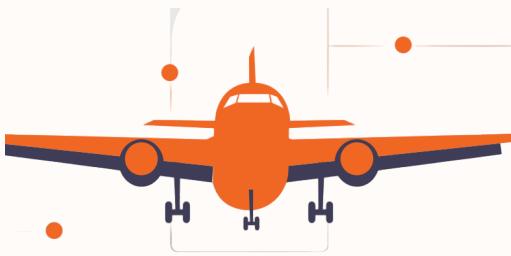
20. Cost avoidance formula

Cost avoidance = (Potential cost - Actual cost) / Potential cost x 100 (Note: Should only be utilized on a project-by-project basis. Cost avoidance should also be defined as (inflation control, new project negotiation, or process improvement results))



17. Days payable outstanding formula

DPO = (Accounts payable / Cost of goods sold) x 365



18. Days inventory outstanding formula

DIO = (Average inventory value / Cost of goods sold) x 365



21. Return on assets (ROA) formula

ROA = Net income / Total assets x 100



22. Net present value (NPV) formula

NPV = Sum of discounted cash flows - Initial investment

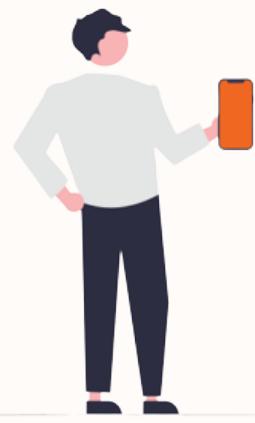


23. Contract utilization rate formula

Utilization rate = (Total contract value / Potential contract value) x 100

27. Contract compliance cost formula

Compliance cost = (Cost of compliance activities / Total contract value) x 100



24. Alternate score card

Goods-Service level and KPI score card.

Check out the attachment template Product section of our website by James Moran's procurement classes, Bundle G-Supplier Relationship Management in the Procurement League Library



25. Alternate score card

Services-Service level and KPI score card.

Check out the attachment template in product section of the website by Jim Moran's procurement classes, Bundle G-Supplier Relationship Management in the Procurement League Library



28. Contract management cost formula

Management cost = (Cost of contract management activities / Total contract value) x 100



29. Contract lifecycle time formula

Lifecycle time = Time taken for contract initiation + Time taken for negotiation + Time taken for execution + Time taken for close-out



26. Contract renewal rate formula

Renewal rate = (Number of renewed contracts / Total number of expiring contracts) x 100

30. Contract risk assessment formula

Risk assessment score = (Probability of risk + Impact of risk) / Total weightage

(Note: Weighting will be based on level of importance to project as determined by sourcing team). (For a 'Risk Plan' template and a 'Project Risk Assessment' template check out our product section of the website by Jim Moran's procurement classes under Sourcing-Bundle B in the Procurement League library)



31. Supplier diversity spend formula

Diversity spend = (Spend with diverse suppliers / Total spend) x 100 (Note: This should also be used as a metric for category manager performance within their category spend.)



32. Supplier on-time delivery rate formula

On-time delivery rate = (Number of on-time deliveries / Total number of deliveries) x 100

33. Total landed cost formula

TLC = (Purchase price + Freight + Duties + Taxes + Insurance + Handling) / Quantity purchased



34. Purchase order cancellation rate formula

Cancellation rate = (Number of cancelled POs / Total number of POs) x 100



35. Receiving accuracy rate formula

Accuracy rate = (Number of accurate receipts / Total number of receipts) x 100



36. Supplier lead time formula

Lead time = Time taken from order placement to delivery (Supplier order receipt to order delivery at end destination, measured in days)

37. Cost of quality formula

Cost of quality = Prevention costs + Appraisal costs + Internal failure costs + External failure costs



38. Cost of non-quality formula

Cost of non-quality = Internal failure costs + External failure costs



39. Supplier consolidation ratio formula

Consolidation ratio = (Number of suppliers / Total spend) x 100



43. Material usage variance formula

Material usage variance = (Standard quantity - Actual quantity) x Standard price



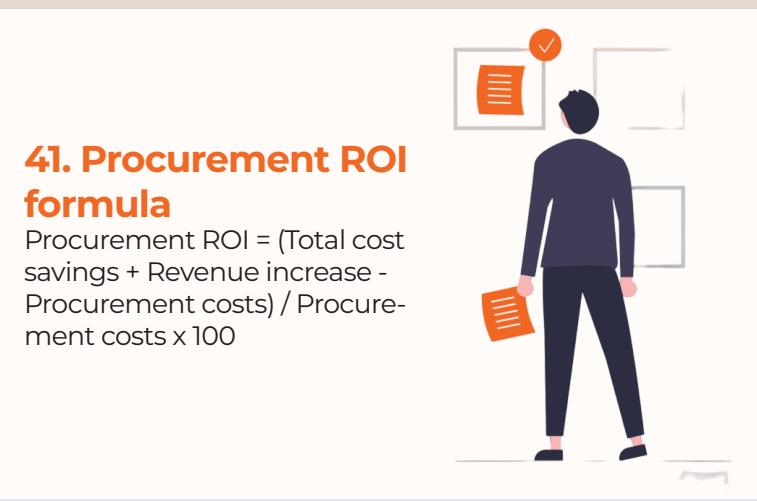
40. Procurement budget variance formula

Budget variance = Actual spend - Budgeted spend



44. Supplier performance improvement formula

Improvement rate = (New score - old score) / Old score x 100



41. Procurement ROI formula

Procurement ROI = (Total cost savings + Revenue increase - Procurement costs) / Procurement costs x 100



45. Category based Supplier Spend Analysis with Opportunity Assessment

Check out the 'Opportunity Assessment Matrix' and the 'Category Strategy Template.pg2' attached to Jim Moran's procurement series in Bundle D Category Management in the product section of Procurement League website.



42. Contract term compliance formula

Compliance rate = (Number of compliant terms / Total number of contract terms) x 100 (Note: End user needs to define what terms need to be compliant, i.e., Legal, Risk.)

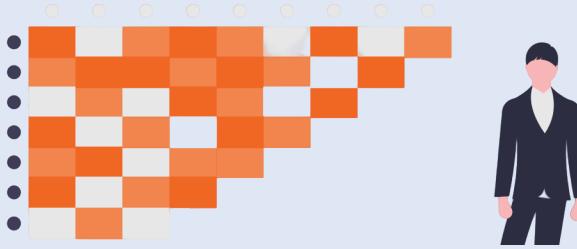


46. Procurement cycle time formula

Cycle time = Time taken for supplier identification + Time taken for supplier evaluation + Time taken for contract negotiation + Time taken for PO creation + Time taken for goods receipt

47. Purchasing power parity formula

PPP = (Exchange rate of foreign currency / Domestic price level) x (Price level of foreign country / Exchange rate of domestic currency)



49. Procurement cost reduction formula

Cost reduction = (Current cost - Negotiated cost) / Current cost x 100



48. On-time delivery rate formula

On-time rate = (Number of deliveries received within actual lead time / Total number of deliveries) x 100



50. Procurement cost avoidance

(Budgeted Price - Latest Negotiated Price) x Quantity Purchased



BONUS

51. Procurement Professionals + Procurement Formulas = Improved Procurement Outputs





Thank you for your time and attention.

If you have **any questions** or would like to learn more about procurement best practices, please feel free to **reach out to us**.

Calling all procurement experts!

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Please **comment on this post** with **your thoughts**, and share it freely with your connections!