Dr. Tony Miller's formulas for organisational efficiency – 2015

FORMULA 1. Pearsons moment correlation for two data comparisons eg. Age v productivity

$$r = \frac{\sum XY - \dfrac{(\sum X)*(\sum Y)}{N}}{\sqrt{\left[\sum x^2 - \dfrac{(\sum x)^2}{N}\right] * \left[\sum Y^2 - \dfrac{(\sum Y)^2}{N}\right]}}$$

FORMULA 2. Reliability (attendance) index

S^1 x S^2 x D = BI > software = R%

S^1 is the spell of absence

S^2 is the spell of absence

D is the duration of the absence

BI is the Bradford Index (un modelled)

R is the reliability score based on a 1-100 scale

FORMULA 3. LSI Labour stability index

$$\frac{\text{Number with more than one year's service now} \times 100}{\text{Total employed one year ago}} = LSI$$

FORMULA 4. ChI The cohort turnover index

$$\frac{\text{Number employed at a certain time} \times 100}{\text{Number engaged at the start}} = ChI$$

FORMULA 5. ESUC. Unit cost for any employee per day (divide by 8 for hourly rate)

Part 1

$$\frac{\text{Total salary cost including all allowances} \times 2}{\text{Total staff employed}} = X$$

Part 2

$$\frac{X}{PWD} = ESUC$$

FORMULA. 6 Competency averages

Example

2000 staff at 55% competence = 110,000

1000 x 70 % competence = 70, 000

total 180,000

Divide the 180,000 by 3000 (no of staff) = 60

Company average competency this year 60%

FORMULA. 7 How much does appraisal cost

Cost of performance appraisal (if you use 360 degree appraisal, multiply the end figure x 3)

TH x TE x ESUC = annual cost of yearly appraisal

Where TH is the total hours spent including all processing time

TE is the total number of employees

ESUC is the unit cost per hour of each employee

FORMULA. 8 The value of re-engineering a process

Cost of old process E – e = avpy cost of new process (plus change costs) = added value created per year.

FORMULA. 9 HR and training ROI

AV (actual business value created in one year) – total cost of activity = added value (or loss)

FORMULA 10 How many people do you need to run the organisation?

Total staff employed x PWD – (sickness days training days & unauthorised absence) = Man days needed to run the organisation (software is being developed to exploit this)

FORMULA 11 How many trainers do you need to deliver in-house training

$$\frac{T}{10} = C \qquad\qquad \frac{C}{50\% \ PWD} = IHT$$

Where:

T is the total man days of in-house training

C is the number of courses

IHT is the number of in house trainers

(support staff are normally at a ratio of 1:4)

FORMULA 12. Calculating prime working days PWD

Base number Days in the year 365 – (Public Holidays 10 + Weekends 104 + Annual Leave 25) = Prime working days 226