Application of Brown–Gibson model in workers' productivity: an impact study of weighted parameters using experimental research design

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Abstract

Purpose – The urban-rural divide in developing countries such as India often finds focus in every economic analysis. This paper aims to find the existing gap and to suggest an action plan to reduce the gap identified therein. With an aim to find a good leader in furtherance the group performance operating in rural areas, a multi-plant location model is tested taking its weighted assessment method on assumptions that the unorganized sector is devoid of accessing any scientific model for its growth and sustenance.

Design/methodology/approach – In this research, two different business groups in the same city location were taken as samples and the multi-plant location (Brown–Gibson) model was used to test the impact of any changes in leadership on the group.

Findings – The result in the first sample group indicated incremental profitability which was under observation for three years. The second group witnessed a varied trend of profitability under two different leaders which was studied for a four-year period.

Research limitations/implications – Purposive behavioural alignment under a controlled research environment often dampens the real objective of the study. A meticulous effort was meted out to remove it from research.

Practical implications – The research aims at providing a long-standing solution to leadership issues in the unorganized sector that contributes to the national economy but usually kept neglected.

Originality/value – Scientific model experimentation on human resources is unique and innovative.

Keywords Leadership, Brown Gibson model, Group productivity, Weighted parameters, Unorganized sector

Paper type Research paper

Introduction

A leader is someone, who develops and communicates a vision while giving meaning to the work of others. Leaders are needed at all levels amid all situations that are fully aware of their own strengths and weaknesses to fit with required areas (Decenzo *et al.*, 2015).

In the unorganized sector, leaders should learn values what their colleagues expect; develop gender sensitivity to avoid gender stereotypes; raise critical consciousness about socio-political and economic issues in the community and analyze its situation; learn and enhance communication skills (Dubrin *et al.*, 2006). It is observed that the leaders in remote places are unanimously and emotionally selected without any scientific background check or back up, which, in turn, makes the success vulnerable and unpredictable (Mollary, 1984; De Alessi, 1980).

The division of the economy into formal and informal sectors has a long history. Arthur Lewis in his seminal work "Economic Development with Unlimited Supply of Labour" published in the 1950s was the celebrated paradigm of development for the then-new independent countries in the 1950s and 1960s. His model assumed that the unorganized sector with surplus labour will gradually merge in the organized sector. The Lewis model is drawn from the experience of capitalist countries in which the contribution of the unorganized sector showed a spectacular decline but it did not substantiate in many developing countries including India. Indian scenario is quite different. Although the share of the unorganized sector in Indian national income has been declining but the absolute number of enterprises and employment in the unorganized sector continues to swell. Much time gone, as India got independence but the ever-growing labour force in the unorganized manufacturing sector contradicts the theory of merging of unorganized to organized (Bedi and Banerjee, 2007). In India, the growth of the rural non-farm sector is crucially dependent on the performance of the agricultural sector (George, 2015). Meaningful correlation can also be found among organized factory growth, urban poverty and agricultural growth (Mukherjee, 2004). So the unorganized sector growth ultimately is the deciding factor of the overall economic growth of a country.

The Indian organized manufacturing sector undoubtedly depends on the unorganized sector. In 2000–2001, more than 99% of manufacturing enterprises were in the unorganized segments alone. In terms of employment, the sector absorbed 84.3% of the workforce in the manufacturing sector in 1984–1985 where as it is noticed that it came down to 82.5% in 2000–2001. On the other hand, the organized segment accounted for 15.7% of manufacturing employment in 1984–1985 and stood up only to 17.5% in 2000–2001. Therefore, unorganized manufacturing nearly sumps up the total industrial scenario in India both in terms of employment and in the number of enterprises (Tun, 1971; Bedi and Banerjee, 2007).

Critical to the national economy unorganized sector requires more focus, more research.

The urban-rural divide in developing countries like India often finds focus in every economic calculations. Different states and their policymakers realize that in rural areas the poverty is deep-rooted and the presence of an unproductive female populace makes matter worse for the gross per capita income. Much research study commented in favour of empowering the female folk in rural areas to get rid of such economic maladies. Therefore, institutions such as National Bank for Agriculture and Rural Development, Department for International Development and Gamin Vikash trust of Krishak Bharati Cooperative Limited came forward to play a game changer's role in the rural areas of various poverty-stricken states like Odisha. Odisha in recent times tries to transform itself from a poverty-ridden state to one of the industrial hubs in the country. On record, 62% of its total population depends upon traditionally styled agriculture despite its cultivable landmass is half irrigated and half rain-fed. So people are naturally looking towards the urban growth to bring some parity in total per capita income of the state irrespective of quantum of manpower involvement and their output. There are many

authors who opine the growth of the unorganized sector in the urban area is negatively correlated to the contribution of the agriculture sector in rural areas. They argued agricultural distress in the rural areas can be attributed to the development of the unorganized sector in the urban areas. However, looking to the paramount contribution of the Indian unorganized sector to its national income, it seems inevitable to give it some focussed attention. A study also highlights unorganized growth in the manufacturing sector is correlated to the growth of the formal manufacturing sector (Krishna and Mitra, 1998; Mishra *et al.*, 2012).

Methodology

To know how leadership plays a vital role only one problem statement was taken for study. The statement states "Leaders in the unorganized sector are basically chosen emotionally leading to the operation and productivity of concerned unorganized group turns highly volatile." If we adopt a more scientific approach, the productivity of the group can be more stable and sustainable.

"Brown and Gibson" model was chosen as the model for the selection of a leader. This model is usually used for a multi-plant location where a single final plant location is selected out of multiple shortlisted sites. The parameters of the model used here are transformed to suit manpower sector usage to check the model fitness in sample groups operation (Feridon *et al.*, 2005).

The study using the "Brown–Gibson" model undertook six qualitative (subjective) parameters such as "communication", "competence", "commitment", "relationship", "decision-making", "foresight and vision" and three quantitative (objective) factors on "age," "fieldwork experience" and "educational qualification". All the data on their qualitative and quantitative aspects are collected on a primary basis as the groups have participated voluntarily in this research. The model requires two-pronged analysis in its subjective category. The weightages are first decided among the parameters only known as subjective factor weighatage (SFW). In this study, we have taken six parameters so equal weightages are given to all as $1/6 = 0.166$ assuming that all six parameters are equally important. Then the weightages of the parameter vs the members are calculated and termed as subjective weightage (SW). When the members are compared with the parameters one after another for SW in a paired comparison manner member who scores better in one parameter as compared to the other, gets '1 point and the other gets 0' as in "preference theory". All subjective factors (both SFW and SW) are converted into numerals. This method also considers the tangible costs, which are known here as Objective Factor Costs (OFC). The total costs are converted into "measures" by taking their reciprocal and comparing them with the summation of these reciprocals for all participating members (Feridon *et al.*, 2005; Mishra *et al.*, 2012).

Subjective factor measure (SFM) is arrived at; $SFM_i = \sum (SFW_k \times SW_{ik})$ where SFW_k = weight of subjective factor k relative to all subjective factors

SW_{ik} = weight of member i relative to all potential member for subjective factor k

The Objective factor measure (OFM) is thus calculated as: $OFM_i = \left(\frac{1}{OFC_i}\right) / \sum \left(\frac{1}{OFC_i}\right)$

Now, the integrated measure is given by: $M_i = CFM_i \times [D \times OFM_i + (1 - D)SFM_i]$ where CFM_i = Critical factor measure for member i ($CFM_i = 0$ or 1)

D = relative weight of Objective factor measure (OFM), in the final decision.

The OFM and SFM are multiplied [with weightages D and (1–D), respectively, to arrive at the comprehensive final score performance measure (PM).

Members with higher measures [M_i or here Performance Measure (PM)] are preferred to members with lower measures

Samples

The first sample is "Balaji Mixture"; an unorganized firm involved in the production and distribution of snacks mixture in the city of Berhampur, Odisha. The mixture production group under study is consisting of six members who are semi-literate and perceived to be a cohesive group. Details of members for subjective, as well as objective factors are collected through a primary survey. The financial data of the group is collected for three years from 2017 to 2019 and the role of leader as per the model is analyzed to see whether the group is operating under the right leader as per our model. Actual names are reflected in a study on mutual consent.

The second sample group "Krisna Chit Funds" is involved in a money lending business in the same city Berhampur, Odisha. The group financial data are collected for four years from 2015 to 2018. The group was led by one leader in the first two observation years whereas it was operating under a different leader in our second part of a study of two years. The efficacy of the two leaders was tested by the model and findings are interpreted. Name of leaders remained unchanged.

Analysis of performance of Balaji mixture group.

SFW is calculated as $1/6 = 0.166$. (As we earlier said and assumed all six leadership parameters are equally important for a leader).

SW (parameter vs members): as calculated by a primary survey using preference theory.

1st Subjective Factor – Communication: Table 1 Paired comparison chart of each member on 'Communication'.

Members																				Total	Relative weight
								Comparison													
1 (Krusna Patro)	1	1	0	1	1															4	4/19
2 (Ramesh Behera)	0					1	0	1	1											3	3/19
3 (Sunita Dora)		0			0					1	0	1								2	2/19
4 (Kuna Patro)			1			1			1			0	1							4	4/19
5 (Laxmi Jena)				1			1			1		1		1						5	5/19
6 (Hari Rout)					0			0			1		0	0						1	1/19
TOTAL																				**19**	**1.00**

2. Competence: Table 2 Paired comparison chart of each member on 'Competence'.

Members																		Total	Relative weight
							Comparison												
1	1	0	1	1	0													3	3/19
2	0					0	1	1	0									2	2/19
3		1			1				1	0	0							3	3/19
4			1			0			1			1	1					4	4/19
5				0			1			1		0		1				3	3/19
6					1			1			1		1	0				4	4/19
TOTAL																		**19**	**1.00**

3. Commitment: Table 3 Paired comparison chart of each member on 'Commitment'.

Members	Comparison															Total	Relative weight
1	1	1	0	1	0											3	3/18
2	0					0	1	1	0							2	2/18
3		1				1				0	1	1				4	4/18
4			1				0			1			0	0		2	2/18
5				0				1			0		1		1	3	3/18
6					1				1			1		1	0	4	4/18
TOTAL																18	1.00

4. Relationship: Table 4 Paired comparison chart of each member on 'Relationship'.

Members	Comparison															Total	Relative weight
1	1	1	0	1	1											4	4/19
2	1					0	1	1	0							3	3/19
3		0				1				0	1	1				3	3/19
4			1				1			1			0	1		4	4/19
5				0				0			0		1		1	2	2/19
6					1				1			0		0	1	3	3/19
TOTAL																19	1.00

5. Decision Making: Table 5 Paired comparison chart of each member on 'Decision Making'.

Members	Comparison															Total	Relative weight
1	1	1	1	1	1											5	5/22
2	1					0	1	0	1							3	3/22
3		0				1				1	0	1				3	3/22
4			0				1			0			1	0		2	2/22
5				1				1			1		1		0	4	4/22
6					1				1			1		1	1	5	5/22
TOTAL																22	1.00

6. Foresight and Vision: Table 6 Paired comparison chart of each member on 'Foresight and Vision'.

Members	Comparison															Total	Relative weight
1	1	1	0	1	0											3	3/18
2	0					0	1	1	0							2	2/18
3		1				1				0	1	1				4	4/18
4			1				0			1			0	0		2	2/18
5				0				1			0		1		1	3	3/18
6					1				1			1		1	0	4	4/18
TOTAL																**18**	**1.00**

OFM (Objective Factor Measure) for each member is obtained as Table 7.

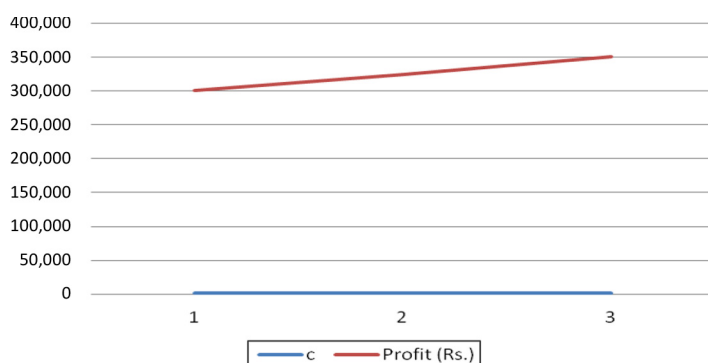|	Members						
OFC	1	2	3	4	5	6	
Age	38	34	30	28	33	27	
Qualification (School years)	10	10	10	12	12	12	
College years	02	05	0	04	0	05	
Experience	05	04	0	05	03	07	
Total OFC	55	53	40	49	48	51	
1/OFC (units: (lakhs)$^{-1}$	0.018	0.018	0.025	0.02	0.02	0.019	$\sum\left(\dfrac{1}{OFC}\right):$ 0.12
$OFC \times \sum 1/OFC :$	6.6	6.36	4.8	5.88	5.76	6.12	
$OFM = (OFC \times \sum 1/OFC)^{-1}$	0.151	0.157	0.208	0.17	0.173	0.163	

Now, the Subjective factor measure (SFM) are given by: $SFM_i = \sum(SFW_k \times SW_{ik})$.

The SFW $_k$ i.e. weight of subjective factor "k" = 0.166 for each parameter.

SFM for the six members are:

(1) Member 1: (0.166) (4/19) + (0.166) (3/19) + (0.166) (3/18) + (0.166) (4/19) + (0.166)(5/22) + (0.166)(3/18) = 0.034 + 0.026 + 0.027 + 0.034 + 0.037 + 0.027 = 0.185

(2) Member 2: (0.166) (3/19) + (0.166) (2/19) + (0.166) (2/18) + (0.166) (3/19) + (0.166) (3/22) + (0.166)(2/18) = 0.026 + 0.017 + 0.018 + 0.026 + 0.022 + 0.018 = 0.127

(3) Member 3: (0.166) (2/19) + (0.166) (3/19) + (0.166) (4/18) + (0.166) (3/19) + (0.166) (3/22) + (0.166)(4/18) = 0.017 + 0.026 + 0.036 + 0.026 + 0.022 + 0.036 = 0.163

(4) Member 4: (0.166) (4/19) + (0.166) (4/19) + (0.166) (2/18) + (0.166) (4/19) + (0.166) (2/22) + (0.166)(2/18) = 0.034 + 0.034 + 0.018 + 0.034 + 0.015 + 0.018 = 0.153

(5) Member 5: (0.166) (5/19) + (0.166) (3/19) + (0.166) (3/18) + (0.166) (2/19) + (0.166) (4/22) + (0.166)(3/18) = 0.043 + 0.026 + 0.027 + 0.017 + 0.030 + 0.027 = 0.17

(6) Member 6: (0.166) (1/19) + (0.166) (4/19) + (0.166) (4/18) + (0.166) (3/19) + (0.166) (5/22) + (0.166) (4/18) = 0.008 + 0.034 + 0.036 + 0.026 + 0.037 + 0.036 = 0.177

The performance measure for different members: $Performance\ Measure\ (PM) = CFM \times [D \times OFM + (1 - D) \times SFM]$.

Figure 1.
3 years profit to cost
statement of Balaji
mixture

Critical factor measure (CFM) for each member is 1, as all the vital inputs are available in all six members. Judgmental basis the study gives 60% weightage to the qualitative or subjective factors leading to D (objective factor decision weight) = 1–0.60 = 0.40 (40%).

(1) Member 1: $1 \times [0.40 \times 0.151 + 0.60 \times 0.185] = 0.0067$

(2) Member 2: $1 \times [0.40 \times 0.157 + 0.60 \times 0.127] = 0.0047$

(3) Member 3: $1 \times [0.40 \times 0.206 + 0.60 \times 0.163] = 0.0080$

(4) Member 4: $1 \times [0.40 \times 0.17 + 0.60 \times 0.153] = 0.0062$

(5) Member 5: $1 \times [0.40 \times 0.173 + 0.60 \times 0.17] = 0.0007$

(6) Member 6: $1 \times [0.40 \times 0.163 + 0.60 \times 0.177] = 0.0069$

As the performance measure of a member no. 3 (Ms Sunita Dora) is the highest, as per the model she should lead the team. Incidentally, she was the person who started the factory and till date she has been running it. Despite the low educational level, she was very agile and market savvy. The 3 years profit statement is given below (Figure 1).

(The group earns a Rs. 20.54 as net profit per 1 kg sales and average sales was 40 kg per day in the year 2017 so $20.54 \times 40 \times 365 = $ Rs. 2,99,884 similarly they sell 43 kg in 2018 and 46 kg in the year 2019 on an average. An overall growth rate of 7.23% per annum.)

Table 8. 3 Years Net Profit in Rs. of Balaji Mixture.

Year	2017	2018	2019
Profit (Rs.)	300,000	324,000	350,000

Analysis of performance of "Krishna Chit Funds"
This chit fund operates in Berhampur city of Odisha consists of 10 members and was running under Ms Annapurna Sahu during our first two years of study but due to reasons better known to them in the year 2017, it changed its leader and Ms Anupama handed over her responsibilities to her daughter Miss Namita Sahu. We took the details of both the leaders and checked the group's financial data to see the model fitness.

In similar fashion all subjective factor measure (SFM), objective factor measure (OFM) and performance measure (PM) calculated.

SFW is 0.166 for both the leaders (as we assume the six leadership parameters are equally important for a leader) and SW is calculated as per their biographic details and are grouped to find out the performance measure for each leader.

Table 9 Subjective Weightages of both the leaders (Comparison of parameters and leaders).

Leaders	Communication	Commitment	Competence	Relationship	Decision making	Foresight and vision	SW
Annapurna	0	1	0	0	0	0	1/6 = 0.166
Namita	1	0	1	1	1	1	5/6 = 0.83

Calculation of Subjective Factor Measure (SFM) is shown below:
$SFM_i = \sum(SFW_k \times SW_{ik})$
SFM1 (Ms Anupama Sahu) = $0.166 \times 0.166 = 0.027$
Table 10 Objective Factor Cost calculation of both leaders.
SFM2 (Ms Namita Sahu) = $0.166 \times 0.83 = 0.137$

Name	Age	Work exp	Other exp	School edu	College edu	OFC Total	1/OFC
Annapurna	50	5	8	5	0	68	0.014
Namita	29	5	0	10	2	46	0.021
Total $\sum$ of 1/OFC = 0.035							

So: $OFM_i = \left(\frac{1}{OFC_i}\right) / \sum\left(\frac{1}{OFC_i}\right)$
OFC is calculated as follows:
OFM 1 = $[68 \times 0.035]^{-1} = 0.42$,
OFM 2 = $[46 \times 0.035]^{-1} = 0.621$
PM of both leaders = $PM = CFM \times [D \times OFM + (1 - D) \times SFM]$, (CFM = 1 and D is 40%).
Table 11 Performance Measure calculation of both leaders.

SFM 1	0.027	OFM 1	0.42	PM 1	0.184
SFM 2	0.137	OFM 2	0.621	PM 2	0.33

Group's financial transactions were taken for analysis. Two years (2015, 2016) under the first leader (Annapurna) and the next two years (2017, 2018) under the second leader (Namita).

Most of the members have suffered losses in the financial year 2015. The members M1, M3, M4, M5, M6, M7 have incurred losses (Rs. 900, 500, 400, 300, 200, 100, respectively) **(Rs. 2,400 in total),** while only three members i.e. M2, M9 and M10 have incurred profits of Rs. 2,100, 100 and 200, respectively **(Rs. 2,400 in total).** M8 neither has profit nor loss. In 2016, again many members have suffered losses on their investment and less number of members have earned less profit. The members M1, M3, M4, M5, M6, M7, M8 have incurred losses of Rs. 730, Rs. 630, Rs. 430, Rs. 330, Rs. 230, Rs. 130, Rs. 30, respectively **(Rs. 2,510**

Months	Collection	Money taken	Bonus	Balance	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10
Jan	10,000	7,000	300	3,000	7,000+300	300	300	300	300	300	300	300	300	300
Feb	10,000	10,000	0	0	0	10,000+0	0	0	0	0	0	0	0	0
Mar	10,000	7,400	260	2,600	260	260	7,400+260	260	260	260	260	260	260	260
Apr	10,000	7,500	250	2,500	250	250	250	7,500+250	250	250	250	250	250	250
May	10,000	7,600	240	2,400	240	240	240	240	7,600+240	240	240	240	240	240
Jun	10,000	7,700	230	2,300	230	230	230	230	230	7,700+230	230	230	230	230
Jul	10,000	7,800	220	2,200	220	220	220	220	220	220	7,800+220	220	220	220
Aug	10,000	7,900	210	2,100	210	210	210	210	210	210	210	7,900+210	210	210
Sep	10,000	8,000	200	2,000	200	200	200	200	200	200	200	200	8,000+200	200
Oct	10,000	8,100	190	1,900	190	190	190	190	190	190	190	190	190	8,100+190
				Total	9,100	12,100	9,500	9,600	9,700	9,800	9,900	10,000	10,100	10,200
				Loss/ Profit	**−900**	**2100**	**−500**	**−400**	**−300**	**−200**	**−100**	**–**	**100**	**200**

Table 12.
January 2015 to
October 2015

Months	Collection	Money taken	Bonus	Balance	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10
Jan	10,000	7,000	300	3,000	7,000+300	300	300	300	300	300	300	300	300	300
Feb	10,000	10,000	0	0	0	10,000+0	0	0	0	0	0	0	0	0
Mar	10,000	7,100	290	2,900	290	290	7,100+290	290	290	290	290	290	290	290
Apr	10,000	7,300	270	2,700	270	270	270	7,300+270	270	270	270	270	270	270
May	10,000	7400	260	2,600	260	260	260	260	7,400+260	260	260	260	260	260
Jun	10,000	7,500	250	2,500	250	250	250	250	250	7,500+250	250	250	250	250
Jul	10,000	7,600	240	2,400	240	240	240	240	240	240	7,600+240	240	240	240
Aug	10,000	7,700	230	2,300	230	230	230	230	230	230	230	7,700+230	230	230
Sep	10,000	7,800	220	2,200	220	220	220	220	220	220	220	220	7,800+220	220
Oct	10,000	7,900	190	2,100	210	210	210	210	210	210	210	210	210	7,900+210
				Total	9,270	12,270	9,370	9,570	9,670	9,770	9,870	9,970	10,070	10,170
				Loss/Profit	−730	2,270	−630	−430	−330	−230	−130	−30	70	170

Table 13
January 2016 to
October 2016

Months	Collection	Money taken	Bonus	Balance	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10
Jan	10,000	8,000	200	2,000	8,000+200	300	300	300	300	300	300	300	300	300
Feb	10,000	10,000	0	10,000	0	10,000+0	0	0	0	0	0	0	0	0
Mar	10,000	7,500	250	2,500	250	250	7,500+250	250	250	250	250	250	250	250
Apr	10,000	7,900	210	2,100	210	210	210	7,900+210	210	210	210	210	210	210
May	10,000	8,200	180	1,800	180	180	180	180	8,200+180	180	180	180	180	180
Jun	10,000	9,000	100	1,000	100	100	100	100	100	9,000+100	100	100	100	100
Jul	10,000	9,200	80	800	80	80	80	80	80	80	9,200+80	80	80	80
Aug	10,000	9,600	40	400	40	40	40	40	40	40	40	9,600+40	40	40
Sep	10,000	9,700	30	300	30	30	30	30	30	30	30	30	9,700+30	30
Oct	10,000	9,800	20	200	20	20	20	20	20	20	20	20	20	9,800+20
				Total	9,130	11,110	8,610	9,010	9,310	10,110	10,310	10,710	10,810	10,910
				Loss/Profit	−870	1,110	−1,390	−990	−690	110	310	710	810	910

Months	Collection	Money taken	Bonus	Balance	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10
Jan	10,000	7,000	300	3,000	7,000+300	300	300	300	300	300	300	300	300	300
Feb	10,000	10,000	0	0	0	10,000+0	0	0	0	0	0	0	0	0
Mar	10000	7,600	240	2,400	240	240	7,600+240	240	240	240	240	240	240	240
Apr	10,000	7,900	210	2100	210	210	210	7,900+210	210	210	210	210	210	210
May	10,000	8,000	200	2,000	200	200	200	200	8,000+200	200	200	200	200	200
Jun	10,000	8200	180	1,800	180	180	180	180	180	8,200+180	180	180	180	180
Jul	10,000	8,900	110	1,100	110	110	110	110	110	110	8,900+110	110	110	110
Aug	10,000	9,100	90	900	90	90	90	90	90	90	90	9,100+90	90	90
Sep	10,000	9,200	80	800	80	80	80	80	80	80	80	80	9,200+80	80
Oct	10,000	9,500	50	500	50	50	50	50	50	50	50	50	50	9,500+50
				Total	8,460	11,460	9,060	9,360	9,460	9660	10,360	10,560	10,660	10,960
				Loss/profit	−1,540	1,460	−940	−640	−540	340	360	560	660	960

Table 15.
January 2018 to
October 2018

in total), while profits earned by M2, M9 and M10 are Rs. 2,270, Rs. 70 and Rs. 170, respectively **(Rs. 2,510 in total).**

In 2017. under the supervision of the 2nd leader the members M1, M3, M4 and M5 have incurred losses of Rs. 870, Rs. 1,390, Rs. 990 and Rs. 690, respectively (**Rs. 3,940 in total)**. While on the other hand, members M2, M6, M7, M8, M9 and M10 have received profits of Rs. 1,110, Rs. 110, Rs. 310, Rs. 710, Rs. 810 and Rs. 910, respectively **(Rs. 3,960 in total).** A balance between the profit and loss of the group is observed. In 2018, again a balance between the profit and loss incurred by the members is observed. The members M1, M3, M4, M5 and M6 have incurred losses of Rs. 1,540, Rs. 940, Rs. 640, Rs. 540 and Rs. 340, respectively **(Rs. 4,000 in total),** while the profits of M2, M7, M8, M9 and M10 amounts to Rs. 1460, Rs. 360, Rs. 560, Rs. 660 and Rs. 960, respectively **(Rs. 4,000 in total)**.

Even if the number statistics are almost the same but if we see the no of members incurring profit or loss, it tells the whole story. During the 2nd (the year 2017, 2018) leader most members were incurring profit but it is just the reverse during the first leader (the year 2015, 2016). The model is more productive in the case of the second leader than the first leader.

Conclusion

Despite the urban-rural gap, our society shows improvements in per capita income and people's living standard. However good research-backed models are needed in working fields to hone its efficacy. The article showed the way how a scientific model can be used in manpower management to improve productivity. The first group shows a growth rate of close to 30% in its annual financial growth when the leader was changed. Financial performance is the key to group performance so when the group was led by a different leader (marked capable by our model) the group started showing positive trends proving model fit. In our second sample, who is actually in a financial business showed some varied results. Although quantitatively the result in all the observed four years are the same but a microscopic view shows a healthy movement in a reduction of loss of members. Maximum members incur profit albeit in small quantity during the tenure of the changed leader in the second and third year of our observation. So ultimately it creates happiness and positive trends. May be in further studies the same group show more robust performance? So here we conclude the model chosen for group performance is quite pertinent to field studies having social ramifications and values.

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About the author

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