

**Managerial and other characteristics affecting
the industrial sector's performance**

in the Gaza Strip

the year 2000

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Abstract

In this paper, the performance of 105 firms (the study sample out of 523 firm, study population) is analysed. For the purpose of this analysis, all sample firms are classified into three groups: *Clothing*, *Food* and *Others* (N.B. Others include all types industries except clothing and food industries. Another classification for these firms depends on the size of the firm as reflected in the numbers of workers being employed. Size one includes firms which have from 5 to 9 workers, while size two includes firms employing ten workers or more.

In our attempt to compare and contrast the different firms' performance, two different types of indicators are used. The first is general and descriptive. The second type includes growth of employment (GE) and Cost per job creation (CJC) or capital intensity (K/L) as a technology indicator.

Industry in the Gaza Strip (GS) has some characteristics that show the nature of the industrial sector as well as the unstable situation. These characteristics affect the performance of the industry. This paper is also to examine the effect of these characteristics, especially the managerial ones, on the performance of the industry.

The objective of the majority of firms is to provide employment opportunities for themselves and their families or relatives using labour-intensive technique with little assets. 84% of the managers are educated (higher school or above) while 36% of firm owners and managers reported that they follow their fathers' occupation. The majority of firms are either owned by the family or the manager himself.

Clothing Industry shares with about 50 % of the total value added, while food firms are the highest in terms of average value added. This implies that clothing firms are labour intensive and ensure the subcontracting nature of the clothing industry in the NPE.

Although Food and Other firms are not growing in terms of employment, we found that clothing firms are growing fast compared with other firms. Also we found that clothing as well as subcontracting firms are the best in terms of creating cheap jobs compared with Food or Other firms. We found that clothing and subcontracting firms are better in terms of profit ratio (PR). PR in clothing firms equals 28% compared with 18% And 11% for Food and Others.

Regarding discussion of factors that affected the performance of SSIs, the researcher used the multiple regression to determine factors affecting cost per job and growth of employment for all firms as well as Clothing, Food and Other firms, each one is alone.

For cost per job as a dependent variable in the model, we found that factors affecting it are: initial total assets, average wages, type of technology, age of the firm, and type of ownership. And factors determining growth of employment are as follows: age, experience of the firm, growth of total assets, profit ratio, type of finance, current number of workers and initial number workers. The models are significant and the independent variable explained 60 – 70% of the changes in the dependent variable.

Introduction

The industrial sector is very important in general and has special importance in the GS as a part of the New Palestinian Entity (NPE). The Palestinian National Authority (PNA) gave much attention to improve industry by improving the infrastructure, increasing investment and improving management and training. Industrial activities in the West Bank and Gaza Strip (WBG) in 1968 were modest, and have remained so, accounted for only 7% of GDP in 1969, in 1990 this figure was still exactly the same (World Bank, 1993-3). The share of industry only rose to 8% of GDP in 1993 (ICBS, 1995).

The industry in the GS is still traditional based on micro and small-size firms. Also many of the so-called industrial activities in the WBG are craft works of low productivity. The structure of industry emphasises this and shows that more than 90% of industrial establishments employ less than 10 persons (PBS, August-1995) while half of the industry works as subcontracting to Israeli firms.

High unemployment, low income, closure of the Palestinian areas, Israeli control of the borders, and many obstacles are still facing industry in the GS. Many firms did not consider the shortage of loans and credit facilities as a real reason for little expansion. The real reason for little expansion is the unstable situation under the Israeli occupation, and the condition of low profitability (Awartani, 1979).

Sample and population of the study:

The population from which the sample has been chosen is all industries in the GS employing five workers or more¹, within the formal and informal sector.

There is some limitation on the data provided especially when we asked about profit and income. The main constraint on the data collection is that many of the establishments in the GS do not use a bookkeeping system and some are not even registered as a formal firm. In these cases we depend on the memory of the owner or the manager to provide information.

The important empirical difficulties in performance measurement arise from the frequent inability to meet the demanding data requirements of the more refined measures of performance. The use of less satisfactory, but more readily available data may result in a suitable redefining of the performance indicators themselves. Hence we have had to use very simple indicators of performance.

Sample Design

As we have discussed, all industries in the GS are small and micro-scale. The majority related to the informal sector. More than 90% of firms employ less than 10 persons. There are no industries employing more than 100 employees, and only 9 firms that employ between 50-99 in the GS (PBS, 1995). In the sample only 4 firms out of 105, employ between 50 –60 workers.

The study considers all firms that employ 5 workers or more and excludes micro-firms with less than 5 persons. We obtained a list² of firms from the Palestinian Central Bureau of Statistics (PBS). The PBS list contains 969 firms, divided into two parts. Part one includes all industries employing less than 5 persons and the second part includes industries employing 5 persons or more. This list containing 523 firm employing 5 persons or more is the one we use to choose the sample.

This list comes from the industrial survey in 1994 and any addition or adjustment up to 1996. The population that we take the sample from, is thus 523 firms employing 5 persons or more. The sample was chosen randomly through the Excel program to reduce sample bias.

¹ The study considers only firms employing 5 workers or more and excludes firms employing less than 5 workers. The primary reasons for that is that very small firms in the GS are unstable. Many of those on the PBS list are closed and others are established recently. Most of these firms are workshops carrying out maintenance and seasonal work and they are less likely to have good data records

² This list of firms is not published; I obtained it informally from Statistical Bureau of Palestine.

Using a random number, we chose a random sample of 150 firms. The effective response to our survey was 105 firms still working, including 14 firms still working weakly now with less than 5 employees; 37 firms had closed and 8 firms refused to give any response.

The response ratio is very high, especially if we know the traditional fear of the heavy tax under the Israeli occupation. Firms also dislike the spread of the information about their industry, fearing competition and imitations. The taxation system under the PNA is not clear and most Palestinian businessmen consider that the tax system is a copy of the Israeli one³.

We designed a questionnaire to collect detailed data to enable us to analyse the performance and efficiency of industry in the GS and to explore the problems and obstacles facing it. For these reasons and to calculate efficiency indicators, such as profitability and productivity, we include questions that enable us to do this analysis. Other questions have been included to enable us to explore factors affecting performance and efficiency. Those factors might be related to characteristics of the firm or to some obstacles from Israeli or Palestinian sides. Without this questionnaire it would have been impossible to undertake this analysis⁴.

A pilot study had been done to be sure that questions in the questionnaire are clear. To ensure that firms gave the correct data, we compared the data of firms in the same sector and size together, we excluded some questionnaires that contained conflicting information. A visit to the union of Clothing Industry and the union of Plastic Industries was carried out. There, we discussed results that we found in the primary analysis with them. They confirmed the result and said that it is the case in the GS.

General characteristics and problems facing the industry

Industry in the GS, is characterised by smallness, single or family ownership and financed, subcontracting with Israeli firms, labour-intensive technique due to the high unemployment and lack of capital, lack of managerial skills, lack of raw materials, inadequate infrastructure and training and unstable political situation.

³ . This was clear from the interviews with firms' owners, the majority of whom mention this point. A discussion with a formal accountant in the GS also confirms this result.

⁴ . The questionnaire of six pages is shown in appendix 4.1, the data collected by interviewing firms by the researcher and his colleague Mr. Bheiss.

Regarding the general situation, 77% of firms in the sample reported that their profit trends decreased in the last three years, while 11% reported that their profit increased and 12% reported that they did not know. Only half of firms expect that the future will be promising and better after establishing the NPE.

The majority of firms (76%) reported that their objective is to provide employment opportunities for themselves and their families or relatives reflecting the small-scale nature of industry in the GS. As a result, most firms are using labour-intensive technique with little assets. Another reason for this situation is that most firms (73%) are self-financed, while other firms are financed mainly by the family or friends.

Less than half of firms in the sample (46%) face stable demand due to the unstable economic and political situation. Regarding management, we found that 84% of the managers are educated (higher school or above) while 45% of firms are owned by managers, 36% of firm owners and managers reported that they follow their father's occupation. 28% of firms are owned by family and 27% work as companies, but between family members or relative and friends.

With respect to the relation between management and workers, 80% of firms reported very good relation between the management and workers, due to the type of ownership structure. Although 70% of firms reported that they use bookkeeping, but they themselves reported also that their procedure are not appropriate and they use it only for tax payment.

Regarding the technology used, 66% of firms reported that they use imported technology, although most of it is imported (second-hand) from Israeli firms, especially for the Clothing group, while 6% use local technology and about 30% of firms reported that they use second-hand technology. This implies that NPE has very little and simple machinery production and firms look for cheap technology, such as the second-hand machinery, due to uncertainty and the ability to cover the cost as early as they can. This also explains partly the low CJC in the Clothing.

The majority of firms (67%) did not make any significant technical change after their first establishment, and they continue using the same technology. The reason might be the lack of capital or difficulties in importing machinery. Therefore they continue with labour-intensive techniques to provide employment for the family.

In the sample, 76% of firms mentioned the Israeli restrictions as an obstacle and asked for free trade. 47% asked for a consistent constant regulatory system, and 41% asked for loans and subsidies from the government to support industry.

In the UN survey of firms in 1981, firms in the WBG were asked for reasons behind non-expansion. Seven reasons were ranked in order in table (1) (ECWA, 1981).

Table (1) some problems facing industries in the WBG

Reason for non-expansion	No. of firms citing the reason
Market limitations	150
Capital shortages	54
Prevailing political conditions	37
Lack of qualified workers	34
Taxation	30
Electricity disturbance	20
Raw material shortages	10

Source: ECWA (1981)

A USAID study lists the following factors as a delaying industrialisation in the WBG: “political uncertainty; limited domestic markets for industrial products due to low purchasing power; lack of expertise, entrepreneur-ship, and willingness to invest capital; out of date technology; low levels of education and vocational training; the absence of complementary services and developed infrastructure, including electricity; the lack of adequate natural resources, which results in an increase in the import of raw material” (Spector, 1978) and (Bahiri, 1987). While Abu-Kishk (1989) found that 34% of the owners were considered as qualified persons while 69% completed only the middle school, so he considered that there is a problem of training.

Contribution in terms of VA and employment

In the sample, the average size of all industries in the GS illustrated in table (2). For our sample, among the three groups, in terms of total employment, Clothing firms are four times higher than Food and about 2.5 times higher if compared to Others. In terms of value added, Clothing firms are slightly less than double of Food and Others (See table 2).

In terms of average VA, Food firms are the highest, while the lowest in terms of average VA is Others group. Although the Clothing group is the highest in terms of employment size among other groups, it forms about half the average VA compared with Food group. The implications is that Clothing firms are more labour-intensive and this shows the nature of Clothing firms that work as subcontractees with Israeli firms, and depend heavily on the subcontractors in terms of raw-materials and marketing. It implies also that LP is significantly lower in Clothing firms compared with Food or Other Firms.

Table (2) Contribution to value added and employment for surveyed firms by sectors, and employment size.

Sector	No. of Firms	%	% of VA	Total Workers	%	Average size ¹	Average VA
Clothing	45	44	48	884	61	19.6***	58891 ***
Food	14	14	28	217	15	16 ***	108543***
Others	43	42	24	350	24	8 ***	29864 ***
all firms	102	100	100	1451	100	13.8	53469

5---9	49	48	15	270	19	5.4 ***	16219 ***
10---	53	52	85	1181	81	21.5 ***	87907 ***
all firms	102	100	100	1451	100	13.8	53469

***, **, *, Means that the signed figures are t tested for differences between means, and they are significant at significance level, 1%, 5%, and 10% respectively ²

Source: Results based on field survey, 1996-1997 (Data collected from Gaza).

In order to examine the contribution in terms of total value added and total employment according to different sizes, industries in the sample are divided into two sizes, micro and small-scale industries. Even though we excluded firms employing less than 5 workers, the micro size still forms half of the firms in number. This emphasises the small nature of firms in the GS.

The average employment for the micro size is 5.4 workers, and micro-firms form 48% of the firms in the sample. They contribute 19% of total employment and 15% of total value added. The average employment for the small-size is 21.5 workers, with 52% of firms number in the sample, but 81% of total employment. They contribute 85% of total value added.

If we compare the two size categories, we find that there are small and insignificant differences according to comparison of share in VA and employment. The micro-size has (15 and 19%) of total VA and employment, while small-scale size has (85 and 81%) of total VA and employment, which implies that labour productivity is not very different in these two categories³.

Growth rate and cost per job creation in all firms

Growth of employment (GE) is very low in the GS, if compared with the growth of total assets or to the need for creating jobs and overcoming problems of unemployment. For our sample (which includes only firms that continued in operation), it is only (3%) yearly, from the time that firms started their operations until

the end of 1996, while growth of total assets (GTA) is higher at about 12%⁴. As we mentioned above, we exclude 25% of firms that have gone out of the business, however, if we take this into consideration, this will reduce the real growth of employment and total assets due to the high death rate.

For all firms, GE and GTA are growing positively in the same direction, which is the normal development, but all sizes and sectors do not behave in the same way. Table (3) shows differences in GE and GTA in different sectors, different sizes and local or sub-contracting firms.

It is obvious that Clothing firms are growing faster than all other firms in both GE and GTA, and they are lower in terms of cost per job. These differences are significant at 1% level of significance. The growth of employment that appears in all firms is due only to Clothing firms since there is a fall in employment for the other two groups. The lower rate for CJC implies that the Clothing group is the most efficient in generating cheaper jobs compared by Food or Others group.

For different sizes there is a significant difference in terms of GE, but the difference is not significant in terms of GTA and CJC. GE is negative in the micro size firms, but it is positive in the small size. The positive and the high growth for the small size reflects more stability and suggests that small firms are dominated by Clothing and Sub-Contracting firms. This result reflects more stability in the case of slightly larger firms, and also reflects the encouragement of Israeli firms to the local Clothing firms, that work as subcontractors to them. CJC is approximately the same without any significant differences, although it is lower in small firms compared to micro firms.

Table (3) GE, GTA and CJC for different sectors, and size

Type	GE	GTA	CJC
Clothing	.08***	.20*	2467***
Food	-.02	.04	26251
Others	-.015	.065	22867
All firms	.03	.12	9464

Size	GE	GTA	CJC
5-----9	-.0198 ***	.08	10110
10-----	.0598	.15	8910
All firms	.03	.12	9464

Sector	GE	GTA	CJC
Subcont.	.062***	.12	2077***
Local	.0073	.12	13946
All firms	.03	.12	9464

***, **, *, means the same as in table 2

CJC for full time equivalent = (total assets / total employment in the firm) * (No of working months / 12).

GTA = (TA replacement / initial TA)^{(1/ age of the firm) -1}

GE = (Number of workers / initial No. of workers)^{(1/ age of the firm) -1}

Source: Results based on field survey, 1996-1997 (Data collection from the GS).

Clothing and Sub-contracting firms are growing faster than other firms, using labour-intensive and they are the cheapest in creating jobs. Cost per job creation is almost the same without any significant differences between different sizes of firms.

Efficiency measures for different sectors

There are significant differences between different sectors in terms of most efficiency measures. We shall discuss partial and comprehensive efficiency measures; partial efficiency measures include labour and capital productivity, and comprehensive efficiency measure is profit ratio.

Partial efficiency measures

Food firms have the highest labour productivity among the three groups, while their capital productivity occupies the middle position between Clothing and Others. Although labour productivity is the lowest in Clothing, capital productivity is the highest, which implies that Clothing is the most efficient in using capital, the scarcer factor. This may refer to the low level of capital-intensity in Clothing due to the nature of sub-contracting that dominates the Clothing group. There is no significant difference between Food and Others in terms of capital productivity (see table 4).

In the case of the GS, higher CP is more important than higher LP for two reasons; the first is the scarce capital and problems in getting loans from banks, while the second reason is the high unemployment that faces the government in the NPE especially in the GS. So arguably it is important to create jobs, even if they have a low labour productivity.

**Table (4) Partial and comprehensive efficiency measures.
Surveyed firms by groups**

Sector	LP	CP	PR
Clothing	4928***	2.32 **	.28***
Food	39361 *	1.84	.18
Others	10220	1.46 **	.11
All	11901	1.9	.20

5-----9	7208	1.66	.15
10-----	15987	1.65	.24
All firms	11729	1.91	.20

Subcontracting	3746***	2.2	.27**
Local	16821	1.7	.15
All firms	11729	1.9	.20

***, **, *, means the same as in table 2

LP = total value of output / total employment.

CP = total value of output / total assets.

PR = total profit / total assets.

PM = total profit / total value of output.

total profit = (VA - wages and salaries).

Source: Results based on field survey, 1996-1997

(Data collection from Gaza).

Comprehensive efficiency measures

Clothing firms have the highest profit ratio (28%) at 1% significance level. While profit ratio in Food (18%) is slightly higher than Others (11%), but the difference is not significant

If we compare partial and comprehensive efficiency measures, Clothing seems to be the most efficient among the three groups. Clothing is the highest in terms of capital productivity and for the profit ratio, and the lowest in terms of capital intensity. This implies that Clothing is the most efficient in using capital; it is also the most efficient in profit per unit of capital which is the scarce factor of production, but is the lowest in terms of labour productivity, because the vast majority of clothing firms work as sub-contractors to Israeli firms with a special relation between the sub-contractors and the

Israeli firms. In the GS, we might accept lower labour productivity to create more employment, because of the high ratio of unemployment there.

Clothing firms are the lowest in terms of LP, while Food industries are the highest. These differences are significant at the 1% level. Taking into consideration that the capital is the scarce factor, Clothing is the most efficient among the three groups.

Other firms are the lowest in terms of PR, and CP and less than the average in terms of LP so, considering partial and comprehensive efficiency measures, the Others group is less efficient compared with Clothing and Food, while Food has the middle position amongst Clothing and Others.

Efficiency measures for sub-contracting firms

There are significant differences between sub-contracting and local firms in terms of partial and comprehensive efficiency measures. This is clear from table 4, and implies that sub-contracting affects partial and comprehensive efficiency measures.

Sub-contracting firms are significantly lower in terms of labour productivity, but higher in terms of capital productivity (see table 4). Depending on partial efficiency measures for comparison, sub-contracting industries are more efficient in using capital, the scarce factor of production in the GS although the difference is not significant. But local firms are more efficient in terms of LP. The nature of the sub-contracting with Israeli firms reflects the low level of LP, because those firms take only wages for doing a job. They do not buy raw materials nor sell the product.

Comprehensive efficiency measures confirm that sub-contracting firms perform better than other firms. The profit ratio is significantly higher in sub-contracting firms. As a result it is obvious that sub-contracting firms are more profitable than local firms. This result is compatible with the studies of Cortes (1987), Boswell (1972) and Heemst (1982). Table 4 shows efficiency measures for subcontracting and local firms.

Efficiency measures for different employment size

Both partial and comprehensive efficiency measures are higher in small firms than micro-firms, even though the differences between different sizes are not significant. LP as a partial efficiency measure is higher (double) in small firms compared with micro firms. However, there are no other significant differences in terms of partial efficiency measures. According to the partial efficiency measures there is no difference between the two sizes, although LP is higher in small firms compared with

micro size. One of the explanations for the low LP for the micro size is the cottage and craft nature of the micro size firms in the GS⁵. While capital productivity is almost the same without any significant differences (see table 4).

There are differences between the two sizes of firms in terms of profit ratio and profit margin in the same direction. The PR is higher in the small firms but the difference is not significant, even though it is big difference. This result should not be surprising, Cortes (1987) and Boswell (1972) found that firm size did not appear to have a significant impact on efficiency or profitability. Little (1987) also found no systematic relation between size and profitability. Taking both partial and comprehensive efficiency measures into consideration it is obvious that the two sizes are performing similarly, even though the averages are higher in small firms.

Regression analysis of factors determining the selected ratios

We used the multiple regression analysis to determine factors affected growth of employment and cost per job in the firms as a dependent variable. The data used are suitable for such regression. The dependent variable is continuous variable in each model, while the independent variables are mixed, some are continuous and others are dummy variables.

• Dependent and independent variables

The dependent variables that we explain are the economic variables that measure performance of the firms. Two types of performance measures are examined; first, as a growth indicator we use growth of employment (GE); second, the technology indicator, that is capital intensity, or as it is termed here (CJC). The independent variables are the characteristics of the firms, as well as dummies for the unstable political and economic situation.

In the literature there are many independent variables that might determine economic performance. We assume that characteristics the small-scale industries affect performance in small and micro-scale industries in the GS. The main variables representing those characteristics are; size, age, type of technology, type of finance, type of management, relation between management and employees, training of the employees, location, type of industry, type of ownership, father's occupation, education, and so on. We add some dummies that represent the special situation in the GS such as: problems in getting raw materials as a result of closure and the unstable

political situation, as well as sub-contracting, capacity utilisation and demand situation.

- **Factors determining technology ratios**

For CJC it is used as an indicator of technology. After running the regression analysis, we find that the main significant explanatory variables that affect CJC are, initial total assets, father's occupation, average wage, local or sub-contracting, type of technology, age of the firm, type of ownership of the firm, owners' education and experience, working months per a year. Table 5 shows the result of regression analysis of cost per job creation in all firms and in each group separately. It shows the coefficients, the signs, t statistic in parenthesis, and the significance level. It shows also F test and adjusted R^2 , as measures of how well the model fits the data.

- **Technology indicators for Clothing firms**

For Clothing firms, adjusted R^2 is 0.55, which means that the three explanatory variables that reported in table 5 for Clothing firms explain 55% of the variation, while other independent variables have limited and insignificant impact on CJC. F calculated is much higher than critical F, and this indicates a good fit for the Clothing regression equation at 1% level of significance.

There are four main significant independent variables that explain or affect CJC. They are; initial total assets, fathers' occupation, type of technology, and experience of the owner. All independent variables have the expected relation with CJC.

The initial total assets as a measure of size of capital at the start have a significant positive impact on CJC. This relationship is expected since if the firm had been started with capital-intensive techniques the results show that it is more likely to continue with capital-intensive techniques, and a high CJC. This result suggests that larger firms at the start of operations measured by total assets have a higher CJC. This differs from result if we measure size by number of employees.

Imported technology has a low significant positive relationship with CJC at (0.10) level. This relationship is expected, because the imported technology is likely to increase total assets more than total employment. This is due to the expensive imported technology.

Owner experience has a negative relation with CJC in Clothing firms. It is an expected and significant relationship at 0.05 level. Those owners that have more

experience in Clothing will try to reduce capital intensity and work with minimum capital, because of the instability and the absence of continuous work.

Table (6) Regression Result Of cost per job creation (CJC)

Independent Variables	Clothing n = 45	Food n = 13	Others n = 45	All Firms n = 101
Constant	-618 (-0.48)	22348 (2.42)**	-36669 (-3.46)***	-9897 (-2.02)*
Initial total assets (ITA)	0.07 (6.7)***	0.03 (4.8)***	0.11 (5.2)***	0.045 (9.3)***
Average Wages (W)	-	-	96 (3.1)***	37.56 (2.2)**
Father occupation (FOc)	2173 (2.9)***			
Local Firms (L)	-	-	-	10460 (4.5)***
Imported Technology (IT)	2528 (2.9)***	13064 (2.13)*	7682 (1.8)*	3992 (1.6)*
Family ownership (FO)	-	-20062 (-2.9)**	-	-
Age (A)	-	-1110.1 (-2.15)*	-	-
Age (1-9) (A1-9)	-	-	-	-4249 (-1.9)**
Experience (EX)	-210 (-4)***	-	-	-
Month per year (MY)	-	-	1698 (2.6)***	-
Adjusted R ²	0.55	0.87	0.49	0.58
F Statistic	14 ***	19***	10***	27***

n = number of valid observation, figures in parenthesis are t statistics, ***, **, * : significant at 1,5,10% level respectively.

Source: researcher computation based on field survey.

Technology indicators for Food firms

For Food firms, adjusted R² is 0.87 which means that the four explanatory variables that reported in the table 6 for Food firms, explain 87% of the variation, while other independent variables have a limited and insignificant impact on cost per job creation. F calculated is much higher than critical F, and this indicates a good fit in Food regression equation at less than 1% level of significance.

There are four main significant independent variables that explain cost per job creation. They are; initial total assets, imported technology, family ownership and age of the firm. All independent variables have the expected relation with CJC.

The effect of initial total assets and imported technology has the same relation with CJC as for Clothing firms and the same explanation should apply. Initial total asset is significantly related to CJC at 1% level, while type of technology has a significant relationship with CJC at 10% level.

Type of ownership also affects CJC. If the firm is family owned, it is less capital-intensive and can create cheaper jobs at 5% significance level. This is due to the objectives of the family-owned firms, which for the majority of these firms are to create job opportunities for the family.

Age of the firms has a negative relation with CJC in Food firms at 10% significant level. This indicates that the older firms create cheaper jobs and are more labour-intensive, while the younger firms are more capital-intensive probably due to the use of more modern technology by the latter.

- **Technology indicators for Other firms**

The explanatory variables that affect CJC in Other firms are; initial total assets, average wages, imported technology, and number of working month per year. All reported independent variables have a significant positive relationship with CJC in Other firms. Adjusted R^2 for other firms equals 0.49 which means that the explanatory variables that reported in table 6 for Others groups, explain 49% of the variation. F test indicates a good fit in other firm's regression equation at 1% level of significance.

Initial total assets have an expected significant relationship at 1% level, for the same reasons as for Food and Clothing firms. Average wages have a significant positive relationship with technology indicators at 1% level. This positive relation is probably because firms that use capital-intensive techniques need more qualified workers. Therefore they have to pay more for average wages. This is an expected relationship that is found for Others groups and All firms only.

Imported technology in Others groups, as in Clothing and Food, has an expected positive relationship with CJC. This relationship is significant at 10% level. Number of working months per year has a significant positive relation with CJC at 1% level. This result indicates that firms, which work the whole year, are more capital-intensive. Therefore they try to maximise the utilisation of capital.

- **Technology indicators for All firms**

For all firms, adjusted R^2 equals 0.58 that means 58% of the variation of cost per job creation in all firms is explained by the explanatory variables that are reported in table 6. Also F test indicates that the equation fits the variables well at less than 1% level of significance.

The main variables affecting CJC in All firms are: initial total assets, average wages, sub-contracting, imported technology, and a dummy for the firms existence in the Intifada period, that is if the age of the firm is 9 years or less. All the variables have the expected relationship with the explained variable.

CJC is higher in the firms that started with higher total assets and in firms that use imported technology as well as in firms that paid higher average wages at 1, 5 and 10% respectively. This relation is expected and is the same as for Others groups in the sample.

CJC is higher in local firms than in sub-contracting firms and this is an expected relation. This positive relationship between local firms and CJC is significant at 1% level. Firms that started in the Intifada period are more labour-intensive, for reasons similar to those that apply to the age variable. This effect exists in each group, but it is only significant in All firms

Factors determining growth

We find that the main significant explanatory variables that affect employment growth (GE) are; profit trends, working months per year, experience of the owner, age of the firm, profit ratio, growth of total assets, number of workers, and type of finance. Table 7 shows the results of regression analysis of growth of employment in all firms and in each group. It shows the coefficient, the sign, t statistic in parenthesis, and the significant level. It shows also F test and adjusted R² as a measure of how well the model fits the data.

Table (7) Regression Result Of growth of employment (GE)

Independent Variables	Clothing n = 45	Food n = 14	Others n = 44	All Firms n = 103
Constant	-.0224 (-.66)	-.028 (-.73)	-.207 (-5.7)***	-.125 (-6.5) ***
Profit trends (decrease) (P.D)	-	-.073 (-2.3)**	-	-
Working Month per a year (W.M)	-	-	.014 (4.5)***	-
Experience (Ex)	-	-.003 (-2.1)*	-	-
Age (A)	-.004 (-2.2)**	-	-	-
Profit Ratio (PR)	-	-	-	.10 (2.5) **
Growth of total assets (GTA)	.26 (9.6)***	-	.31 (4.1)***	.28 (11.8) ***
Number Of Workers (N.W)	-	-	-	.001 (1.8) *
Number of workers at start (W.L)	-	-	-.002 (-2.2)**	-
Self Finance (S.F)	.127 (3.9)***	.103 (3.5) ***	.08 (3.5)***	.116 (6.1) ***
Adjusted R ²	.76	.76	.62	.70
F Statistic	46 ***	15 ***	17***	56**

n = number of valid observation, figures in parenthesis are t statistics, ***, **, * : significant at 1,5,10% level respectively.

Source: researcher computation based on field survey.

Conclusion

In this paper we discuss variables affecting performance for all firms in the sample and for each group and for local and sub-contracting firms.

The main finding of the regression analysis is that both characteristics of firms and factors representing the unstable conditions and political situation are affecting significantly the performance of the firms. Not all firms or groups of firms perform in the same way, and there are differences between groups of firms in terms of performance indicators.

1. The main finding for CJC is that it is higher for local firms than sub-contracting firms. This finding indicates that sub-contracting firms are more efficient in creating cheap jobs. Size of the firm has a negative effect on CJC for All firms and for each group. This indicates perhaps unexpectedly that for the sample larger firms can create cheaper jobs. If we consider that virtually all firms in the GS are small or of micro size, so small is preferable to micro size from this point of view.

2. The most important factor that determines GE is the source of finance. If the firm is self-financed, it will increase labour relative to capital and GE is higher. This result is true for All firms and for each group. Another finding is that growth of total assets grows in the line with GE, which is expected. For GE, the results show that Clothing firms are growing faster than Food or Other firms. Also firms that start with a small number of workers grow faster than firms that start with a larger number of workers.

Another interesting result is the relation between objectives of the firm and the CJC or the relation between type of ownership and if firms are self-financed or financed by others, and CJC. If firms are family-owned or their objective is to create labour for the family, rather than to employ excess capital. This will decrease the CJC. Also if firms are self-financed, firms are labour-intensive and CJC is low. Labour-intensity might be due to the shortage of capital in the GS; however, it will help in solving the serious problem of unemployment in the GS. The positive relation between informal relation in the firm and profitability in the Others groups is an indicator of the traditional nature and smallness of firms in this group. This implies that it is difficult for this group of firms (Others) to employ formal and registered workers having different rights, due to the positive relation between profitability and informal relations between workers and owners of firms.

The problem in getting raw material is one of the important issues in the GS, as a result of the instability and the Israeli restrictions on importing freely from abroad. This problem is clearer in Food and Others groups but is not significant in Clothing and sub-contracting firms. Israeli firms try to facilitate getting raw material for the sub-contracting firms in the GS, some times illegally, through the Israeli settlements that are spread in the GS. It is easier for settlers to enter the GS under the Israeli restrictions and monitorship, especially in the closure periods. On the other hand, it is very difficult for all other firms including Food firms, to get the proper raw materials due to the Israeli restrictions in general and especially in the closure periods. It is an Israeli policy to prevent any Palestinian competing with Israeli firms. As a result, we find a negative effect of the raw material problem on profitability for the Food or Others groups.

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¹ . Size of firms is measured by number of workers.

² . This t test is done after the consideration of Levene’s test for equality of variance. In SPSS package there are two values for estimated (t). The first value is usually use if Levene’s test shows equal variances, while the second (t) value is usually use if Levene’s test shows unequal variances in the two populations from which the researcher takes the sample. This note is suitable for all tables containing * marks in this chapter. See (Norusis, et al, 1995)

³ . Testing for differences between different sizes in terms of LP will be done in chapter 6.

⁴ . This is in current prices, which could be misleading due to inflation.

⁵ . Even though this result seems to be surprising, Ho (1980) found mixed evidence regarding the relationship between size and CP, while Wagner and Korka (1995) found a negative relation between size and LP. This means that micro size firms have higher LP than small or medium firms.