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**Clerical Work, Employment Practices and  
Technological Change**

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## **Clerical Work, Employment Practices and Technological Change**

### **— The Portuguese Case \*\***

It has been amply demonstrated that, as regards the existing sex discrimination in the labour market, Portugal is no exception to the rule. Women have lower employment rates than men and tend to work in the less remunerative sectors of the economy. Women occupy posts which require fewer qualifications and stay in these posts longer than men. Women's salaries are lower and their overall period of employment is shorter than those of their male counterparts, etc. (see Nunes, 1979; Silva, 1983). However, there is some indication that this discrimination adopts certain characteristics in Portugal. For example, compared with more developed countries in general, in Portugal, women constitute a relatively higher proportion of people employed in technical and scientific professions as well as in cadres and managerial positions (54.9% and 15.6%, respectively).<sup>1</sup> Furthermore, the wage differential between the salaries of male and female employees is one of the lowest (0.78, in 1987). Genealogies of some professional groups have shown that the increased number of women in the work force (feminization) occurs later, but in a less discriminatory form, than in other countries.<sup>2</sup>

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<sup>1</sup> As regards technical and scientific professions, these figures are exceeded only by Sweden (62.4%). As to the group of highly qualified professionals and managers, the rate is higher in the United States of America, Australia and Canada (37%, 29.7% e 33.9%, respectively). Data from 1986, published by the International Labour Office (cit. in Mata-Greenwood, 1988:13 - 20).

<sup>2</sup> Antonio Nóvoa (1987), for example, shows that women Primary School teachers gained equal pay in the middle of the 19th Century, while in England this was only accomplished in 1950.

The office employment seems to be the best suited sector to the study of sex discrimination in the development of female employment. In Portugal, this is the second most important sector as regards the total female employment; it is the sector which has absorbed the greatest increase in women workers and, finally, it is the sector which has undergone the most relevant changes, owing to the impact of the introduction of new information technology which has been less integrated into factory work.

In this study, practices in office employment will be used as an analytic device to understand the response of Portuguese society to new information technology and its impact on female employment. The paper comprises three parts. The first will provide a brief description of office employment in Portugal. In the second, the situation concerning the increasing female work force and the introduction of information technology will be placed in a theoretical framework. Finally, the third part will present methodology and discuss the results of the empirical research.

## 1. OFFICE EMPLOYMENT IN PORTUGAL

In Portugal, office employment has been subject to profound transformations. In 1940, office employees represented 1.8% of the active population and, in forty years, the figure reached 13.1%. Changes in the sex composition of this work force have also been registered. In 1940, female employment in offices was 12.4% of the total in that sector, and 1% of the total of the active female population. By 1981, these figures had risen to 43.4% and 16.8% respectively. The major increase occurred during the 1950's, when global employment in offices expanded to two and a half times the previous level. Although the number of female employees has been increasing markedly since 1940, the definitive turning point occurred during the 1960's, as it was then that female employment began to rise at a greater rate than that of men (1960/1970 — 31.6% for men and 203% for women; 1970/1981 — 63,2% and 141% respectively). The increase in the number of women workers and the development of the tertiary sector of the economy are correlated and simultaneous; 50% of

female employees are currently engaged in the tertiary sector, whereas, in 1974, the year of the Portuguese Revolution of April 25th, the figure was 33%. During the 1970's, of the professional groups which drew most of the female work force, those linked to the tertiary sector showed the highest growth rate:

**Table 1 - Growth of Female Employment**

Professions	Female Employees (1981)	Growth (1970=100)
factory workers	321,292	123
Office Workers	203,341	234
Domestic and Personal Employees	100,785	107
Teachers	86,981	264
Rural Workers	76,82	95
Sales Personnel	44,421	158

The increase in the number of office workers came second in terms of growth rate, doubling the number of employees between 1970 and 1981, and falling just below the rate for teachers. The largest group (factory workers) has been increasing at a slower rate (27% during the 1960's, and 23% during the 1970's). In the light of these figures it may be concluded that the expansion of professions linked to office work is mainly responsible for the extraordinary increase in the rate of female employment registered since 1960.<sup>3</sup>

The increase in the number of women in this professional group can be linked, as in other countries, to two factors. One, of a general nature, is the result of a global phenomenon affecting the structure of employment as a whole. The other is specific to this sector.

Portuguese society during the sixties underwent a period marked by various phenomena which directly affected the male work-force. Firstly, there was a rise in employment caused by

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<sup>3</sup> The professions showing substantially higher growth rate were: mill, oven and distillery workers — 642, electronics workers — 752, glass workers — 762. These figures, however, are not significant since the largest category, that of electronics workers, did not rise above 10,418 employees in 1981.

industrialization and an expansion of the economy resulting from the partial repeal of the Industrial Restriction Law, which has been operating since the early thirties, and from the lifting of limitations on foreign investment. Secondly, there was a reduction in the male labour force owing to the colonial wars. Most important of all, there was a high level of emigration during this period which accounted for 646,962 people.

A part from those affecting employment, there are other important phenomena affecting the restructuring of conditions and organization of office work. The expansion of the functions of the State and the development of administration, inherent conditions for the maximization of economic activity (including the work of administration, accounting, market analysis, management and planning), are accompanied by the attempt to rationalise offices so that they become increasingly efficient.

In parallel with the scarcity of male workers was a significant change in the level of education, especially of young women. During the sixties an improvement began to occur in the education differential between women and men. Female participation in university education underwent a veritable explosion, rising by 204.7%, passing from 31.4% of 19,987 students at that level of education in 1960/1961, to 43.5% of 43,966 students in 1970/1971.<sup>4</sup> To sum up, as clearly defined factors, we have the expansion of employment, the modernization of offices, the paucity of male workers, and the availability of women with education requirements.

These phenomena form part of a set of factors which have been considered responsible for the increase in the female work-force in other countries. Besides these, others have been suggested such as the proletarianization of the work force and the deskilling or loss in social status of office work, owing essentially to mechanization and, later on, to automation. No sociological study of

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<sup>4</sup> In 1985-1986, this participation rose to more than 50%, both in matriculations (53.3%) and in degrees conferred (57.7%). This means that Portuguese universities are among the least discriminatory. Certainly, distribution by course continues to be unfavorable to women. However in, for example, the sciences, mathematics, computing and engineering we have the highest level of female participation in Europe (59.3%, 49.1% and 24.6% respectively).

office employment exists in Portugal.<sup>5</sup> In order to discuss the theses which relate increased female employment with mechanization, it would be necessary to make a detailed genealogy of office professions which would determine working conditions and status throughout the past hundred years. The main purpose of the present study is far more limited, though it may contribute to the discussion of specific aspects of these theses.

## 2. HYPOTHESES AND METHODOLOGY

### **2.1. INITIAL QUESTIONS**

The semiperipheral character of Portuguese society (Fortuna, 1984; Santos, 1985) makes it a complex one, difficult to explain, in all its complexity, exclusively in terms theories which have been put forward to explain conditions in more core or peripheral countries. Since we may not extrapolate from one or another of these theories to understand the case of Portugal, certain precautions have to be taken. The question of deskilling, always present in the analysis of the effects of mechanization and automation in core European and North-American countries, may not be transposed, purely and simply in the same terms, into Portuguese society, where the organization of production is far from the level of rationalization reached in these countries. On the other hand, cannot follow the analysis of peripheral countries which clearly exhibit a work force lacking in professional qualifications and technical background. In Portugal, industrialization is still not well developed but it is certainly not in its infancy.

The starting indications are vague and contradictory. On the one hand, the requirements of mechanization and profitability, imposed by Portugal's entry into the EEC, figure in discussions

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<sup>5</sup> Here we may consider 'Information Technologies for Administrative Systems' (TISA) by the Centre of Computing of the National Laboratory of Civil Engineering and the responsibility of the Ministry of Public Works, Transports and Communications. The project is an applied and experimental study aimed at evaluating training requirements and examining working conditions and equipment. The results of this project are not yet known. The stated objectives take us back to the typical Job Evaluation, which is essentially related to technical conditions for executing administrative tasks by computer.

about investment in professional training, restructuring of employment policies, and the promotion of policies contributing to positive discrimination of women as workers and citizens. These concerns are constantly introduced into the public appeals for women's professional training in new technology. New technology has been incorporated into 'common sense' as requiring a rise in qualifications and signifying an unique opportunity for women to better their position in the labour market.<sup>6</sup>

On the other hand, the increase in number of male employees in certain types of office work traditionally carried out by women is a small but noteworthy change. The most recent figures, gathered from various professional groups in the National Census of 1981, revealed a slight decrease in the relative number of female employees in the following professional groups:

Stenographers, typists and similar — In 1970, 86.3% of the employees were female and in 1981 this percentage had decreased to 79;

Operators of Automated Information Machines — In 1970, 46.5% of the employees were women and in 1981 this percentage had decreased to 42.9.

These small statistical differences gain importance in the light of the information furnished by a Union official of the sector, according to whom the number of young men entering the work force to operate with computers, is a source of concern.<sup>7</sup> Furthermore, there have been reports in the women's press concerned with the entry of men into professions which have traditionally been feminine, for instance, the profession of secretary.<sup>8</sup>

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<sup>6</sup> It is not only in Portugal that this has occurred. An expression of this is, for example, the enquiry requested by the Commission of the European Community in 1983. This enquiry examined the level of preparation for new technology of salaried women in the ten countries which formed the EEC at that time (EEC, 1984a). We may also refer to the analysis carried out in France, Sweden and Belgium, also at the request of the EEC, of the training for new technology of salaried women, a particularly vulnerable group with major employment problems (EEC, 1984b). In Portugal, the initiatives have not embraced investigation, being limited to a few occasional programmes of professional training supported by the European Social Fund, examples of which are the two courses on the use of microcomputers, organized in 1988 by the Department of Science and Education of the Faculty of Science in Lisbon and by the Commission for Women's Rights

<sup>7</sup> To be more specific, the concern was about the fact that many of these young men were contracted, in the opinion of the Union, without recognition of their qualifications.

<sup>8</sup> In fact, a similar tendency has also been noted in other countries, but for different professions. See, for example, Rosemary Pringle (1989), about secretaries in Australia.



If this tendency continues, Portuguese society will exhibit a very peculiar behaviour. In studies carried out in Western Europe and North America, a continued and generalized increase in female employment has been registered, especially in posts more affected by mechanization and automation, as in the case referred to above. Another peculiarity must be noted. That is, that in these countries, the number of female employees is about 80%, a much higher figure than in Portugal, which is 45.6%.<sup>9</sup> Could it be that we are importing technology, but not the social practices to go with it? In a society in which office work is not so clearly defined as female, and which qualified posts still exist, men may not offer the resistance to the use of the keyboard, stressed by Collin Gill (1985). Thus, operating machines, which has been left to women in the more developed countries (Cockburn, 1985), may well be a symbol of prestige in a technically inferior country.

In view of this one may question whether or not the introduction of new technology will cause an inversion in the process of feminization of office work.

## **2.2. HYPOTHESES**

### **2.2.1.- FEMINIZATION VERSUS OCCUPATIONAL SEGREGATION**

Feminization and occupational segregation are two sides of the same problem. They define the mode of women's integration into the labour market. The reasons most frequently cited in relation to the former derive from some changes on the supply side of employment, but upset the demand side explanations. Scaling them according to their logico-temporal sequence, we have:

- 1. employer difficulty in finding other sources of cheap labour with the necessary education.**
- 2. the unaffordable rise of salary costs due to enormous expansion of office work.**

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<sup>9</sup> In the Federal Republic of Germany and in Holland the rate of feminization is also around 50% (Littek, 1986; Fransen, 1985).

3. the deskilling of office work owing to mechanization and consequent routinization and standardization.
4. the increasing supply of educated women.
5. the diminishing of opposition to female employment, of both employers and male employees, resulting from the changing social norms;  
(Davies, 1975, 1982; Cohn, 1985; Lowe, 1987; Glenn and Feldberg, 1977; Rotella, 1981).

The theories which claim to explain occupational segregation in relation to supply include the theory of double shift and of human capital, which explain the mode of women's integration into the labour market by the fact that they choose not to work outside the home, or that they prefer less demanding and non-competitive jobs, so as not to jeopardize their roles as wives and mothers. This option becomes the basis of discrimination by employers, who prefer to contract men, instead of women, who have a tendency to intermittent interruption of their employment. According to this logic, any employer who did not want to discriminate would be confronted by a shortage in the supply of qualified and experienced female employees able to guarantee the fulfillment of long term contracts.

The theories based on the demand side of labour argue that sexist segregation of employment favours capital both economically and socially. The reasons for this may be due as much to the pressure exerted by female employment on male salaries and jobs, as to the rejection by women of the labour market in favour of working at home, that ends up in the reduction of costs of reproduction of labour (Beechey and Perkins, 1987: chap. 5).

Both theoretical positions have been submitted to criticisms. Numerous empirical studies have shown that restrictions regarding women's work do not emanate from women themselves and that, on the other hand, the actual existence of a segregated market would result in the neutralization

of the effects claimed by employers segmenting this market, once women were no longer competing for the posts occupied by, or destined for, men (for instance, Game and Pringle, 1983)

Some authors have been carrying out work which surmounts the analytic dichotomy of supply and demand in employment. Attempts have been made so as to explain the phenomena of discrimination and segregation by analysis of the characteristics of employment sectors and of the matching processes between both supply and demand (Bridges, 1980; 1982; Granovetter, 1981).

Samuel Cohn suggested that discrimination must be understood in terms of its costs to the employer so that we can define which employers will be able to support such costs. The author claims that discrimination is less likely to occur in labour-intensive enterprises and, all other conditions being equal, is less tolerated in jobs which are the basis of the work force in an enterprise. Thus, for Cohn, the more labour-intensive enterprises are the more female labour they tend to employ in offices. The same remains true for the more white-collar labour-intensive branches of the economy. Through his study of two large English public companies, the author successively rejects the thesis of deskilling, of human capital, of discriminatory action by male Unions and of the segmentation of the labour market (Cohn, 1985).

Cohn's framework, however, is not strictly economic. It also covers the influence upon the patterns of female employment, of the legislation and of social norms deriving from sexist ideology, in general. Following Hichs, Cohn also considers the crystallization of economic practices within enterprises, which prevent, often through inertia, any change in such practices, once the conditions which formerly justified them no longer exist.<sup>10</sup>

In his analysis of occupational segregation in industry, Bridges concludes that gender segregation varies in accordance with various factors. It increases with the increments in capital intensity, the proportion of men aged between 25 and 54; the age of female employees and the

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<sup>10</sup> Hichs suggests, for example, that this happens in expanding enterprises. In the initial stages, the salaries are set at a fairly high level in order to attract workers. Once the initial conditions no longer apply, the enterprises practices tend to fossilize so that it is not possible to interpret them in terms of economic efficiency.

oligopolism of the enterprise. It diminishes, in turn, with increases in the ratio white collar/ blue collar workers and in the level of unionization.

### 2.2.2. – Feminization versus Computerization

If we apply these predictors of the exclusion and segregation of women to the analysis of the reversal of feminization, we may expect that the re-masculinization occurs in the enterprises exhibiting characteristics with a strong positive effect on segregation. We must, however, also take into account the computerization, whose eventual association with re-masculinization calls for attention.

Many studies have shown that the prematurely proclaimed revolution of the paperless office is far from becoming a reality, and that the adoption of new information technology is associated with certain characteristics of the enterprises.<sup>11</sup> For example, a survey by the National Computing Centre in England revealed that computerization is greater in the public sector and in enterprises, not integrated in a group, with a higher ratio white collar/blue collar workers and having a higher proportion of foreign capital. The financial and commercial services are the most computerized, followed by retail and wholesale enterprises. The hotel and catering sector appears in last place (McLoughling and Clark, 1988: 23-26).

The model for analysing the re-entry of men in offices is obtained by crossing the influential factors of segregation with those of computerization. Once this may be linked to computerization, it will certainly be greater in enterprises having characteristics creating masculization and greater computerization. The resulting model contains, however, a clear paradox. On the one hand, feminization increases in enterprises where the ratio white collar/blue collar workers is higher, and, on the other hand, the correlation between this ratio and computerization varies accordingly. The model

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<sup>11</sup> See, for instance, the studies carried out in England, France, West Germany and Italy (Fondation Européenne pour l'amélioration des conditions de vie et de travail, 1984).

of feminization, previously discussed, states that more computerization corresponds to greater feminization and less segregation. It is exactly in this regard that the exceptional nature of Portuguese society becomes apparent, account taken of the possible scenario, in which offices tend to combine higher proportions of male workers with higher levels of computerization.

### 2.3. METHODOLOGY

The first step of data collection was carried out by consulting yearly records of enterprises' personnel delivered at the Ministry of Employment and Social Security. In addition, a telephone survey was launched to enterprises whose records had been consulted. This enables the general characterization of the enterprises, their workers and office equipment.<sup>12</sup>

In the sample data were included all enterprises or private associations with at least two office workers and a minimum of five employees, in the District of Coimbra.<sup>13</sup> Thus, information about 606 enterprises and 3,227 office workers for the years 1988 and 1989 was obtained.

All the enterprises from all sectors of activity were included in the sample, with the exception of Banking, Insurance and Public Administration, as well as all the employees whose job designation led to the conclusion that they worked with written information.<sup>14</sup> Excluded were, on the one hand,

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<sup>12</sup> It is recognized that in Portugal enterprises give the State the least possible information and distort it as much as possible. This fact was not considered important since, in a sex comparison both male and female employees would be affected alike by this practice. Besides, since the undeclared work does not particularly affects office employees, this was not considered relevant either.

<sup>13</sup> The District of Coimbra is neither the most nor the least developed in the country. If we analyse it according to various indices of economic development, it almost always occupies an intermediate position. Its importance as sample data in this study does not derive from the possibility of taking it as a national average, which would be absurd, but from the heterogeneity of the region, which permits both traditional and advanced industries to exist in the same areas. In the regional typology of employment characteristics, Maria João Rodrigues (1988: 248-262), Coimbra is classified as a hybrid zone, on a par with other districts. With a single exception, it can be seen that all those districts occupy an intermediate position as regards the distribution of professions related to computing.

<sup>14</sup> The analytic framework attributes greater importance to economic factors, so for this reason, sectors which might be more affected by institutional factors were not included. Banking and Insurance were excluded they belong to, or have only recently left, the Public sector. This option presupposes that the practices of employment in the Public sector are distinct from those of Private sector. This idea is well corroborated by the recently denounced practice on the part of a private bank (the Banco Comercial Português) of not employing

telephonists, office messengers, telex operators and debt-collectors, and on the other, managerial positions, in order to limit the variety of situations regarding both work content and autonomy degree.<sup>15</sup>

The data has been subjected to statistical analysis: factor analysis of principal components, multiple regression, and variance. (The appendix 1 includes a brief presentation of the enterprises studied, as related to general features and structure of the enterprises, offices, and office equipment, as well as some individual characteristics of office employees).

### 3. DATA ANALYSIS

Of the 1306 workers with less than 5 years of service in their present company, 51.8% are female, which indicates that generally offices in the District of Coimbra are albeit very slowly undergoing feminization, bearing in mind that the average global rate for feminization is 48.8%.<sup>16</sup> As shown in table 2, the sector most feminized sector is Public, Social and Personal Services [Group 9 in the Classification of Economic Activity (CAE)] in which 66.7% of the workers entered employment over the last four years are female. The sector of Business Services (sub-group 8.3.2 of the CAE) is the sector which appears to be undergoing the reversal of feminization, since only 55.2% of workers entering the sector over the last 5 years are women (90 in 163) whereas the average rate of feminization for this sector is 58.4%.

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women, while in public banking feminization has been increasing (about 27% in 1987). Furthermore, given the typical concentration of the sectors, it is recognized that they are more computerized.

<sup>15</sup> In a data collection of this type, it is inevitable that the classification of the employees is taken simply from that attributed by the entrepreneur, but it is recognised that this classification may be totally arbitrary. For example, in the category of typist the following categories were found: typist 1st, 2nd and 3rd class; 1st, 2nd and 3rd typist; typist 1st, 2nd or 3rd year, and trainee typist 1st class.

<sup>16</sup> The choice of this period of service was determined by the fact that the data on computerization showed that from 1985 more than three quarters of the enterprises (76.6% of 385) acquired their first computer.

**Table 2 - Enterprises of District of Coimbra (1989):  
Feminization of Office Employees**

	All Employees	Employees with less than 5 years of service in their present company
All Sectors of Activity	48.8% (N = 3,227)	51.8% (N = 1,306)
Public, Social and Person. Services	57.7% (N = 473)	66.7% (N = 141)
Business Services	58.4% (N = 226)	55.2% (N = 163)

A comparison between the average age and duration of service of women and men is another indicator which we may use with the same purpose (see next table). Male employees are on average older than female employees. The sector dealing with Business Services, considering the group of employees with less than 5 years of service and under 30 years old, however, is the sector with the lowest age mean of both male and female employees and the smallest difference between them (28.02 years for men and 27.92 for women).

**Table 3 - Enterprises of District of Coimbra (1989):  
Features of Office Employees with less than 5 years of service  
and aged under 30 years**

	Feminization related to all employees of the sector	Average Age		Average Salary	
		Males (in years)	Females (in years)	Males (in <i>escudos</i> )	Females (in <i>escudos</i> )
All Sectors of Activity	43.3%	31.96	28.65	54,872	51,134
Business Services	68.2%	28.02	27.92	44,376	43,059

In turn, the proportion of the same group of workers in relation to the absolute level of employees in the sector gives us a measure of the intensity of job creation or of employment turnover. In this respect, the less dynamic sector is that of Public and Social and Personal Services, in which men with less than 5 years of service and under 30 years old represent only 23.6% of the absolute level of employees in the sector (47 in 199) while women in the same group represent only 34.3% (94 in 274). At the opposite extreme is the sector Business Services, in which the proportion of this group of workers is the highest. Moreover, it is the only sector in which the proportion of recently contracted men (77.7% - 73 in 94) is greater than that of women (68.2% - 90 in 123). This

helps us to understand the fact that it is the sector in which the average age of men is nearer to that of women.

The data related to these three indicators leads us to think that the intensification of contracting male employees in offices may be happening in this specific sector of economic activity. The most interesting matter is that this sector is also that in which feminization is greater (58.4%), in which the proportion of office employees in relation to the total number of workers employed by the enterprise is greater (0.61), in which the office structure is more complex, where the occurrence of hierarchical structures is greater, in which professions related to computing are more frequent (in 46.9% of the cases), which is the most extensively (87.8% of the enterprises are equipped with computers), and most intensively computerized (about 30% of the enterprises have mini and macro computers, well ahead of the sector which comes in second place — Wholesale and Retail 7.2%), and, lastly, is also the sector which has been computerized the longest (average age of computers is 4.9 years, while the general average is 2.94 years) (See Annex 1). In short, the indicators render this sector a model of excellence in as much as it is the most feminized and computerized sector of economic activity.

This sector is in great expansion. Various reforms underway, a result of modernizing administrative, accounting and fiscal systems brought about by Portugal's entry into the EEC, cause a large increase in the demand for this type of services (computing, legal, advertising) by numerous micro and small enterprises generally lacking in suitably qualified staff. This tendency is quite recent, but very marked, having a rate of variation between 1981 and 1989 of 41.4%<sup>17</sup>. At the end of 1989, 28 of the 32 enterprises included in the sample for this sector had started activity less than 6 years ago.

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<sup>17</sup> In 1981 there were 101,126 workers in group 8 of the CAE, and in 1989 about 143,000. Since it is known that in the sector of Banking and Insurance, also included in this group, employment practically stagnated after 1982, this verified rise is totally attributable to subgroup 8.3 - Real Estate and Business Service (INE, 1981, 1989; Kovács *et al.*, 1989: 19).



In this light, the contracting of male employees could be understood as being a case where the enterprise prefer to pay higher salaries in order to attract workers (the explanation put forward by Hichs, referred to above). However, a comparison of the average salary in this sector with that of other sectors does not corroborate this expectation. As a matter of fact, it confirms instead the hypothesis of payment of lower salaries, because we are dealing with a sector in which small scale business are dominant, generally associated with lower salaries, and which is more labour-intensive, being its output strongly dependent on the office output. In fact, the average salary of the sector (43,616 *escudos*) contrasts clearly with the general average (53,675 *escudos*) and still more with that of non-traditional industry which has an even higher average salary (60,503 *escudos*).

Male/female differences in salaries are evident. In the analysis of the effects of sex on salaries, where the duration of service, levels of education and levels of qualifications are equal, a highly significant difference between the salaries of men and women is confirmed. The average salary, after adjustment, is 54,872 *escudos* for men and 51,134 *escudos* for women [F (1,1979) = 30.665; p < .0001] (Ratio female/male salaries = .932).<sup>18</sup>

The analysis of multiple regression, separated by gender, of the individual variables having effect on salaries (level of education, age, unionization, level of qualification and length of service) reveals that level of qualification is the first predictor for both genders (std. value = .484 for men, and .413 for women). The second predictors, however, do not coincide. In case of men it is level of education (std. value = .2) and in the case of women it is duration of service (std. value = .242). This shows that the women salary scale is based more on duration of service than on levels of education, which is typical of non-qualified office work. This type of scale is used in those jobs where the worker's professional experience only increases his/her productivity by very little. Employers prefer then to contract younger employees to whom they pay lower wages (Cohn, 1985).<sup>19</sup>

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<sup>18</sup> In 1980, the non-adjusted national ratio was .925 for administrative personnel, while that of the total employed population was .72.

<sup>19</sup> Although this phenomenon particularly affects women, it also has some influence on men. This influence is observable in a comparison of the curve of the age of office workers with that of the total employed population. For both men and women a more abrupt exit is noticeable which may indicate that office work is a route leading

In the case of professions which show, in the 1981 Census, a decrease in the proportion of women (typists and operators of automation machines), women earn more than men (see tables 4 and 5). Controlling the variables of qualifications, age and duration of service it is confirmed that male typists earn an average of 34,156 *escudos*, and the female typists, who represent 78.3% of the total number of the professional category, earn 37,846 *escudos*. The average salary of operators, although in this case men are greater in number (55% of the total), is still less (40,513 *escudos*) than that of their female counterparts (44,445 *escudos*).<sup>20</sup>

**Table 4 - Enterprises of District of Coimbra (1989):  
Salaries of Typists and Automated Machines Operators (in *escudos*)**

	Typists		Automated Machines Operators	
	Males	Females	Males	Females
All Sectors of Activity	36,160	40,247	50,666	49,080
Business Services	32,334	47,034	38,070	44,222

**Table 5 - Enterprises of District of Coimbra (1989):  
Salaries of Office Employees with less than 5 years of service  
and aged under 30 years (in *escudos*)**

	Typists		Automated Machines Operators	
	Males	Females	Males	Females
All Sectors of Activity	34,156	37,846	40,513	44,445
Business Services	31,000	45,942	37,855	40,125

As far as sector differences are concerned, once again, the Business Services sector attracts particular attention as it is the sector which, as mentioned above, pays the lowest salaries but which discriminates against women less than other sectores (ratio of male/female salaries = .97), in complete contrast with the general average (.84), or with the sector of non-traditional industry which pays higher salaries than any other but discriminate women's salaries most (ratio of male/female

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to many others, as suggested by Stewart, Prandy and Blackburn (1980). We will not, however, develop this analysis here.

<sup>20</sup> Data corroborated by the study carried out by Ministry of Employment and Social Security with reference to the national situation in 1986 (Duarte *et al.*, 1989: 22).

salaries = .79). Returning to the professions which we have analysed, and restricting ourselves to the group aged under 30 years with less than 5 years of service, we can confirm that the operators of automation machines earn less (38,553 *escudos*) than the general average (41,955 *escudos*). In the group of typists, however, although the average salary is higher (44,095 *escudos*) than the general average (39,368 *escudos*), this higher average is attributable to women's salaries (47,034 *escudos*), because on average male typists earn less (32,334 *escudos*) than in other sectors (36,160 *escudos*). As to the sex differentials in these same categories, the sector is conspicuous as being that which pays women best (ratio of male/female salaries: operators = 1.16 vs. .97; typists = 1.45 vs 1.11).

#### 4. FINAL REMARKS

It is possible that phenomena of symbolic order play a role in the rising number of male employees working with new technology. The rise in social prestige for whoever conquers the infernal new machines is not an unimportant phenomenon. Qualitative analysis is required to grasp the impact of this. In view of the preliminary stage of the analysis presented herein, however, one cannot but suggest an interpretation based on the mainly quantitative components of the issue, as it takes place in Portugal.

Due to the mainly statistical nature of the research carried out this far, it remains uncertain the extent to which re-masculization is taking place in Portugal. From data collected, nonetheless, it is plausible to assume that, though still not clearly defined, a re-masculization tendency, is on its way in Business Services in Portugal. I think we must look for the reasons of this trend at three levels:

**Economical** - It becomes rather understandable that men are now entering those professions which use to pay higher salaries to women once we take the line of reasoning of Cohn, Bridges and Granovetter who support the idea that discrimination is practised mostly by those entrepreneurs who can afford the costs involved therein. As Business Services offices are the most labour intensive, the most computerized, and that the category of operators is the most numerous

(72.3%) of the computing professions, it is understandable they are the most responsive to the new market trends.

**Social** - With the current crisis of young people employment, the Business Services Sector, being in a strongly expansive phase, offers good perspectives of future growth and development. This contributes to turn employment in this sector in an attractive opportunity to young male employees, who may expect faster promotion prospects.

**Professional** - Mainframe systems, demanding greater specialization have not become deeply rooted in Portugal ever. Their operators were mainly female data processing operators, earning relatively high pay. The data processing operators category is now diminishing and being replaced by the computer operators category. Nowadays, everything leads to the belief that the majority of computing professionals are classified as computer operators. This may be a result of the classificatory system used by the National Classification of Professions that makes it more effective in the classification of tasks more related to classical mainframe computers. As a matter of fact, from the beginning of the expansion of multifunctional micro computers, the category of operator has tended to include a large proportion of computing professionals, being the category with less descriptive content and therefore less restrictive. The designation of computer operator possibly refers more and more to the worker who collects and enters data, uses (applicational and basic) software, and supervises the final output (Duarte *et al.* 1989, 12-13).

With micro systems, the function of the computer operator is becoming more diversified than the original data processing operator, a category which is tending to disappear. As a result of the diversification of the functions of computer operators, this category may well be becoming a more appealing job and, thus, more attractive to male workers. After all, it could be that the high-level salaries for women operators observed may be only due to the mere transposition of old practices (associated with mainframe computers) to new realities (where more flexible micro-systems dominate). Further research is needed to sustain these hypotheses. Particularly, research based on qualitative analysis.

## Appendix 1

### General Features of the Sample

#### Enterprises

The majority of the 616 enterprises are located in the Municipality of Coimbra (62%); they are 'Sociedades por Quotas' (joint associations) (71.9%); they are small or medium sized enterprise (74.3%) of which 60.9% have fewer than 20 employees; their activity is related to Commerce, the Hotel and Catering industry (32.5%) and to manufacturing (30.8%); they pertain to private Portuguese capital (86.4%); they were founded before 1974 (55.1%) and are therefore fifteen or more years old.

#### Offices

The majority of their offices have 2 or 3 employees (52.4%) — only 66 of the enterprises have offices with more than 10 employees; have a proportion of office workers relative to the total number of employees of .23; did not alter the number of their employees during 1989 (66.8%); do not have any internal hierarchy, having all the workers classified either under the same professional category — clerks or typists (37.5%), or under two categories — clerks/typists and a book-keeper or treasurer (29.6%); do not have computer specialists (88.2%); have workers of both sexes (64.8%); pay a minimum salary of between 30,000 and 50,000 *escudos* per month and a maximum of between 40,000 and 70,000 *escudos* per month;<sup>21</sup> do not subcontract offices work (74.8%).

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<sup>21</sup> The salary variable analysed only takes into account the basis monthly salary. It does not include credits for duration of service, regular or irregular payments, holiday pay, Christmas bonus or overtime.

### **Office Employees**

The majority of 3,227 office employees are males (51.3%); are aged between 30 and 45 years (50.5%), the average age of male employees being more than that of female employees (38.8 against 33.3 years); belong to the two categories of staff requiring the fewest qualifications (72.8% - 88.3% of women and 69% of men);<sup>22</sup> do not have more than the general level of secondary education (72.6%); work in offices that do not have more than 5 employees (51.2%); have less than 20 years of service (85%), the average period for men being more than that of women (11.2 years against 8.3); do not belong to a Union (65.5%); do not have professional category related with computerization (94.5%).

### **Office Equipment**

The majority of the 554 offices are equipped with computers (69.6%) of which 162 only have a micro or personal computer (42.1%); acquired their first computer 2 or 3 years ago (64.8%); use the computer exclusively for processing salaries and accounting (64.5%); have one terminal for 2 or 3 office workers (62.8%); do not have a fax (56.5%); do not have electronic typewriters (70.6%); plan to install new equipment during 1990 (50.5%), primarily introducing or intensifying computerization (68.1%).

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<sup>22</sup> The levels of qualification used were taken from Kovács *et al.* (1989: 61-62). The authors adapted the categorization used by the EEC to Portuguese industry. Based on the criterion of level of education (to determine the level of workers qualification) and on the characteristics of the job (execution/elaboration/conception, degrees of autonomy and responsibility), they proposed a scale with 5 levels of qualification: I - Non-qualified or poorly qualified (typists, office machines operators, auxiliaries); II - Qualified (typist in a foreign language, clerk, operator of accounting machines, data registering operator, computer operator, mechanograph operator, cashier, filing clerk); III - Highly qualified (Head and deputy head of section, chief clerk, information planner for automated treatment, mechanograph programmer, book-keeper, treasurer, secretary, administrative officer); IV - Technical Personnel (General Secretary, systems analyst, computer programmer, accountant, correspondent in a foreign language, documentalist); V - Cadres (functions analyst, director). Only professions from the first four levels were included in this work.

All the variables related to 554 enterprises were subjected to factor analysis of principal components.<sup>23</sup> The analysis of the framework of factor saturation retains three factors as pertinent, from the eight factors extracted. The first factor, responsible for 24.5% of the total variance of the matrix, is of a *organizational* order, since the variables with the greatest factor scores were the following: office structure, age of computerization, total number of enterprises employees, and maximum salary paid to office employees. The second factor (13.6%) is of a *temporal* order (age of the enterprise, age of most recent contract and prevalence of unionization of office employees).<sup>24</sup> The third factor (12.6%) is of a *technological* order (type of computer, terminals density per office employees and fax machines).

The older the enterprise, the greater the level of unionization, the longer the duration of service of the most recently contracted employee, then the lower the probability of computerization. The more computerized office is that which has the greatest number of office employees, has a more complex organizational structure and pays higher salaries. This conclusion coincides perfectly with expectations deriving from any theoretical framework for technological modernization.<sup>25</sup>

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<sup>23</sup> The solution analysed is oblique solution reference structure - orthotran/varimax of program statview. The factors were extracted by the default method of Statview, which coordinates the rule of the 75% of variance with the scree test of Cattell. in the oblique solution reference structure - orthotran/varimax of program statview

<sup>24</sup> Unionization of office employees in the enterprises studied is strongly correlated with duration of service – less than 5% of younger workers are unionized.

<sup>25</sup> The subtle specifics of this business fabric require a detailed examination which is too lengthy to be included in the present text.

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