

Appendix-I

Home Loan: Contribution and average growth rate of EBL (In Million)

Year	Home loan (X)	Total Loan & Advance (Y)	% of home loan on Total loan and advance	Growth = $\frac{\textit{Ending-Beginning (X)}}{\textit{Beginning}}$	Growth = $\frac{\textit{Ending-Beginning (Y)}}{\textit{Beginning}}$
064/065	1815.48	9801.31	18.52	0	0
065/066	2924.11	13664.08	21.4	0.61	0.39
066/067	4093.75	18836.44	21.73	0.40	0.38
067/068	5825.4	24469.6	23.80	0.42	0.30
Total				1.43	1.07
Average Growth Rate	47.66	35.67			

For Home Loan (X)

$$\text{Average Growth rate} = \frac{\textit{Total Growth}}{\textit{No.of Years}} \times 100$$

$$= \frac{1.43}{3} \times 100$$

$$= 47.66$$

For Loan & Advance (Y)

$$\text{Average Growth rate} = \frac{\textit{Total Growth}}{\textit{No.of Years}} \times 100$$

$$= \frac{1.07}{3} \times 100$$

$$= 35.67$$

Appendix-II

Contribution and average growth rate of NABIL

Year	Home loan (X)	Total Loan & Advance (Y)	% of home loan on Total loan and advance	Growth = $\frac{\textit{Ending-Beginning (X)}}{\textit{Beginning}}$	Growth = $\frac{\textit{Ending-Beginning (Y)}}{\textit{Beginning}}$
064/065	2313	12922.54	17.9	0	0
065/066	3239	15545.78	20.83	0.40	0.20
066/067	4423	21759.5	20.32	0.36	0.40
067/068	4890.70	27999	17.46	0.10	0.28
Total				0.86	0.88
Average Growth					

For Home Loan (X)

$$\text{Average Growth rate} = \frac{\textit{Total Growth}}{\textit{No.of Years}} \times 100$$

$$= \frac{0.86}{3} \times 100$$

$$= 28.67$$

For Loan & Advance (Y)

$$\text{Average Growth rate} = \frac{\textit{Total Growth}}{\textit{No.of Years}} \times 100$$

$$= \frac{0.88}{3} \times 100$$

$$= 29.33$$

Appendix-III

Contribution and average growth rate of KBL

Year	Home loan (X)	Total Loan & Advance (Y)	% of home loan on Total loan and advance	Growth = $\frac{\textit{Ending-Beginning (X)}}{\textit{Beginning}}$	Growth = $\frac{\textit{Ending-Beginning (Y)}}{\textit{Beginning}}$
064/065	318.27	6891.86	4.62	0	0
065/066	514.31	8929.01	5.75	0.62	0.3
066/067	653.89	11522.38	5.67	0.27	0.29
067/068	1020.4	14795.26	6.90	0.56	0.28
Total				1.45	0.87
Average Growth	48.33	29.00			

For Home Loan (X)

$$\text{Average Growth rate} = \frac{\textit{Total Growth}}{\textit{No.of Years}} \times 100$$

$$= \frac{1.45}{3} \times 100$$

$$= 48.33$$

For Loan & Advance (Y)

$$\text{Average Growth rate} = \frac{\textit{Total Growth}}{\textit{No.of Years}} \times 100$$

$$= \frac{0.87}{3} \times 100$$

$$= 29$$

Appendix-IV

Auto Loan: Contribution and average growth rate of EBL

Year	Auto loan (X)	Total Loan & Advance (Y)	% of Auto loan on Total loan and advance	Growth = $\frac{\text{Ending-Beginning (X)}}{\text{Beginning}}$
064/065	641.13	9801.31	6.54	0
065/066	985.18	13664.08	7.20	0.54
066/067	1313.19	18836.44	6.97	0.33
067/068	2336.8	24469.6	9.54	0.78
Total				1.65
Average Growth	54.97			

For Auto Loan (X)

$$\text{Average Growth rate} = \frac{\text{Total Growth}}{\text{No. of Years}} \times 100$$

$$= \frac{1.65}{3} \times 100$$

$$= 54.97$$

Appendix-V

Auto Loan: Contribution and average growth rate of NABIL

Year	Auto loan (X)	Total Loan & Advance (Y)	% of Auto Loan on Total loan and advance	Growth = $\frac{\text{Ending-Beginning (X)}}{\text{Beginning}}$
064/065	3760	12922.54	29.10	0
065/066	4965	15545.78	31.94	0.32
066/067	3599.62	21759.5	16.54	(0.28)
067/068	3811	27999	13.61	0.06
Total				0.10
Average Growth	3.47			

For Auto Loan (X)

$$\text{Average Growth rate} = \frac{\text{Total Growth}}{\text{No.of Years}} \times 100$$

$$= \frac{0.1}{3} \times 100$$

$$= 3.47$$

Appendix-VI

Auto Loan: Contribution and average growth rate of KBL

Year	Auto Loan (X)	Total Loan & Advance (Y)	% of Auto Loan on Total loan and advance	Growth = $\frac{\text{Ending-Beginning (X)}}{\text{Beginning}}$
064/065	493.17	6891.86	7.16	0
065/066	653.6	8929.01	7.32	0.33
066/067	782.44	11522.38	6.79	0.20
067/068	1308.08	14795.26	8.84	0.67
Total				1.2
Average Growth	40			

For Auto Loan (X)

$$\text{Average Growth rate} = \frac{\text{Total Growth}}{\text{No.of Years}} \times 100$$

$$= \frac{1.2}{3} \times 100$$

$$= 40$$

Appendix-VII

Personal Loan: Contribution and average growth rate of EBL

Year	Personal Loan (X)	Total Loan & Advance (Y)	% of Personal loan on Total loan and advance	Growth = $\frac{\text{Ending-Beginning (X)}}{\text{Beginning}}$
064/065	992.56	9801.31	10.13	0
065/066	1265.48	13664.08	9.26	0.27
066/067	1632.47	18836.44	8.67	0.29
067/068	2192.8	24469.6	8.96	0.34
Total				0.91
Average Growth	30			

For Personal Loan (X)

$$\text{Average Growth rate} = \frac{\text{Total Growth}}{\text{No.of Years}} \times 100$$

$$= \frac{0.90}{3} \times 100$$

$$= 30$$

Appendix-VIII

Personal Loan: Contribution and average growth rate of NABIL

Year	Personal Loan (X)	Total Loan & Advance (Y)	% of home loan on Total loan and advance	Growth = $\frac{\textit{Ending-Beginning (X)}}{\textit{Beginning}}$
064/065	232	12922.54	1.80	0
065/066	306	15545.78	1.97	0.32
066/067	380.9	21759.5	1.75	0.24
067/068	417	27999	1.49	0.09
Total				0.66
Average Growth	22			

For Personal Loan (X)

$$\text{Average Growth rate} = \frac{\textit{Total Growth}}{\textit{No.of Years}} \times 100$$

$$= \frac{0.66}{3} \times 100$$

$$= 22$$

Appendix-IX

Personal Loan: Contribution and average growth rate of KBL

Year	Personal Loan (X)	Total Loan & Advance (Y)	% of Personal loan on Total loan and advance	Growth = $\frac{\text{Ending}-\text{Beginning (X)}}{\text{Beginning}}$
064/065	215	6891.86	3.12	0
065/066	398	8929.01	4.46	0.85
066/067	519.20	11522.38	4.51	0.30
067/068	699.34	14795.26	4.73	0.35
Total				1.50
Average Growth	50			

For Personal Loan (X)

$$\text{Average Growth rate} = \frac{\text{Total Growth}}{\text{No.of Years}} \times 100$$

$$= \frac{1.50}{3} \times 100$$

$$= 50$$

Appendix X

Correlation coefficient between Home Loan and Total Loan & Advance for EBL (in Million)

Year	Home Loan (x)	Total Loan & Advance (y)	XY	X ²	Y ²
064/065	1815.48	9801.31	17794082.28	3295967.63	96065677.72
065/066	2924.11	13664.08	39955272.97	8550419.292	186707082.2
066/067	4093.75	18836.44	77111676.25	16758789.06	354811471.9
067/068	5825.4	24469.6	142545207.8	33935285.16	598761324.2
	14658.74	66771.43	277406239.3	62540461.15	1236345556

$$(r) = \frac{n \sum xy - (\sum x) \cdot (\sum y)}{\sqrt{n \sum x^2 - (\sum x)^2} \sqrt{n \sum y^2 - (\sum y)^2}}$$

$$(r) = \frac{4 \times 277406239.3 - 14658.74 \times 66771.43}{\sqrt{4 \times 62540461.15 - (14658.74)^2} \sqrt{4 \times 1236345556 - (66771.43)^2}}$$

$$r = 0.998$$

$$R^2 = 0.996$$

$$\text{Probable Error (P.E.)} = 0.6745 \times \frac{1-r^2}{\sqrt{n}} = 0.0007$$

$$6 \times \text{P.E.} = 6 \times 0.0007 = 0.004$$

Appendix XI

Correlation coefficient between Home Loan and Total Loan & Advance for NABIL

Year	Home Loan	Total Loan & Advance	XY	X ²	Y ²
064/065	2313	12922.54	29889835.02	5349969	166992040.1
065/066	3239	15545.78	50352781.42	10491121	241671275.8
066/067	4423	21759.5	96242268.5	19562929	473475840.3
067/068	4890.7	27999	136934709.3	23918946.49	783944001
Total	14865.7	78226.82	313419594.2	59322965.49	1666083157

$$(r) = \frac{n \sum xy - (\sum x) \cdot (\sum y)}{\sqrt{n \sum x^2 - (\sum x)^2} \sqrt{n \sum y^2 - (\sum y)^2}}$$

$$(r) = \frac{4 \cdot 313419594.2 - 14865.7 \cdot 78226.82}{\sqrt{4 \cdot 59322965.49 - (14865)^2} \sqrt{4 \cdot 1666083157 - (78226.82)^2}}$$

So, r = 0.9697

R² = 0.9403

$$\text{Probable Error (P.E.)} = 0.6745 \times \frac{1-r^2}{\sqrt{n}} = 0.0201$$

$$6 \times \text{P.E.} = 6 \times 0.0201$$

$$= 0.1206$$

Appendix XII

Correlation coefficient between Home Loan and Total Loan & Advance for KBL

Year	Home Loan	Total Loan & Advance	XY	X ²	Y ²
064/065	318.27	6891.86	2193472.282	101295.7929	47497734.26
065/066	514.31	8929.01	4592279.133	264514.7761	79727219.58
066/067	653.89	11522.38	7534369.058	427572.1321	132765240.9
067/068	1020.4	14795.26	15097083.3	1041216.16	218899718.5
Total	2506.87	42138.51	29417203.78	1834598.861	478889913.2

$$(r) = \frac{n \sum xy - (\sum x) \cdot (\sum y)}{\sqrt{n \sum x^2 - (\sum x)^2} \sqrt{n \sum y^2 - (\sum y)^2}}$$

$$(r) = \frac{4*29417203.78 - 2506.87*42138.51}{\sqrt{4*1834598.861 - (2506.87)^2} \sqrt{4*478889913.2 - (42138.51)^2}}$$

So, $r = 0.9827$

$R^2 = 0.9657$

$$\text{Probable Error (P.E.)} = 0.6745 \times \frac{1-r^2}{\sqrt{n}} = 0.012$$

$$6 \times \text{P.E.} = 6 \times 0.012$$

$$= 0.072$$

Appendix XIII

Correlation coefficient between Auto Loan and Total Loan & Advance for EBL

Year	Auto Loan	Total Loan & Advance	XY	X^2	Y^2
064/065	641.13	9801.31	6283913.88	411047.6769	96065677.72
065/066	985.18	13664.08	13461578.33	970579.6324	186707082.2
066/067	1313.19	18836.44	24735824.64	1724467.976	354811471.9
067/068	2336.8	24469.6	57180561.28	5460634.24	598761324.2
Total	5276.3	66771.43	101661878.1	8566729.525	1236345556

$$(r) = \frac{n \sum xy - (\sum x) \cdot (\sum y)}{\sqrt{n \sum x^2 - (\sum x)^2} \sqrt{n \sum y^2 - (\sum y)^2}}$$

$$(r) = \frac{4 \cdot 101661878.1 - 5276.3 \cdot 66771.43}{\sqrt{4 \cdot 8566729.525 - (5276.3)^2} \sqrt{4 \cdot 1236345556 - (66771.43)^2}}$$

$$r = 0.9653$$

$$R^2 = 0.9318$$

$$\text{Probable Error (P.E.)} = 0.6745 \times \frac{1-r^2}{\sqrt{n}} = 0.023$$

$$6 \times \text{P.E.} = 6 \times 0.023$$

$$= 0.0138$$

Appendix XIV

Correlation coefficient between Auto Loan and Total Loan & Advance for NABIL

Year	Auto Loan	Total Loan & Advance	XY	X ²	Y ²
064/065	3760	12922.54	48588750.4	14137600	166992040.1
065/066	4965	15545.78	77184797.7	24651225	241671275.8
066/067	3599.62	21759.5	78325931.39	12957264.14	473475840.3
067/068	3811	27999	106704189	14523721	783944001
Total	16135.62	78226.82	310803668.5	66269810.14	1666083157

$$(r) = \frac{n \sum xy - (\sum x) \cdot (\sum y)}{\sqrt{n \sum x^2 - (\sum x)^2} \sqrt{n \sum y^2 - (\sum y)^2}}$$

$$(r) = \frac{4 \cdot 310803668.5 - 16135.62 \cdot 78226.82}{\sqrt{4 \cdot 66269810.14 - (16135.62)^2} \sqrt{4 \cdot 1666083157 - (78226.82)^2}}$$

$$r = -0.7844$$

$$R^2 = 0.6153$$

$$\text{Probable Error (P.E.)} = 0.6745 \times \frac{1-r^2}{\sqrt{n}} = 0.1297$$

$$6 \times P.E. = 6 \times 0.1297 \\ = 0.7785$$

Appendix XV

Correlation coefficient between Auto Loan and Total Loan & Advance for KBL

Year	Auto Loan	Total Loan & Advance	XY	X ²	Y ²
064/065	493.17	6891.86	3398858.596	243216.6489	47497734.26
065/066	653.6	8929.01	5836000.936	427192.96	79727219.58
066/067	782.44	11522.38	9015571.007	612212.3536	132765240.9
067/068	1308.08	14795.26	19353383.7	1711073.286	218899718.5
Total	3237.29	42138.51	37603814.24	2993695.249	478889913.2

$$(r) = \frac{n \sum xy - (\sum x) \cdot (\sum y)}{\sqrt{n \sum x^2 - (\sum x)^2} \sqrt{n \sum y^2 - (\sum y)^2}}$$

$$(r) = \frac{4 \cdot 37603814.24 - 3237.29 \cdot 42138.51}{\sqrt{4 \cdot 2993695.249 - (3237.29)^2} \sqrt{4 \cdot 478889913.2 - (42138.51)^2}}$$

$$r = 0.9638$$

$$R^2 = 0.9289$$

$$\text{Probable Error (P.E.)} = 0.6745 \times \frac{1-r^2}{\sqrt{n}} = 0.0711$$

$$6 \times \text{P.E.} = 6 \times 0.0711 \\ = 0.4265$$

Appendix XVI

Correlation coefficient between Personal Loan and Total Loan & Advance for EBL

Year	Personal Loan	Total Loan & Advance	XY	X ²	Y ²
064/065	992.56	9801.31	9728388.254	985175.3536	96065677.72
065/066	1265.48	13664.08	17291619.96	1601439.63	186707082.2
066/067	1632.47	18836.44	30749923.21	2664958.301	354811471.9
067/068	2192.8	24469.6	53656938.88	4808371.84	598761324.2
Total	6083.31	66771.43	111426870.3	10059945.12	1236345556

$$r = \frac{n \sum xy - (\sum x)(\sum y)}{\sqrt{n \sum x^2 - (\sum x)^2} \sqrt{n \sum y^2 - (\sum y)^2}}$$

$$(r) = \frac{4*111426870.3 - 6083.31*66771.43}{\sqrt{4*10059945.12 - (6083.31)^2} \sqrt{4*1236345556 - (66771.43)^2}}$$

$$r = 0.9959$$

$$R^2 = 0.9918$$

$$\text{Probable Error (P.E.)} = 0.6745 \times \frac{1-R^2}{\sqrt{n}} = 0.0028$$

$$6 \times \text{P.E.} = 6 \times 0.0028 \\ = 0.0166$$

Appendix XVII

Correlation coefficient between Personal Loan and Total Loan & Advance for NABIL

Year	Personal Loan	Total Loan & Advance	XY	X ²	Y ²
064/065	232	12922.54	2998029.28	53824	166992040.1
065/066	306	15545.78	4757008.68	93636	241671275.8
066/067	380.9	21759.5	8288193.55	145084.81	473475840.3
067/068	417	27999	11675583	173889	783944001
Total	1335.9	78226.82	27718814.51	466433.81	1666083157

$$(r) = \frac{n \sum xy - (\sum x) \cdot (\sum y)}{\sqrt{n \sum x^2 - (\sum x)^2} \sqrt{n \sum y^2 - (\sum y)^2}}$$

$$(r) = \frac{4 \cdot 27718814.51 - 1335.9 \cdot 78226.82}{\sqrt{4 \cdot 466433.81 - (1335.9)^2} \sqrt{4 \cdot 1666083157 - (78226.82)^2}}$$

$$r = 0.9585$$

$$R^2 = 0.9187$$

$$\text{Probable Error (P.E.)} = 0.6745 \times \frac{1-r^2}{\sqrt{n}} = 0.0274$$

$$6 \times \text{P.E.} = 6 \times 0.0274 \\ = 0.1645$$

Appendix XVIII

Correlation coefficient between Personal Loan and Total Loan & Advance for KBL

Year	Personal Loan	Total Loan & Advance	XY	X ²	Y ²
064/065	215	6891.86	1481749.9	46225	47497734.26
065/066	398	8929.01	3553745.98	158404	79727219.58
066/067	519.2	11522.38	5982419.696	269568.64	132765240.9
067/068	699.34	14795.26	10346917.13	489076.4356	218899718.5
Total	1831.54	42138.51	21364832.7	963274.0756	478889913.2

$$(r) = \frac{n \sum xy - (\sum x) \cdot (\sum y)}{\sqrt{n \sum x^2 - (\sum x)^2} \sqrt{n \sum y^2 - (\sum y)^2}}$$

$$(r) = \frac{4 \cdot 21364832.7 - 1831.54 \cdot 42138.51}{\sqrt{4 \cdot 963274.0756 - (1831.54)^2} \sqrt{4 \cdot 478889913.2 - (42138.51)^2}}$$

$$r = 0.9915$$

$$R^2 = 0.9831$$

$$\text{Probable Error (P.E.)} = 0.6745 \times \frac{1-r^2}{\sqrt{n}} = 0.0057$$

$$6 \times \text{P.E.} = 6 \times 0.0057 \\ = 0.0342$$

Appendix- XIX

Trend analysis of Home Loan for EBL (in Million)

Year (x)	Home Loan (y)	X=x-2.5	x^2	XY	Yc = trend value
064/065 (1)	1815.48	-1.5	2.25	-2723.22	1684.77
065/066 (2)	2924.11	-0.5	0.25	-1462.055	3004.71
066/067 (3)	4093.75	0.5	0.25	2046.875	4324.65
067/068 (4)	5825.4	1.5	2.25	8738.1	5644.59
N =4	$\sum y = 14658.74$	$\sum x = 0$	$\sum x^2 = 5$	$\sum xy = 6599.7$	

The number of years is even i.e. N=4, therefore, the origin is taken at x=2.5

The equation of trend line is

$$Y_c = a + bx$$

$$\text{As, } \sum x = 0$$

$$a = \frac{\sum Y}{N} = \frac{14658.74}{4} = 3664.68$$

$$b = \frac{\sum xy}{\sum X^2} = \frac{6599.7}{5}$$
$$= 1319.94$$

Hence, the trend line is

$$Y_c = 3664.68 + 1319.94X \quad (1)$$

Hence the origin is 2.5

Substituting the respective value of x in equation 1 we get the trend value

$$\text{When } X = -1.5, Y_c = 3664.68 + 1319.94(-1.5) = 1684.77$$

$$\text{When } X = -0.5, Y_c = 3664.68 + 1319.94(-0.5) = 3004.71$$

$$\text{When } X = 0.5, Y_c = 3664.68 + 1319.94(0.5) = 4324.65$$

$$\text{When } X = 1.5, Y_c = 3664.68 + 1319.94(1.5) = 5644.59$$

$$\text{When } X = 2.5, Y_c = 3664.68 + 1319.94(2.5) = 6964.53$$

$$\text{When } X = 3.5, Y_c = 3664.68 + 1319.94(3.5) = 8284.47$$

Appendix- XX

Trend analysis of Home Loan for Nabil (in Million)

Year (x)	Home Loan (y)	X=x-2.5	X ²	XY	Yc = trend value
064/065 (1)	2313	-1.5	2.25	-3469.5	2378.85
065/066 (2)	3239	-0.5	0.25	-1619.5	3270.56
066/067 (3)	4423	0.5	0.25	2211.5	4162.27
067/068 (4)	4890.7	1.5	2.25	7336.05	5053.98
N =4	∑Y= 14865.7	∑X = 0	∑X ² = 5	∑XY = 4458.55	

The number of years is even i.e. N=4, therefore, the origin is taken at x=2.5

The equation of trend line is

$$Y_c = a + bx$$

$$\text{As, } \sum x = 0$$

$$a = \frac{\sum Y}{N} = \frac{14865.7}{4} = 3716.42$$

$$b = \frac{\sum xy}{\sum X^2} = \frac{4458.55}{5} = 891.71$$

Hence, the trend line is

$$Y_c = 3716.42 + 891.71X \quad (1)$$

Hence the origin is 2.5

Substituting the respective value of x in equation 1 we get the trend value

$$\text{When } X = -1.5, Y_c = 3716.42 + 891.71(-1.5) = 2378.85$$

$$\text{When } X = -0.5, Y_c = 3716.42 + 891.71(-0.5) = 3270.56$$

$$\text{When } X = 0.5, Y_c = 3716.42 + 891.71(0.5) = 4162.27$$

$$\text{When } X = 1.5, Y_c = 3716.42 + 891.71(1.5) = 5053.98$$

$$\text{When } X = 2.5, Y_c = 3716.42 + 891.71(2.5) = 5945.69$$

$$\text{When } X = 3.5, Y_c = 3716.42 + 891.71(3.5) = 6387.40$$

Appendix- XXI

Trend analysis of Home Loan for KBL (in Million)

Year (x)	Home Loan (y)	X=x-2.5	X ²	XY	Yc = trend value
064/065 (1)	318.27	-1.5	2.25	-477.405	289.83
065/066 (2)	514.31	-0.5	0.25	-257.155	514.83
066/067 (3)	653.89	0.5	0.25	326.945	739.02
067/068 (4)	1020.4	1.5	2.25	1530.6	963.60
N =4	∑Y= 2506.87	∑X = 0	∑X ² = 5	∑XY = 1122.98	

The number of years is even i.e. N=4, therefore, the origin is taken at x=2.5

The equation of trend line is

$$Y_c = a + bx$$

As, $\sum x = 0$

$$a = \frac{\sum Y}{N} = \frac{2506.87}{4} = 626.72$$

$$b = \frac{\sum xy}{\sum X^2} = \frac{1122.98}{5} = 224.59$$

Hence, the trend line is

$$Y_c = 626.72 + 224.59X \quad (1)$$

Hence the origin is 2.5

Substituting the respective value of x in equation 1 we get the trend value

$$\text{When } X = -1.5, Y_c = 626.72 + 224.59(-1.5) = 289.83$$

$$\text{When } X = -0.5, Y_c = 626.72 + 224.59(-0.5) = 514.43$$

$$\text{When } X = 0.5, Y_c = 626.72 + 224.59(0.5) = 739.02$$

$$\text{When } X = 1.5, Y_c = 626.72 + 224.59(1.5) = 963.60$$

$$\text{When } X = 2.5, Y_c = 626.72 + 224.59(2.5) = 1188.19$$

$$\text{When } X = 3.5, Y_c = 626.72 + 224.59(3.5) = 1412.78$$

Appendix- XXII

Trend analysis of Auto Loan for EBL (in Million)

Year (x)	Auto Loan (y)	X=x-2.5	x^2	XY	Yc = trend value
064/065 (1)	641.13	-1.5	2.25	-961.695	506.82
065/066 (2)	985.18	-0.5	0.25	-492.59	1084.32
066/067 (3)	1313.19	0.5	0.25	656.595	1589.82
067/068 (4)	2336.8	1.5	2.25	3505.2	2131.32
N =4	$\sum y = 5276.30$	$\sum x = 0$	$\sum x^2 = 5$	$\sum xy = 2707.51$	

The number of years is even i.e. N=4, therefore, the origin is taken at x=2.5

The equation of trend line is

$$Y_c = a + bx$$

As, $\sum x = 0$

$$a = \frac{\sum Y}{N} = \frac{5276.30}{4} = 1319.07$$

$$b = \frac{\sum xy}{\sum x^2} = \frac{2707.51}{5} = 541.50$$

Hence, the trend line is

$$Y_c = 1319.07 + 541.50X \quad (1)$$

Hence the origin is 2.5

Substituting the respective value of x in equation 1 we get the trend value

$$\text{When } X = -1.5, Y_c = 1319.07 + 541.50(-1.5) = 506.82$$

$$\text{When } X = -0.5, Y_c = 1319.07 + 541.50(-0.5) = 1084.32$$

$$\text{When } X = 0.5, Y_c = 1319.07 + 541.50(0.5) = 1589.82$$

$$\text{When } X = 1.5, Y_c = 1319.07 + 541.50(1.5) = 2131.32$$

$$\text{When } X = 2.5, Y_c = 1319.07 + 541.50(2.5) = 2672.82$$

$$\text{When } X = 3.5, Y_c = 1319.07 + 541.50(3.5) = 3214.32$$

Appendix- XXIII

Trend analysis of Auto Loan for Nabil (in Million)

Year (x)	Auto (y)	X=x-2.5	X ²	XY	Yc = trend value
064/065 (1)	3760	-1.5	2.25	-5640	4215.74
065/066 (2)	4965	-0.5	0.25	-2482.5	4094.51
066/067 (3)	3599.62	0.5	0.25	1799.81	3973.28
067/068 (4)	3811	1.5	2.25	5716.5	3852.05
N =4	∑Y= 16135.62	∑X = 0	∑X ² = 5	∑XY = -606.19	

The number of years is even i.e. N=4, therefore, the origin is taken at x=2.5

The equation of trend line is

$$Y_c = a + bx$$

As, $\sum x = 0$

$$a = \frac{\sum Y}{N} = \frac{16135.62}{4} = 4033.90$$

$$b = \frac{\sum xy}{\sum X^2} = \frac{-606.19}{5} = -121.23$$

Hence, the trend line is

$$Y_c = 4033.90 + (-121.23)X \quad (1)$$

Hence the origin is 2.5

Substituting the respective value of x in equation 1 we get the trend value

$$\text{When } X = -1.5, Y_c = 4033.90 + (-121.23)(-1.5) = 4215.74$$

$$\text{When } X = -0.5, Y_c = 4033.90 + (-121.23)(-0.5) = 4094.51$$

$$\text{When } X = 0.5, Y_c = 4033.90 + (-121.23)(0.5) = 3973.28$$

$$\text{When } X = 1.5, Y_c = 4033.90 + (-121.23)(1.5) = 3852.05$$

$$\text{When } X = 2.5, Y_c = 4033.90 + (-121.23)(2.5) = 3730.82$$

$$\text{When } X = 3.5, Y_c = 4033.90 + (-121.23)(3.5) = 3609.60$$

Appendix- XXIV

Trend analysis of Auto Loan for KBL (in Million)

Year (x)	Auto Loan (y)	X=x-2.5	X ²	XY	Yc = trend value
064/065 (1)	493.17	-1.5	2.25	-739.755	423.29
065/066 (2)	653.6	-0.5	0.25	-326.8	680.64
066/067 (3)	782.44	0.5	0.25	391.22	937.99
067/068 (4)	1308.08	1.5	2.25	1962.12	1195.34
N =4	∑Y= 3237.29	∑X = 0	∑X ² = 5	∑XY = 1286.78	

The number of years is even i.e. N=4, therefore, the origin is taken at x=2.5

The equation of trend line is

$$Y_c = a + bx$$

As, $\sum x = 0$

$$a = \frac{\sum Y}{N} = \frac{3237.29}{4} = 809.32$$

$$b = \frac{\sum xy}{\sum X^2} = \frac{1286.78}{5} = 257.35$$

Hence, the trend line is

$$Y_c = 809.32 + 257.35X \quad (1)$$

Hence the origin is 2.5

Substituting the respective value of x in equation 1 we get the trend value

$$\text{When } X = -1.5, Y_c = 809.32 + 257.35(-1.5) = 423.29$$

$$\text{When } X = -0.5, Y_c = 809.32 + 257.35(-0.5) = 680.64$$

$$\text{When } X = 0.5, Y_c = 809.32 + 257.35(0.5) = 937.99$$

$$\text{When } X = 1.5, Y_c = 809.32 + 257.35(1.5) = 1195.34$$

$$\text{When } X = 2.5, Y_c = 809.32 + 257.35(2.5) = 1452.70$$

$$\text{When } X = 3.5, Y_c = 809.32 + 257.35(3.5) = 1710.04$$

Appendix- XXV

Trend analysis of Personal Loan for EBL (in Million)

Year (x)	Personal Loan (y)	X=x-2.5	x^2	XY	Yc = trend value
064/065 (1)	992.56	-1.5	2.25	-1488.84	907.64
065/066 (2)	1265.48	-0.5	0.25	-632.74	1304.41
066/067 (3)	1632.47	0.5	0.25	816.235	1701.18
067/068 (4)	2192.8	1.5	2.25	3289.2	2097.95
N =4	$\sum y = 6083.31$	$\sum x = 0$	$\sum x^2 = 5$	$\sum xy = 1983.85$	

The number of years is even i.e. N=4, therefore, the origin is taken at x=2.5

The equation of trend line is

$$Y_c = a + bx$$

As, $\sum x = 0$

$$a = \frac{\sum Y}{N} = \frac{6083.31}{4} = 1520.82$$

$$b = \frac{\sum xy}{\sum x^2} = \frac{1983.85}{5} = 396.77$$

Hence, the trend line is

$$Y_c = 1502.80 + 396.77X \quad (1)$$

Hence the origin is 2.5

Substituting the respective value of x in equation 1 we get the trend value

$$\text{When } X = -1.5, Y_c = 1502.80 + 396.77(-1.5) = 907.64$$

$$\text{When } X = -0.5, Y_c = 1502.80 + 396.77(-0.5) = 1304.41$$

$$\text{When } X = 0.5, Y_c = 1502.80 + 396.77(0.5) = 1701.18$$

$$\text{When } X = 1.5, Y_c = 1502.80 + 396.77(1.5) = 2097.95$$

$$\text{When } X = 2.5, Y_c = 1502.80 + 396.77(2.5) = 2494.72$$

$$\text{When } X = 3.5, Y_c = 1502.80 + 396.77(3.5) = 2891.49$$

Appendix- XXVI

Trend analysis of Personal Loan for Nabil (in Million)

Year (x)	Personal Loan (y)	X=x-2.5	X ²	XY	Yc = trend value
064/065 (1)	232	-1.5	2.25	-348	239.49
065/066 (2)	306	-0.5	0.25	-153	302.48
066/067 (3)	380.9	0.5	0.25	190.45	365.47
067/068 (4)	417	1.5	2.25	625.50	428.46
N =4	∑Y= 1335.90	∑X = 0	∑X ² = 5	∑XY = 314.95	

The number of years is even i.e. N=4, therefore, the origin is taken at x=2.5

The equation of trend line is

$$Y_c = a + bx$$

As, $\sum x = 0$

$$a = \frac{\sum Y}{N} = \frac{1335.90}{4} = 333.97$$

$$b = \frac{\sum xy}{\sum X^2} = \frac{314.95}{5} = 62.99$$

Hence, the trend line is

$$Y_c = 333.97 + 62.99X \quad (1)$$

Hence the origin is 2.5

Substituting the respective value of x in equation 1 we get the trend value

$$\text{When } X = -1.5, Y_c = 333.97 + 62.99(-1.5) = 239.49$$

$$\text{When } X = -0.5, Y_c = 333.97 + 62.99(-0.5) = 302.48$$

$$\text{When } X = 0.5, Y_c = 333.97 + 62.99(0.5) = 365.47$$

$$\text{When } X = 1.5, Y_c = 333.97 + 62.99(1.5) = 428.46$$

$$\text{When } X = 2.5, Y_c = 333.97 + 62.99(2.5) = 491.45$$

$$\text{When } X = 3.5, Y_c = 333.97 + 62.99(3.5) = 554.44$$

Appendix- XXVII

Trend analysis of Personal Loan for KBL (in Million)

Year (x)	Personal Loan (y)	X=x-2.5	X ²	XY	Yc = trend value
064/065 (1)	215	-1.5	2.25	-322.50	221.78
065/066 (2)	398	-0.5	0.25	-199.00	379.16
066/067 (3)	519.2	0.5	0.25	259.60	536.54
067/068 (4)	699.34	1.5	2.25	1048.80	693.92
N =4	∑Y= 1831.40	∑X = 0	∑X ² = 5	∑XY = 786.90	

The number of years is even i.e. N=4, therefore, the origin is taken at x=2.5

The equation of trend line is

$$Y_c = a + bx$$

As, $\sum x = 0$

$$a = \frac{\sum Y}{N} = \frac{1831.40}{4} = 457.85$$

$$b = \frac{\sum xy}{\sum X^2} = \frac{786.90}{5} = 157.38$$

Hence, the trend line is

$$Y_c = 457.85 + 157.38X \quad (1)$$

Hence the origin is 2.5

Substituting the respective value of x in equation 1 we get the trend value

$$\text{When } X = -1.5, Y_c = 457.85 + 157.38(-1.5) = 221.78$$

$$\text{When } X = -0.5, Y_c = 457.85 + 157.38(-0.5) = 379.16$$

$$\text{When } X = 0.5, Y_c = 457.85 + 157.38(0.5) = 536.54$$

$$\text{When } X = 1.5, Y_c = 457.85 + 157.38(1.5) = 693.92$$

$$\text{When } X = 2.5, Y_c = 457.85 + 157.38(2.5) = 851.30$$

$$\text{When } X = 3.5, Y_c = 457.85 + 157.38(3.5) = 1008.68$$