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EMPLOYMENT GENERATION AND TECHNOLOGY
FACTOR IN KVI SECTOR: PROBLEMS AND
PROSPECTS

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Abstract

For the rural economy of India, characterized by growing
unemployment and poverty, the labour intensive economic
activities like Khadi and Village Industries are deemed
to assume greater relevance than ever. But the past
trends of growth of this sector reveal that the pace of
employment generation is largely determined by the external
support it received than its internal viability. This
paper brings to light that the low technology base has been
responsible for the above phenomenon. The stagnation in
the technology base has also been responsible for a meagre
enhancement in the real wage earnings of the workers
engaged in Khadi and Village Industries.

EMPLOYMENT GENERATION AND TECHNOLOGY FACTOR IN KVI SECTOR: PROBLEMS AND PROSPECTS

TK Moulik
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According to a recent estimate, every second person in the rural areas of India lives below poverty line. A look into the past reveals that this proportion has been growing fast. Rapid growth in the proportion of landless labourers and tenant farmers and the declining resource base of small and marginal farmers has contributed to this distressing phenomenon. As a result, all of these people are competing for scarce employment avenues and incomes in the country side. It is clear by now that even a radical land reform cannot solve the poverty problem because of the immense pressure on the land. Therefore, more and more people need to be shifted from agriculture to non-agricultural occupations.

To this end the Khadi and Village Industries sector which has the potentiality to generate employment opportunities at a low capital outlay, by harnessing the existing skills of village artisans, offers a propitious alternative. The relevance of this sector in our economic development can also be traced to its capability to 1) provide work opportunities to people at their own habitats, thus preventing the job motivated rural-urban migration, 2) retain self-employed character of labour force in the enterprise, 3) offer flexible work norms and 4) ensure the universal participation of family members in the enterprise.

The present paper attempts to examine the trends in the operations, particularly employment generation, in the sector and seeks to identify the factors underlying these trends. The data base of this paper is limited to the secondary source viz., the published information of Khadi and Village Industries Commission.

THE KVI SECTOR AND ITS GROWTH

Khadi and Village Industries (KVI) sector comprises of a number of cottage and household industries. Prominent among them are: Khadi (hand spinning and hand weaving), ghani oil, Kandasari, cottage match, village leather, village pottery, palm gur and soap manufacturing. The others include carpentry and blacksmithy, hand made paper, gobar (methane) gas, fibre, beekeeping, lime manufacturing and some forest based industries. However, of all these industries, Khadi alone accounts for about two-fifths of the total operations of the sector.[1]

To promote and develop these industries, a wide net work of institutional base has been built in the country. The structure of this network composes Khadi and Village Industries Commission (KVIC) - at the apex level, State Khadi and Village Industries Boards (SKVIBs) - at the middle level, and registered institutions and cooperatives - at the grass-root (operational) level. The KVIC has been assigned the role of policy formulation while the SKVIBs

Table 1

The Growth of K.V.I. Sector

Rs. in lakhs

S. No.	Variables/ operations	PLANS					
		1st	2nd	3rd	Annual	4th	5th
1.	Working insti- tutions@ (in No.)	304	12499 (4011.51)	20423 (63.40)	20772 (1.71)	24416 (17.54)	27785 (13.80)
2.	Average annual production	994.63	3542.04 (256.12)	6706.22 (89.33)	9552.92 (42.45)	12674.17 (32.67)	21202.43 (67.29)
3.	Average annual sales	373.78	2204.82 (489.87)	6021.31 (173.10)	8370.42 (39.01)	11802.99 (41.01)	21513.67 (82.27)
4.	Average annual employment (in lakhs of man years)	2.06	5.28 (156.31)	7.27 (37.65)	6.16 (-15.31)	5.74 (-6.75)	7.13 (43.50)

Note: 1) Data relating to employment has been computed by assuming six part timers as equivalent to one full timer in Khadi industry; for other industries this ratio was taken at 4:1

2) @ at the end of each plan

3) Figures in parentheses refer to percentage change over preceding plan levels.

Source: Annual Reports of KVIC

have been envisaged to provide lineal institutional support in implementing these policies. Registered institutions and cooperatives are to execute these policies and related programmes.

The role of registered institutions and cooperatives are in fact extremely crucial in the sense that it is both functional as well as developmental. Their developmental operations include updating the technology base, training of workers, product design and development and market expansions.

For the most part, the sector draws its financial support from the resources earmarked under the five year plan allocations. The sector has also been provided with various fiscal concessions and market support by the government.[2]

During the past plan period, the sector registered varied rates of growth. On the institutional front, the growth performance of the sector has been substantial in the early plan period. Between the first and second plans the number of working units in the sector rose from 304 to 12500 — an increase by over 4000 per cent. This pace declined substantially to 63 per cent in the third plan and further to mere two per cent during the annual plans. The fourth and fifth plans too witnessed a modest growth of 18 and 14 per cent respectively in the number of working units.

Production too increased phenomenally in the initial plans.
The average annual production rose by about 256 per cent
from Rs 995 lakhs to Rs 3542 lakhs between the first and second
plans. In the succeeding plans, this pace slowed down to
89 per cent in the third plan, to 42 per cent during the
annual plans and further to 33 per cent in the fourth plan.
This trend recovered, slightly (67 per cent), only by the
fifth plan.

Sales also kept pace with the production trends. The annual
sales increased by about 490 per cent between the first and
second plans. This percentage declined to 173 in the second
plan. However, as it could be seen from table 1, the successive
plans could not maintain this pace. In fact, the rates of
growth accomplished during the annual plans (39 per cent) and
the fourth plan (41 per cent) were four times lower as com-
pared to that in third plan. This tendency recovered modestly,
albeit, during the fifth plan (82 per cent).

The employment data in the sector refer to two broad classi-
fications. These are 1) full timers - those employed for
273 or more days in a year and 2) part timers - employed
for less than 273 days.[3] For the present analysis, it is
assumed, on the basis of a crude wage earnings potential,
six part timers as equivalent to one fulltimer in khadi
industry. For other industry groups, the ratio[4] was assumed

to be 4:1. On the basis of these assumptions, there were about two lakh workers employed in a year during the first plan. The number of these workers increased by about 156 per cent in the second plan and further by 38 per cent in the third plan. But this trend declined during the annual plans (-15 per cent) and the fourth plan (-7 per cent). It recovered only in the fifth plan with the number of workers increasing by about 44 per cent. Yet, the level of employment attained during the fifth plan did not reach the corresponding level set in the third plan. Data pertaining to the other operations such as profit/loss and the grants and loans disbursed to the sector are reported in appendix 1.

To sum up, the number of working institutions, production, sales and employment in the sector showed a substantial rate of growth during the first and second plans. In the third plan,too, the growth of those operations had been fairly high. But the trend received a set back in the annual and fourth plans. It recovered only during the fifth plan.

EMPLOYMENT GENERATION

The forte of KVI sector is its potential to generate employment opportunities to people. However, this objective has been accomplished throughout the plan periods at a 'cost' factor or a resource drain. These 'costs' are: grants, operational losses, opportunity cost of loan funds made available and various fiscal concessions provided to this sector.

A brief explanation of these cost factors as considered in
the paper is necessary. Grants are usually given for two
purposes: first, to meet the expenditure for rebates and
subsidies which accounted for over 80 per cent of total
grants disbursed[5] and second, to purchase improved equipment
and tools, train labourers and provide seed capital to
weaker artisans. According to the KVIC, the benefits of
grants given for rebates and subsidies go to the consumer in
the form of low price. Yet, these are to be considered
essentially as a resource drain incurred by the sector for
its sustenance.[6] The operational losses included here were
derived by deducting production costs from sale proceeds.
Since the loans advanced to this sector are interest free,
an interest rate equivalent to Bank Rate has been assumed
as opportunity cost. However, the fiscal concessions
offered to this sector could not be included in the above
'cost' factors. This is because it is almost impossible
to estimate them, at any rate of precision.

The sum of these 'costs', reported in table 2, gives the
'cost of employment generation'. Since all these 'costs'
are met out of the financial support extended to this
sector under plan allocations, they can as well be termed
as the resource support provided for generating employment.

Table 2

Cost of employment and wage income generation
in KVI Sector

Plan	Cost of Employment Generation (lakhs of Rs)	Person years employed lakhs No.	Cost per person year employed Rs. $(2 \div 3)$	Wage earnings (lakhs of Rs.) Rs.	Cost per rupee of wage generation Rs $(2 \div 5)$
1	2	3	4	5	6
1st	2255.94	6.18	365.04	1343.93	1.68
2nd	9988.07	26.40	378.34	6191.89	1.61
3rd	8376.21	36.34	230.50	181.16	0.75
Annual	6310.70	18.47	341.67	7696.95	0.82
4th	8414.88	28.72	293.00	16445.40	0.51
5th	7476.32	28.52	262.14	25995.02	0.29

Source: Computed from basic data given in the Annual Reports of KVIC

It is observed from the foregoing table that the sector drew an
external resource support (as defined above) of Rs 370 to
generate/sustain a job during the first and second plans.
This amount declined to Rs 231 in the third plan. It however
showed an upward trend during the annual plans. But the
following plans showed declining trend in this regard. However,
these computations can be accepted only at the risk of ignoring
the inflationary impact.

More important here would be to examine the wage earnings.
Wages, as a ratio against the above 'cost of employment genera-
tion' would reveal, precisely, with a built-in adjustment for
inflation, the money spent to generate a rupee of wage income.
During the first and second plans, for every rupee of wages
generated, over Rs 1.60 was additionally spent to sustain the
jobs. However, it should be recalled here that these costs do not
have any capital commitment to the sector; nor do they account
for prime costs in the production operations. The ratio
declined to 0.75 and 0.82 in the third and annual plans.
It further declined to 0.51 in the fourth plan and to 0.29
in the fifth plan.

The trends in the operations of the sector, particularly
employment generation, viewed against the above cost factors
(resource support) brings to light a significant revelation.

The reduction in the resource support seems to have resulted
in the downward trend of employment and poor growth in produc-
tion and sales from the third plan onwards. In other words,
the sector could not keep the earlier pace in its operational
growth, particularly on the employment front, during the
latter plan period when the magnitude of external support was
curtailed. This also indicates that the sector did not
grow beyond its incipient stage and build up its viability.
This is evident from the data on productivity and the related
variables such as value addition and net surplus generated
by the sector (table 3).

Table 3

Worker Productivity, Value addition and
net surplus generated in the KVI sector

S.No.	Variable	P L A N S					
		1st	2nd	3rd	Annual	4th	5th
1.	Net value addition (lakhs of Rs.)	-731.66	-2648.81	4877.79	3083.59	12181.05	27603.50
2.	Net surplus generated* in the sector. (lakhs of Rs.)	-2075.59	-8840.70	-6303.37	-4613.36	-4264.35	2021.16
3.	Opportunity cost@ of loan funds made available to the sector (lakhs of Rs.)	31.26	272.16	488.50	375.60	998.98	2031.75
4.	Ratio of net value addition to the opportunity cost(1÷3)	-23.41	-9.73	9.99	7.80	12.32	13.59
5.	Ratio of net surplus to the opportunity cost (2÷3)	-66.40	-32.48	-12.90	-12.28	-4.31	0.99
6.	Worker productivity in the sector in Rs./ at 1960-61 prices)	613.00 —	732.00 (19.41)	806.00 (10.11)	956.00 (10.61)	1111.00 (16.21)	936.00 (-15.75)

Note * Net surplus = Net Value Addition – Wages

@ Arrived at by assuming an interest rate equivalent to Bank Rate.

Figures in parentheses are percentage change over the corresponding previous plans.

Source: Computed from the basic data given in the Annual Reports of KVIC.

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For instance, worker productivity (at 1960-61 prices) in the sector rose by about 19 per cent between the first and second plans. It again increased by 10 per cent in the third plan, by 19 per cent in the annual plans and further by 16 per cent in the fourth plan over their respective preceding plan levels. However, in the fifth plan, this productivity declined by about 16 per cent. Notwithstanding the above growth in the productivity, the sector made, so far, little headway in 1) contributing to the economy in the form of value addition, and 2) building its economic viability.

Viewed against the opportunity cost of funds (loans) provided to this sector, its contribution to the economy has been negative till the end of the second plan. During the first and second plans, the value addition-opportunity cost ratio turned out to be -23.41 and -9.73 respectively. In the third and annual plans this ratio turned out at 9.99 and 7.80 respectively. The successive plans saw only a modest improvement in this ratio (12.39 in the fourth plan and 13.59 in the fifth plan).

On the viability front, the picture has been more distressing. Till the end of the fourth plan, the sector generated negative returns. In the first plan, the surplus-opportunity cost ratio turned out to be -66.40. During the second plan this ratio, however, came down to -33.48. It again declined to

around -12 per cent during the third and annual plans and further to -4.31 during the fourth plan. It is only by the fifth plan that this ratio (0.99) turned out to be positive. Thus, the sector's operations did not reach the breakeven point, at all, till the beginning of the fifth plan.

The trends in the wage earnings of workers in the sector are more worrying. The real wages (deflated by the Wholesale Price Index, 1960-61 = 100) declined from Rs 277 a year in the first plan to Rs 257 a year in the second plan, a fall by about seven per cent. In the third and annual plans, too, the real wage earnings declined by about two and seven per cent respectively over the first plan level (table 4).

Table 4

Annual Wage Earnings of a Worker in
KVI Sector

Plan	Absolute Wages	Deflated (by wholesale price index 1960-61=100) Wages	
	Rs.	Rs.	% Change over 1st plan
1st	217.46	276.50	-
2nd	234.54	257.43	-6.90
3rd	307.68	270.30	-2.24
Annual	416.73	258.48	-6.52
4th	572.61	288.73	4.42
5th	911.47	282.82	2.29

Source: Computed from the basic data given in KVIC Annual Reports.

This trend recovered only by fourth plan with real wage earnings reaching the level of Rs 289. These wages have again declined, marginally, to Rs 283 during the fifth plan.

Thus, whatever enhancement has been achieved in the productivity in the sector was too inadequate to more than offset the inflationary impact, strengthen its viability and increase the wage earnings of the workers in any appreciable measures.

TECHNOLOGY FACTOR

Outmoded and far less efficient technology base has been the backdrop against the low productivity and the poor growth of the sector. It was also responsible for the stagnation of wage scale at a low level. Yet, not much has been done to update the technology in the sector. For instance, over 80 per cent (see table 5) of spinners still operate on traditional and Ambar charkas. These charkas, as compared to the New Model (NM) charkas, are ten times less productive. What is more, yarn spun on these charkas qualify for a low count. And a spinner on these charkas earns less than one rupee a day, at current prices.

Table 5

Spinner population and their annual
wage earnings in cotton khadi industry
during the fifth plan

Spinners in 000 persons
Wages in rupees

S.No.	Spinner groups	1974-75		1975-76		1976-77		1977-78	
		No.	Per Work-er wages	No.	Per Worker wages	No.	Per Worker wages	No.	Per Worker wages
1	Traditional charka	487 (74.35)	80	442 (74.41)	81	450 (79.09)	80	431 (72.19)	91
2	Ambar charka	86 (13.13)	152	49 (8.58)	195	42 (7.38)	277	71 (11.88)	140
3	New Model charka	76 (11.60)	351	75 (13.13)	299	74 (13.01)	329	87 (14.57)	402
4	Total	655	122	571	121	569	128	597	146

Note: Figures in parenthesos indicate percentage to total spinners

Source: Annual Reports of KVIC

Table 5 would give more details in this regard. As long back as in 1957 Professor Amartya Sen[7] pointed out that for every rupee of wage earnings generated on Ambar charka, a net deficit of Rs 0.81 was incurred by the industry, not to speak of traditional charka. In the village pottery industry, about 85 per cent of the artisans still work on traditional potter-wheels. These traditional wheels, as compared to the improved ones (with ball bearings), are less safe, less productive, unwieldy to operate and much inferior in controlling the product quality standards. In the ghani oil industry over 50 per cent of the ghanis used are still of traditional type. These ghanies, due to their low oil-expelling ratio, are less productive to the workers and uneconomical to the industry. The other village industries too have a low technology base.

The meagre proportion of funds utilised for research and development and capital expenditure purposes bears a clear testimony to this imprudence towards updating the technology (table 6).

Table 6

Purposewise utilisation of grants
in Khadi industry

S.No.	Purpose of Utilisation	P L A N S					
		1st	2nd	3rd	Annual	4th	5th
1.	R & D	0.34 (0.12)	7.23 (0.28)	26.63 (0.74)	15.01 (0.65)	19.34 (0.65)	25.61 (0.84)
2.	Capital	3.20 (1.16)	442.04 (17.08)	233.70 (6.46)	85.92 (3.74)	33.05 (1.12)	40.42 (1.32)
3.	Total grants	275.56	2587.78	3615.80	2295.68	2955.76	3053.04

Figures in parantheses refer to percentages to total grants

Source: Statistical Abstract of Khadi & Village Industries
and Annual Reports of KVIC.

For instance, during the first and second plans less than
0.30 per cent of the grants was utilised for research and
development in Khadi industry. In the subsequent plans this
percentage scarcely crossed the mark of 0.85. The proportion
of grants utilised for capital outlays too reveal a similar
phenomenon. During the first, fourth and fifth plan periods
barely one per cent of the grant funds was spent for capital
outlays. In the third and annual plans this proportion was
in the range of 3.75 and 6.50 per cent. The second plan,
when over 17 per cent of grants utilised for capital expendi-
ture, seem to be the lone exception to this pattern.
Throughout the plan periods, the loan funds were utilised,
for the most part, towards working capital requirements.

Even with the present magnitude of the funds, a considerable
proportion of traditional equipment could be modernised.
What is needed is a little change in the present policy of
funds utilisation. For instance, instead of making use of
grants for rebates and subsidies, in 1977-78 alone, over
60 thousand traditional charkas could have been replaced by
twelve spindle NM charkas. Such attempt would have increased
the wage earnings of an equal number of spinners by more than
three folds. Table 7 is self-explanatory in this regard.

Table 7

Alternative returns of grants utilisation in khadi industry during the fifth plan

Rs. in lakhs

S.No.	Year	Grants utilised for rebates & subsidies in a year Rs.	No. of New Model charkas(12 spindle) which could have been purchased with the grants@ Rs.	No. of tradi- tional spinners who could have been benefitted	Impact on Wage earnings		Impact on production £ (yarn in thousands of hanks)	
					Additional wages that could have been gene- rated in a year* Rs.	Additional wage income** that could have been ge- nerated during the life of the NM charkas Rs.	Addition- al prodn. that could have been realised in a year	Cumulative enhanced production that could have been realised during the life of NM charkas.
1.	1974-75	559.49	39401	39401	106.78	1281.41	1260.83	15129.96
2.	1975-76	709.67	49977	49977	108.81	1305.71	1599.26	19191.17
3.	1976-77	640.46	45103	45103	112.49	1349.89	1443.30	17319.55
4.	1977-78	879.17	61913	61913	192.98	2315.80	1981.22	23774.59
5.	Plan total	2788.79	196394	196394	-	6252.81	6284.61	75415.27

@ at the rate of Rs 1420 a New Model charka (based on the cost estimates given in "KVIC at a Glance", Khadi and Village Industries Commission, Bombay, October 1979, p. 68.)

* difference between wage earnings of NMC and traditional charka spinners (see table 5).

** based on the assumption that NMC will have a life of 12 years.

£ The additional production has been computed on the assumption that the traditional and NMC have a productivity of 3 and 35 hanks, respectively, per 8 hours.

Source: Computed, on the above assumptions, from the basic data given in the Annual Reports of KVIC.

If those NM charkas are assumed to have a life of about 12 years, the cumulative returns would be substantial. The above hypothetical choice of funds utilisation could have also resulted in a ten fold enhancement in the worker productivity, from three hanks of yarn per worker per day of eight hours on traditional charka to 32 hanks on NM charka. And, at this rate, over 40 per cent of traditional charkas could have been replaced with NM charkas in fifth plan alone.

Then, does it mean that there would be no need for rebates, once the technology base is improved? The necessity for the present rebates can be traced to the high per unit cost of production and low quality of the product in the sector. Technology improvement, undoubtedly, brings about an ehhancement in productivity and turnover - thus lowering the per unit cost - on the one hand and improvement in the product's quality on the other. The sector, thus, could, in all probabilities, do away with the losses and hence rebates. If not, it can at least cut down its operational losses in substantial measures. As such, the present resource utilisation pattern seem to have a high opportunity cost within the sector.

This, however, does not mean that the sector need not be provided with additional outlays. What is meant here is that at least for another decade, technology development

should receive the highest priority in the sector.
Otherwise, it is highly doubtful whether this sector would
be able to maintain the present level of wage earnings of
the workers.

CONCLUSION

The rapid growth in the proportion of landless labourers
and declining resource base of small farmers has been
throwing several millions of people below poverty line.
As a result, the competition among these people for
scarce employment avenues in the country-side is growing
ever fierce. In this end, labour intensive industries
like Khadi and Village Industries are viewed as antidote
to the problem of unemployment. But, the past trends of
this sector indicate that as long as its technology base
remains poor, with the resultant low productivity, it could
make little progress in building its viability. Further,
it continues to depend, precariously, on the external
support to generate and sustain the jobs. The real wages
of the workers have remained stagnant at a low level,
even after several years. But, with a slight change in
the present resource utilisation policy, an appreciable
proportion of traditional equipment can be updated.
However, with the increasing hopes on this sector for
generating employment[9], it needs considerable additional

resource support in fulfilling this objective. Such a
resource support is also imperative to enhance the level
of wage earnings of workers, through the improved
technology and increased productivity.

(This paper is an outcome of a research project undertaken
on the transfer of technology for rural development)

NOTES AND REFERENCES

1. However, with the inclusion of new industries, the share of Khadi in the sector has been slowly declining.

2. For details, please see, Khadi and Village Industries Commission, 'Khadi and Village Industries: A Review', Bombay, 1976, pp 1-84.

3. Data relating to employment, and for that matter several other operations, have certain conceptual limitations. For instance, persons employed on a part time basis throughout the year, those employed on full time for only a certain period in the year and those employed on a more casual basis are all termed as part timers though their wage earnings differ substantially. For a detailed note on these and other limitations of data in KVI sector, please see YD Panditrao, 'Need to Widen the Base for Data Collection', Commerce, Vol. 140, No. 3586, March 15, 1980, pp 29-33.

4. It may not be fair enough to assume a blanket ratio for all village industries. But, due to the paucity of data, we do not have a better choice. In a somewhat similar analysis Dr LK Mitra too has taken this ratio at 4:1. For details, please see, LK Mitra, 'Employment and Output in Small Enterprises of India', Book land Pvt. Ltd. Calcutta, 1967, p 103.

5. In Khadi industry, this proportion went even upto 90 per cent, for instance in the fifth plan.

6. Khadi and Village Industries Commission, op.cit. pp 49-50. The above claim of KVIC is based on a fallacy. It is a simple logic that if the consumer is not prepared to purchase the sector's product at a price that offsets the cost of production, the per unit production cost in the sector is higher than the market (equilibrium)price; hence the need for rebates and subsidies.

7. Amartya Sen, 'Choice of Techniques', Oxford, Basil Blackwell, 1962, p. 117.

8. Estimated on the basis of the number of workers engaged in the pottery industry and the improved potter-wheels distributed to them.

9. Government of India, Planning Commission, 'The Draft Plan, 1978-83, Vol III, p 132, table 2.

Appendix 1

Operations of KVI Sector

Rs. in lakhs

S.No.	Operational/ Variable	PLANS					
		1st	2nd	3rd	Annual	4th	5th
1.	Production	2983.90	17710.18	33531.11	28658.75	63370.83	84809.71
2.	Sales	1121.34	11024.12	30106.55	25111.25	59014.93	86054.68
3.	Profit/loss	-1862.56	-6686.06	-3424.56	-3487.50	-4355.90	1244.97
4.	Disbursement						
	a) Grants	377.02	3353.49	4571.37	2488.83	3316.30	3828.08
	b) Loans	453.41	5009.27	7354.65	3435.75	3945.84	6513.79
	Total Disbursement	830.43	8362.76	11826.r2	5924.58	7262.14	10341.87

Source: Annual Reports of KVIC.