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Options for human resources development in Egypt: The labour market context

Analysis of the findings from the Egypt survey of human resources development

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Foreword

This report is based on findings from the 1996 Egypt Human Resources Development Survey, which was carried out to document changes in labour demand and in the occupational distribution of employment and to take stock of the training needs and practices of both large state-owned enterprises and very small informal sector shops. The survey provides a wealth of information on human resources development practices and employment trends at a critical juncture in Egypt's transition to a more open economy. These economic changes portend fundamental shifts in what kinds of jobs will be created (and lost) and substantial challenges for enterprises and government authorities in adjusting to these changes.

The survey findings are indicative of broad trends in labour market developments at the enterprise level and suggest areas in which resources devoted to human resources development would be most effective, for example targeting work skill development towards the types of enterprises that indicate the greatest need, such as firms facing import and export competition, and those where job creation potential is highest, such as enterprises that are investing in new technologies; emphasizing entrepreneurship development for workers in the informal sector and in large firms facing privatization; and improving the labour-matching services that public employment agencies are able to offer employers and job-seekers. The report illustrates the utility, and necessity, of basing such human resource policy decisions on analysis of appropriate labour market data.

This paper was originally submitted as part of the Study on Options in Human Resources Development for the Government of the Arab Republic of Egypt. Research on the demand side of the labour market was part of broader advisory services on human resources development provided to the Government by the Employment and Training Department of the ILO. This work was coordinated by Anthony Twigger of the Training Policies and Systems Branch.

The survey instrument was developed by Lin Lean Lim and Virginie Pérotin as part of the work on Labour Market Information Systems carried out by the Employment and Labour Market Policies Branch of the ILO. The survey was conducted by the Central Agency for Public Mobilization and Statistics (CAPMAS), under the direction of Mr. El Heneidy, CAPMAS consultant. Support for carrying out the survey was provided by the United Nations Development Programme and the Egypt Social Fund for Development.

Thanks are extended to the enumerators at CAPMAS, to all of the establishment managers that gave of their time to participate in the survey, and to Mr. El Farouk of the Egypt Social Fund for Development for his support in carrying out this work. Thanks are also due to Virginie Pérotin for her valuable comments on the report draft and to Smita Barbattini for managing the data files and preparing the graphics. The final document was prepared by Anne Drougard.

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1. Introduction

A broad perspective that links human resources development closely to labour market and other socio-economic developments has three main sets of related implications. Firstly, it implies that an analysis of the human resources development challenges and response measures should be based on a realistic assessment of the labour market situation. Such an assessment should not only shed light on the supply and demand sides of the labour market but should also identify the broader contextual factors that have affected and are likely to affect human resource mobilization, utilization and development. These contextual factors could include, for example, how enterprises are responding to economic reform or structural adjustment programmes, moves towards privatization, the opening up of markets to international competition, export-promotion drives, and so on. Secondly, emphasizing the importance of the "enabling environment" means that additional measures are needed to support an effective human resources development programme, such as the legal, institutional or taxation reforms which would encourage enterprises to provide training to workers, the labour market information requirements to better match the supply and demand for labour, human resources management to complement human resources development, measures to redeploy redundant workers especially those employed in state enterprises, etc. Thirdly, it means that to be effective, human resources development should focus not just on reform of the educational and vocational and skills training systems. It should include, for example, effective labour market policies and programmes, an efficient system of labour market information, measures to enhance entrepreneurship development and dynamic efficiency of those in small and medium size enterprises, and efforts to promote employee-friendly and family-friendly workplaces where the development and utilization of skills are likely to be more effective.

This report illustrates some of these linkages and issues for the case of Egypt. It is based mainly on the findings of a 1996 survey of 1,700 Egyptian establishments in the manufacturing and service sectors in three governorates. It focuses on how human resources development practices facilitate or hinder adjustment to the emerging challenges confronting Egyptian businesses. The survey findings highlight the role of enterprises – their demand for labour in terms of occupation mix and skills structure, the mismatch between labour demand and labour supply, etc., and how their labour market adjustments, training practices, etc. are enabling them to respond to external challenges. How successfully they respond to these challenges will determine their ability to create more good jobs for a growing population.

While the survey focuses on the enterprise level, it is important to stress the point from the outset that the implications for human resources development are much broader. In addition to training at the enterprise level and how employers view investment in improving the productivity of their workforce, there are important implications for the entire range of human resources development – for individuals investing in their own job skills; the need for better functioning labour market information systems that signal to individuals and public and private

training institutions what skills and occupations employers will need; the reform of education, training and retraining policies and programmes; and the role of public and private training institutions vis-a-vis the role of enterprise-based training.

1.1. Organization of the report

To define the scope and coverage of the information for this report and to set the overall context, the following two parts of this Introductory section describe the Egypt Human Resources Development Survey (EHRDS) and highlight the main challenges confronting enterprises in Egypt.

The main part of the report is based on data from the survey. Section 2 describes the characteristics of the surveyed establishments, distinguishing state-owned and privately-owned, large and small, rural- and urban-based establishments and summarizing their distribution by industrial sector. Sections 3 to 6 present the main findings, which are used to answer four basic questions:

- How do business managers and owners perceive threats and opportunities to their future growth?
- How effective are their current labour market adjustments and training practices in enabling them to respond to external challenges?
- How extensive is their participation in existing training programmes, how do they evaluate their relevance and effectiveness, and what do they identify as priorities for public policy in the area of human resources development?
- Finally, what types of government support would be most effective to improve human resources development and thereby both encourage and enable establishments to provide more good jobs?

The survey findings on human resource development practices and needs are analysed and contrasted for establishments in each of these principal groups: the informal sector (of small establishments), the state-owned sector, and rural establishments. Where interesting information is available, the report also discusses the experience of establishments which have recently adopted new technology or are attempting to compete with foreign firms in export/import markets. The current practices and future prospects of each group are analysed with the aim of ensuring that policy recommendations are appropriate to the particular needs of different types of enterprises.

Section 3 examines how establishments have fared in relation to recent economic trends and macroeconomic challenges. It documents the overall performance of establishments in each group, and highlights the challenges and problems managers and owners ranked as having the greatest impact on their performance and prospects. Section 4 describes establishment responses in terms of their labour market practices. It analyses labour demand in terms of the employment structure of the establishments, their hiring and firing practices, recruitment preferences, etc. It also assesses how well the labour market has been functioning in terms of matching job seekers and prospective employers. Section 5 examines establishment responses in terms of functional flexibility through human resources development, specifically in terms of training practices and the types of employees who are most likely to receive training. The section also examines the extent to which establishments participate in public training programmes, and their satisfaction with these programmes. In addition to training, establishments in Egypt also engage in other broader aspects of human resource development and management. Section 6 therefore looks at remuneration, terms of employment and

working conditions, social benefits, etc. Section 7 summarizes the main findings in relation to the challenges and options for human resources development in Egypt.

1.2. The Egypt human resource development survey

The questionnaire for the Egypt Human Resource Development Survey (EHRDS) was developed by specialists in the Employment and Training Department (EMPFORM) of the International Labour Office, Geneva.[1] A pilot test of the survey instrument was carried out in the Alexandria Governorate for twenty public and private sector establishments.[2] The survey was conducted by the Central Agency for Public Mobilization and Statistics (CAPMAS) in the summer 1996. Interviewers were trained by officials from CAPMAS and EMPFORM. Coding and data entry were done by CAPMAS, which supplied EMPFORM with the data files for analysis. The survey itself was part of a study on human resources development funded by the United Nations Development Programme (UNDP) at the request of the national government, with additional funding provided by the Egypt Social Fund for Development.

The most recent census available for identifying establishments had been carried out in 1986. However, a later survey of manufacturers in 1992 showed significant changes within the private sector. It was therefore felt that the census would not provide an accurate listing of businesses from which to draw a random sample. Rather than stratifying on the basis of an obsolete sampling frame, it was decided to do area (random) samples for the private sector. The pilot survey was based on sampling areas within three selected governorates: Alexandria, Dakhalia and Assuit. About half of the administrative units or shiackhas, in each of the three governorates were included in the sample frame. All public and formal-sector, privately-owned establishments in the selected shiackhas were identified according to CAPMAS records and included in the survey. In addition, all informal sector establishments (those with ten or fewer employees) found in a sample of 200 buildings in each shiackha was also surveyed.

A particular advantage of this sampling framework was that the survey captured a sufficient number of establishments across industries, ranging from the smallest to largest firms, both private and government-owned, to permit adequate comparisons to be drawn. In order to document establishments' training practices and needs, it was deemed important to include firms which were likely to provide worker training, as well as those which were not likely to provide training (such as establishments with few workers, single proprietorships, small trade activities). The survey thus served three purposes:

- First, it allowed researchers to identify where training does not take place, and to analyse whether its absence constrains establishment productivity and growth.
- Second, it provided sufficient detail of information on firms which do provide training to permit analysis of the effectiveness of existing private and public training programmes.
- Third, it collected data on the specific types of skills sought by particular types of establishments.

[1] The design of the survey questionnaire was in a sense constrained because the original aim was to ensure some comparability with other surveys. One survey was based on a questionnaire prepared by GTZ (Deutsche Gesellschaft für Technische Zusammenarbeit) which was interested in examining the implications of a cooperative (dual) vocational education and training system in Egypt which is partly supported by German technical assistance. It was also thought useful to have some comparability with enterprise labour flexibility surveys that the Employment and Training Department has conducted in a number of other countries.

[2] The survey instrument was then modified slightly to clarify some questions and to resolve possible ambiguities based on discussions with enumerators about their experience administering the questionnaire.

While the survey sample was representative for the three governorates covered, the survey results should not be considered representative of the national economy on the basis of industry sectors. Rather, analysis of the survey data provides indicators of human resources practices and needs across a wide variety of establishments and across formal and informal sectors, size and ownership characteristics. The survey results are presented and contrasted for major groupings of respondent establishments within the sample, without attempting to extrapolate survey responses to the entire population of Egyptian establishments.

All the data analysed in this report originate in the Egypt Human Resources Development Survey (EHRDS). The reference date for most of the data was January 1996, although some questions were answered on the basis of the situation at the time the survey was administered, August 1996.

1.3. The major challenges for human resources development

To set the context for the rest of the report, this sub-section highlights the main human resources development challenges and the related policy considerations in Egypt. Although the report based on the survey results obviously cannot shed light on or provide answers to all these challenges, it is worth drawing attention to them.

C *The Employment Challenge: What will be the main sources of productive employment in the future?*

Human resources development in Egypt has to be seen in a context where population and labour force growth are still rapid, there is growing unemployment and persistent under-employment and the potential for international labour emigration is expected to be more limited in the future. It is clearly important to have a handle on the demand for labour – the number and types of jobs, etc. in the Egyptian economy in the coming years. To date, the Egyptian economy has been dominated by the service sector which, including public administration, accounts for almost half of the GDP. In the future, however, the public sector cannot be expected to be the main job creator. Currently also, the informal sector (firms with fewer than ten workers) is estimated to account for as much as half of total employment activity, so a focus only on vocational and skills training for the formal sector will not be appropriate or adequate in the Egyptian context.

C *The Challenge of Entrepreneurship Development and the Informal Sector*:

A very high proportion of establishments are in the informal sector and small enterprises tend to dominate the economy. Almost 70 per cent of the establishments covered in the EHRDS are in the “informal” sector. These are very small businesses, most often owned and managed by individuals or families, typically but not exclusively engaged in providing consumer services, and which currently account for a relatively small share of total jobs. The capacity of this sector of the economy to contribute to employment, productivity and growth is obviously critical. Especially as large state-owned enterprises are restructured, the importance of small and medium size enterprises would grow, and the challenge is to support their development. It is important to determine, for instance, how the needs and problems of small enterprises in the informal sector, especially in relation to human resources development, differ from those of large state enterprises. It is important also to identify the main constraints establishments in the informal and small and medium size sectors face and to see how the government can assist them to overcome these constraints.

C *The Challenge of Economic Reforms, Exposure to International Competition and the Adoption of New Technologies:*

Export or import competition is currently not an overwhelming problem for establishments in Egypt; it was identified as a serious problem by less than ten per cent of the survey respondents. But it can be expected that as the economy moves towards trade liberalization and export promotion and becomes more open to foreign investments, Egyptian establishments will be under increasing pressure to be efficient and competitive. Firms attempting to enter foreign markets or firms finding their home market share increasingly threatened by foreign competition need to improve product quality and workplace productivity. Meeting this challenge rests in part on their ability to retrain existing workers and to hire new labour market entrants with the required skills.

The better enterprises are able to adopt new technologies and to ensure that their workforce have the necessary skills to operate the new technologies, the more economically efficient they would be. The survey found that one out of five establishments had adopted new technologies in order to improve their productivity or competitive position. These establishments may have the most obvious training needs. Their success or failure in upgrading skills of their employees or hiring new ones with the desired qualifications reveals strengths and weaknesses in the human resources development institutions and labour markets.

The success of businesses would also hinge on their ability to exploit international comparative advantage through export market identification and participation. Those producing for the domestic market also need to be able to better compete against imports. And the way in which enterprises adjust their internal and external labour markets would have major implications for employment and human resources development. The challenge to workers is that they need to be more productive and flexible, and this is clearly where skills training and upgrading assume greater significance.

C *The Challenge of Privatization:*

As part of the economic reforms in the country, there is an ongoing process of privatization. Approximately 10 per cent of the establishments covered in the survey were totally or partially state-owned but they accounted for some 80 per cent of total employment. The challenge is to determine how the shift from public to private ownership can be efficiently achieved, and also to identify and deal with the implications of privatization for workers. Other critical questions concern the effective mechanisms for privatization: Should there be an outright sale to the private sector, should shares be given to employees, should foreign partners be brought in, etc.? It is also important to have information on how state enterprises can be assisted to improve their productivity and cost-efficiency so that they can effectively compete in increasingly aggressive environments.

The survey revealed differences in human resources practices between state-owned and privately-owned establishments; and the analysis suggests how privatization may affect aggregate demand for labour and also the skill and occupation mix of the workforce. Understanding these differences will be helpful in devising policies to manage the human resources dimension of the privatization process. The implications of privatization are directly related to the problem of surplus workers. How can human resources development help in the redeployment of surplus workers from privatized enterprises, and what are the social safety net arrangements for retrenched workers?

C *The Challenge of Rural Establishments*:

The disparities between rural and urban areas represent a major challenge in the process of development and modernization. In the survey, about 10 per cent of the establishments were

located in the rural governorate of Assuit. Rural establishments may be particularly vulnerable to being excluded from modernization processes. Their viability as an important source of employment may also be threatened if they are unable to respond to external forces of change. Human resources development policies are part of the broader efforts to improve employment prospects and living standards outside the urban areas and to mitigate disparities in opportunities between urban and rural areas.

C *The Labour Market Information Challenge:*

For an economy in transition, there are clearly growing needs for labour market information that can help ensure better matching of supply and demand, and also smoother adjustments in the labour market. To improve labour market information, employment services could play an important role. But their role depends on how they are viewed by establishments – whether they are considered as providing useful services, whether establishments feel the need to report vacancies to them, etc. It would also be useful to see how training institutions determine training needs, do they involve the "end users" in identifying the needs and developing the training packages, and what can be done to encourage greater cooperation between training institutions and employers? Especially in the Egyptian context of small establishments which may rely more heavily on public training institutions for skilled workers, this linkage is important.

C *The Challenge posed by Vulnerable Groups:*

An important aim of human resources development should be to improve the position of vulnerable groups in the labour market. The special needs of vulnerable groups should be taken into account in designing human resources development policies and practices, so as to ensure that they are not further marginalized in the process of enterprise adjustment to competitive forces. It is important, for instance, to examine the position of women and men in the labour market and understand whether labour market trends imply more or fewer jobs for women, the extent of occupation segregation that exists, and the measures that can be taken to promote equality of opportunity and treatment. Human resources development should give attention not only to women but also to other disadvantaged or vulnerable groups, such as child labour or older workers.

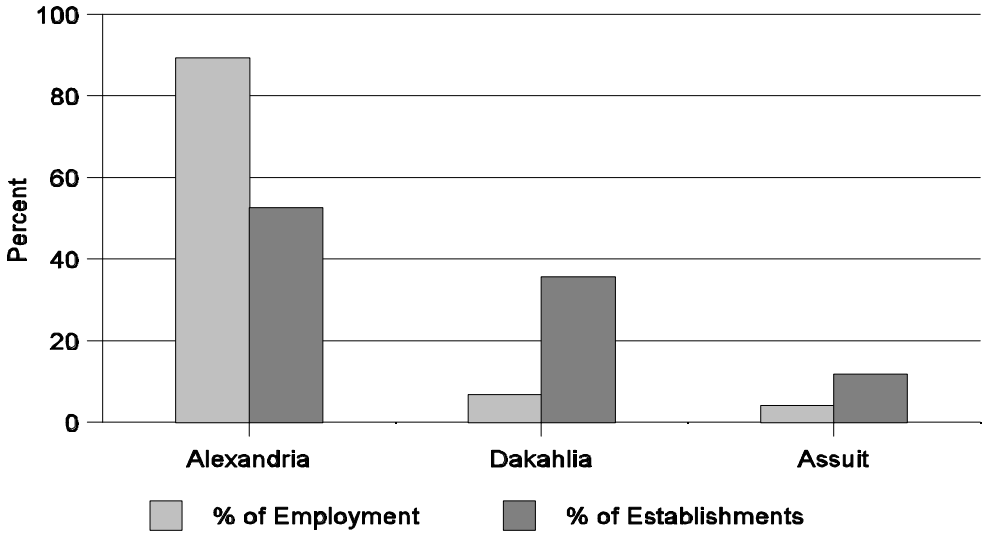
2. Characteristics of the surveyed establishments

This section describes these 1,700 establishments covered in the survey in terms of their location, type of economic activity, size of work force, and type of ownership. These are the principal characteristics for which findings will be compared throughout the report.

2.1 Region and industrial sectors

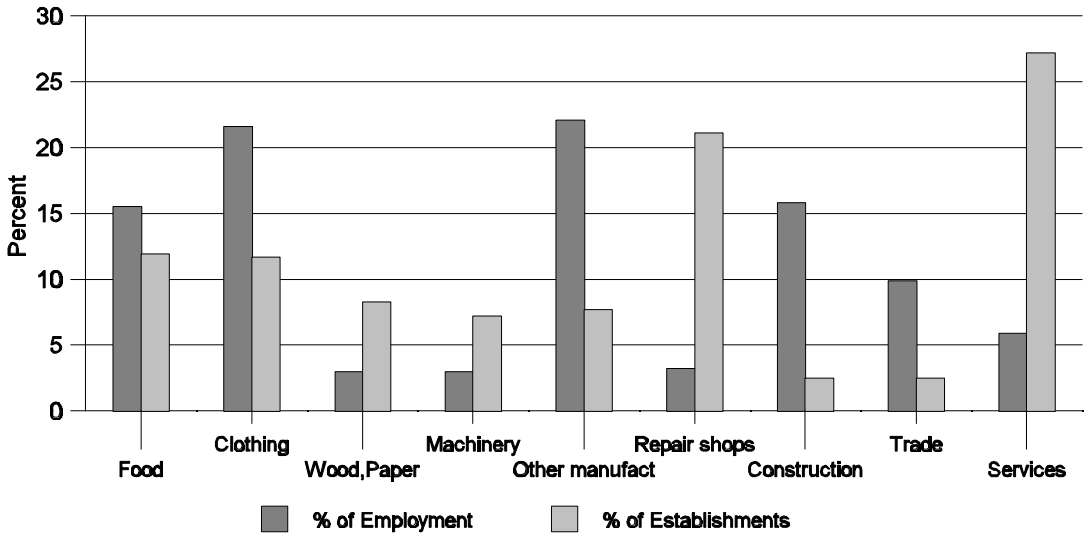
Just over half of the establishments were located in Alexandria, but they accounted for 90 per cent of the 282,259 employees covered by the survey (Figure 1). A third of the establishments surveyed were in Dakahlia, and the final 11 per cent were in the rural governorate of Assuit.

Figure 1. Establishments and employment by region



The survey respondents were distributed almost evenly between manufacturing (47 per cent) and non-manufacturing (53 per cent). However, manufacturing accounted for twice the number of jobs as services, 65 per cent versus 35 per cent in services. For ease of contrast, branches of economic activity have been grouped into five manufacturing and four non-manufacturing sectors (Figure 2).

Figure 2. Establishments and employment by industry



The largest single sectors, in terms of employment, were clothing/textiles (22 per cent), construction (16 per cent), and food products (15 per cent). Because they accounted for relatively few of the establishments individually, the chemical, pharmaceutical, and building materials branches were combined together (along with other smaller industrial branches) and accounted for about 22 per cent of total employment. Machinery was also a broad category, encompassing metal works, engineering, automotive and electrical engineering and electronics,

but adding up to only 3 per cent of employment in 7 per cent of the establishments. (See Appendix Table 1 for more detailed employment data by industry.)

The single largest sector in terms of number of establishments was "maintenance", which was relabelled "repair shops" to more accurately reflect its small, independent nature. The repair and consumer services sectors together accounted for nearly half of all the surveyed establishments (21 per cent and 27 per cent, respectively) but even combined, their share of total employment was less than 10 per cent. By contrast, the other two principal service sectors, construction and trade/transport had relatively few, but large, firms; together they accounted for just 5 per cent of the establishments surveyed but 25 per cent of employment.

2.2. Size and ownership characteristics

Typically the informal sector is defined along three criteria: size, employing ten or fewer workers; property form, independent, single or family proprietorship not owned by larger enterprises; and legal status, not necessarily registered with the principal tax or social security agencies. In the EHRD Survey, information was collected on the first two of these criteria.[3]

On the basis of size alone, more than two-thirds of the establishments surveyed would be classified as informal. Some 1,200 establishments, or 71 per cent, employed ten or fewer persons (Figure 3). These smallest establishments employed on average only 4 workers. The non-agricultural sector of the Egyptian economy has been characterized elsewhere as many tiny establishments employing few people, and a few large enterprises employing most of the people, with relatively few medium-sized businesses. This characterization is corroborated in the survey sample, with only 20 per cent of establishments and less than five per cent of workers in the middle-size category, broadly defined from 11 to 100 employees.

The small establishments were either single proprietorships (68 per cent) or partnerships (29 per cent). Similarly, nearly all of the single proprietorships were small: 88 per cent employed ten or fewer workers and the rest employed fewer than 50 (Figure 4). Thus on the basis of size and ownership, over two-thirds of the surveyed establishments could be considered in the informal sector. Because of the overlap of establishments by these two criteria, analysis of "informal sector" businesses will refer to establishments with ten or fewer workers.

[3] Establishments were not asked in the survey whether they had registered with tax and social security agencies in order to reduce the risk that informal establishments would decline to participate.

Figure 3. Establishments and employment by size of establishment

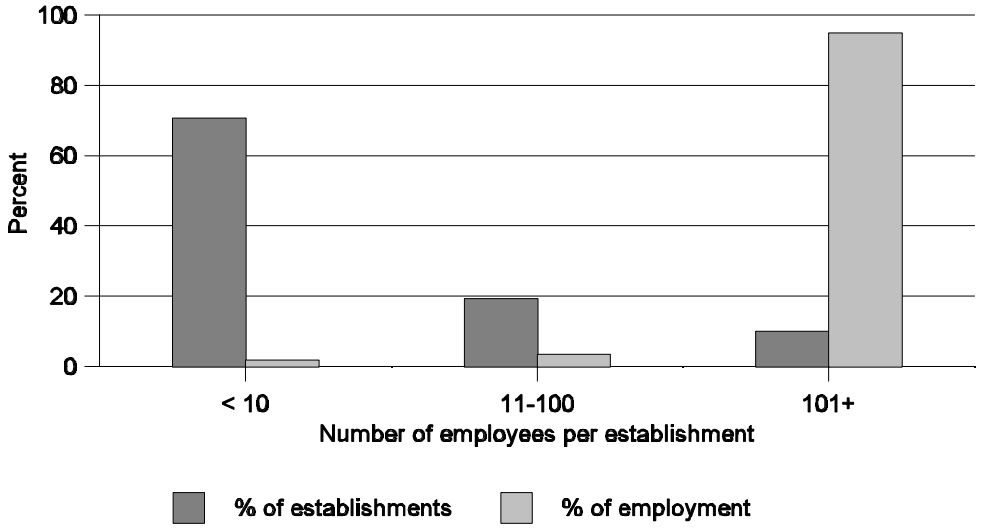
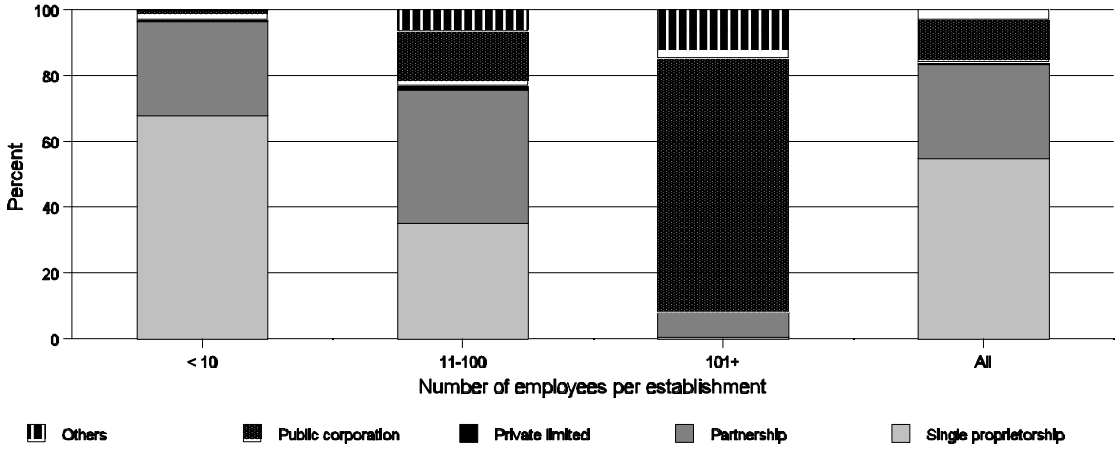
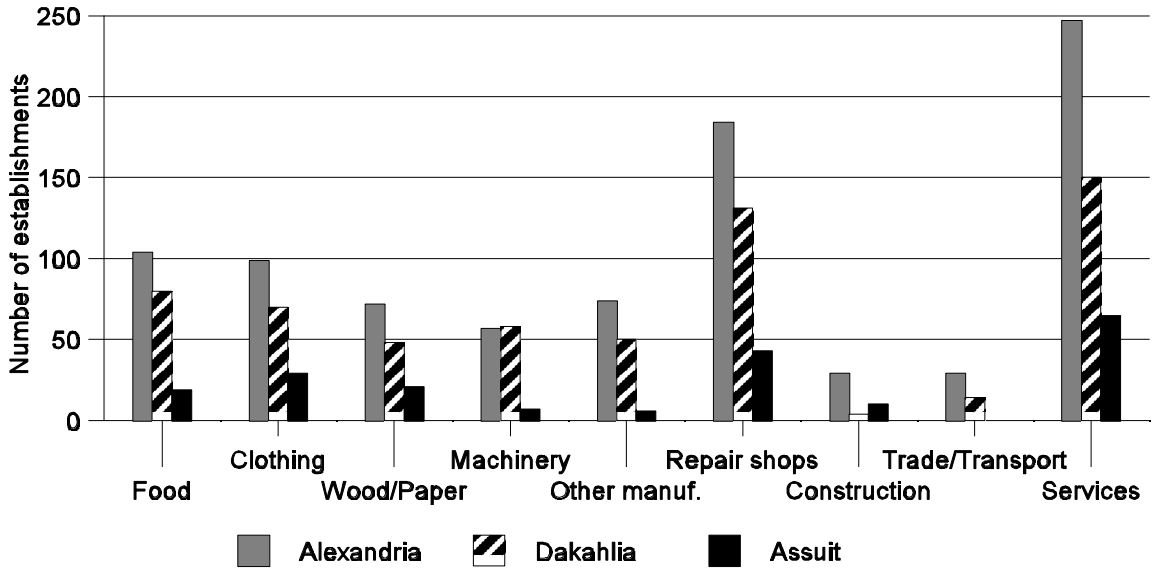


Figure 4. Establishments by legal form and size



The majority of establishments located in the most rural Governorate, Assuit, would be included in the category of informal establishments. This region had a small share of the surveyed establishments in construction (5 per cent) and machinery (4 per cent), which tended to have large establishments, and the highest proportion of the three regions in consumer services (33 per cent) repair shops (22 per cent), and clothing/textiles (15 per cent) which were typically small establishments (Figure 5). In fact, 85 per cent of the establishments located in Assuit in the EHRDS had at most 10 employees. By contrast, small establishments comprised 69 per cent of the sampled establishments in Alexandria and Dakahlia Governorates.

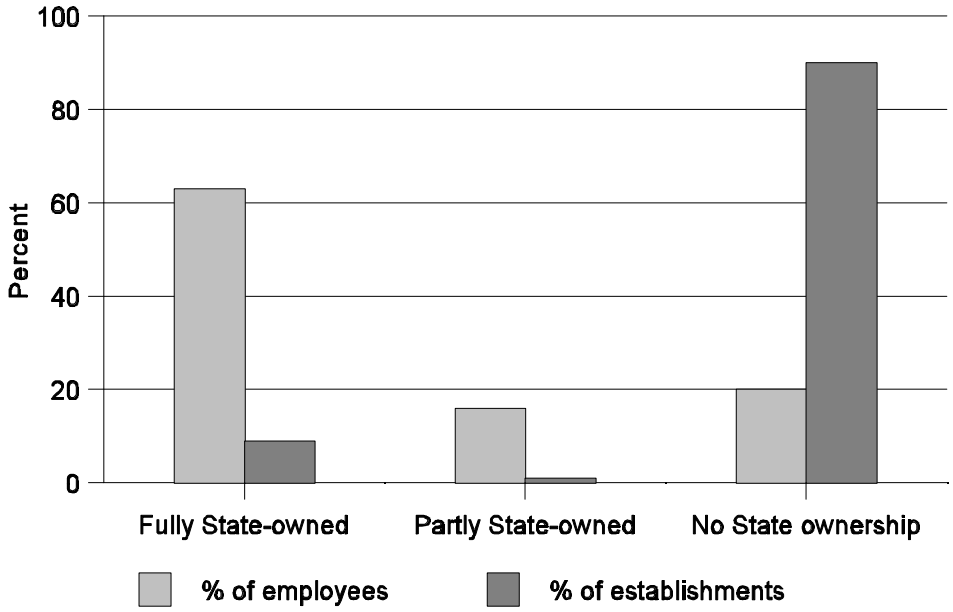
Figure 5. Distribution of establishments by industry and region



One tenth of the establishments were in the largest size class (over 100 employees), with an average size of nearly 600. Most of the large establishments remained state-owned, either fully (62 per cent) or partially (11 per cent). Average size in the construction industry was over 1000 employees; establishments in trade/transport and chemicals also tended to be large, with over 600 employees on average (see Appendix Table 1).

Although only 10 per cent of the EHRDS establishments were totally or partially owned by the State, these 174 establishments provided 80 per cent of the jobs documented in the survey (Figure 6). One half of the surveyed construction and trade establishments were state-owned, as were almost one fifth of the establishments in the food and chemical industries (Appendix Table 1). The survey indicated a slow pace of privatization: Only ten establishments supplied sufficient information to be able to determine that they planned to be privatized within the next several years. These also tended to be large (only one with fewer than 100 employees; 7 with more than 1,000 workers).

Figure 6. Establishments and employment by state ownership



Thus it should be noted from the outset, and the reader should be reminded throughout this report, that consideration of HRD practices and needs in the informal sector is deemed noteworthy because most employers were in fact very small. However, most workers were employed in large and state-owned establishments. The workplace practices and expectations of these relatively few employers are emphasized because, first, they affect the majority of workers and, second, HRD policy targeting these firms will have to be part and parcel of broader policies regarding state-sector management or privatization.[4]

3. Establishment responses to external challenges: performance and problems

Human resource practices and needs must be analysed within the framework of the challenges and overall problems confronting establishments. Their adjustment strategies influence their aggregate and occupational demand for labour, and the success of these strategies relies in part on the productive management of human resources. In this section, several dimensions of economic performance will be compared for the principal groups identified above. Establishments which had introduced new technologies and those which identified themselves as being most concerned about international competition are also singled out. The business and personnel problems identified by surveyed establishments as most critical to their future performance are also analysed.

[4] Due to the correspondence between size and ownership (most large establishments were state-owned and most state-owned enterprises were large) most of the survey findings are not reported separately for each group. Only where their survey responses differed notably, are results provided for both sets of respondents.

3.1. Business performance: Sales, technology and markets

Measured by the crude indicator of whether sales had risen or fallen over the previous year, most establishments would not claim to be enjoying prosperous times. Exactly half of the establishments reported that their sales had fallen. One third said they had stayed the same and just under one fifth (17 per cent) reported a rise in sales. Smaller and non state-owned establishments were more likely to register poor sales performance than were larger or state-owned establishments.

Table 1. Change in sales over previous year, by establishment size and ownership type

Establishments		Per cent of establishments		
		Sales Rose	Sales Fell	No change
Employees	< 10	9	56	33
	11-100	24	40	33
	101+	55	25	15
Ownership	State-owned	53	23	22
	Partially state-owned	57	38	5
	Private	13	53	33
All		17	50	32

A second way to consider performance is the adoption rate of modern technology. Performance in terms of product quality is one aspect of competitiveness, which may require investment in new process equipment, computerization, or plant modernization. Of the large manufacturers in the survey, almost half had automated processing technology and a third had computer-based communication systems (Figures 7 and 8). These technologies were virtually unknown among the smallest establishments, and only one out of ten medium-sized establishments utilized computers.

Twenty per cent of the surveyed establishments had introduced new technology over the previous two years. Their employment and training practices are tracked throughout this report in order to draw lessons about training needs from their experience. These 309 establishments tended to be large and located in the urban area, and were fairly evenly distributed across manufacturing sectors (See Appendix Table 2). Only eight per cent of the establishments in the informal sector had adopted new technology, as opposed to two thirds of the establishments with more than 100 employees. Almost 60 per cent of the establishments with new technology were located in Alexandria and only 10 per cent were in the rural governorate of Assuit. Two thirds of the establishments with new technology were in manufacturing sectors, implying that the remaining third, in services, trade, and construction, had adopted new communication or design technologies, as opposed to processing technologies.

Figure 7. Manufacturing technology by size of establishment

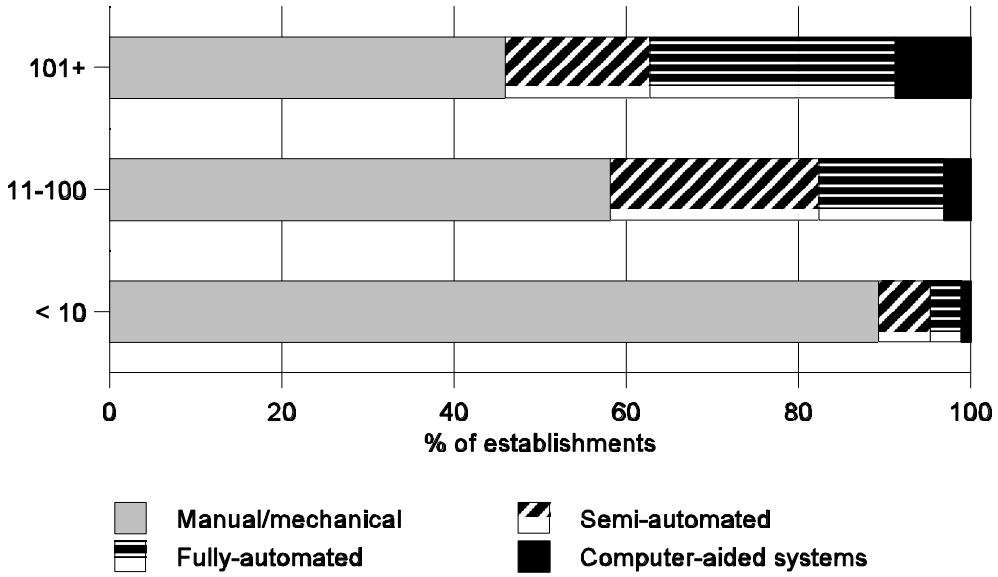
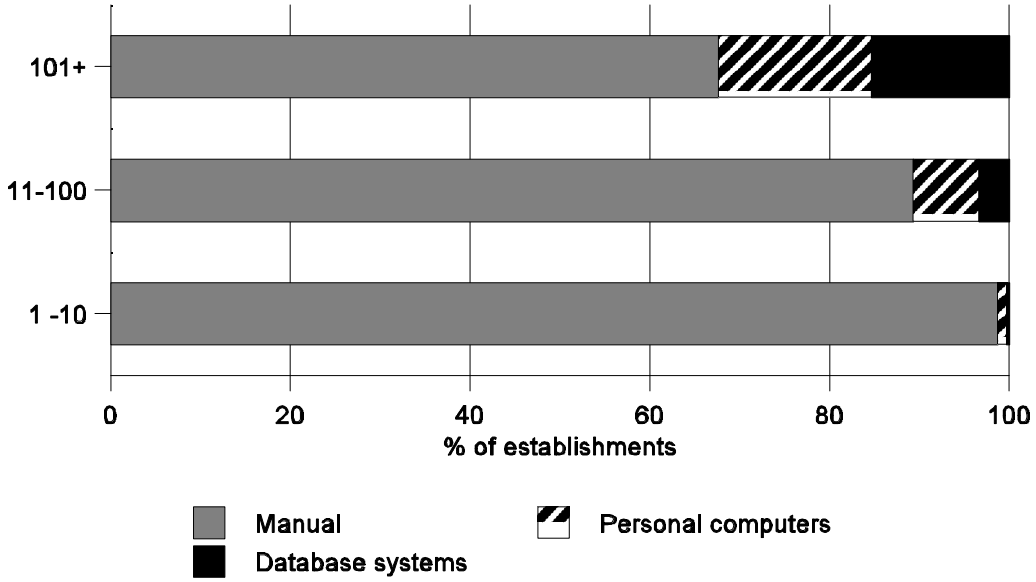
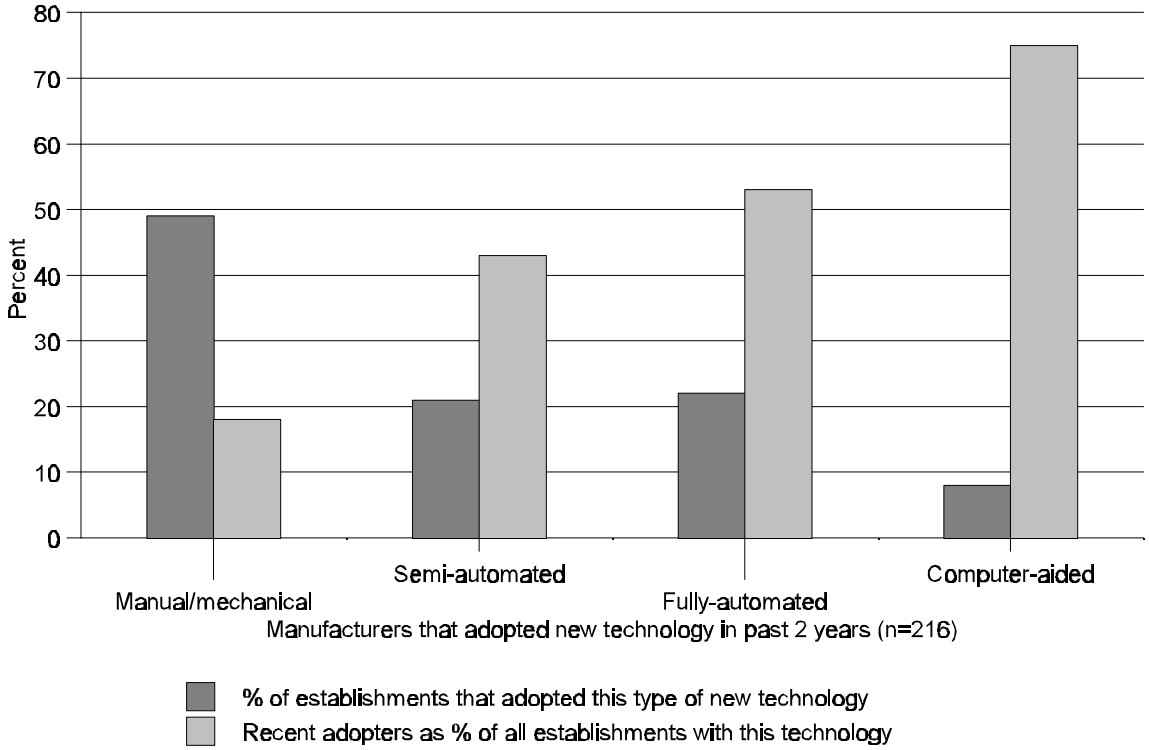


Figure 8. Communications technology by size of establishment



The principal reason these establishment gave for adapting new technology was to improve product quality (45 per cent); the second most frequent explanation was to increase quantity of output (25 per cent). Half of the establishments that adopted new manufacturing technology described it as manual or mechanical (Figure 9). Most of the rest had invested in automation and eight per cent had invested in computer-aided equipment. As also shown in Figure 9, fully 75 per cent of all the establishments surveyed that operate computer-aided equipment had acquired it over the previous two years, as had 50 per cent of all establishments with fully-automated equipment. Thus the findings indicate that while the pace of adopting high technology was increasing, most of the investment remained in manual and mechanical technologies.

Figure 9. Types of new manufacturing technology adopted



A third way to consider performance is competitiveness, particularly how establishments perceived their efforts to deal with foreign competition at home or abroad. The survey is not representative of Egyptian exporters: only ten establishments reported that their principal market was foreign (about one half of one per cent of the total survey).[5] But a significant number of other establishments identified difficulties entering export markets and competing against imports in their home market as "serious" or "very serious" problems (elaborated in Section 3.2 below). These two groups of establishments, referred to as export competitors or import competitors, are also tracked throughout the report because their problems and human resources difficulties may be faced by growing numbers of establishments as trade barriers are lowered and Egyptian businesses increasingly seek growth opportunities abroad.

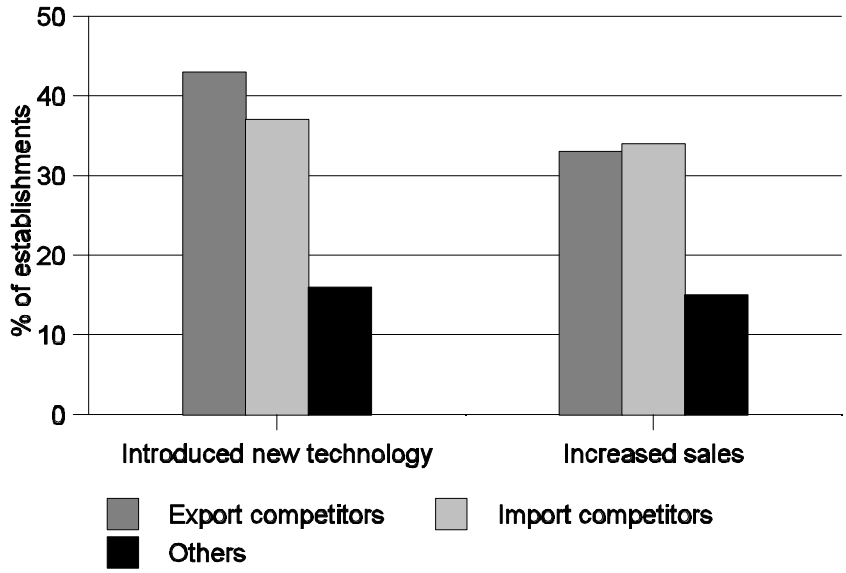
Overall, about one tenth of the establishments surveyed were export competitors (146 establishments), or import competitors (159 establishments).[6] However, about one third of the large establishments and of the state-owned establishments were export competitors or import competitors (See Appendix Table 3). Although a much smaller portion of the informal sector establishments identified foreign competition as a serious problem (5 per cent), these small establishments accounted for a third or more of the total group of export or import competitors. It is evident, however, that most of the small establishments with this concern were located in Alexandria: only one per cent of the export competitors and seven per cent of the import competitors were in Assuit. The clothing and textile industry was the industry most concerned about foreign competition: one out of four establishments surveyed in this sector indicated concern about losing markets to imports and about one out of six was concerned about exporting.

[5] Four out of five establishments described their market area as local and almost all of the rest described it as national.

[6] Of the 159 import competitors, 57 per cent were also export competitors. Of the 146 export competitors, 62 per cent were also import competitors.

The struggle to cope with increasing foreign competition was evident in the efforts of enterprises to improve the quality of their products. The proportion of the export and import competitors that had invested in new technology was two to three times higher than the proportion among other establishments (Figure 10). The survey findings also suggest that establishments' efforts to meet the international challenge may be paying off: one third of the export and import competitors reported an increase in sales, twice the proportion reported by other establishments.

Figure 10. Performance of export and import competitors



Establishments with new technologies and export and import competitors are singled out because they can be identified as having directly encountered and responded to the fundamental challenges confronting Egyptian businesses – trade liberalization, privatization of some state-owned sectors, and improving product quality. Although these three challenges are intertwined (for example, investing in new technology can be a means to attain international quality standards and compete in export markets), the human resource development practices and needs of these groups of enterprises are highlighted throughout the report because their experiences may be particularly relevant for policy formation.

3.2. Business problems

The set of business problems identified as most serious varied substantially by type of establishment (Table 2). Taxes were the overwhelming complaint by small and by privately-owned establishments (selected by about two-thirds of each group). By contrast, taxes were selected as the most serious problem by only 9 per cent of large establishments, and ranked lower than foreign competition (15 per cent), lack of markets (15 per cent) and local competition (11 per cent). Customer debt and machinery breakdown were the most common "other" problems among large firms (selected as most serious by 9 per cent and 5 per cent respectively). The distribution of problems cited by state-owned establishments (not shown) was almost identical to that of large firms in general, with the exception that taxes were

selected by a smaller proportion of state-owned establishments (4 per cent, compared to 9 per cent of all large establishments).

Table 2. Main business problem (per cent of establishments)

Main Problem	All	Size		Special Groups		
		1-10	101 +	Export Competitors	Import Competitors	Adopted new technology
Taxes	57	67	9	30	31	38
Government regulations	11	11	9	11	10	9
Local competition	7	6	11	11	13	8
Foreign competition	2	1	15	16	19	7
Lack of markets	4	2	15	8	7	9
Lack of skilled workers	7	7	7	8	4	8
Capital	2	1	7	5	6	4
Material inputs	3	2	7	6	4	5
Other	6	4	21	6	6	12
Total*	99%	101%	101%	101%	100%	100%

* In this and subsequent tables, totals may not equal 100% due to rounding.

By contrast, finding sufficient numbers of skilled workers was of nearly uniform difficulty across groups of establishments. Overall, seven per cent of respondents said this was their most serious problem, reported by equal proportions of small and large establishments. Interestingly, the incidence of skilled labour shortage was marginally higher in the state-owned establishments (10 per cent), the sector commonly believed to be able to attract preferred workers most easily.

Firms which had *adopted new technology* did not have an above-average tendency to select skilled labour shortages as their principal business problem. Following concern about taxes, lack of skilled workers ranked in the second tier of most-cited problems, along with competition, lack of markets and government regulations.

Import competitors were less likely to rate skilled labour as their most serious problem (4 per cent). One out of five of these establishments identified foreign competition as their number one problem, and the proportion was only slightly lower for *export competitors*. For both groups, taxes were the principal concern.

On average, one out of ten respondents identified government regulations as their main business problem. Almost 500 establishments went on to specify which regulations they would most like to see changed. The most marked finding is how different the responses were between large and small establishments (Figure 11). Taxation was the government "regulation" most firms wanted to change, but the proportion grew from 30 per cent of large establishments to 48 per cent of small ones. Business licenses ranked second, across all size classes. Two regulations that received almost ten per cent of the votes of the smallest establishments received no votes at all from large ones: local council tariffs and utility

policies. Most striking of all, however, is the different response to work regulations. Naturally these were considered more burdensome by establishments with large workforces, and were selected by almost one out of four large establishments as the regulation they would most like to see changed. (The survey did not go into details about specific work or employment regulations).

In a separate, but related question, survey respondents ranked various factors to improve business performance along a continuum from "not important" to "very important". The relative importance of the five highest ranked factors is compared in Figure 12. Improving product quality was the overwhelming first choice, ranked most important by two-thirds of the respondents (combining responses of "important" and " very important"). Hiring qualified workers and training for workers were the second and third most important factors. Over half of the respondents considered these factors most important (59 per cent for hiring qualified personnel, 53 per cent for training workers), ranking them as marginally more important than new technologies or new products (50 per cent and 45 per cent, respectively) and much more important than changing terms of employment: Introducing incentive-based pay systems was considered important to improving business performance by about one third of the respondents and extending working hours was deemed important by one fifth.

Figure 11. Regulations managers would most like to see changed by size of establishment

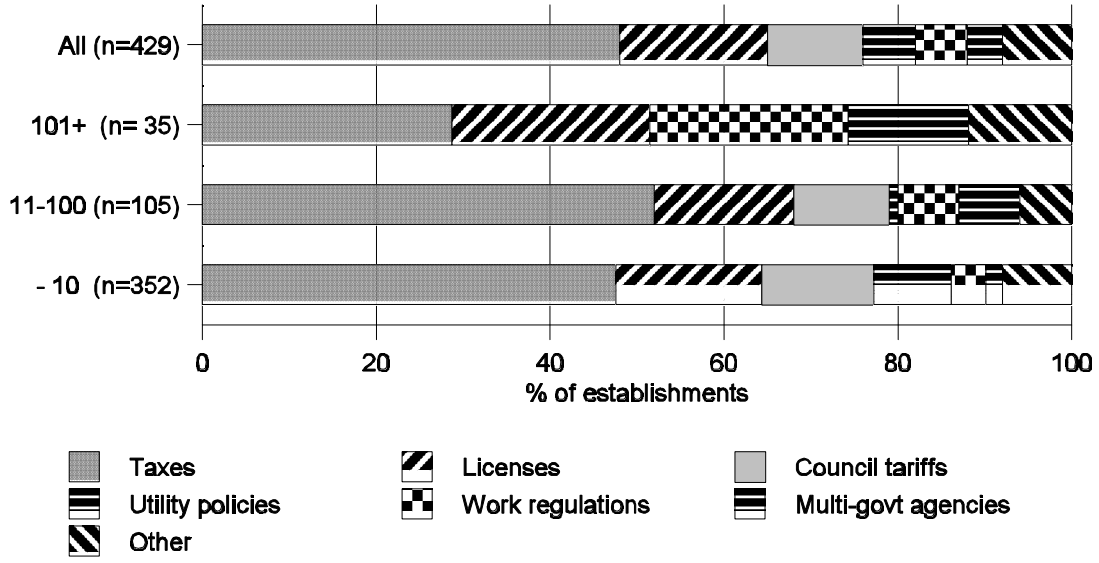
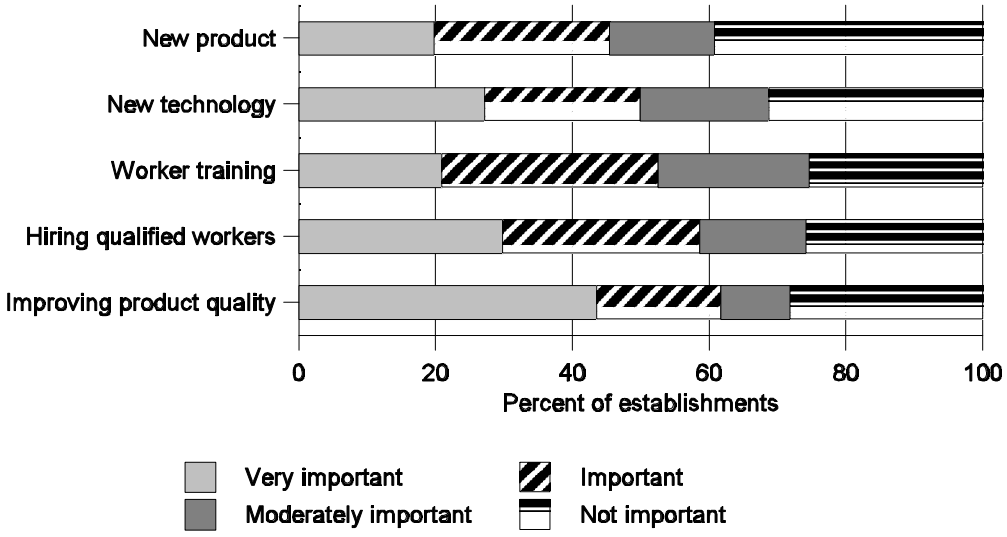
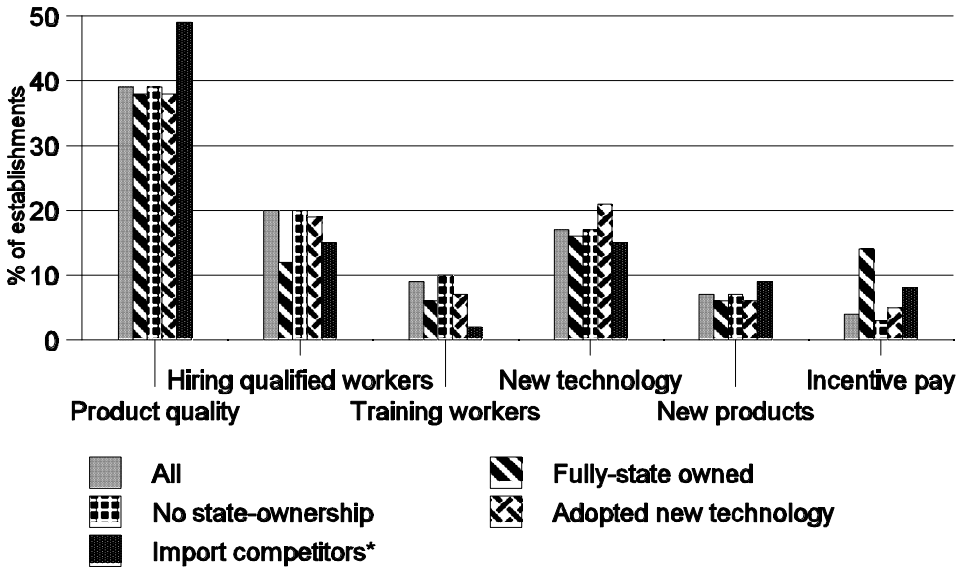


Figure 12. Relative importance of factors to improve business performance



When limited to selecting the *single* most important factor, hiring qualified personnel received the second or third most votes across a wide variety of business types (Figure 13). Product quality was universally regarded as the one factor most likely to improve business prospects, selected by two out of every five respondents. On average, the ability to hire qualified workers was the second most important single factor to improve business performance. One out of five privately-owned establishments selected hiring qualified workers as the most important factor. The same proportion of responses was recorded for the informal-sector establishments, which, as documented earlier, were nearly the same sub-set of establishments as the privately-owned ones.

Figure 13. Most important factor for improving business performance



*Export competitors had exactly the same ordering of factors.

Overall, only 4 per cent of establishments selected incentive pay systems as the most crucial factor, but among the state-owned establishments this factor was considered the third most important (14 per cent), just behind new technology (16 per cent) and just ahead of skilled workers (12 per cent). This was probably indicative of an underlying problem in state-owned establishments that anticipated needing to change terms of employment away from long-term security to more performance-based wage and tenure systems.

Even among the 300 establishments that *adopted new technology*, the ability to hire qualified workers received only marginally fewer votes (19 per cent) than technology (21 per cent) as the most important factor. Nearly half of these establishments selected product quality as the single most important factor (compared to 39 per cent on average). Concern with product quality was highest among *import and export competitors*; about half of these establishments considered this the most important factor.

Worker training, however, typically was not selected as the most important factor, receiving on average just half as many votes as hiring qualified personnel. Among *export and import competitors* the margin of difference was most startling: 15 per cent selected hiring qualified personnel as the most important factor but only 2 per cent of import competitors and 4 per cent of export competitors selected worker training as most important. Among both state-owned and privately-owned establishments, worker training received half as many votes as hiring skilled workers. Had these two proffered factors been considered nearly identical, or interchangeable, by respondents, one would expect a small difference in the proportion of respondents selecting one or the other. Therefore, the evidence that hiring qualified workers was considered a more important factor than training workers may indicate that managers preferred to compete in the market for workers with desired skills rather than train current workers or newly hired ones. It may also indicate that general skills were in demand, versus industry or establishment-specific skills, which managers may have been reluctant to provide due to high turnover. Evidence on these questions will be examined in a later section of this report.

It is also important to note that while improving product quality was consistently regarded as the most important factor to improve business performance, the other factors can be considered as *means* to that end. Better trained personnel, more modern technology, replacing obsolescent products with new ones are all strategies, or parts of a holistic strategy, to improve the quality of the product or service offered on the market. Thus, rather than regard the ability to hire qualified workers as *only* the second or third-most important factor, the survey findings indicate that difficulties hiring skilled workers was a crucial element of most establishments' responses to external challenges.

3.3. Personnel problems

The ability to hire workers qualified for openings was generally rated among the most important business problems and requirements for business success. Before turning to the findings on how businesses deal with this problem, it is helpful to put training problems in perspective, relative to a broad range of personnel problems that businesses must manage.

Across all categories of establishments, scarcity of skilled workers, or difficulties in recruiting or retaining them, topped the lists of personnel problems (Table 3). Overall, 43 per cent of managers interviewed cited lack of skilled workers as their number one personnel problem, 17 per cent complained of difficulties in retaining skilled workers and another 9 per cent cited difficulty retaining skilled workers. Summing across these three responses, we find that *seven out of ten establishments reported finding, recruiting or retaining skilled workers as their main personnel problem.* After skill levels, high turnover was selected as the next most serious personnel problem (by 14 per cent of establishments). Surplus workers, poorly motivated

workers and high absenteeism together were selected as most important by ten per cent of the respondents.

Almost as striking as the intensity of the response on the subject of trained personnel is the constancy with which this priority was registered across types of establishments. Skilled labour shortage was the most frequently selected personnel problem by large establishments (23 per cent), although the combined skilled labour responses (recruitment and retention) accounted for a significantly lower share of responses among large establishments (52 per cent) than among small establishments (73 per cent). The difference is largely explained by the problem of surplus labour, which was cited as the most serious personnel problem by 17 per cent of the large establishments and literally none of the smallest ones.

Table 3. Personnel problems, by size of establishment (per cent of responses)

Personnel problem	All	Size		Special Groups		
		1-10	101 +	Export Competitors	Import Competitors	Adopted new technology
Too many employees	3	1	17	10	8	8
Lack of motivation	3	2	7	4	5	7
High absenteeism	5	4	6	2	2	6
High turnover	14	12	12	15	14	14
Lack of skilled workers	43	48	23	33	40	36
Difficulty recruiting skilled workers	17	17	16	22	22	16
Skilled workers leave	9	9	13	12	8	8
Other	7	8	7	1	1	6
Total	100%	100%	100%	99%	100%	101%

There were no significant differences in the responses by rural and urban establishments. The three problems dealing with skilled labour were identified as most important by 65 per cent of the establishments in Assuit versus 70 per cent of those in Alexandria. Seventy per cent of privately-owned establishments cited one of the skilled labour problems as being their most serious personnel problem, versus 56 per cent of fully state-owned establishments. Similar to large establishments in general, 17 per cent of state-owned establishments selected surplus workers as their most serious personnel problem.

A large portion of the establishments which had *adopted new technology* were concerned about the lack of skilled workers (36 per cent). Far more establishments with new technology were worried about finding or retaining sufficient numbers of qualified workers than believed that new technology would affect the quantity of labour they would need: only 15 per cent of establishments that had adopted new technology reported a decline in the level of employment, while 54 per cent reported an increased demand for technical expertise or qualifications (See Section 4). A large share of these establishments reported no change in either labour demand or skill requirements (61 per cent and 41 per cent, respectively).

Lack of skilled workers was also the single most important employment problem for both *export competitors* (33 per cent) and *import competitors* (40 per cent). Difficulties in recruiting or retaining skilled workers were of the highest concern to another 33 per cent of export competitors and 30 per cent of the import competitors.

The depth of concern documented by the survey for the quantity of skilled workers available, and establishments' ability to attract and retain preferred workers, leads to questions about how well the labour market functions in matching employers and job-seekers with desired skill levels and about their own practices to develop skills among their employees – issues addressed in subsequent sections.

4. Establishment responses: Labour market adjustments

Establishments respond to external challenges through changes in both their external and internal labour markets. They can adjust their demand for labour in terms of the number and types of workers they hire or fire, their recruitment preferences and the types of employment contracts they offer ("external numerical flexibility"); and they can also adjust the quantity and timing of labour inputs through changes in part-time, overtime and shift work arrangements or greater flexibility for leave arrangements without altering the number of employees ("internal numerical flexibility"). They can also respond in terms of work reorganization and human resources development and management in their internal labour market ("functional flexibility"). This section examines the labour market adjustments, while Sections 5 and 6 deal with human resources development and management.

4.1. Current employment structure of the workforce

A total workforce of 282,259 persons was employed as of 1 January 1996 by the 1,700 establishments covered in the survey. The skill structure of the workforce was relatively high, only about 18 per cent were unskilled workers. These skills were, however, mainly aquired through on-the-job training; the formal educational structure of the workforce was, in fact, lower; as discussed in sub-section 4.4 below. Privately-owned establishments tended to have a slightly higher proportion of skilled workers and at the same time also a slightly higher proportion of unskilled workers (and consequently a smaller share of administrative personnel) than the state-owned establishments. The skill differentials were more striking by size of establishments (Figure 14). The small establishments had almost a fifth of their workforce listed as managers (because of the single proprietorship or partnership nature of these small establishments) and less than 3 per cent in professional occupations. Although more than half their workforce were listed as technicians or skilled workers, the small establishments still reported the scarcity of skilled workers as their principal personnel problem (as was discussed earlier). The large establishments had the smallest proportion of unskilled workers, but a much larger proportion (13 per cent) of their workforce was in clerical jobs compared to small firms (less than 3 per cent).

Figure 14. Establishments by size and occupational structure of workforce

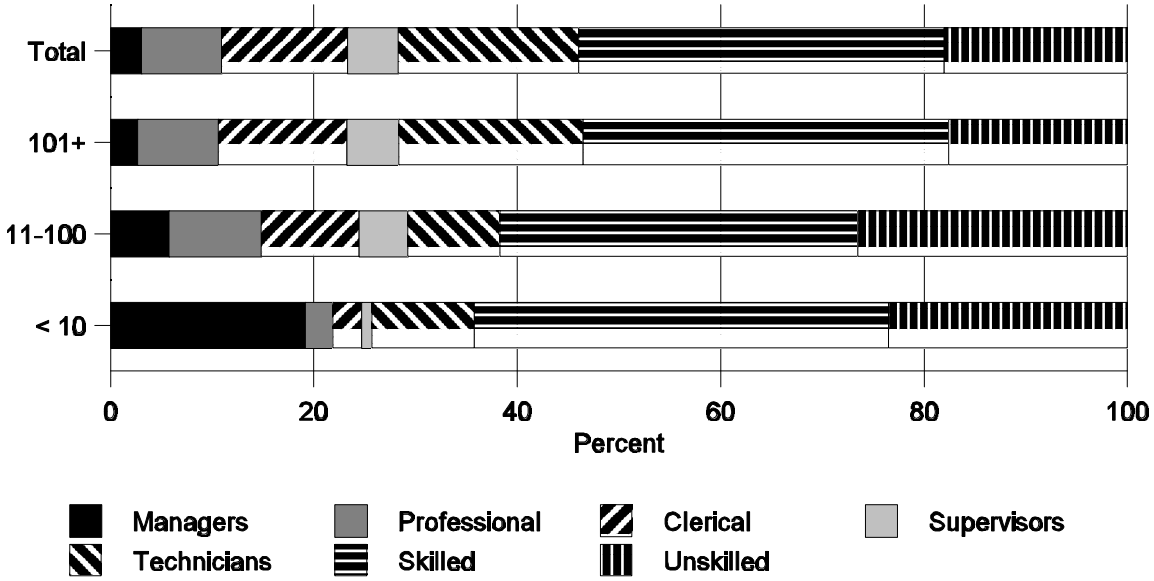
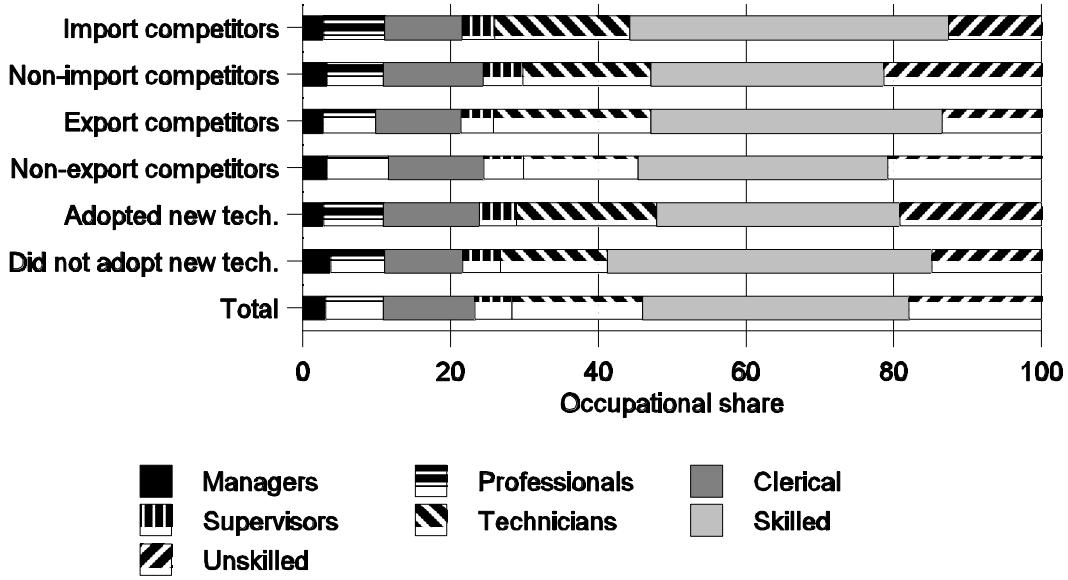


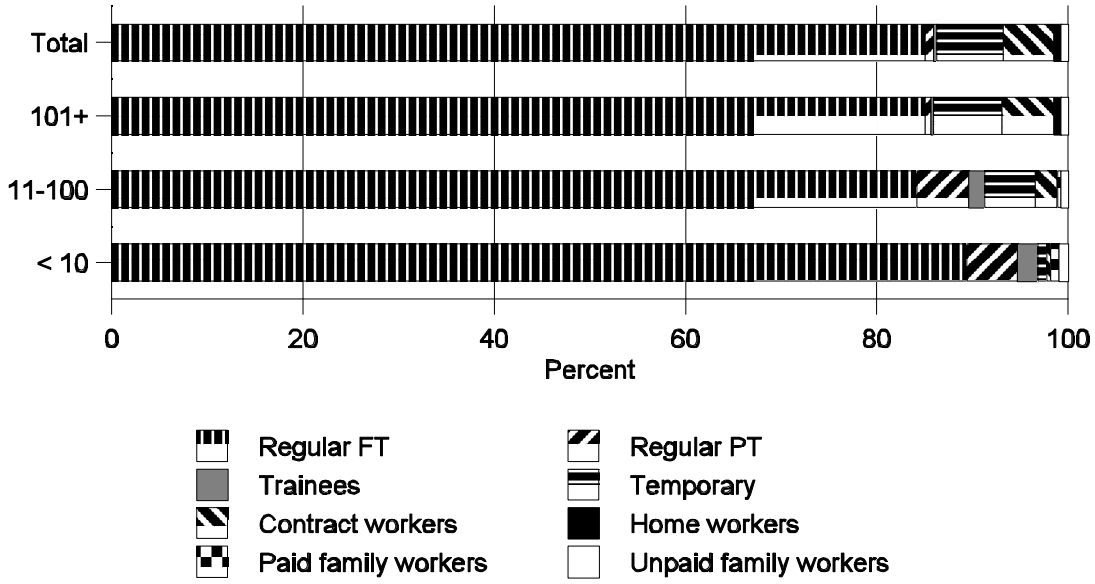
Figure 15 shows that the import competitors and export competitors were more likely to have higher proportions of their workforce who were skilled workers and technicians (and conversely lower proportions of unskilled workers) than those not exposed to external competition. However, surprisingly, those firms that had adopted new technology in fact had a smaller proportion of skilled workers in their labour force than those that had not modernized.

Figure 15. Establishments by import/export competion and adoption of new technology and occupational structure of workforce



There appears to have been little flexibilization of the labour market insofar as more than 85 per cent of the total labour force were regular full-time workers. Since the private establishments hired almost 90 per cent of their workforce on a regular full-time basis, other more flexible statuses were relatively unimportant. State-owned establishments made some use of temporary and contract workers; in fact, about 94 per cent of all temporary and contract workers covered in the survey were employed by fully or partly state-owned enterprises. Related to type of ownership, the larger establishments were more likely to employ temporary and contract workers, while the small establishments tended to employ workers on a regular basis and to make more use of family workers (Figure 16). One implication of the finding could be that the larger, state-owned establishments hired temporary or contract workers to fill a specific labour demand or because their demand for labour tended to fluctuate more. For instance, among the firms hiring temporary workers only 35 per cent were looking for unskilled workers; the remainder required various types of skills and professions. Less than a quarter of the establishments hiring temporary workers cited cost reasons; the most important reasons were related to shortages of particular skills. Similarly, over two-thirds of the firms hiring contract workers did so to fill particular skills or because they felt such workers were more productive relative to costs.

Figure 16. Establishments by size and employment status of workforce

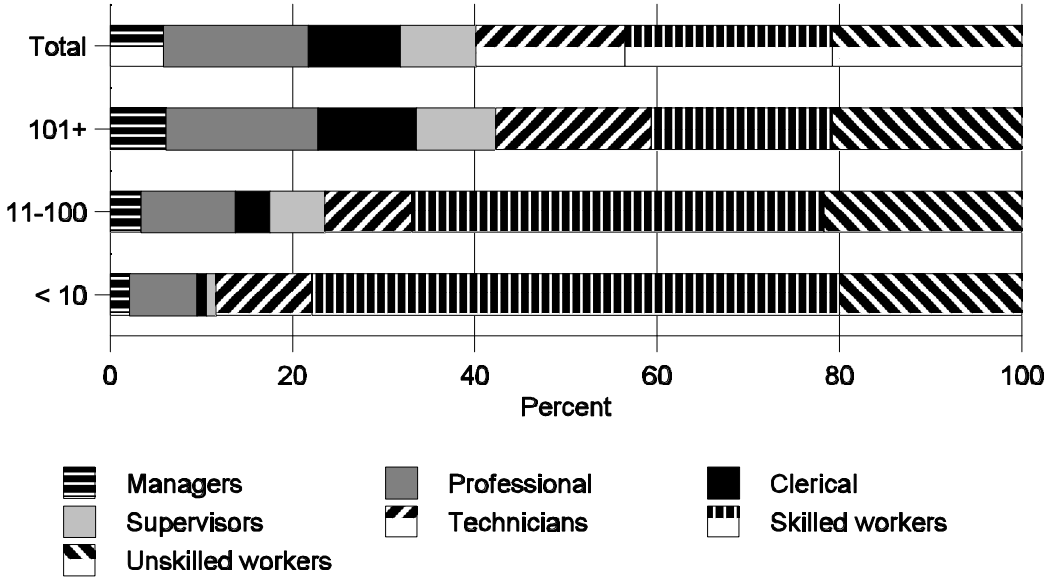


The survey found, however, that both *import competitors and export competitors* were about ten times less likely to make use of temporary workers and half as likely to make use of contract workers than those that did not consider external competition to be a problem. It would appear that exposure to external competition did not involve fluctuating demand for labour. On the other hand, firms that had *adopted new technology* were about four times more likely to make use of temporary workers than firms that had not modernized. Although, as discussed earlier, much of the new technology was in terms of automation, there was still a need for temporary workers.

4.2. Employment dynamics

The demand for labour can also be examined in terms of vacancies that the establishments were attempting to fill. The total number of vacancies reported by the 1,700 surveyed establishments represented only 1.3 per cent of total employment (3,652 out of 282,259), indicating a very low rate of employment creation. The dependence on employment creation by the state-owned establishments was obvious from the fact that they accounted for 84 per cent of total vacancies. Small firms accounted for less than 3 per cent of all reported vacancies. There were also significant differences in occupational structure of the vacancies. Of the vacancies reported by private firms, almost half were for skilled workers while another 29 per cent were for unskilled workers (Figure 17). Fully or partly state-owned establishments were more likely to be looking to hire workers with professional, administrative or technical qualifications. It is striking from Figure 17 that of the total vacancies in small firms, almost 58 per cent were for skilled workers and another 10 per cent were for technicians; whereas in large firms, the vacancies were more evenly spread among the various occupational groups.

Figure 17. Establishments by occupational share of vacancies and size



Establishments that had *adopted new technology* accounted for 62 per cent of all vacancies (although they represented only 20 per cent of all establishments surveyed). Of the vacancies, the establishments that had adopted new technology were more likely to demand skilled workers and professionals than those establishments that had not modernized (26 per cent as compared to 18 per cent for skilled workers, and 18 per cent as compared to 12 per cent for professionals).

Although *import competitors* accounted for less than 10 per cent of all vacancies, their vacancy structure showed a very strong demand for skilled workers and technicians (60 per cent of all vacancies as compared to 36 per cent of the vacancies in firms not competing with imports). *Export competitors* accounted for 20 per cent of all vacancies, and again they displayed a strong demand for skilled and technical workers (almost half of all vacancies as compared to 36 per cent in firms not competing in foreign markets).

Another indication of the limited employment creation was that the total number (7,111) of newly hired workers over the past year represented only 2.5 per cent of current employment. The private establishments accounted for 43 per cent of all new hires (compared to 16 per cent of vacancies). Most of the newly hired workers were, however, concentrated in large establishments (almost 90 per cent of all new hires). In terms of occupational groupings, skilled workers and technicians clearly accounted for the largest group of new hires across all establishments by both size and ownership. But among the new hires in small and medium size establishments, more than a third were unskilled workers (Figure 18).

The data in Table 4 suggest that there was *a decline rather than increase in overall employment* in the surveyed establishments, in that there was a larger number of "exits" than new hires or vacancies over the past year. Those who quit, retired or were retrenched, dismissed, transferred or seconded numbered 11,991 as compared to 7,111 new hires, meaning a net loss in total employment of some 4,880 jobs. The fully state-owned establishments accounted for 63 per cent of all employee separations, and correspondingly 94 per cent of all exits were from establishments with more than a hundred workers. The overall turnover rate (crudely calculated as total exits over past twelve months as a percentage of total employment on 1 January 1996) was 4.2 per cent. By occupation, the turnover rate was highest for managers, followed by supervisors and lowest for skilled workers.

Figure 18. Establishments by new hires and size

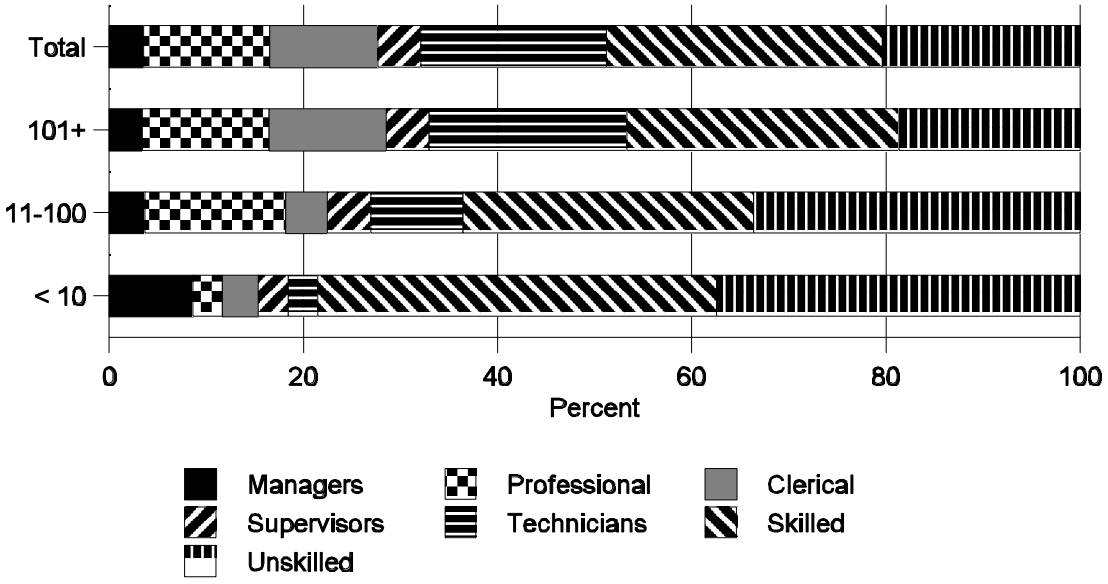


Table 4. Vacancies, recruitments and exits as a percentage of total employment

Occupation	Total Vacancies	Total New Hires	Total Exits	Total Employment	Vacancies as % of Total Employment	Hires as % of Total Employment	Exits as % of Total Employment
Managers	213	252	653	8643	2.4	2.9	7.6
Professionals	581	921	1158	22162	2.6	4.2	5.2
Clerical	368	796	1331	34949	1	2.3	3.8
Supervisors	304	313	785	14160	2.1	2.2	5.5
Technicians	597	1358	2020	50010	1.1	2.7	4
Skilled workers	829	2023	3603	101517	0.8	2	3.5
Unskilled workers	760	1448	2441	50818	1.4	2.8	4.8
Total	3652	7111	11991	282259	1.2	2.5	4.2

The picture that emerges from Figure 19 suggests that the role of state-owned establishments in employment creation may be changing, especially vis-a-vis the role of private establishments. While the fully state-owned establishments accounted for the largest proportion of exits and reported vacancies, it was the privately owned establishments that were responsible for the largest share of new hires. This may suggest that, especially with the trend towards privatization, greater attention should be given in the future to the labour demand of the privately owned establishments.

Figure 19. Vacancies, recruitment and exits by type of ownership

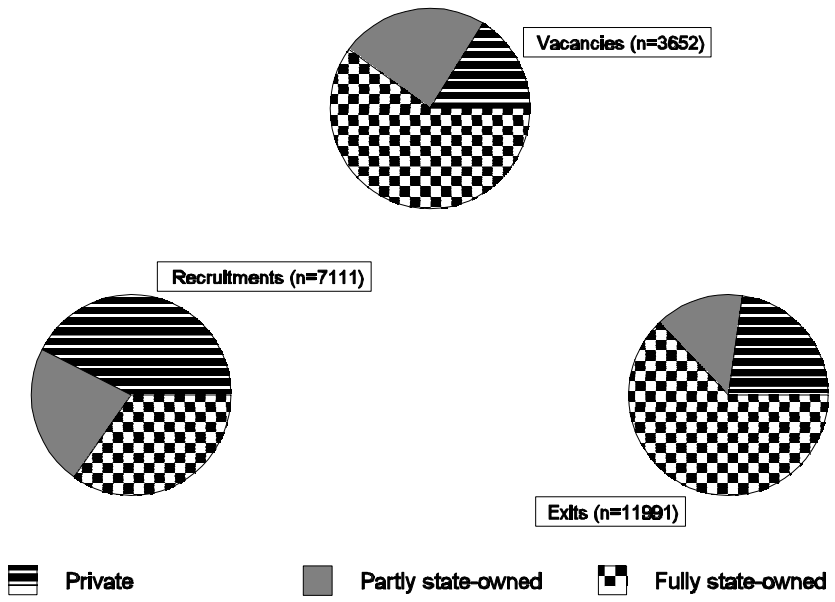


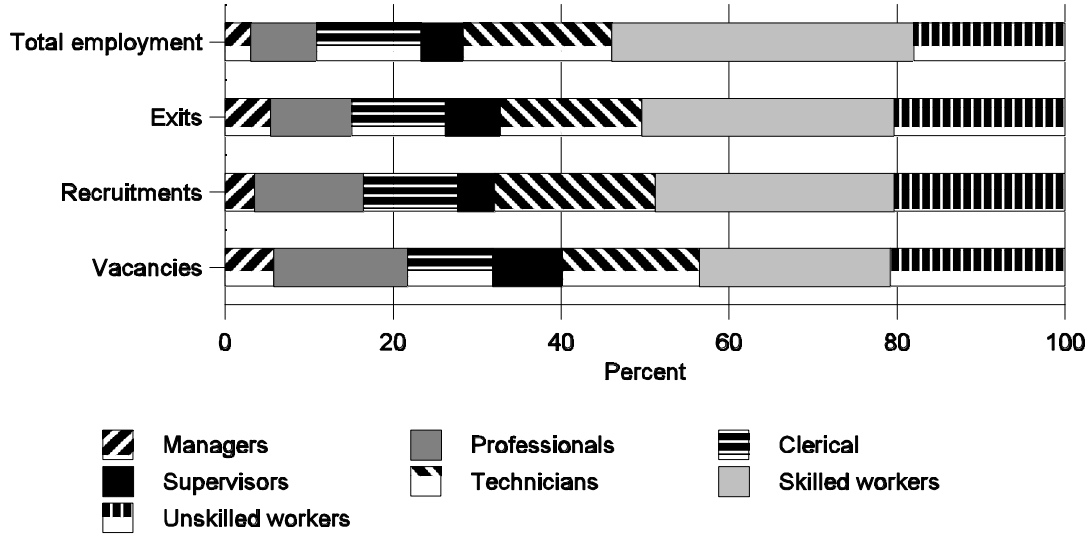
Table 5 highlights the important employment creation potential of the adoption of new technology. The 309 establishments (or 18 per cent of all surveyed establishments) that had *adopted new technology* accounted for over 80 per cent of total recruitment over the year and for 62 per cent of new job openings. In terms of the change in employment over the past twelve months (total exits as compared to total new hires), it is also evident that those establishments that had adopted new technology accounted for a smaller proportion of the job losses than establishments that had not modernized. Both *import and export competitors*, however, experienced larger job losses than those establishments that were not exposed to external competition.

Table 5. Vacancies, recruitment and exits by import/export competition and adoption of new technology

	Total	Import Competition		Export Competition		Adoption of new technology	
		No problem	Serious problem	No problem	Serious problem	Yes	No
Vacancies	3652	3292	360	2923	729	2258	1394
Recruitment	7111	3832	3279	4084	3027	5701	1410
Exits	11991	6079	5912	5649	6342	7673	4318
Change in Employment	-4880	-2247	-2633	-1565	-3315	-1972	-2908

Figure 20 shows that occupational structures may be changing, with important implications for labour demand and human resources development. What is striking is that while the proportion of unskilled workers remained relatively unchanged, skilled workers accounted for a smaller proportion of vacancies (23 per cent) as compared to their proportion of exits (30 per cent) or of current employment (36 per cent). Although skilled jobs accounted for the largest proportion of vacancies (23 per cent), such vacancies represented less than 1 per cent of current employment. One implication of this finding could be that establishments are more concerned with filling the demand for skilled workers through upgrading the skills of those currently employed than employing new skilled workers. But, as discussed in Section 5 below, very few of the establishments were providing upgrade training for their workers. If establishments were not hiring new skilled workers and not providing training to upgrade the skills of current workers, this might help to explain why they identified lack of skilled workers as the single most important personnel problem. The recruitment shift appears to be towards professional and supervisory jobs, while the proportion of clerical jobs remained roughly unchanged. The most significant change was in the professional category, where the proportion of recruitments (13 per cent) and especially of vacancies (16 per cent) was much higher than their share of current employment (8 per cent) or of exits (10 per cent).

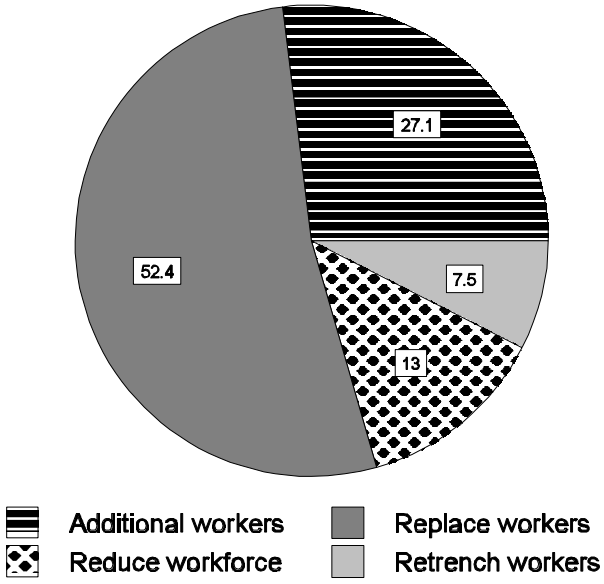
Figure 20. Total employment, exits, recruitments and vacancies by occupational structure



Changing labour demand can also be assessed in terms of the recruitment plans of the establishments. Among those establishments (786 out of the total sample) that expected changes in their current workforce, more than half indicated that they would hire new workers merely to replace those who left, while another one-fifth wanted to reduce their workforce through non-replacement of those who leave or through retrenchment. Figure 21 again shows the poor prospects for employment creation in the Egyptian context. Among those establishments which expected to recruit additional workers (213 out of the total sample) more than 70 per cent currently employed less than 10 workers each, and about 95 per cent were in the private sector, reinforcing the earlier finding that future employment will depend mainly on small, privately owned establishments, rather than on the state sector.

Of the 786 establishments expecting changes in their current workforce over the next twelve months, there were no significant differences between those that *had adopted new technology* and those that had not done so. The proportions that expected to reduce their workforce (about 20 per cent) and that expected to hire additional workers (about 28 per cent) were roughly the same for both groups. The *import competitors* who expected changes in their current workforce were more likely to reduce or retrench their workforce (33 per cent) than to hire additional workers (22 per cent). The *export competitors* were even less likely to hire additional workers (19 per cent); about half of the export competitors expected merely to replace workers who had left.

Figure 21. Expected changes in employment over the next twelve months



4.3. Recruitment preferences and practices

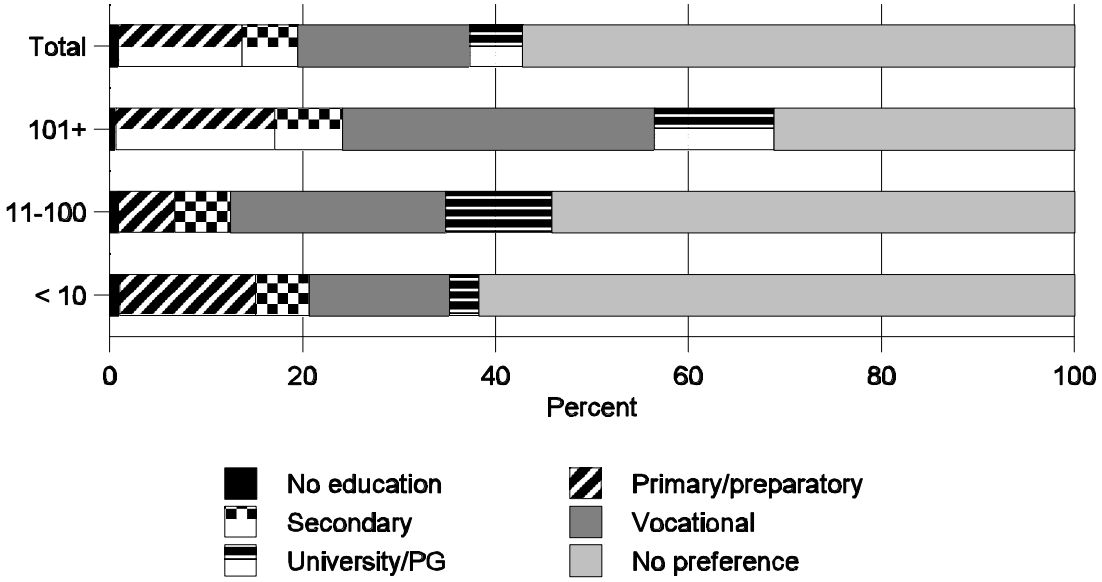
The establishments indicated clear preferences in recruiting production or service workers. The strongest preference was by gender, as discussed in sub-section 4.4 below. In terms of age groups, more than 40 per cent of the establishments indicating a preference chose those between 20-24 years, and another quarter chose those between 25-34 years. There was a marked preference for young workers. In fact, 17 per cent of the establishments indicated a preference for workers below 19 years of age. In terms of marital status, however, most establishments had no preference; among the 220 firms indicating a preference, about two-thirds preferred production or service workers who had never been married.

More than half the establishments claimed that they had no preference in terms of the educational and skill qualifications of production or service workers. The small firms in particular had no educational or skill preferences, whereas the large firms were half as likely to not have educational preferences. But among the firms which did, the strongest preference was for those educated in vocational institutions, followed by those with primary education. Figure 22 also shows that the larger the size of the establishment, the larger the demand for higher levels of education.

Figure 23 shows that the establishments were more likely to have preferences based on the type of training that workers should have. Close to half of all establishments indicated that they preferred workers with previous on-the-job training, and about another quarter preferred workers with apprenticeship training. This finding suggests that establishment owners or managers were not assigning much importance to the role of formal vocational or technical training institutions in equipping workers with the requisite skills and that they preferred to rely instead on establishment-level training for workers. The establishments that did indicate a preference for workers with certification from vocational/technical institutions were more than three times as likely to be in the state-owned sector than the private sector. Similarly, the survey also found that the smaller the size of the firm, the lower tended to be the demand for workers with training institution certification. The establishments that had *adopted new technology* had a clearly higher preference for workers who had been certified by training institutions (27 per cent as compared to 16 per cent by establishments that had not adopted new

technology). *Export competitors* also had a stronger preference (24 per cent) for workers with institutional certification than *import competitors* (19 per cent) or those who were not exposed to external competition (17 per cent).

Figure 22. Recruitment preference by worker qualifications and establishment size



Privately owned establishments and small establishments relied overwhelming on recruitment through friends or relatives of the owners, managers or employees; less than 3 per cent relied on employment services. Fully state-owned establishments, on the other hand, relied mainly on advertisements and direct applications and to a smaller extent on public and private employment services. This pattern was also true for the large establishments. Medium size establishments recruited workers through both direct applications and the recommendations of friends and relatives (Figure 24).

The main reason given (by 70 per cent of the establishments) for not recruiting workers through the employment service was that the employment service could not provide suitable workers or the quality of workers they sent to the establishments was poor. Other important reasons cited were the slowness of service provided by employment exchanges (18 per cent) or because there was no local employment service available (4 per cent). More than three-quarters of all the establishments therefore did not report vacancies to the employment service, mainly claiming that there was no necessity to do so or the quality of services provided was not suitable. The survey findings indicated a clear need to improve both the quality and coverage of employment services in Egypt.

Figure 23. Establishments by preference for type of training of workers and type of ownership, import/export competition and adoption of new technology

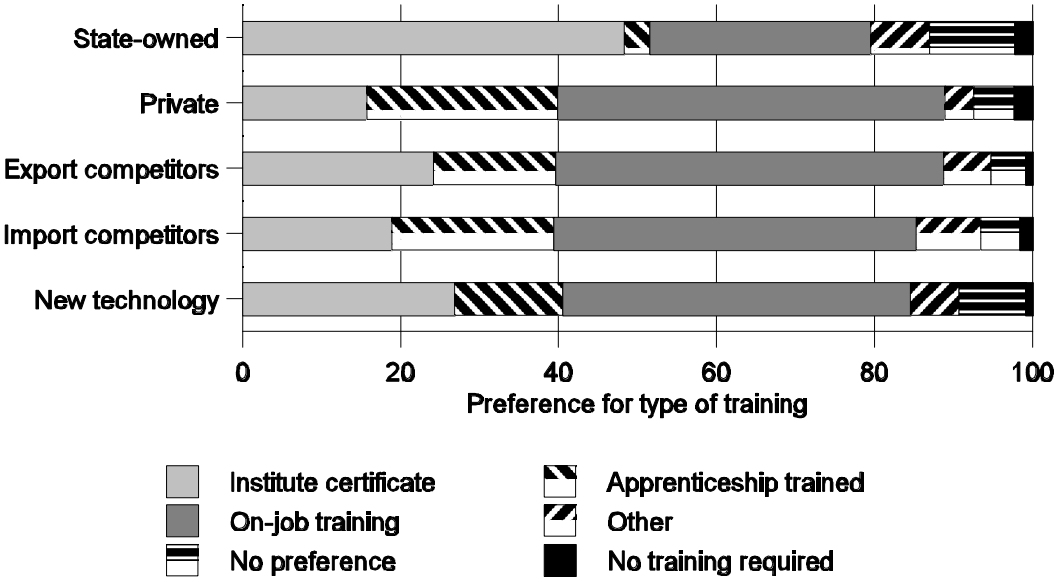
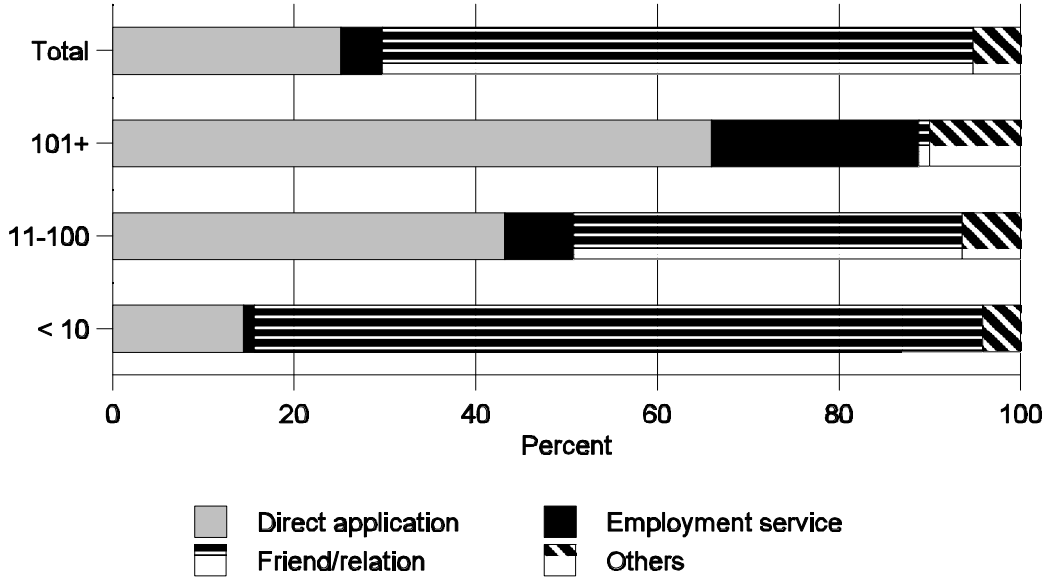


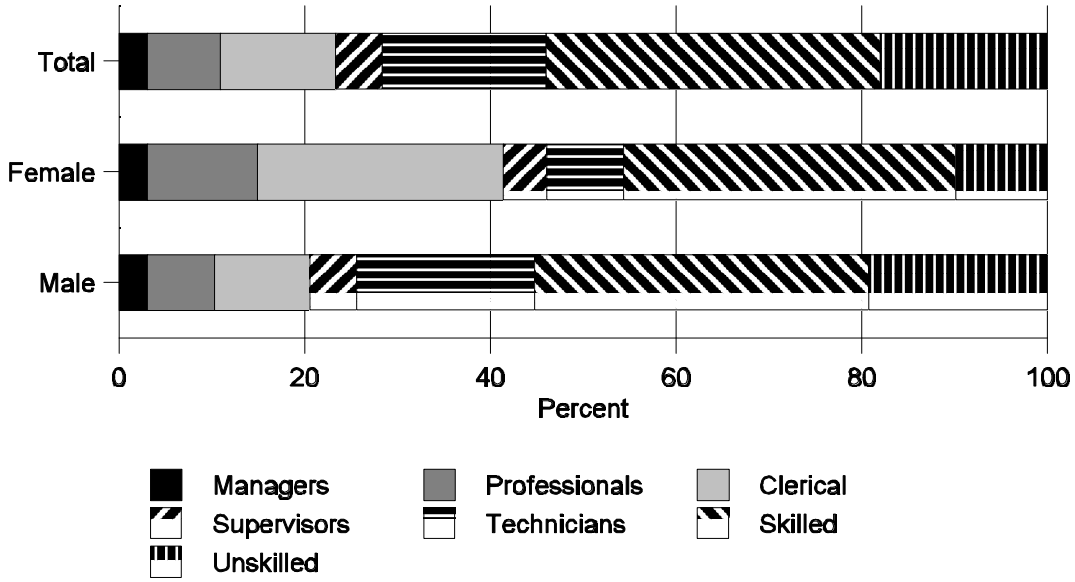
Figure 24. Establishments by size and recruitment method



4.4. Gender discrimination in the labour market

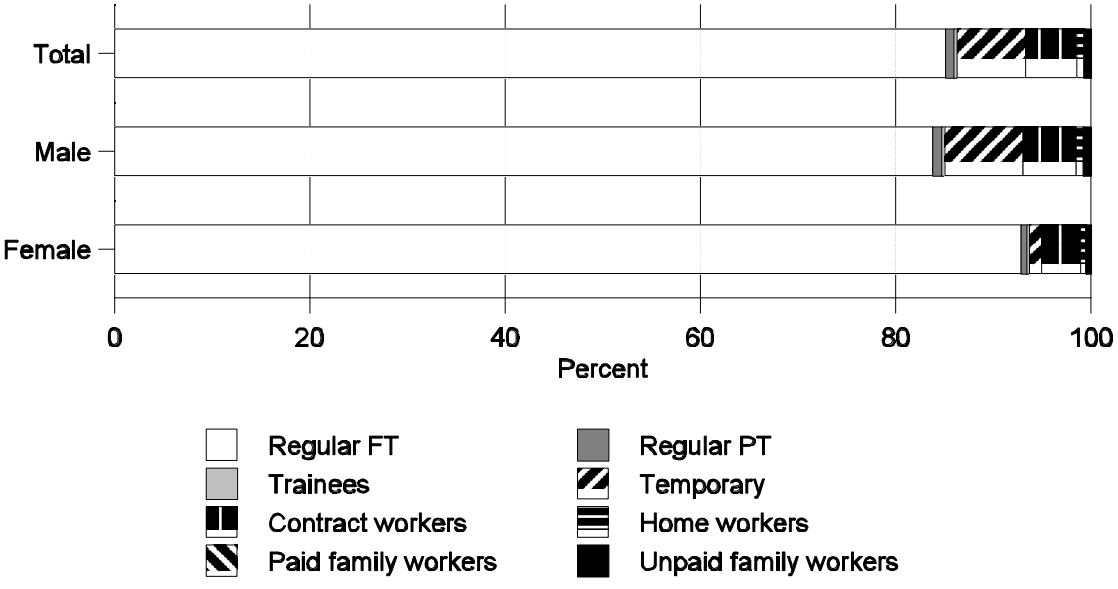
Gender differentials in the Egyptian labour market were glaring. Women accounted for only 13 per cent of the total workforce covered in the survey, although Figure 25 shows that their skill levels were, in general, higher than those of their male counterparts. Women workers were half as likely as male workers to be unskilled (10 per cent as compared to 20 per cent). Occupational segregation was evident, with women tending to be concentrated in professional and clerical jobs, while men were much more likely to be technicians (19 per cent as compared to 8 per cent).

Figure 25. Distribution of workforce by occupation and gender



Gender differentials were also evident in employment status (Figure 26). Related to their concentration in professional and clerical jobs and higher proportion in skilled jobs, over 93 per cent of women workers were in regular employment and only 5 per cent were hired as temporary or contract workers. In contrast, about 84 per cent of male workers had regular employment status and 13 per cent had temporary or contract work arrangements. It appeared that women had to be as well or better qualified than men to compete in the labour market. Unlike the situation in many countries, developing and developed, women in Egypt are getting employment because of their qualifications or skills, rather than because they are going into atypical or non-standard forms of work or because of the relative cheapness of their physical labour. The important point then is that if women who were employed have the requisite qualifications or skills, the very low female proportion in the total workforce must have been because, in the first place, those who were not employed were very seriously disadvantaged relative to men in terms of access to acquiring these qualifications or skills.

Figure 26. Distribution of workforce by employment status and gender



Women's low participation was also due to clear discrimination in recruitment on the part of employers (Table 6). More than three quarters of the establishments indicated a strong preference for male workers, compared to only 3 per cent preferring to hire women. It is striking, however, that both *import competitors and export competitors* tended to show a higher preference for women workers than those not exposed to external competition.

Table 6. Gender preference in recruitment by import/export competition and adoption of new technology (in percentages)

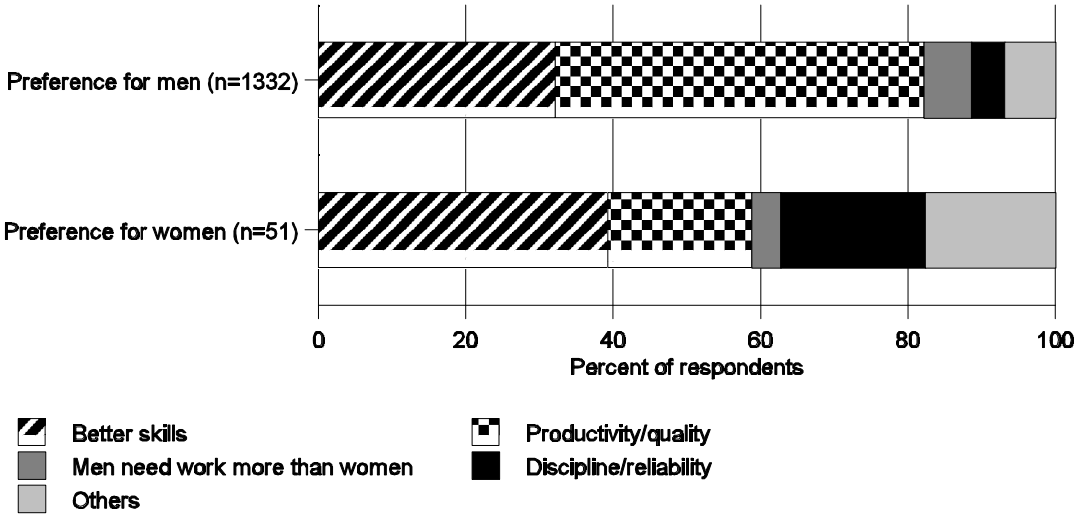
Type of Establishment		Gender Preference		
	Total	Men	Women	No Preference
Import Competitors	100	67.3	5.7	27
Non-import Competitors	100	79.5	2.7	17.8
Export Competitors	100	61.6	5.5	32.9
Non Export Competitors	100	79.9	2.8	17.3
Adopted new technology	100	64.7	2.9	32.4
Non-adoption of new technology	100	81.4	3	15.6
Total	100	78.4	3	18.6

Export competitors were also much more likely to not have a gender preference than those who did not have to compete in foreign markets. Those that had *adopted new technology* were twice as likely to not have a gender preference for workers as those that were still relying on old production techniques.

Of the establishments preferring male workers, half cited their higher productivity or higher work quality, as compared to only 20 per cent citing the same reasons for their preference for female workers. The most important reason given for preferring women was their skills, supporting the earlier observation that where women had found jobs, they had competed on the basis of having higher skill levels than those of men. Other reasons cited for preferring women workers tended to relate to perceptions concerning "feminine" characteristics, such as women being more disciplined and reliable workers and less likely to be absent (Figure 27).

Another survey question on whether establishments wished to change their current workforce of women also revealed the gender discrimination. Inspite of the current low share of women in the workforce; almost three-quarters of the establishments had no plans to change this. Of the remainder, the number of establishments wanting to lower the current share of women in their workforce was almost the same as the number wanting to increase the share; effectively meaning hardly any overall change.

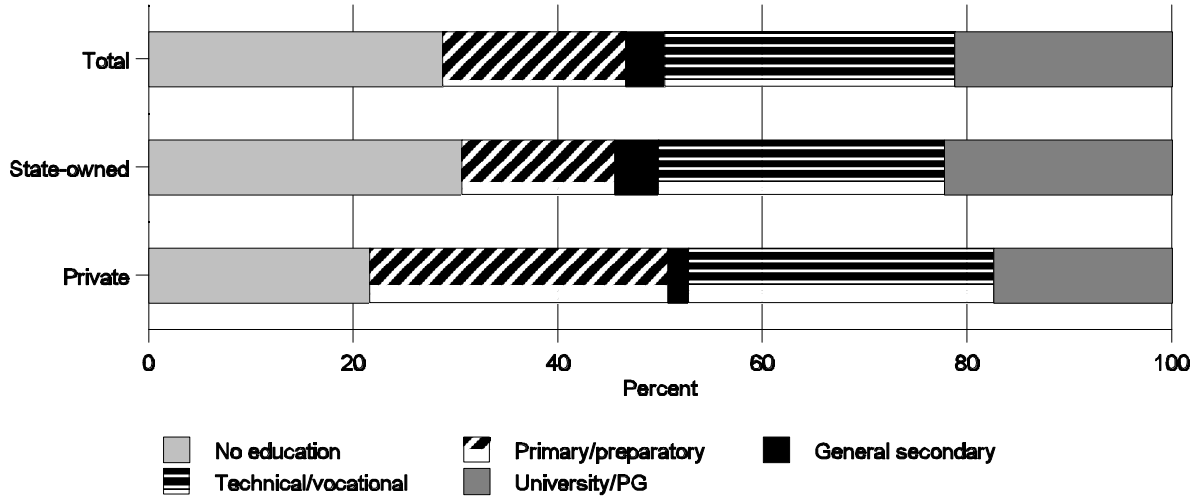
Figure 27. Reasons for gender preference



4.5. Skills and training requirements: Is there a mismatch between labour demand and labour supply?

Almost 30 per cent of all workers had no formal education and another 18 per cent had only primary or preparatory level education. Those with formal technical or vocational education comprised about 30 per cent of the workforce (Figure 28). Since skilled and technical workers accounted for more than half the workforce (refer back to Figure 14), it appears that significant proportions of the workforce relied upon some form of on-the-job training or apprenticeship, rather than on the formal education or training systems, to acquire their skills. This relates also to the earlier finding that establishment owners or managers preferred workers with establishment-level training, rather than formal institution certification. On the whole, workers in private establishments tended to have lower formal qualifications than those in state-owned establishments. The survey also found that the smaller the size of the establishment, the lower

Figure 28. Establishments by educational qualifications of the workforce and type of ownership



the educational qualifications of the workforce. Among the establishments with less than 10 workers each, 38 per cent of the workforce were without formal education and another quarter had only primary or preparatory level education (the corresponding proportions for larger firms were 28 per cent and 19 per cent respectively).

The establishments were asked to identify the types of occupations or trades they expected to need, taking into account production plans over the next twelve months. The largest expected demand (identified by more than half the establishments) was for crafts/trade workers, followed by service workers, technicians, machine operators, professionals, managers, clerks and, finally, unskilled labour (Figure 29). The expectation was that the crafts/trade workers, service workers and machine operators be mainly trained on the job, while the professionals, managers, clerks and technicians should have professional qualifications or certification from vocational/technical institutions.

In relation to their expected labour needs, the establishments were also asked to identify the occupation they expected would be most difficult to recruit workers for. Figure 30 shows a similar pattern to Figure 29, with crafts/trade workers being the most difficult to recruit, followed by service workers and technicians. While more than 60 per cent of the small establishments expected that crafts/trade workers would be the most difficult to recruit, followed by service workers; the larger and state-owned establishments indicated different expectations of labour market "mismatches". The larger the establishment, the lower the expectation that it would be difficult to hire crafts/trade or service workers and the higher the concern that it would be difficult to hire professionals, technicians and machine operators. Of course, this was likely to be related to the different types of production that large and small enterprises are engaged in. The state-owned establishments were much more likely than the private sector establishments to identify managerial and professional occupations as being the most difficult to recruit workers for.

Figure 29. Establishments by occupational needs and type of training for the occupations

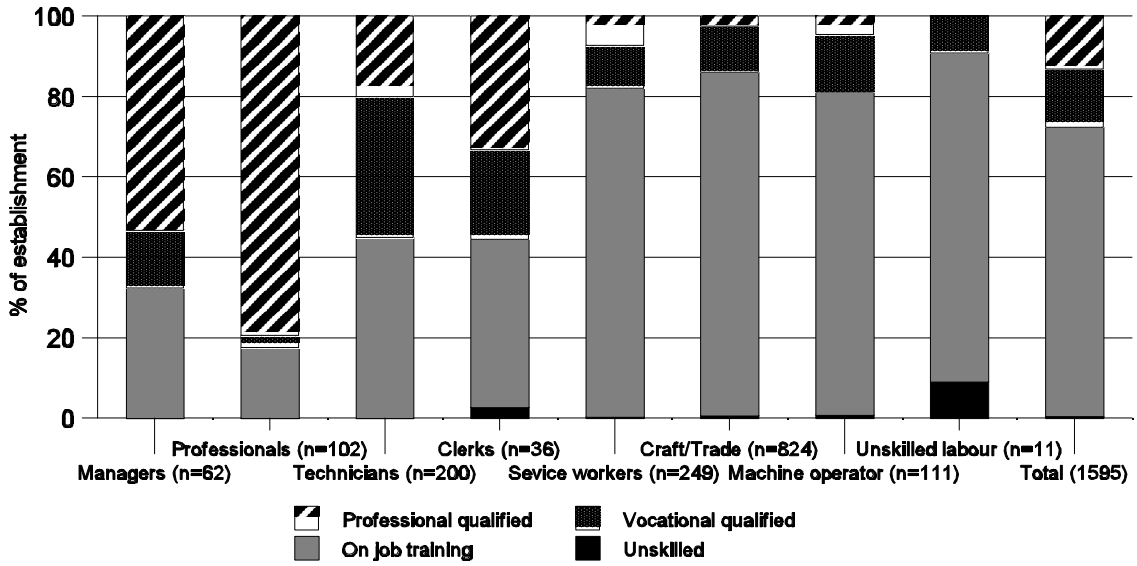
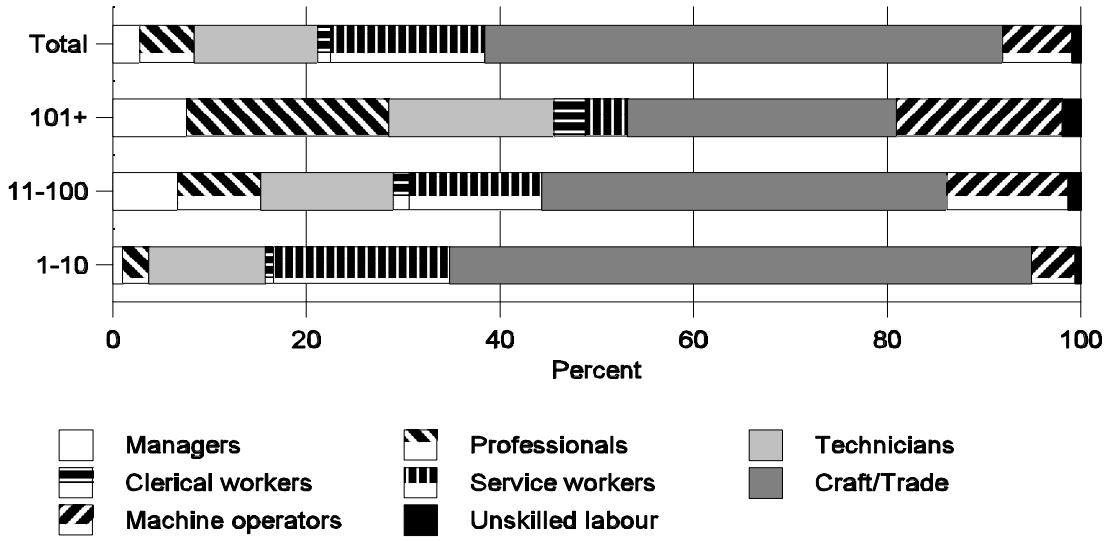


Figure 30. Establishments by occupation most difficult to recruit workers for and by size



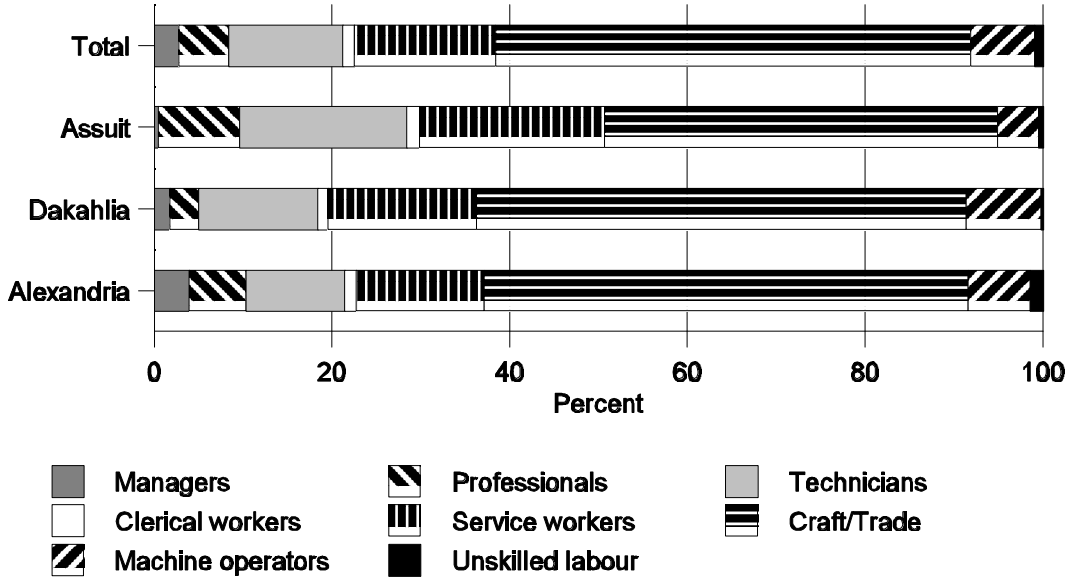
The establishments that had *adopted new technology* were more likely to be concerned about the difficulty of recruiting management and professional staff and technicians and less concerned about recruiting crafts and trade workers than those establishments that had not modernized (Table 7). As would be expected, those not exposed to external competition were much more concerned about the difficulty of hiring service workers than *import or export competitors* who were not likely to be selling services. Both import and export competitors were more likely to be concerned with recruitment of professional and management staff.

Table 7. Most difficult occupation to recruit workers for by import/export competition and adoption of new technology (in percentages)

	Mangt	Profess.	Techn.	Clerical	Service	Crafts / trade	Machine operators	Unskilled	Total
Import competitors	2.0	10.7	11.4	1.3	5.4	59.1	10.1	....	100.0
Non-import competitors	2.8	5.0	13.0	1.3	17.1	52.9	6.9	0.9	100.0
Export competitors	6.3	6.3	14.1	2.8	3.5	53.5	12.7	0.7	100.0
Non-export competitors	2.4	5.5	12.7	1.1	17.2	53.4	6.7	0.9	100.0
Adopted new technology	6.0	15.8	23.2	2.3	5.4	34.6	12.4	0.3	100.0
Non-adoption of new technology	2.0	3.3	10.5	1.0	18.4	57.7	6.1	1.0	100.0

What is also worth noting is the differences in labour market "mismatches" by governorate. Establishments in rural Assuit reported less difficulty in hiring crafts/trade workers, managers or machine operators and more concern with hiring service workers, technicians and professionals than did those in the more urbanized governorates (Figure 31).

Figure 31. Establishments by occupation most difficult to recruit workers for and by location



5. Establishment Responses: Training Practices

The previous Sections laid the groundwork for analysing establishments' training and other human resource development practices by describing the problems they face, characterizing their workforces and analysing their internal labour market practices. Evidence has been presented of the widespread recognition, across different types of establishments, that successful response strategies must give priority to human resources development. In this Section, findings on establishments' training activities are analysed, including the extent of their participation in public training programmes. The principal question addressed is whether these internal and external training activities are effective in helping establishments meet external challenges. In general, there seems to be evidence that establishments' concern over human resource development was not matched by a commensurate level of activity or resources devoted to training.

5.1 Who trains their workforce?

At first glance, the survey findings indicate that relatively few establishments were actively engaged in providing training to recruits or to long-term employees:

- One out of five survey respondents provided training to newly-hired personnel.
- One out of about eight provided retraining to improve workers' job performance or to move workers between jobs at the same level.
- One out of ten provided additional training to upgrade or promote production workers and to raise their earnings.

This general picture, however, is misleading because of the preponderance of very small establishments in the survey sample. Apart from the smallest establishments, those with ten or fewer workers, nearly half of the establishments provided some training to new recruits (45 per cent). As shown in Figure 32, the incidence of training increases with size of establishment: while fewer than ten per cent of the smallest establishments provided any type of training, over 70 per cent of the largest establishments trained new recruits, and at least 60 per cent provided some ongoing training.[1]

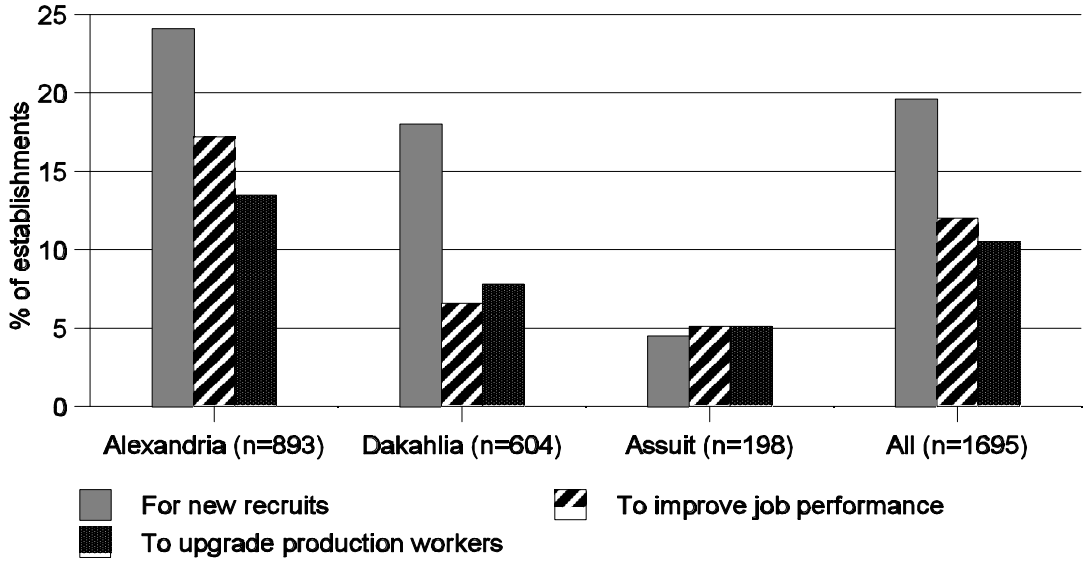
The difference in which establishments provided training does not correspond to which establishments identified lack of qualified workers as their most serious business or personnel problem. As shown in the previous summary of how establishments rated their business and personnel problems (Section 3), small establishments were almost twice as likely to choose scarcity of skilled workers as their principal personnel problem as were largest establishments, (48 per cent versus 23 per cent, respectively). And the share of small establishments identifying difficulty in recruiting skilled personnel as their number one personnel problem was nearly the same as the proportion among the large establishments (about 16 per cent each).

[1] The survey asked whether the establishment *usually* provided, or paid for, training for newly recruited production or service workers. The two questions about training for longer tenured workers (to improve their productivity or to promote them to higher-paying work) did not specify whether such training was provided to most, as opposed to only a few, workers. Thus the extent of training within the larger establishments beyond the entry-level training could not be established from the survey findings.

Figure 32. Types of training provided, by size of establishment

The pattern of larger firms having more extensive training activities is seen again in the regional distribution of training activities (Figure 33). As the establishments located in the rural region of Assuit were almost all small, there was a marked absence of establishment-level training in this Governorate: less than five per cent of the establishments there reported any training activities.

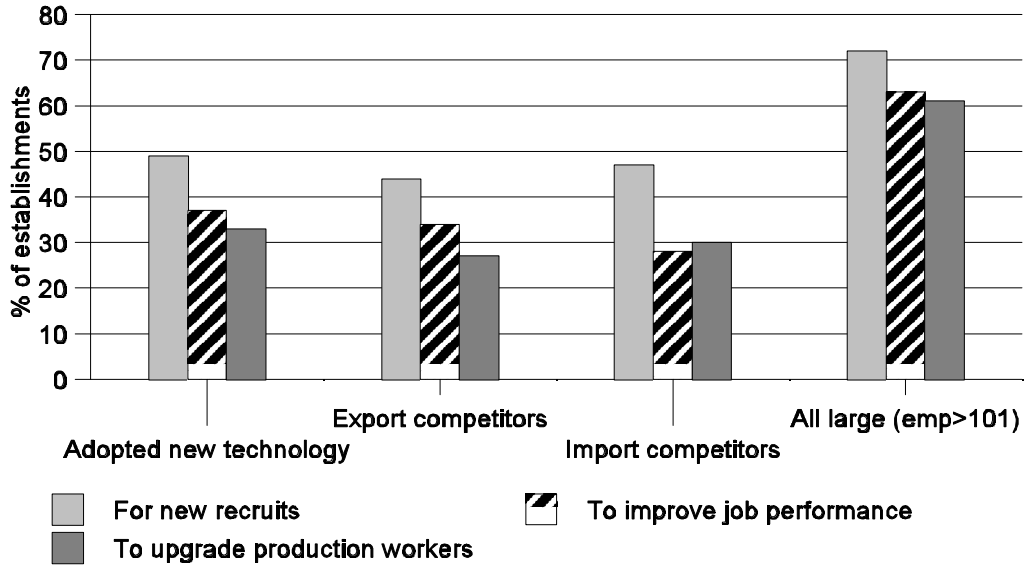
Figure 33. Types of training provided, by region



There was a marked higher tendency for *import and export competitors* and especially for establishments which had recently *adopted new technology* to train their newly-hired and longer-term workers. The incidence of training activities in these establishments was much

higher than on average, but below the incidence among establishments in the largest size category. Fifty per cent of the establishments which had adopted a new technology provided training for their new recruits, as opposed to 20 per cent of the entire sample (Figure 34). The proportion of these establishments which provided training to improve productivity (37 per cent) or to promote production workers (33 per cent) was three times the survey average. However, the share of establishments with new technologies that provided training was lower than the share of establishments with more than 100 workers that provided training, across all three types of training.

Figure 34. Training activities by selected groups of establishments



The evidence is also strong that establishments which were most concerned about import or export competition had an above-average propensity to train their employees. Forty-four per cent of export competitors and 47 per cent of import competitors trained newly-hired recruits. Their propensity to train other workers was two to three times above the average, but again, lower than the share of large establishments which provided this kind of training.

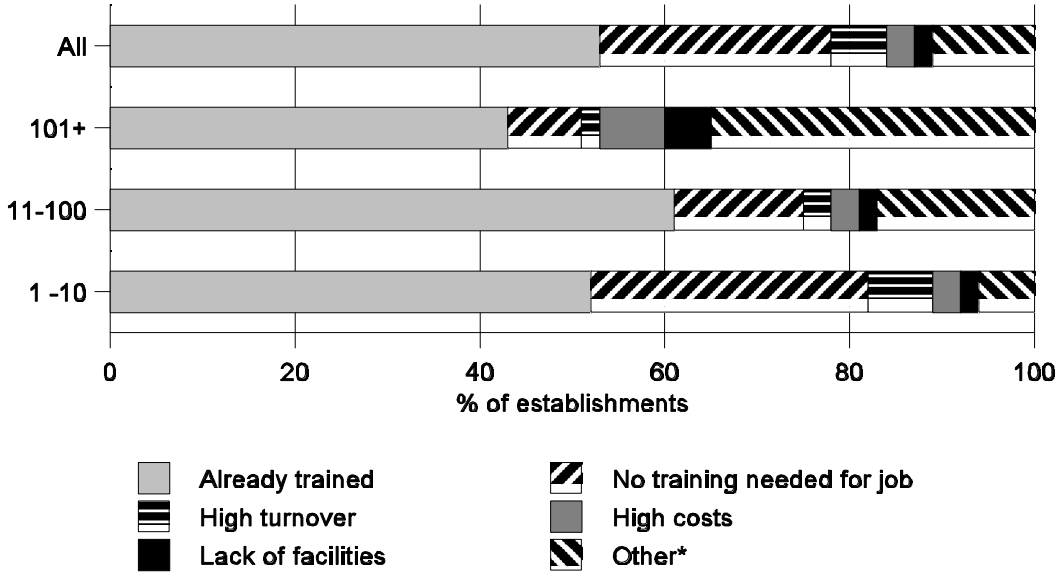
The level of training provided appears to be constant, with relatively few establishments indicating a change in the amount of training over the previous year or anticipated for the next. Of those establishments that currently provided some training, 79 per cent reported no change relative to the previous year. Of the remaining respondents, half as many said training had declined (6 per cent) as reported an increase (15 per cent). About one third of the large establishments had increased training activities. On the other hand, only 5 per cent of all respondents indicated plans to increase resources devoted to training in the upcoming year. Although even fewer planned to reduce their current training activities (2 per cent), the vast majority either expected training resources to remain at the same level (54 per cent) or did not know (40 per cent).

5.2 Reasons given for lack of training activities

The survey findings indicate something of a paradox: Most establishments regard human resource development as a high priority, in terms of its potential impact on business performance, but relatively few provided training. In this Section an effort is made to determine why establishments which identified lack of sufficiently trained personnel as a principal business or personnel problem did not have more training activities.[2]

Most establishments reported simply that training activities were not needed (Figure 35). Either recruits already had the necessary skills when hired (53 per cent of the responses) or training was not required to perform the job for which the employees were hired (25 per cent). For the remaining quarter of respondents, 6 per cent said they had no incentive to provide training because workers did not stay long enough in the job to warrant investing in their human capital. Only 3 per cent said that high costs deterred training and another 3 per cent cited lack of training facilities or instructors.

Figure 35. Explanations for not training recruits, by size of establishment



As also shown in Figure 35, the explanations for not training recruits did vary somewhat by size of establishment. Small establishments tend to have a greater proportion of jobs for which training was not needed (30 per cent compared to 8 per cent of large establishments). The largest establishments had the most difficulty finding already trained recruits (43 per cent said recruits were already sufficiently trained, compared to 60 per cent of medium-sized establishments). The largest establishments were also least likely to say that

[2] A total of 333 establishments answered 'yes' to the question of whether they provided training for newly-recruited personnel. A later question asked "If the establishment is not providing entry-level training, what is the reason?" All 1700 establishments responded (although 117 said they did not know), not just those that did not provide training. Thus, the most reasonable interpretation is to give the question a more general meaning as identifying the barriers to providing more, as well as any, entry-level training. There was no significant difference in the distribution of responses for why training was not provided between the entire sample and those that did not train recruits (1362 establishments).

training was not needed for the jobs new employees were hired to do (only 8 per cent). This corresponds to the findings cited in the previous Section that the larger establishments had the highest proportion of workers in the more highly skilled occupations. Curiously, one quarter of the large establishments indicated that they did not know why they did not provide training (apart from the five per cent that selected unspecified "other" reasons).

The explanations given by establishments that *adopted new technology a*nd *import and export competitors* for not providing more training were similar to those of large establishments. Export competitors were the least likely to claim that no training was needed for jobs (3 per cent). Over 50 per cent of the establishments in each of these groups said that their recruits were sufficiently well-trained for their jobs, indicating that these establishments competed successfully for trained personnel in the labour market.

Establishments which identified lack of skilled workers as their most serious personnel problem (43 per cent of the total) were as likely to explain that they did not train recruits because they were already skilled or because no training was needed for the job as were the rest of the establishments which had not identified lack of skilled workers as their most pressing personnel problem. As shown in Table 8, 17 per cent of the establishments citing lack of skilled workers as their main personnel problem actually trained workers, compared to 20 per cent of all establishments. Similarly, the portions of establishments reporting that it was unnecessary to train recruits were the same for the subset that had identified difficulty in recruiting skilled workers as their principal personnel problem as for the entire survey.

One of the clearest findings is that improving access to training may not in itself result in substantial increase in actual training activities. High costs and lack of training facilities or trainers were not found to be significant constraints on establishments' training activities. To the extent that establishments refrained from training workers because they could not expect employees to continue in their employ, publically funded training programmes emphasizing generally applicable skills may be appreciated. However, only 6 per cent of establishments cited this reason for not providing more training.

Table 8. Personnel problems and training activities

	All	Main personnel problem		
		Lack of skilled workers	Difficulty recruiting skilled workers	Difficulty retaining skilled workers
Number of establishments	1700	691	265	144
Per cent of total	100%	43%	17%	9%
Of which, train recruits:				
… Number	325	118	52	37
… Per cent	20%	17%	20%	26%
Of which do not train recruits, Reasons given:				
-Recruits already skilled	54%	54%	54%	59%
-No training needed for job	23%	27%	20%	12%
-High turnover	6%	5%	4%	11%

5.3 How establishments train their workers

The evidence on how establishments provided training is presented for each of the three types of training for which data were collected, and for just the establishments that actually provided such training: 1) for new recruits, 2) to improve productivity of workers in their current jobs, and 3) to promote or upgrade workers. This section pertains only to training provided internally by the establishment; it is followed by an examination of establishments' participation in public training programmes.

The first finding of note is that establishments interacted very little with professional training institutions. Almost all the establishments that provide training to new recruits did so with their own internal resources, on their own premises, so-called in-house training (88 per cent). Only 30 of these 333 establishments paid fees to a training institution to train their employees. Less than 2 per cent either paid a stipend directly to workers to reimburse them for training tuition or gave them unpaid leave for training purposes (Table 9).

Typically the in-house training consisted solely of informal on-the-job training. Three-fourths of establishments which provided any training to new recruits relied on this method, and another 15 per cent provided classroom training on the premises. Likewise, only about one out of five establishments hire trainers, on a full-time or part-time basis. The rest relied on production managers to train the new employees assigned to work under them.

Table 9. Training methods

Type of Training	Establishments that provided training	
	Number of "Yes"	Per cent of "Yes"
In-house training	294	88.2%
Pay fees to training institution	30	9.0%
Pay stipend to workers receiving training	4	1.2%
Training leave without stipend	2	0.6%
TOTAL	330	99.0%

The way training was provided to workers with some experience on the job differed slightly from that provided to new recruits. Here the purpose of the training was to improve productivity, job performance, and mobility across jobs but at the same grade or level (i.e. without promotion). While the most common form of training remained informal on-the-job (60 per cent of the 200 establishment providing this type of training), classroom training was more common, with one fifth providing classroom training within the establishment and another fifth sending employees to classroom training elsewhere.

As noted, providing training for the purpose of upgrading production workers and to enable them to increase their earnings was the least common form of training provided, by 178 establishments. Here too, where more specific training was needed, there was a higher tendency to hire training professionals, rather than to train on-the-job. Just half of the establishments providing this type of training did so on the basis of managers training their own workers; a fifth provided classroom training on their premises and a fourth sent workers to professional training institutions.

No specific survey questions probed managers' motivations for providing training themselves or sending employees for training. It can be surmised that the higher the level and the more specific (trade, craft) the training required, the less likely it could be provided by establishments' managers and supervisors at comparable cost to a specialised training institution. Also, no data was collected as to the share of workers trained, but it could well be that those establishments providing training to a larger proportion of their workforce found it cost-effective to hire professional trainers to provide classroom training on their premises than to send a large number of workers elsewhere.

Finally, those establishments already providing some training to their employees were asked whether the *kinds* of training currently provided were adequate given their production plans for the upcoming year. Some seventy per cent deemed it adequate; only 8 per cent said more would be needed, and the remaining 23 per cent said they did not know.

5.4 Which workers receive training

Improving the position of earning capacities of production or service workers was the least cited reason for providing training. Overall, only one respondent out of ten provided this type of training, or 30 per cent of the middle and large-sized establishments. These establishments were asked first whether they provided training to all their production or service workers or whether trainees were selected on the basis of some criteria, such as occupation, gender and age. This preference structure is examined just for the 140

establishments that indicated that they provided training/retraining for selected workers (out of the 178 respondents which provided upgrade training).

Age — Workers between the ages of 25 and 34 were the most likely to be selected to participate in training activities (an age group selected by 25 per cent of the establishments). Two thirds of the respondents said they preferred to train workers between the ages of 25 and 45. This suggests two things relevant to training policy:

- Older workers, who may still be ten to twenty years away from the normal retirement age and who may have the highest probability of finding their skills obsolete as new technologies and work methods are adopted, may be the last to benefit from any investments in training on the part of their employers.
- Public programmes emphasizing apprenticeship-level training may find public awareness and interest lacking, possibly because such programmes have not traditionally been widely available. Twenty-five establishments indicated a preference to train workers between the ages of 20 to 24 (18 per cent of those indicating selection preferences for trainees), and another eight establishments selected the 15 to 19 year-olds as their preferred trainees (5 per cent).

Gender — Half of the 140 establishments which used selection criteria to choose which employees to train preferred to train their male employees. Only 4 per cent preferred to train women and the rest indicated no preference on the basis of gender.

The variation in share of women workers included in establishments' training activities, by size, ownership or industry, was quite modest. Women represented ten per cent of workers receiving training in the smallest establishments and 16 per cent in the largest. There was literally no difference in their training rate between state-owned and privately-owned establishments. Women working in establishments in the rural Governorate of Assuit were least likely to be included in the limited training activities there, where they accounted for only 5 per cent of trainees on average. Those industry sectors that had a higher proportion of women workers also had above-average share of women trainees: 28 per cent of trainees in clothing and textile were women, 17 per cent in food products, and 18 per cent in consumer services.

Education — Workers already having some vocational education were more likely to receive further training once employed than those with secondary education or less. About 28 per cent of the respondents (out of 140) preferred to train workers with some vocational training. Secondary education was not viewed as a substitute, with only 5 per cent of the respondents preferring to train workers with a secondary education. This is most probably an indication that employers took previous vocational education as an indication of ability to learn, and that these workers were in the types of jobs (technical, production) in which training could be expected to yield the highest return.

Job-related — Employers' satisfaction with individual employees clearly affected their choice of which employees could participate in training activities: Half of the 140 respondents said job performance was a principal selection factor; 12 per cent evaluated the individual's leadership qualities, and 8 per cent considered

employees' years of service with the business. Another fifth of these establishments said their first criteria was the likelihood that workers would not leave the business. Only 5 per cent of these establishments placed a high priority on providing training to workers affected by technical changes in their jobs. This set of job-related preferences also has direct policy implications:

- Employers have low motivation to provide training in general skills. If the training which an individual employer finds useful is adaptable to a large number of other establishments (either within an industry which has many establishments in the area or skills adaptable to other industries) there is a high probability that the employer that invests in training its workers will find them sought after and bid away by other employers. To the extent that the overall productivity of the Egyptian workforce would benefit from upgrading general skills (literacy, numeracy, general machine aptitude, management) it is unlikely that the private sector will provide a sufficient level of this training. Public training provision should concentrate on this type of training which would benefit not only a large number of workers, but also a large number of businesses without preferential treatment to particular industries or companies.
- Employers do not have a commitment to retrain workers at risk of displacement due to obsolescence of their skills (whether technical or managerial). This is further corroboration that they would rather compete to hire (younger) workers with desired traits and skills than invest in training middle-aged workers. If these workers are to remain productive, and avoid long-term unemployment, access to public re-training programmes may be crucial.

5.5 Participation in public training programmes

A tiny portion of the surveyed establishments reported receiving any governmental assistance for training workers. Of the 54 establishments (or 3 per cent of the total surveyed) reporting receiving any assistance, most said that the government had organised training programmes (30 respondents). Only 20 respondents said they had received any other form of government assistance for training (tax benefit, financial subsidy, training materials, trainers).

Not a single establishment with fewer than ten employees nor a located in Assuit was among the few establishments receiving government assistance for training. Establishments in the trade/transport service sector and food processing each accounted for about a third of the establishments reporting that they received some government training assistance. Forty-two of the 54 establishments receiving government support were either fully or partially government-owned.

A separate section of the questionnaire was devoted to information about a specific public-private programme to promote training at the establishment level. Commonly referred to as the Mubarak-Kohl Initiative, the Dual Vocational Training System (DVTS) is a programme to promote classroom theoretical training with practical training in actual work sites. To that end, it is administered and funded jointly by the Ministry of Education and the private business sector (through investors' associations). The programme was initiated in 1994 with support from the Egyptian Ministry of Education and the German Government (GDZ). Thus, implementation had begun in four pilot projects established in new cities around Cairo, with courses for mechanics, electricians, and garment workers.

Detailed information on which establishments had heard of DVTS and were interested in participating is provided in Appendix Table 5. One out of five surveyed managers knew about the programme, and fully half of these expressed interest in participating. Most of these establishments were large (40 per cent) and located in Alexandria (60 per cent).

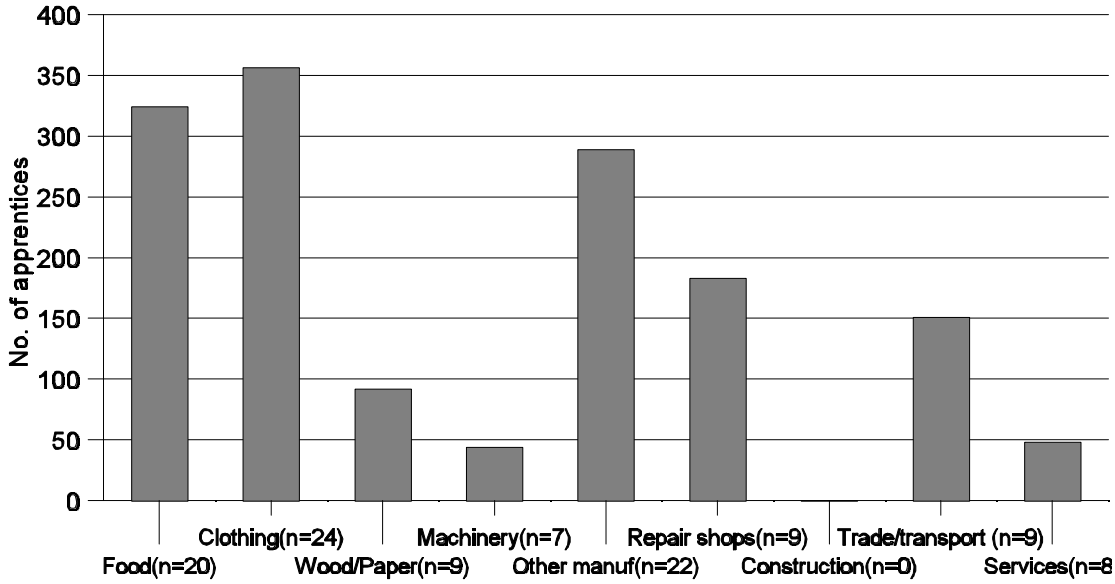
The survey gauged the type of cooperation in which establishments were most interested (Table 10). Of those that were interested in participating at all, providing training on their premises was the most popular form of cooperation (57 per cent), followed by allowing apprentices to attend classes twice a week (48 per cent) and providing equipment for training (47 per cent). The type of cooperation with the lowest favourable response was paying a salary to apprentices in the system (40 per cent).

Two thirds of the 156 establishments familiar with DVTS indicated that they expected to need apprentices who could be trained under the programme. In total, these 108 establishments estimated that they would need about 1500 apprentices. The distribution of these apprenticeships by industry is provided in Figure 36. The clothing, textile and footwear industry had the highest number of apprenticeships, 356, or one fourth of the total. The food processing and other manufacturing branches (including chemicals and building materials) each accounted for about a fifth of the total.

Table 10. Cooperation in DVTS

Type of Cooperation	Establishments	
	Number of 'Yes'	Per cent of 'Yes'
Provide equipment for training	73	46.8%
Provide training in establishment	89	57.1%
Allow apprentices to attend 2 days/week	75	48.1%
Pay salary for apprentices in system	62	39.7%
Help training institute develop curriculum	70	44.8%
Participate in permanant committees	64	41.0%

Figure 36. Apprentices needed, by industry



6. Establishment Responses: Other Human Resources Development Practices

Training practices may be the principal, and most obvious, component of human resources development practices. However, other workplace practices also affect human capital development and the effectiveness of human resource management. This section analyses findings on these other aspects for which the EHRDS collected information.

6.1 Wages and Benefits

The first set of findings on the relationship between remuneration and human resource development concerns how pay rates are determined. Employers may consider a range of factors when setting starting wages for various occupations or skill levels, as well as for rates of pay increases over time. Individuals' productivity can be measured by their qualifications, their training and experience in previous jobs, or evidence of work quality. Some employers may also base wage offers on other types of individual attributes, such as gender, age, and ethnic group. Institutional factors, for example minimum wage laws and collective bargaining agreements, could also affect remuneration rates. In analysing how employers in the EHRDS weighed these various factors, we are particularly interested in the evidence of how important training and skill accumulation are in influencing wage rates.

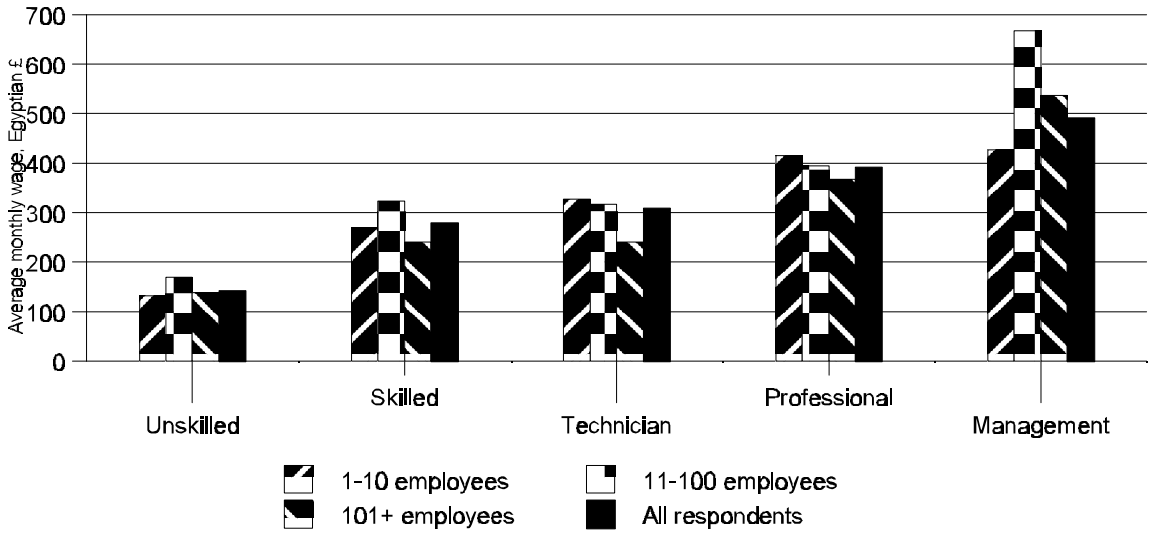
As shown in Figure 37, the average reported wage for employees in management positions was 3.5 times the average wage for unskilled labourers. Although caution must be exercised in drawing conclusions from the survey wage data, the findings do suggest that there is a significant financial return to work training. The average wage for "skilled workers" was 96 per cent higher than the average wage reported for unskilled workers, the average wage reported for "technicians" was 117 per cent higher.[1]

Survey respondents were offered a series of possible pay criteria and asked whether each one influenced their wage decisions. As shown in Figure 38, nearly all the large establishments (90 per cent) indicated that they used the qualifications of the individual employee, or skill level, as a criteria to determine pay. By contrast, only 20 per cent of the smallest establishments considered individuals' qualifications when determining pay levels. Across all size classes, employers considered the individual's performance on the job when determining pay; this factor was selected by almost three quarters of the respondents in each size category. There was also considerable agreement that pay rates were determined by overall business performance, indicating that the benefits of high growth or rising profits, or the inverse, would be reflected in pay rates. Finally, about half of the employers in each size

[1]The wage date collected in the survey proved to be problematic. Survey respondents are often most hesitant to provide accurate data on wages to questionnaire enumerators. In this case, only slightly more than half of the survey participants divulged wage data for unskilled workers; two-thirds provided wage data for managers. There also seemed to be some tendency for respondents to report total wages paid in each occupational category rather than the average wage per worker within categories. To reduce the influence of such errors on the analysis, observations were deleted in each occupation category if the reported average wage was more than 4 standard deviations above the median in each size-class group. An additional 27 observations were deleted that reported a lower average wage for skilled than for unskilled workers. Remaining errors may partly explain the lack of uniform differentials in occupational wage rates across establishment size classes, as shown in Figure 37. Moreover, due to the combination of the low proportion of respondents that provided data on worker training and the high share of missing observations in the wage data, it was not possible to draw conclusions about the relationship between training and remuneration within firms.

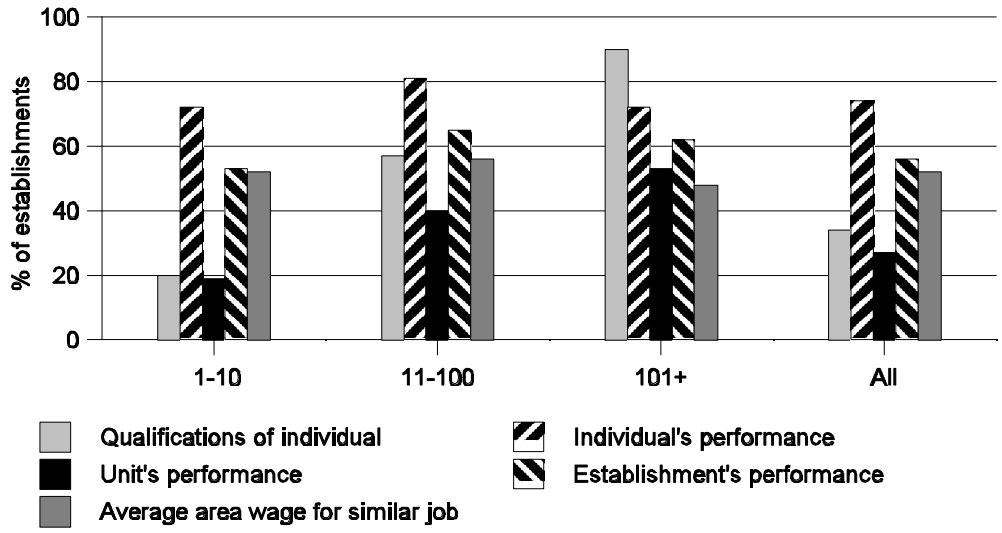
category indicated that they did pay attention to what other firms in the same area paid workers in similar jobs when deciding wage rates for their own employees.

Figure 37. Wage rates by occupation and size of establishment



Although performance on the job was certainly related to former training and skill level, most employers gave more weight to individual productivity than to going wage rates for broad categories of occupations when setting wages. Not surprisingly, formal qualifications as evidenced in certificates or degrees was given more weight by formal-sector establishments. Thus, the incentive for workers to invest in their own training was highest for those employed, or expecting to be employed, by the large formal sector establishments. For workers in the informal sector, acquiring skills on-the-job and performing well on-the-job was relatively more important. These findings are not surprising and concur with those presented earlier comparing the occupational mix of large and small establishments. A larger share of the workforce of larger firms had vocational or other technical certification. Thus we would expect to find, in the wage information, that the returns to certification were higher in formal sector establishments.

Figure 38. Criteria to determine pay, by size of establishment*



* Survey respondents responded "yes" or "no" to each pay criteria and did not indicatetheir principal criterion in determining wages.

Unfortunately, problems with the wage data in the survey prevent us from exploring the relationship between skill levels and remuneration more directly. Fewer than two dozen respondents provided complete information to a set of questions asking for starting wage rates by level of training. This is insufficient to attempt to analyse wage differentials between skill or occupation levels, althouth this information would be relevant for policy analysis because it would enable us to compare how wage differentials between skill levels give incentive to individuals to invest in more or higher training, versus how they affect the mix of occupations and skill levels employers demand.

Similarly, only limited data were available on whether other kinds of worker characteristics impact wage determination. Employers were asked to estimate the difference in average monthly pay between men and women working in similar grades or in similar occupations. Just under 300 establishments provided this information, and their responses are presented for each category of establishment size in Figure 39. Employers estimated that on average women's pay was 80 per cent of the men's average, again comparing only within occupations or skill levels. Put another way, women earned 20 per cent less than men for the same work. The relative pay rates reported were the basically the same in small and large establishments.

Figure 39. Women's pay relative to men's in similar occupations

A twenty per cent differential between men's and women's earnings is not high by international standards. It should be noted again that only 17 per cent of the establishments surveyed answered this question and those with larger differentials between women's and men's earnings might have been more reticent to provide this information than establishments with smaller differences. However, the evidence does indicate that women could expect nearly equal return to training as their male colleagues. This finding is consistent with what was reported in Section 4, that employers did not indicate any bias against hiring women with adequate training qualifications.

Quite detailed information was collected on what benefits employers provide for their workers. The findings indicate that workers in large establishments were eligible for a wide range of social services and benefits: 90 per cent of large establishments provided paid sick leave, 86 per cent provided a pension scheme, 64 per cent helped pay workers' transportation costs to work (Table 11). The benefits provided least frequently by large establishments were subsidized housing (17 per cent) and child care services (28 per cent). The low frequency of the later is not surprising considering the low proportion of women employed by these establishments (14 per cent of employment covered in the survey, see Section 4). Production or service workers in the informal sector were much less likely to be eligible for these benefits. One third of the small establishments provided paid vacation, one fourth provided paid sick leave, and 27 per cent offered pension schemes. Almost half of the large establishments and 16 per cent of the small ones reported that they provided loans or subsidies to their workers, indicative of the perhaps more personal relationships between workers and owners in the informal sector, but also of the absence of other types of benefits that help workers' families cope with financial emergencies.

Table 11. Benefit entitlements by size of establishment (in per cent of establishments)*

Benefit	Employees per Establishment			
	1-10	11-100	101 +	All
Paid vacation	35	46	88	43
Paid sick leave	24	46	90	35
Health insurance	10	36	85	23
Pension scheme	27	46	86	37
Severance pay	7	33	80	10
Child care services	0	3	28	3
Transportation	1	13	64	9
Loans/Subsidies	16**	24**	47	17**
Subsidized housing	1	5	17	3
Subsidized meals	1	10	34	6

*Percentage of establishments in which all full-time production or service workers are entitled to benefits.

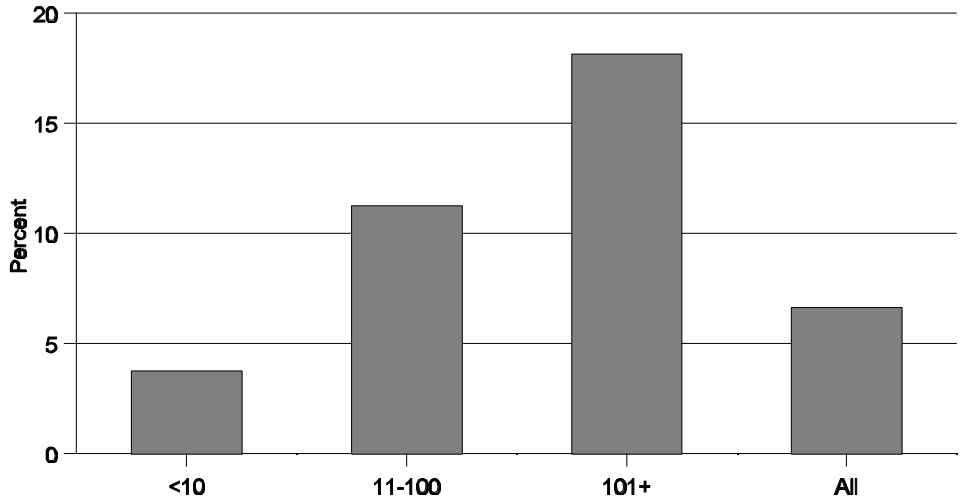
** Percentage of establishments in which some, as opposed to all, production/service workers are eligible

Figure 40 gives the average non-wage labour costs as a share of total costs for labour, for different size classes of establishments. It depicts in financial terms the same story of the uneven distribution of eligibility for fringe benefits and social services between workers in the informal and formal sectors. Non-labour costs included costs paid by the employer for employees apart from wages and salaries, such as employment taxes and training costs as well as fringe benefits. Lumping such costs together, however, large establishments estimated that on average non-wage labour costs accounted for nearly 18 per cent of their total labour costs. Within the informal sector, these costs amounted to only 4 per cent of total labour costs.

6.2 Responses to having surplus workers

One would not expect employers to invest in upgrading their workers' skills if they had more workers than they needed. Survey respondents were asked about their physical capacity utilization as well as if they had "surplus" or "redundant" workers. Specifically, they were asked whether they could produce their present level of output with fewer workers, and if so with how many fewer. This share of their workforce is what is referred to as surplus or redundant.

Figure 40. Non-wage labour costs as per cent of total labour costs, by size of establishment



Surplus labour is a result of two forces. First, it implies that factors other than physical plant and equipment size are limiting sales, and thus production levels. These would range from saturation of suppliers in the product market, to low competitiveness due to poor quality or over-priced products resulting in loss of market share. Unless output constraints are temporary (for example, due to disruptions in procuring raw materials), eventually employers would respond by reducing the size of their workforce. However, even over extended periods of decline employers may resist taking active measures to release workers (relying on retirements and voluntary departures) in the hope that sales will pick up and that trained and experienced workers will not have to be replaced. Employers may also be compelled by legal or traditional reasons to keep surplus workers on their payrolls. These are the second set of factors resulting in surplus workers.

The relevant data on physical capacity utilization and workforce redundancies are presented in Table 12. It is striking that the average capacity utilization rate for the small establishments was only 22 per cent. The average rate among large establishments was three times higher. Despite the much lower capacity utilization rate, a smaller proportion of the smaller establishments were willing to say that some of their workers were redundant – under 3 per cent of the smallest establishments versus 27 per cent of the large ones.

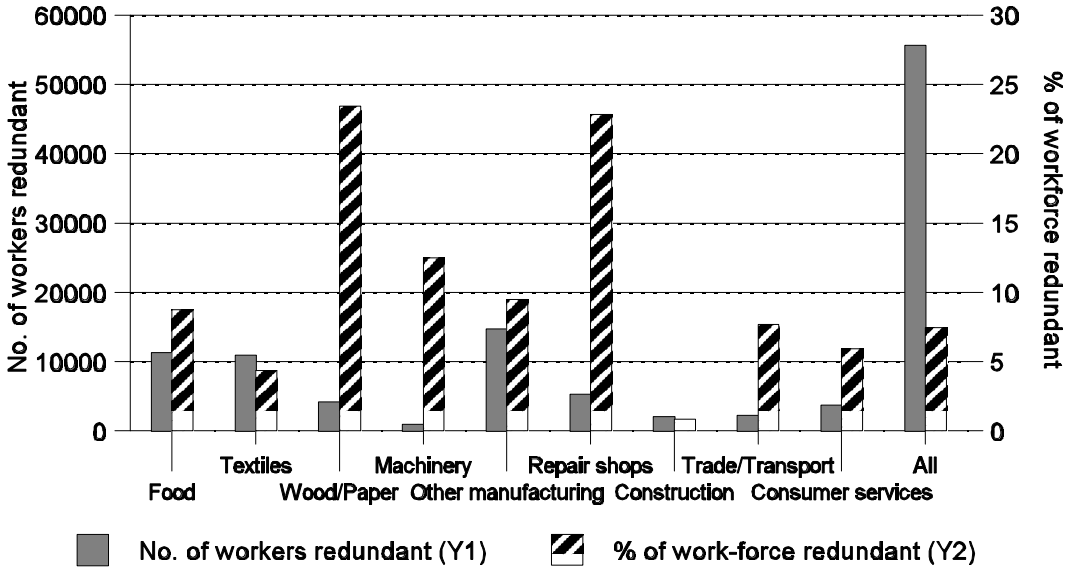
Table 12. Production capacity and redundant workers, by size of establishment

Employees per establishment	Average capacity utilization rate	Establishments with redundant workers		All Establishments
		Per cent of Establishments	Number of redundant workers	Redundant workers as % of total employment*
1 - 10	22	2.7	117	2.4
11 - 100	54	10.3	389	4.0
101 +	67	27.4	20,531	7.7
All	33	6.9	21,038	7.5

* Per cent of entire workforce in survey, including employment in establishments which reported no surplus workers.

Some 21,000 employed workers were considered redundant by their employers, equivalent to 7.5 per cent of the total employment covered in the survey. The distribution of redundant workers across industries is shown in Figure 41. Referring to the scale on the left-hand side of the Figure, number of redundant workers, we can see that redundant workers are clustered in food products, clothing/textile/footwear, and the chemical and building material industries grouped under other manufacturing. Referring to the scale on the right-hand side of Figure 41, these redundant workers are shown as a percentage of total employment in each industry. By this indicator, redundancies were largest in wood/paper and repair shops, where over a fifth of the employees were redundant, followed by machinery/engineering with 12 per cent. This information gives some indication of where job cuts could be expected and of the industries in which less training and investment in future productivity of workers could be due to an excess supply of workers relative to the quantity of products or services establishments they were able to sell.

Figure 41. Redundant workers, by industry



In a related question, employers identified the measures they took in response to having too little work for the size of their workforce (during a period of at least one month duration in the last year). Although many more establishments answered this question than said they had redundant workers, the range of responses can still be taken as a good indication of how they deal with the general problem of too little work to keep their workers fully occupied or productive. The most frequent response by both small and medium-sized establishments was to do nothing (Table 13). This should probably be interpreted as a response to their perception that the over supply of workers was due to temporary factors. The second most-frequent response for these establishments was to cut back hours, selected by a third of respondents in each size category – the most common response for the large establishments. There was also a notable similarity in the share of establishments that retrenched workers, about 15 per cent across categories.[2]

Beyond these similarities, however, there were clear differences in what response mechanisms were at the disposal of which type of establishments. Ten per cent of small establishments were willing to cut wages, compared to 2 per cent of large ones. Nearly one out of five large establishments offered early retirement to reduce their workforce, while literally none of the small and medium-sized establishments mentioned this option. The pattern of responses corresponded to the different internal labour market and external institutions that shape decision-making in the formal versus informal sectors. Small establishments were less likely to provide pensions to their employees, and so early retirement was not among their options in adjusting labour supply to changes in demand for their product. Large establishments operated under formal wage-setting procedures and had less leeway in adjusting wages. However, there was no marked reduced tendency for large establishments to retrench workers, compared to small establishments, even though large establishments were much more likely to have to provide severance payments (Table 11 above).

[2] On the questionnaire, Upgrading workers' skills was not listed as a possible response to labour surplus..

Table 13. Response to having too little work for the workforce

	Employees/establishment				Fully State-owned
	1 - 10	11 - 100	101 +	All	
Number of Establishments reporting	323	108	52	483	39
Response:					
No measure taken	34	37	17	33	31
Retrenched workers	14	16	17	15	13
Cut hours or overtime	34	29	27	32	13
Cut wages	10	6	2	8	3
Transferred workers within enterprise	4	7	8	5	5
Unpaid vacations	2	4	4	3	5
Offered early retirement	0	0	17	2	23
Other	3	2	8	1	7
Total	101%	101%	100%	100%	100%

*Most important measure taken to respond to having too little work for the workforce during at least one month in the previous year.

Table 14 repeats the same information on capacity utilization and redundancies for selected categories of establishments. Capacity utilization rates and redundancies as a share of workers of the fully state-owned establishments were substantially the same as for large establishments in general. A slightly smaller percentage of state-owned establishments admitted to having redundant workers (21 per cent compared to 27 per cent). However, state-owned establishments dealt with this problem in quite different ways (Table 13 above). Twice as many state-owned establishments as large establishments "did nothing" in response to having too little work for the size of their workforce (33 per cent compared to 17 per cent). They appeared as passive towards this problem as establishments in the informal sector. State-owned establishments were more likely to try to reduce their workforce by encouraging early retirement (23 per cent) and much less likely to reduce labour supply by cutting hours worked (13 per cent) than large establishments in general.

As also shown in Table 14, *export and import competitors* on average had higher capacity utilization rates than establishments less concerned about foreign competition. However, more of these establishments reported having surplus workers than did non foreign-competitors, by a margin of two to one; they also reported a higher percentage of surplus workers. These figures suggest two things. First, most of these establishments could increase employment without having to invest in facilities or equipment because they had excess physical capacity. Second, greater success in competing with foreigners, abroad and at home, would have simply provided productive employment for those ten per cent of employees already on the job but who were not needed to produce current levels of output. Substantial

new job creation would have required even greater success at winning market share.

Table 14 Redundancies for selected categories of establishments

Category		Average capacity utilization rate	Per cent of establishments with redundant workers	Redundancies as per cent of total employment*
State-owned		63%	21%	7.1%
Adopted new technology	Yes	54%	18%	7%
	No	29%	4%	9%
Export competitors	Yes	54%	21%	10%
	No	31%	6%	6%
Import competitors	Yes	52%	21%	11%
	No	31%	5%	5%
All establishments with more than 100 workers		67%	27%	8%

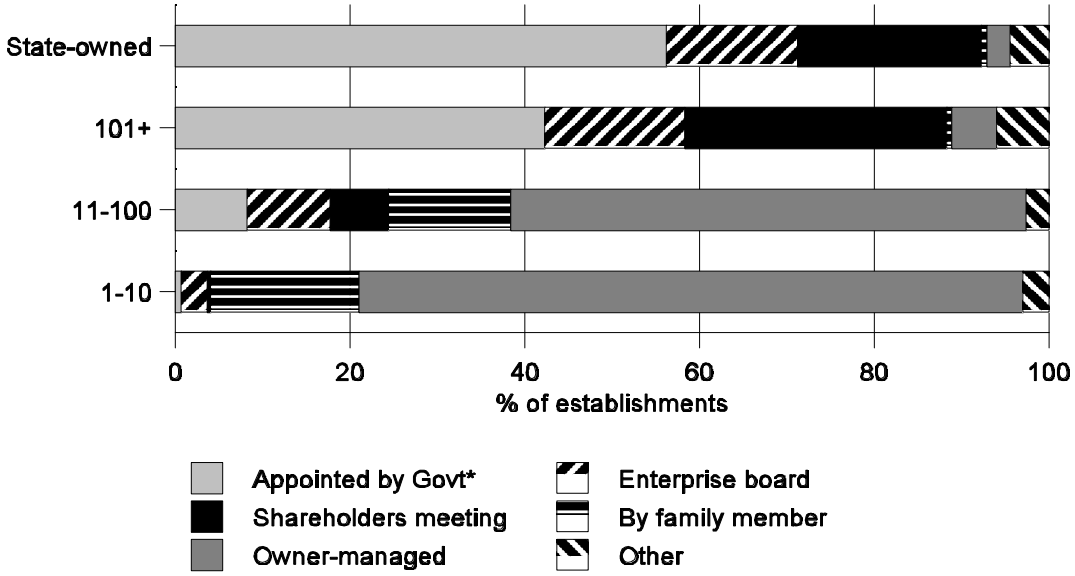
* Per cent of entire workforce in all establishments in each category, including employment in establishments which reported no surplus workers.

Eighteen per cent of establishments which *adopted new technology* reported having redundant workers, compared to 27 per cent of all large establishments. Although a much smaller share of establishments which had not adopted new technology reported having redundant workers, both groups reported about the same redundancy rate: Nine per cent of employees were reported redundant across the 1270 establishments which had not adopted new technology, compared to seven per cent among the 295 establishments which had. This discrepancy may be mostly attributable to the size distribution of establishments in these two groups (two thirds of the establishments with new technology had more than 100 employees, refer to Appendix Table 2).

6.3 Establishment management and governance

The last factor addressed in the survey questionnaire of particular relevance to the question of human resources development is management accountability and the capabilities of business owners and managers. As shown in Figure 42, three-fourths of small establishments were managed by owners and most of the rest were managed by a relative of the owner (17 per cent). Most of the medium-sized establishments were also managed by owners (59 per cent) or their relatives (14 per cent). Managers in just over half of state-owned establishments were appointed by national or local government bodies. Most of the rest were appointed by shareholders meetings (21 per cent) or by enterprises boards (15 per cent), both of which presumably would include government representation.

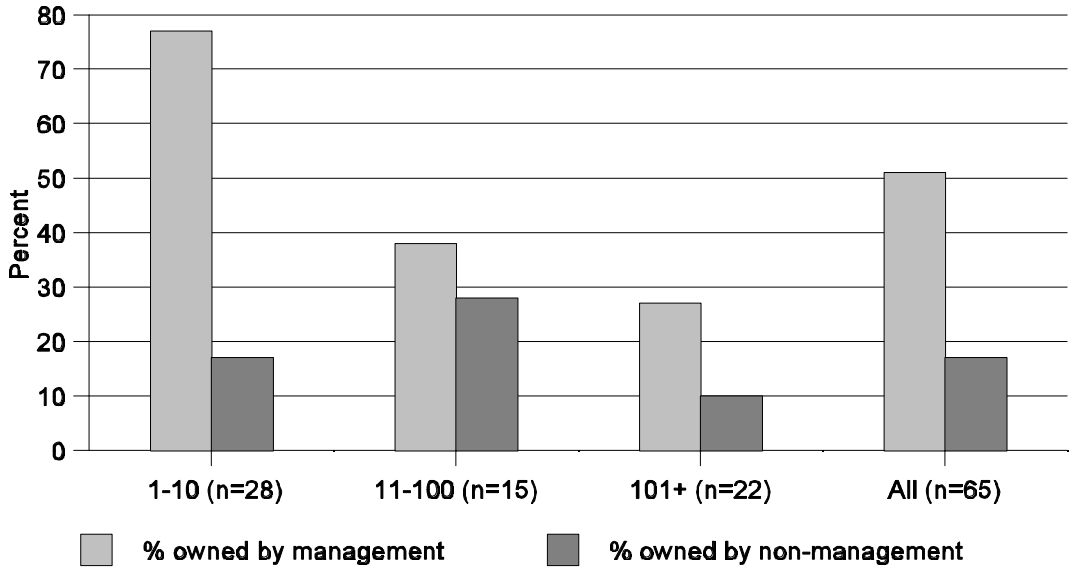
Figure 42. Management appointment by size and type of establishment



This information suggests that a principal influence on managerial decisions was the interests of the State. An optimistic interpretation of these findings would be that it should be possible for government training policies to be implemented broadly by the very fact of its pervasive ownership and participation in economic endeavours (as was presented in Section 2, nearly two-thirds of large establishments are fully state-owned). A more pessimistic view would be that managers in state-owned establishments must be persuaded to continue or expand training and retraining activities without expecting to reap all the benefits of providing or paying for training. Because many of their current workers will be forced to seek re-employment elsewhere following privatization, it is their new employers who will reap the benefit of training provided while still employed in state-owned establishments. But if an overriding policy concern is the reemployment of workers as part of the privatization process, providing training now will reap large social benefit later in terms of workers' improved preparation for jobs in the private sector.

Only a small minority of the establishments reported that employees owned part of the shares of the company (70 establishments, or 4 per cent). Across these establishments, the average share owned by workers was 18 per cent (Figure 43) ; highest on average in medium-sized establishments (28 per cent) and lowest on average in large establishments (10 per cent). The shares owned by managerial employees was higher, across all size groupings, up to 39 per cent on average in the medium-sized establishments and 27 per cent in the larger ones. The data for the small establishments should be interpreted cautiously because, as shown above, most small establishments were managed by owners.

Figure 43 . Ownership shares of management and workers



Establishment owners were asked a series of questions regarding their educational background and previous employment (managers of state-owned establishments were not asked these questions). The responses are summarized in Appendix Table 6. Turning first to the informal sector, one finds that one third of the establishment owners had no formal education. Another quarter had only primary education. One fifth of these owners reported education level above the secondary level, compared to half of the owners of medium-sized establishments. These findings suggest that *managerial training* rather than occupational training may be of the greatest value in training policies or programmes targeting the informal sector. Rather than curriculum for upgrading technical skills of workers, such basic courses in small business management as literacy, accounting, and marketing might prove to have the greatest pay off in terms of business performance and job creation.

Most of the establishment owners reported that their previous job was as an employee in someone else's business (61 per cent of small establishment owners and 40 per cent of medium-sized establishment owners). One tenth of the small establishment owners had managed another business previously, as had one fourth of the medium-sized establishment owners. These data reinforce the previous conclusion, that owners of small and medium-sized establishments had prepared for their role as employers almost exclusively through on-the-job training. These owners and managers may be less likely to support other forms of training for their employees, unless they first see the usefulness of such training for themselves.

The survey questionnaire included questions about the owner of the businesses surveyed in order to gauge the extent of their participation in employers associations. This set of questions was directed at business owners only and so was not asked of managers in the state-owned establishments surveyed (See Appendix Table 6). Only two per cent of the owners of small businesses and twelve per cent of the owners of medium-sized businesses reported that they were members of an investors association. Only fourteen establishments were both large (more than 100 employees) and privately-owned. Most of the owners of these establishments reported being members in an investors association.

7.Survey Highlights and Policy Implications

This section summarizes the main findings of the survey in relation to the challenges to human resources development raised in Section 1.3 of the report, and highlights some policy implications. It is important to emphasize, however, that careful judgement should be exercised in extending the policy implications drawn from the survey to the national context. In particular, it should be noted that the highlights below do not provide an adequate or realistic basis for traditional "manpower planning". They are not intended to be used as a basis for deciding on the number of engineers, supervisors, etc. to train. The findings are reflective of broad trends in labour market developments at the enterprise level, and it is from this perspective that the human resources development options can be considered.

The Employment Challenge:

- In the twelve months prior to the survey, there was a *decline in overall employment*, with exits exceeding recruitments. Even taking into account reported vacancies and future recruitment plans, employment growth appeared limited. The challenge of job creation is obviously a major one in Egypt;
- *Job losses* were more serious among large, state-owned establishments and also among both import and export competitors;
- The larger the size of the establishment, the higher the percentage of *redundant workers* in the workforce, 3 per cent on average in establishments with 10 or fewer employees, 7 per cent in those with more than 100. Likewise, under 3 per cent of the smallest establishments had redundant workers as compared to 27 per cent of the largest establishments;
- The percentage of redundant workers tended to be largest in *wood/paper and repair shops, followed by machinery/engineering*. These are the industries in which job cuts can be expected and also where there may be less training and investment in the future productivity of workers, since there is already an excess supply of workers;
- The establishments that had adopted new technology clearly had the largest *potential for employment creation*. Although much of the new technology was in automation, it did not reduce and, in fact, increased the demand for labour;
- The small, privately-owned establishments also tended to show better employment creation potential than the large, state-owned establishments. With the trend towards privatization, there are important policy implications for supporting the growth of small and medium size establishments because they will most likely be the *source of future employment growth*.

Is there a Mismatch between Labour Demand and Supply?

- The labour market mismatch was especially serious for *skilled workers*. Seven out of ten establishments reported finding, recruiting or retaining skilled workers as their most serious personnel problem. Employment changes suggested that the establishments did not have much success in hiring or replacing such workers. But most of the establishments were not providing upgrade training to improve the skills of the current workforce;
- There were indications of *occupational shifts* away from unskilled and clerical jobs and towards professional and skilled jobs. Large establishments, those that had adopted new

technology and import/export competitors were concerned about the difficulties of hiring *professionals with institutional certification*. There would therefore be implications for the supply of professionals from formal institutions;

- Small establishments identified *crafts/trade workers* as the most difficult to recruit. To meet this demand, establishments did not appear to be relying on the supply of skilled workers from training institutions. Instead, they indicated a higher preference for workers *with previous on-the-job training or apprenticeship training*. The finding suggests that the level of skills demanded was not high, especially since the establishments themselves were generally not providing upgrade training;
- One occupation where there was no evidence of increasing demand was for *clerks*. This is one occupation where there should, therefore, most likely not be an emphasis on increasing the supply.

The Informal Sector Challenge:

- Over *70 per cent of all establishments were in the informal sector* in terms of having ten or fewer workers, but they *accounted for only 2 per cent of total employment* (as compared to the 10 per cent of establishments which were large and which accounted for 95 per cent of total employment and the remaining 20 per cent of establishments which were medium-size and which accounted for 3 per cent of total employment);
- The informal sector establishments were either *single proprietorships or partnerships*, employing on average only 4 workers;
- the predominance of the informal sector and the very small size of establishments are obviously constraints to productivity enhancement. But efforts aimed at *entrepreneurship development*, a review of the *taxation system* (since taxation was the most serious complaint of the small establishments), and supports such as *market opportunity identification*, could all help to improve the competitiveness and employment creation potential of the small establishments;
- the predominance of the informal sector also has implications for human resources development in terms of, for example, the need to emphasize *entrepreneurship development* and not just skills development for workers; the types of *training delivery systems* that would be appropriate (for instance, enterprise-based training may be less feasible or too costly for small establishments); and the *types of skills that workers* in such establishments require;
- For human resource development, it is important to note that one third of the owners of informal sector establishments had *no formal education* and another quarter had *only primary education*. Training programmes aimed at the owner/managers of these small establishments should therefore emphasize literacy and numeracy, basic accounting and marketing;
- Workers in the small establishments were entitled to fewer *social benefits* than those in large firms. On average, non-wage labour costs amounted to only 4 per cent of total labour costs in small firms, compared to 18 per cent in large firms.

The Challenge of External Competition:

- As the Egyptian economy increases its outward orientation, it can be expected that firms will face growing competition both in terms of competing against imports and attempting to break into export markets. Currently though *only about one-tenth of the*

establishments identified either import or export competition as a serious problem;

- The ability of Egyptian establishments to successfully compete against external competition will hinge on several factors -- identified in the survey as including: the *adoption of new technology* (those that had done so reported an increase in sales) and, of course, importantly, their *human resources development* policies and programmes;
- Both import and export competitors identified hiring of qualified personnel as a serious problem but they did not see worker training as a problem, suggesting that they *expected to rely on the market to hire skilled workers rather than to train their own workers;*
- They did, however, have a *higher propensity to train their employees*, especially new recruits as compared to firms not exposed to external competition. But this propensity was lower than that of large establishments which tended to have the most extensive training activities;
- Both import and export competitors indicated a *much stronger demand for skilled workers and technicians* as compared to firms not exposed to external competition. It can be expected then that with trade liberalization, this demand for skilled workers and technicians will grow;
- Both import and export competitors had higher capacity utilization rates than those less exposed to foreign competition but, on the other hand, they were about twice as likely to report surplus workers. The implication is that *greater success in winning market share will not initially lead to job creation, just more productive employment of those who are currently surplus labour, and also will not initially require investment in facilities or equipment*.

The Challenge of New Technology:

- About *20 per cent of all establishments had adopted new technology* and they were mainly large, state-owned, located in urban areas and fairly evenly distributed across manufacturing sectors. The main reason for automation or the adoption of computer technology was to increase product quality or output;
- What is particularly worth noting is that establishments that had adopted new technology (representing 18 per cent of all surveyed establishments) accounted for over 80 per cent of total recruitment and almost two-thirds of all job vacancies. *The type of technology that is being adopted is creating, rather than reducing, employment opportunities* and it can therefore be expected that should the rate of adoption of new technology increase, jobs would also grow;
- As would be expected, the establishments that had adopted new technology were concerned about the *recruitment of management and professional staff and technicians* who had received formal certification from educational and training institutions. This has implications for the output of *graduates from educational and training institutions*;
- In addition, establishments that had adopted new technology were *much more likely to train their newly-hired and longer-term workers* that those that had not modernized.

The Challenge of Privatization:

- Two-thirds of the establishments with more than 100 employees were wholly state-owned;
- State-owned establishments indicated greater *difficulty recruiting trained personnel*

than large establishments on average;

- Almost two-thirds of these establishments provided training to new recruits; but *only ten per cent provided training to upgrade the skills of longer-tenured employees*;
- Workers in these establishments may be at the greatest risk of job displacement, due to anticipated privatization, and thus could benefit substantially from training to update and improve their skills. *However, employers in state-owned establishments have the least incentive to spend money on retraining activities because it is their workers' future employers who would benefit from workers' improved productivity*;
- Because of the above-average skill levels and qualifications of technicians and managers in the state-owned establishments, *these employees would be prime candidates for training programmes to help displaced workers start their own businesses*;
- In the process of privatization, human resources development is particularly important for dealing with the problem of *surplus workers*.

The Challenge of Rural Establishments:

- Very few workers in Assuit, the most rural of the Governorates included in the Survey, had access to training through their employers; *less than five per cent of employers in this region offered training to their workers;*
- None of the establishments in Assuit reported that they had received any *government assistance to promote worker training;*
- Because the far majority of establishments in this Governorate are small, informal businesses, the findings highlighted above for the *informal sector* apply as well to questions of upgrading skills and improving employment in rural areas.

The Labour Market Information Challenge:

- Less than 5 per cent of all establishments surveyed recruited their workers through employment services; and more than three-quarters did not report vacancies to the employment services;
- The main reasons given for not recruiting workers through employment exchanges were that they did not provide suitable workers, the quality of workers they sent was poor, the service they provided was slow, there was no local service available;
- The main reasons given for not reporting vacancies was that there was no necessity to do so and the quality of services was not suitable;
- The policy implication is clearly that *both the quality and coverage of employment services will have to be improved if they are to play a role in helping to match labour supply and demand*.

The Challenge of Vulnerable Groups:

- The survey did not pick up evidence of any significant use of *child labour,* although some 17 per cent of the establishments indicated a preference for production and service workers below 19 years of age;
- However, there was clear evidence of *gender discrimination*. Women accounted for only 13 per cent of the total workforce. Where they were being employed, they tended on average to have equivalent or higher levels of education and skills as men, but they are disadvantaged in the first place in terms of access to education and skills;

- Only 3 per cent of establishments indicated a preference for women workers and less than one-fifth had no gender preference in recruitment;
- Import and export competitors were about twice as likely as non-foreign competitors to prefer women workers, most likely because of the cost advantage (women's lower pay and relatively high skill levels);
- The survey revealed a *gender pay differential* of about 20 per cent, which is not high by international standards, but it should be noted that this question was answered by only 17 per cent of the entire sample. If the differential is representative, then it could mean that women can expect nearly equal returns to training as their male colleagues;
- Only 13 per cent of trainees across all the establishments surveyed were women; and less than 4 per cent of the establishments that identified selection criteria for the provision of training preferred to train women;
- It is obvious that human resources development policies and programmes should give particular attention to redressing these various dimensions of gender discrimination.

The Training Challenge:

- The incidence of training increases with size of establishment: while fewer than ten per cent of the smallest establishments provided any type of training, *over 70 per cent of the largest establishments trained new recruits;*
- Current training activities emphasized training newly-recruited employees and labour market entrants. There was *significantly less training to upgrade workers skills or improve their productivity, which is the type of training that will be needed most to prepare mid-career workers displaced from state-owned establishments for jobs in the private sector*;
- The survey found that *training costs and lack of training facilities were* ***not*** *major deterrents to increasing training activities*;
- Among *small establishments*, the nature of the jobs themselves limited training, with one third of respondents saying that no training was needed for the jobs available;
- Among *large establishments*, managers indicated preference to compete to hire skilled workers rather than provide training;
- The findings that current training activities are predominately in-house and that employers placed higher value on applicants' capabilities learned through previous work experience than on institutional credentials implies that *new human resources development policies should place emphasis on hands-on, practical training in realistic work settings;*
- Employers have low motivation to provide *training in general skills* due to the probability that these employees will be bid away by other employers; therefore the private sector cannot be relied upon to significantly increase training in such general skills as literacy, numeracy, general machine aptitude and management;
- The survey documented that only 3 per cent of the establishments had received government assistance for training workers. *About 20 per cent had heard of the Dual Vocational Training System and of these about half expressed interesting in participating*;
- The best way to ensure that the curriculum of vocational and technical training institutes meets employers' needs is to *create direct linkages between area industries and the training institutions. Understanding supply and demand for skills and*

occupations must be based on continuous communication between trainers, employers, and workers. Currently, the labour market information system is too poorly developed to facilitate the collection and dissemination of such information or to put the different "actors" in touch with each other;

C *Managerial training*, rather than occupational training, may be of the greatest value in training policies targeting the *informal sector* because of the low level of basic education among small-business owners. It may also be crucial for *mid-level managers in state-owned establishments, as preparation for self-employment as an alternative to state-employment*.

Appendix tables

Appendix Table 1 Employment by industry sectors and state-owned establishments

Industry	Number of Establishments	Number of Employees	Per cent of Employment	Average size	Per cent fully State-owned
Food	203	43630	15.5	215	18
Textiles/Clothing	198	60941	21.6	302	9
Wood/Paper	141	8591	3.0	61	4
Building material	72	14650	5.2	203	11
Chemical Products	49	32344	11.5	660	18
Machinery	122	8474	3.0	69	3
Other Manufacturing	9	15237	5.4	1700	78
Manuf. Subtotal	**794**	**183867**	**65.2**	-	-
Construction	43	44702	15.8	1039	49
Trade	43	27917	9.9	649	58
Repair shops	358	9054	3.2	25	2
Consumer services	462	16719	5.9	36	3
Services Subtotal	**906**	**98392**	**34.8**	**-**	**-**
Total	**1700**	**282259**	**100**	**-**	**9**

Appendix Table 2 Establishments that adopted new technology

		Number	% of establishments in group adopting new technology	% of all establishments that adopted new technology
All		309	18%	100%
Size	< 10	90	8%	29%
	11-100	113	35%	37%
	101 +	106	62%	34%
Region	Alexandria	173	19%	56%
	Dakahlia	106	18%	34%
	Assuit	30	15%	10%
Ownership	State-owned	78	51%	25%
	Partially state-owned	19	90%	6%
	Private	212	14%	69%
Industry	Food	48	24%	16%
	Clothing textile	38	19%	12%
	Wood/paper	27	19%	9%
	Machinery	22	18%	7%
	Other manufacturing	52	40%	17%
	Repair shops	21	6%	7%
	Construction	21	49%	7%
	Trade/Transport	61	44%	6%
	Consumer Services	48	13%	20%
Production Technology	Manual/mechanical	106	18%	49%
	Semi-automated	45	43%	21%
	Fully-automated	47	53%	22%
	Computer-aided	18	75%	8%
	All	216	-	100%
Training	New recruits	149	45%	49%
	To improve productivity	112	55%	37%
	To upgrade workers	101	57%	33%
	Increased training	38	62%	24%
	Finds training adequate	131	42%	76%

Appendix Table 3 Export and import competitors

		Export competitors (E.C.)			Import competitors (I.C.)		
		#	% of group	% of all E.C.	#	% of group	% of all I.C.
All		146	9%	100%	159	9%	100%
Size	< 10	45	4%	31%	64	5%	40%
	11-100	51	16%	35%	42	13%	26%
	101 +	50	30%	34%	53	31%	33%
Region	Alexandria	98	11%	67%	103	12%	65%
	Dakahlia	46	8%	32%	45	7%	28%
	Assuit	2	1%	1%	11	6%	7%
Ownership	State-owned	39	26%	27%	47	31%	30%
	Partially state-owned	9	6%	6%	8	38%	5%
	Private	98	43%	67%	104	7%	65%
Industry	Food	22	11%	15%	20	10%	13%
	Clothing textile	31	16%	21%	47	24%	30%
	Wood/paper	14	10%	10%	11	8%	7%
	Machinery	12	10%	8%	13	11%	8%
	Other manufacturing	22	17%	15%	26	20%	16%
	Repair shops	17	5%	12%	17	5%	11%
	Construction	2	5%	1%	4	9%	3%
	Trade/Transport	10	23%	7%	8	19%	5%
	Consumer Services	16	4%	11%	13	3%	8%
Training	New recruits	64	19%	44%	74	22%	47%
	To improve productivity	50	25%	34%	58	28%	37%
	To upgrade workers	39	22%	27%	47	26%	30%
	Increased training	14	23%	21%	14	23%	19%
	Finds training adequate	54	17%	71%	69	22%	78%

Appendix Table 4 Women's share of training and higher occupations

		Women's average share of training (per cent)	Women's average share of employment in higher skilled occupations (per cent)		
			Managers	Professionals	Qualified
Size	0 - 10	10	3	12	5
	11 - 100	12	3	9	8
	100 +	16	12	19	12
Region	Alexandria	12	5	17	7
	Dakahlia	16	3	8	7
	Assuit	5	2	13	2
Ownership	State-owned	11	12	18	4
	Joint	27	16	19	21
	Private	12	3	11	7
Industry	Food	17	4	13	9
	Clothing/Textile	28	4	15	18
	Wood/Paper	6	2	6	3
	Machinery	2	1	14	0
	Other manufacturing	10	7	10	8
	Repair shops	2	1	9	2
	Construction	1	12	10	0
	Trade/Transport	16	7	17	2
	Consumer Services	18	5	19	8
All		13	4	14	7

Appendix Table 5 Establishments willing to cooperate in DVTS

		Had heard of DVTS		Of these, establishments interested in participating in DVTS	
		Number 'Yes'	% of total group establishments	Number 'Yes'	Percent 'yes' of those familiar with DVTS
Size	< 10	31	3%	19	61%
	11-100	159	49%	61	38%
	101 +	131	77%	76	58%
Region	Alexandria	192	21%	102	53%
	Dakahlia	115	19%	50	43%
	Assuit	14	1%	4	29%
Ownership	State-owned	120	78%	59	49%
	Partially state-owned	15	71%	11	73%
	Private	186	12%	86	46%
Industry	Food	64	32%	30	47%
	Clothing textile	43	22%	31	72%
	Wood/paper	19	13%	10	53%
	Machinery	27	22%	12	44%
	Other manufacturing	55	42%	30	55%
	Repair shops	16	4%	10	63%
	Construction	19	44%	8	42%
	Trade/Transport	30	70%	12	40%
	Consumer Services	48	10%	13	27%
All		321	19%	156	49%

Appendix Table 6 Characteristics of owners interviewed for survey

(Private sector establishments only)*

	Percent of owners	Employees/establishment	
		1 - 10	11 - 100
Gender	Female	3%	3%
	Male	97%	97%
Education	No formal education	34%	19%
	Primary education	26%	15%
	Secondary education	22%	19%
	Higher education	18%	47%
Previous job	Employee	61%	40%
	Manager	11%	26%
	Student	13%	26%
	Unemployed	8%	5%
	Other	7%	3%
Member of an Investors Association	Yes	2%	12%

* This series of questions was not asked in state-owned establishments. Because only 14 non-state-owned establishments were included in this section of the survey, responses are reported only for smaller establishments.