

Effects Of Computerization on Employment

Gulrukh Salim

Faculty at Baba Bhim Rao Ambedkar
University, Lucknow, U.P.

Abstract

Though the computers render certain jobs superfluous, it creates certain jobs as well. In order to determine the total quantum and structure of jobs in different categories, primary data was collected from the hardware firms, software firms and business firms.

A large number of organizations did not provide meaningful information. Some even reported that it was not possible to assess the employment effects of computerization on account of reasons such as changes in the volumes of business, transfer to other sections and even aptitude test and the option given to the employees to switch over to computer jobs at extra remuneration. Many organizations refused to possess any data of such kind.

Keywords: Computerization, Employment, IT Professionals

EFFECT OF COMPUTERS ON EMPLOYMENT

However, out of 32 organizations selected for the purpose of research, 28 firms from hardware, software and business sector responded to the questions. Table No. 6.1 provides information of the effects on employment after the introduction of computers in the sampled organizations.

Despite the agreement reached between the unions of employees and the management for limiting the displacement to 'minimum', all the organizations covered were requested to provide information about

the number of employees affected on account of the installation of computers.

It was found that not many of the senior executives were retrenched, demoted or needed to be retired due to computers. Even when the recruitment of senior executives in the post-computerization era was limited to 7.38 percent, 34.21 executives were transferred to distant and different locations or had had to be retrained 68.37 percent in computers. Similar was the trend amongst managers in the organizations, though a larger percentage of managers were displaced and retrenched and were transferred to the jobs suitable to them.

Table No. 6.1

Post-Computerization Effects on Employment in Organizations

S.No.	Effects on Employment	No. of Employees (In Percentage)		
		Senior Executives	Managers	End Users
1.	Displaced	12.76	22.43	36.85
2.	Retrenched	9.24	21.67	38.24
3.	Retired	6.89	7.64	3.67
4.	Demoted	8.37	12.37	4.21
5.	Transferred	34.21	42.31	61.27
6.	Trained	68.37	71.34	73.29
7.	Recruited	31.47	18.67	7.38

(IT Professionals)			
8.	Recruited	14.13	11.64
(Other Employees)			
			16.71

Source : Primary Data Collected through Questionnaire.

Computerization had maximum impact on the employment of the end users that required high displacement, retraining and transfer. Though many 36.85 percent end users were retrenched, 7.38 percent new end users with right computer aptitude had to be recruited.

Compared with the total recruitments in the organizations, did reflect a significant increase in the employment opportunities in the computer data field as indicated in Table No. 6.2. The figures were still lesser than estimated by various experts/committees. NASSCOM estimates that India will need 2.2 million IT professionals by 2008. The

Ministry of Information Technology predicts similar numbers (2,070,000). Now under the circumstances, when it is a known fact that the original plan of computer implementation is lagging far behind, the decline in total employment and inadequate generation of new employment opportunities as a result of computerization is ought to result in the perceptions among the employees that employment opportunities are declining.

Table No. 6.2 provides information on the size distribution of employment expected from computers in; the 28 organizations.

Table No. 6.2
Size Distribution of Employment Expected from the
Computers in Organisations

Total Employment Expected (No. of persons)	Percentage of Organizations	Cadre	Percentage of Jobs Expected
01-20	24.47	Senior Executives	11.26
21-40	45.52	IT Managers	25.37
41-60	12.94	End Users	65.24
61-80	81-100	4.66	Other Employees
81-100	5.96	(non-IT)	42.48
> 100	2.31		

Table No. 6.3
Potential Demand and Loss of Employment

Year	End Users (in percentage)		IT Managers (in percentage)		Senior Executives (in percentage)	
	Actual	Shortage	Actual	Shortage	Actual	Shortage
2008-09	72.32	9.81	19.17	26.33	8.51	17.84
2009-10	31.32	33.36	38.39	31.67	30.29	22.58
After 2010						
Future Plan probability	15.64	81.94	47.22	48.41	37.14	39.72

Source : Primary Data Collected through Questionnaire.

The figures in the Table No. 6.3 signifies a clear cut increasing trend in the number of IT managers and senior executives. Also the shortages in all the cadres were increasing, except for the decrease in actual figures of end users. As regards the potential loss of employment, the unfavorable effect of the computer on employment, particularly end user employment, is supposed to be felt in a different manner. It is said that the computers tend to affect the future recruitments of end users and other co-workers. The effect on the future employment is very difficult to assess. From the Table No. 6.1, it can be said that recruitments have slackened especially in the end user and managerial cadre. As the estimates were based on the past experience or on some rough norms, they cannot be

very reliable and hence any inference drawn from them should be used with caution.

This research assesses the effect of the diffusion of computer technology on the employment structure. A number of statements were presented to the respondents from the sampled organizations and were asked to give their views on the effects of computerization on employment. The analysis shows that computers have had a particularly strong impact on end users in the business firms. Jobs in the hardware firms were found less affected with computer technologies than the jobs in the business firms. The respondents reported lesser negative impact on the jobs of end users in Software firms as shown in Table No. 6.4.

Table No. 6.4
Post-Computerization Cadre Effect on Employment in Organizations

S.No.	Cadre Effect	Organization-wise Perception		
		Hardware Mean Score	Software Mean Score	Business Mean Score
1.	End users are most affected as the job opportunities have been decreased with computer technologies.	2.35	2.11	4.21
2.	The number of knowledge workers and management workers has increased at a very high rate with the introduction of computers.	3.68	4.27	3.21
3.	Computerization can reduce clerical work to tedious and repetitive jobs.	3.98	4.11	3.65
4.	Women are entering more and more in computer professions.	3.42	4.64	4.32
5.	End users from business firms have a neutral relationship with computers because their jobs require highly tacit knowledge which cannot be codified by computers.	3.69	3.78	4.11

Source : Primary Data Collected through Questionnaire.

The study shows that the number of knowledge workers and management workers has ballooned over the last few

years. It was found that the respondents from the software firms perceived the fact most followed by hardware firms and

business firms. The respondents also accepted the reduction of clerical work to tedious and repetitive jobs due to computerization in their organizations which created innovative work and required new skills.

Respondents agreed that the new technology skills are being polarized by gender. It was also evident that women were entering computer professions leading to class polarization within the female labor force itself. The data shows that end users from business firms had a neutral relationship with computers because their jobs required highly tacit knowledge which cannot be codified by computers.

As shown in Table No. 6.5 the respondents accepted the shift from operating jobs to maintenance jobs and that

computerization created innovative work and new skills. The operating work force constituted of a higher proportion of skilled jobs. They agreed on the requirement of high degree of skills and education for computer personnel. It was found that only super skilled workers and specialists were needed by the organizations and not the ordinary workers. The respondents said that the skill composition of the labor market could be transformed with the introduction of computers in the organizations. It was also agreed that unemployment problems could be reduced by providing training programmes, modifying employment policies and procedures and early retirements to accommodate the displaced workers.

Table No. 6.5
Post-Computerization Effects of Skill Level in Job Opportunities

S.No.	Skill Level	Organization-wise Perception		
		Hardware Mean Score	Software Mean Score	Business Mean Score
1.	There is a shift from operating jobs to maintenance jobs, thus increasing the proportion of skilled jobs in the organization.	4.51	4.11	3.12
2.	The jobs which computer displaces are the ones which require a degree of skill.	4.39	4.17	4.21
3.	A higher proportion of skilled jobs in the operating work force are there.	4.21	4.35	4.16
4.	Higher degree of skill is needed by personnel assigned to computers.	4.23	4.12	3.47
5.	Computerization creates high demand for the new skills which may require extensive training and education.	4.37	4.21	4.16
6.	The skill and educational requirements cause the workers to be displaced.	3.91	3.78	3.12
7.	Computerized organizations become a technological lockout for the common man since such organizations need super skilled workers and specialists	4.39	4.28	4.13

	and not the ordinary workers.			
8.	Technological change will transform the skill composition of the labor market.	4.01	4.16	3.71
9.	Unemployment problems can be reduced up to some extent by providing training programmes, modifying employment policies and procedures and early retirements to accommodate the displaced workers.	4.32	4.16	4.34

Source : Primary Data Collected through Questionnaire.

The data from Table No. 6.6 shows that end users is the only category in which the number of jobs had declined over the past two decades. The widespread use of computers has certainly contributed to the job losses. It was contended through the research that the computerization means more systematic, accurate and faster work. The respondents agreed upon the reduction of the quantity of work which affected the employment of end users at the most. The respondents also viewed that the overall employment opportunities would go down

with the introduction of computers. They perceived that with the help of computers, more work will be done with the same staff and only skilled people would be in demand after computerization.

CONCLUSION

It eliminates jobs vacancies for creating new job opportunities, skilled labour required on rotational basis. Many jobs are created, rather than eliminated.

REFERENCES

- Computers Today : “Key Board – Induced Injury is one the Rise”, Sept. 1992, P.6.
- Malhotra, Sapna, (1987), “Computing Experiences – A Data Quest Report”, Data Quest, Aug., pp. 80-81
 - Kanwar, Rajinder Singh (1980), Computers as an Aid to Management, National Productivity Council.
 - Albin, Peter and Eileen Appelbaum (1988), “The Computer Rationalization of Work : Implications for Women Workers”, In Jenson, Jane et.al. (Eds), Feminization of the Labour Force, Oxford, Polity Press.
 - Lavoi, Marie and Roy, /Richard (2000), “The Effect of Computerization on Employment Structure in Canada,” Applied Research Bulletin, Vol. 6., No. 1.

Table No. 6.6
Post-Computerization Effects on Increase or Decrease
in Job Opportunities

S.No.	Increase or Decrease in Job Opportunities	Organization-wise Perception		
		Hardware Mean Score	Software Mean Score	Business Mean Score
1.	The widespread use of computers in the organizations has certainly contributed to the job losses.	3.86	4.01	4.22
2.	The computerization means more systematic, accurate and faster work, hence it may lead to more employment opportunities and more displaced staff shall get adjusted.	3.87	3.91	3.49
3.	Computerization reduces the quantity of work so affects the end users as the core tasks of the workers are codifiable.	4.12	3.67	3.89
4.	Employment opportunities will go down if man is replaced by machine.	2.12	3.31	4.14
5.	Computerization contributes towards more work with the same staff.	2.17	3.12	4.21
6.	Skilled IT workers are in high demand after computerization.	4.56	4.71	3.86
7.	The arrival of electronic commerce, increasing demand for hardware technologies and growth in various software areas, including those related to the internet, and Java, have opened the door to still more employment growth.	3.21	4.21	2.67
8.	The computer potentially contributes towards displacement of the clerical staff, i.e. Loss of potential employment.	4.21	4.32	4.12
9.	There are no fresh recruitments at the clerical level for the past one decade.	2.79	2.81	2.12
10.	As the organization develops, employment opportunities will increase.	4.32	4.47	4.23
11.	Computer will guarantee employment.	3.16	3.23	3.12
12.	Machine will increase the unemployment problem upto an unmanageable proportions.	2.91	2.42	2.87

Source : Primary Data Collected through Questionnaire.

The respondents were expecting the growth in employment opportunities with the arrival of e-Commerce and increasing demand of

hardware and software technologies. A loss of potential employment for clerical staff and no fresh recruitments were perceived

and by the respondents. They were of the opinion that as the organization developed, employment opportunities increased and computers would guarantee employment. The respondents feared that in an underdeveloped economy like India, the biggest fear that was held towards the coming of computers was that machine would increase the unemployment problem to, an unmanageable proportion.

2. Managerial Attitude towards IT Professionals

Perceptions of Management Executives

Table No. 6.7 shows that the management executives were not having a good perception about the IT professionals. The management executives revealed that IT professionals were very expensive for an organization and said that IT professionals can not be the supplant, but are the supplements of the staff. The management executives also reported that IT professionals made the clerks redundant through mechanization of clerical work. IT professionals found creating problems for Management and were of little and limited utility. IT professionals were not promulgated as good decision-makers. Management executives accepted that IT professionals will help in ushering in technological culture in the industry. The respondents could not