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### The wage effects from the use of personal contacts as hiring channels

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#### *Abstract*

It has been argued that the use of personal networks in the hiring process has a positive influence on the wages of referred individuals. However, the value of recommendations to the employer varies according to the type of vacancy to be filled and the provider of information on job applicants. Using data from a manufacturing firm, which combine wages from the personnel files and job-histories from interviews with the workers, it is shown that new recruits receive a higher starting wage when recommended to the job by an individual who has direct experience of their productivity. On the contrary, the use of referrals from friends and relatives has no effect on the starting wage and may even be negatively related to wages of workers in unskilled jobs.

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## **The wage effects from the use of personal contacts as hiring channels**

### **1. Introduction**

Labor economists show a constant interest in employment settings where the wage determination process departs from the anonymity of spot market transactions. Such an example is the use of job search methods involving networks of acquaintances. Corcoran et al. (1980) have argued that even in the United States more than half of all employees were finding their jobs through their own contacts. The high proportion of vacancies filled through personal contacts has intrigued researchers who often view informal arrangements as sources of inefficiency. However, apart from the obvious benefits that job seekers derive from the use of networks in the form of reduced search costs (Holzer 1988, Mortensen and Vishwanath 1994), it has been argued that firms also stand to gain when they tap the networks of their own employees (e.g. Bishop 1993).

Theoretical and empirical studies of employer hiring behavior have implicitly focused on the hiring process for skilled jobs, as the review of the literature in section 2 suggests.

Intermediaries inform employers about unobservable characteristics of prospective employees that are positively correlated with their productivity and increase the probability of a good match. However, in practice, the use of social contacts in recruitment is more common in the search for unskilled jobs. In such jobs productivity differences across individuals are much less sensitive to observable or unobservable ability differences.

Referred individuals, with few specific characteristics that an employer could directly link to an underlying productivity potential, rely on networks so that they can be differentiated from the anonymous group of job applicants and therefore access a job.

In section 3, it is argued that the value of a recommendation – and the way this is reflected in the subsequent wage of the new recruits – is not uniform across jobs but differs according to the *type of vacancy* that is to be filled and the *type of person providing the information*. First, information on applicants for skilled positions may be critical to the success of the match because productivity is sensitive to ability differences in these jobs, but not so for unskilled positions. Second, the above proposition will hold only as long as an individual with first-hand experience of the productivity of the prospective employee, such as through common past work experience, provides the relevant information. There is no reason why accessing a job through a personal network should have any positive impact on starting wages of applicants when the recommendation comes from an individual with whom the applicants hold a family or other social tie and whose intervention might reveal a weak bargaining position. In fact, there might even be a negative effect on the starting wages of unskilled individuals accessing jobs through friends and relatives, if this intervention is implicitly suggestive of higher exposure to unemployment risk.

It is rare that a data set combines the level of detail that is necessary to assess the impact of informal hiring channels on wages. This paper uses data from an Egyptian manufacturing firm, which brings together wage information from the personnel files and job-history information from interviews with the workers. It is possible to distinguish workers who were hired with the help of a contact. It is also possible to distinguish whether the individual providing the information had first-hand knowledge of the specific skills of the job seeker. Section 4 presents corroborating results on the effect of job and referrer characteristics on the initial wage. Section 5 concludes.

## 2. The function of contacts as hiring channels

Unlike sociologists who were mostly interested in the implications of job seekers' networks for labor market success (Granovetter 1995, Fernandez et al. 2000), economists have sought to answer why employers favor the use of referrals. Apart from the conventional wisdom that the administrative costs of filling a vacancy are lower, the explanations put forward generally describe ways through which firms enhance their information. In a concise attempt to describe the use of contacts in recruitment, Montgomery (1991) argued that employers look for referrals because they believe that people tend to refer others like themselves. In a two-period adverse selection model of workers with two levels of ability, a firm employing a high ability worker in the first period is keen to ask that worker to refer one of his or her acquaintances. However, the model does not address the variation in rates of informal hiring by occupation, which is a common finding of job search method studies<sup>1</sup>. For example, Rees and Shultz (1970) showed that with certain occupations, such as material handlers, it is up to three times more likely to find a job with the help of friends and relatives, than is the case with accountants. The use of indirect search methods appears to differ according to the skill content of the job.

Montgomery also ignored the diversity of motives behind the actions of referrers. Although it is true that employers usually seek the recommendations of their best employees when they want to fill a vacancy, it is questionable whether correlation of abilities across individual members of a network is a satisfactory assumption for all the situations that arise in practice. If one takes the view that ability is a multi-faceted characteristic, only few of its

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<sup>1</sup> Calvó-Armengol and Johnson (2002) take note of this variation in the use of networks by occupation and predict that such variations will be related to other behavioral aspects of respective individuals, such as their dropout rate from the labor force.

unobserved dimensions might be relevant in a particular work environment. Moreover, one observes that individuals take active steps to ensure employment for members of their family network for reasons that are often unrelated to whether their relative has a similar level of ability. Employers often respond to such recommendations favorably despite their knowledge that they may have little to do with the new recruits' productivity potential.

Other studies, whether theoretical or empirical, have also tended to abstract from the more common use of networks in daily labor market transactions and describe special cases that are less representative. Saloner (1985) presented a reputation argument for an employee who is approached by the employer seeking advice on job applicants. The referrer's utility is specified to depend on two arguments: the number of job applicants that he or she recommends as high-ability and are ultimately hired by the firm and the expected number of recommended applicants, among those hired, that are proven to be of high ability. However, these are considerations of a professional recruitment consultant. In informal hiring settings, intermediation is usually a one-off event for the referrer, who derives utility from securing a job for a particular individual and is not motivated by dynamic or impersonal concerns. There is usually a direct involvement of the referrer with both the firm (at which he or she often works) and the referred worker (with whom he or she possesses a very explicit social tie), a relationship that might test a referrer's loyalties.

Simon and Warner (1992) used a search argument. Upon recruitment, employees give imperfect indications of their eventual productivity level. Recommendations by a third party reduce the uncertainty of employers and job applicants. Conditional on this information, workers employed through the refereeing system should enjoy higher initial wage, slower wage growth, and longer tenure on account of the better job match that is achieved on average. Unlike Montgomery or Saloner, they set out to test these propositions with actual

data. However, they used a sample of highly qualified workers from a survey of natural and social scientists and engineers. Such workers are active in the high skill job market where variance in productivities can be large and costly for firms so that referrals are critical in reducing employer uncertainty. Hence, their finding that hiring through contacts raises the initial wage should be qualified.

To highlight the difference, consider a more representative cross-section of a labor market analyzed by Pistaferri (1999), who used household survey evidence from Italy, a country characterized by the strong role of family business in job allocation and high youth unemployment. Using a detailed set of control variables, including firm size, occupational and industry dummies, he found that those hired with the help of a friend or a relative received a wage that was lower by about 4%. This finding is important because it suggests that previous attempts to model hiring decisions may have taken an incomplete view of recruitment processes. The results may be explained by recourse to the lower productivity of jobs in family-based enterprises or perhaps the fact that their owners may be maximizing utility rather than profit. Alternatively, they may be picking up workers who were unable to find jobs in modern sector work environments and lower their reservation wages as a result.

An analysis of referrals has to accommodate the fact that they are more commonly associated with low-paying occupations. A brief diversion is necessary at this point. In a recent paper, Kugler (2002) builds an analysis of employee referrals and their potential link to efficiency wages on precisely the opposite premise, namely that the use of referrals is more widespread in high-paying occupations. She supports this claim with evidence from the 1982 US National Longitudinal Survey of Youth showing that the proportion of workers who got their job through a recommendation by incumbent workers was higher in industries that paid wage premia. However, this relationship is spurious and cannot refute the idea that less

skilled workers rely relatively more on social networks for accessing jobs. First, in the same results, networking activity is also higher in industries where the average education in the workforce is lower. Second, highly aggregated data do not control for the type of job within the industry, which is the main variable to look at. Third, no other related study points to this conclusion. On the contrary, Holzer (1996: 52-54) has argued that the importance of informal networks “appears to be relatively greater in the sectors in which fewer cognitive and social skills are required for work”. Finally, recall also that the use of informal hiring methods is more widespread in developing countries (Ben-Porath, 1980), where the interaction of relatively abundant unskilled jobs with denser social relations results in a more frequent use of informal networks in hiring.

Studies of hiring policies from the developing world are rare<sup>2</sup>. Firms in those countries operate in constrained conditions. For example, the low quality of education weakens the strength of signals sent by job seekers, thus depriving employers of an ordinary screening tool in hiring decisions. Entrepreneurs respond to these constraints by relying on familial, ethnic, professional, political, and other social networks. On the other hand, workers with a stable job consider it their duty to inform members of their kin or village about such opportunities in places where underemployment is pervasive. Early successful migrants are known to undertake substantial investments in organizing the reception of newcomers and often set them up in jobs with the same employer (e.g. Carrington et al. 1996).

Singerman (1995) provides vivid descriptions of networks in Cairo, the city where the empirical data for this paper were collected: “Relatives are commonly involved in job searches and job placement, not only in offices but in family-owned commercial and

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<sup>2</sup> For notable exceptions see Frijters (1999) and Collier and Garg (1999).

manufacturing establishments” (p.141). “Certain members of the community, who are known to have wide networks of acquaintances, are routinely approached by others in need of jobs” (p.147). “Among the poorest segment of the community, there is an expectation that those who are ... financially comfortable will help the less fortunate to find employment” (p.148)<sup>3</sup>. The main point to keep is that some motives behind referrals do not necessarily lead to higher wages for the beneficiaries of the networking activity.

### **3. Hypotheses and data**

To sum up, previous attempts to assess the effects of informal methods of hiring on wages have produced contradictory results, with networks being alternatively linked to both lower and higher wages for the referred individual. The key to reconcile these findings lies in the use of a data set satisfying two properties. First, it should sufficiently identify and control for the skill content of jobs. Referrals can only have a positive impact on the wages of workers when they reduce the uncertainty of employers. There is little uncertainty in unskilled jobs, as even large differences in individual ability have limited impact on the output. Note, however, that the positive link of a recommendation to a skilled job can only be ascribed to the intervention of a third person that can be shown to possess direct knowledge of the productivity of the job seeker, such as through past common work experience, and not to the intervention of any acquaintance. Second, therefore, the data set should provide the identity of the person offering the information and distinguish professional ties from family relationships. Family members or friends might provide indispensable help to someone

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<sup>3</sup> Assaad (1997a) assessed in a meticulous study the effects of family ties on access into construction sector occupations in Egypt and reached the conclusion that they were playing a role in reducing barriers to entry to the better paying craft occupations, albeit a weak and indirect one. His research benefited from the use of nationally representative data. However, these would not be suited to answering the questions set out in this paper. The main reason is that the main variables of interest, i.e. the description of contacts and especially the wage level, were measured with less accuracy than in the analysis that follows.



looking for a first job at a low skill post. Old colleagues might provide specific information to an employer about the suitability of an individual for a skilled position at a later stage in one's career. The potential implications of different informal hiring channels on wages are examined here with a sample of 209 male production and technical workers employed at a manufacturing firm in Egypt<sup>4,5</sup>.

Background information was collected during the course of interviews. The main question of interest is the method of recruitment. For the purposes of the analysis, three hiring channels are distinguished. First, some employees got their jobs without help from a contact: they were either hired on the basis of a newspaper advertisement or they inquired at the gate. They serve as a control group. Second, others got their jobs through a recommendation by individuals with whom they had worked together at some point in the past. Third, the remaining workers got their jobs thanks to a good word put in by a friend or a relative with whom there was no past history of working together.

The situation is summarized graphically in Figure 1. The columns present the number of workers hired in each year between 1987 and 1998 (measured on the left vertical axis). The line shows the proportion of workers in each year that were hired through contacts (measured on the right vertical axis), whether these belonged in the old colleagues or the family/friends category. In the early years, the smaller size of the firm and the rapidly growing needs for workers mean that relatively more of them joined the firm without a referral. Later on, the employer asked workers to act as intermediaries for the filling of

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<sup>4</sup> The firm was established in the mid-1980s under the provisions of economic opening laws and is therefore private and partly owned by foreigners. It is a vertical production unit of consumer goods. For Egyptian standards, the technology is relatively capital intensive, the workers are relatively highly educated, and the firm is large, as its workforce exceeds 500 people. It is located in one of the industrial suburbs around Cairo.

<sup>5</sup> Single-firm studies suffer ostensibly from their limited ability to generalize their findings. Yet, they have been used repeatedly by labor economists to refine and test hypotheses thanks to their ability to control for a large

vacancies. This was partly in response to popular demand, as individuals considered lucky enough to possess a good job are expected to lend a helping hand toward less fortunate members of their immediate circle. This may be a way to improve working conditions and ease tensions inside the factory. It also presents a non-pecuniary benefit to incumbent workers who can improve their position in their networks.

Information on remuneration is available from the firm's personnel files. All workers in the sample have equal number of working hours. The files record retrospectively (i.e. since the year of recruitment) the wages of workers employed by the firm at the time of the visit in 2000 (although not the wages of any other worker who had been hired in the past and had quit in the mean time). This full set of wages would not be suited to testing the effects of hiring channels: the wage during a worker's tenure with the firm is affected increasingly by the employer's observations of the worker's productivity rather than by the initial informational content of the referral in which we are interested. Limiting the analysis to the sub-set of starting wages of these workers overcomes this problem. An objection may be that worker tenure could be systematically linked to hiring through a particular channel. In other words, if the sample consists of long-tenured workers hired through the recommendation of old colleagues (whose starting wages are, say, high) and short-tenured workers hired through the recommendation of friends (whose starting wages are, say, low), then the test would be biased. However, means tests reject the hypothesis that the length of tenure is systematically related to these two hiring channels.

As argued earlier, we have to condition on the skill content of the job, since the employer is expected to pay attention to recommendations in a different way depending on whether the

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number of factors.

vacancy to be filled is for a skilled position or not. However, it is likely that a particular hiring channel is associated with the type of job, therefore any effects attributed to the hiring channel may actually be capturing the skill content of the job. For example, friends and relatives may be helping young workers get unskilled jobs only. Two groups of variables are used to control for such effects.

First, ten indicator variables describe the job level upon entry. They are based on internal job titles that form the hierarchy across the three main departments of the firm (maintenance and two production lines). For the purposes of this study it is useful to consolidate these levels into two groups: four managerial and supervisory levels fall under the skilled job category (17% of all first jobs) and the remainder under the unskilled job category. In agreement with the empirical literature, the relative frequency of referrals is negatively related to the skill content of the job: 85% of workers in unskilled posts used contacts compared to 65% of workers in skilled posts<sup>6</sup>. In the regressions that follow, hiring method is interacted with the skill content of the vacancy.

Second, the available measure of experience is more detailed than usual. Workers were asked to describe the various jobs they had held since graduation and their respective duration using an employment history calendar. Employers know whether the job applicant has relevant experience for a particular post and take this into account when they set the level of wages. The information provided by the workers on their prior experience has been grouped accordingly into two kinds of spells, those relevant to the job for which they were

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<sup>6</sup> Wahba and Zenou (2003) have studied the use of friends and relatives as a job search method in Egypt and its association with a measure of population density as a proxy for network size. Their analysis of the 1998 Egypt Labor Market Survey data confirms the existence of a negative relationship between the skill content of an occupation (e.g. management vs. production) and the use of contacts in accessing jobs.

hired and those that were not<sup>7</sup>. The rationale behind the use of this disaggregated experience variable is similar to that of using job level variables. Workers who were recommended by old colleagues have on average 8.2 years of relevant experience prior to hiring, while workers who were recommended by friends and relatives have only 1.3 years of relevant experience. Failing to control for that difference would lead us to mistakenly assign any positive wage effects on hiring channels when it is clearly a matter of higher specific human capital embodied in the recruits.

There are additional controls for education in the wage regressions. Four dummy variables specify two types of secondary school, higher technical institutes and university education. Workers with less than secondary schooling are the excluded category. Each education variable is also interacted with experience prior to hiring. A dummy variable indicates workers who had worked in the firm before but had resigned in the mean time before returning for a second spell. Finally, there is a variable controlling for the year of hiring. During this period, real wages were falling until the early 1990s and increased slightly but steadily thereafter. In order to save on degrees of freedom, the year of hiring is specified as a continuous quadratic variable of time lapsed since the firm's first recruitments.

Table 1 presents descriptive statistics on the sample. Panel A summarizes the sample characteristics with respect to the starting wage, the experience and the education profile of the workers. It further distinguishes these aspects by the main groups in terms of the skill level of the entry job and the type of contact used in the hiring procedure. Panel B presents the breakdown by the skill level of the entry job and the hiring method. Three fifths of

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<sup>7</sup> Parent (2000) has used a decomposition that is similar in scope, although his definition of specific experience was inflexible, as the worker had to remain in the same industry for the experience to count as specific. In the definition used here, the variable of prior relevant experience was constructed combining industry- and

workers were hired in unskilled positions with the intervention of a friend or relative in the process. It is evident that hiring in a skilled job is more commonly associated with either direct methods of recruitment or the recommendation of an old colleague. It is therefore important to control for the initial job level and the pattern of prior experience before any conclusions can be reached about the effect of the hiring channel.

#### **4. Results**

The results for the starting wage regressions are presented in Table 2. Column 1 specifies experience without distinguishing between spells on the basis of their relevance to the current job. This variable is nonetheless more accurate than the standard experience variable (age minus years of education minus starting age at school) because it measures actual time spent in the labor market. The effect of recruitment method is examined with a simple variable describing whether any contacts were mobilized at all in the hiring process. No reference is made to the skill content of the job or the source of the recommendation. Getting a job through the intervention of a third person appears to have no significant effect on the starting wage<sup>8,9</sup>.

In column 2, the recruitment method variables are presented in a format that allows a test of the hypothesis that both the type of job and the type of referrer matter. Indeed, a different picture emerges when the recruitment method is disaggregated to take into account these

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occupation-specific elements. For example, an electrician does not cease acquiring job-specific experiences when he or she switches industries.

<sup>8</sup> Among the education variables only university qualifications have a strong and significant positive effect on remuneration. These highly non-linear returns to education are uncommon, but they are consistent with the startling findings of Assaad (1997b) who showed that the returns to education in the private sector in Egypt up to the university level were zero.

<sup>9</sup> The effects of the year of hiring on starting wages (not presented in Table 2 for brevity) are consistent with the existing evidence on the Egyptian labor market of a rapid decline in real wages in the late 1980s and early 1990s

variations. The involvement of an old colleague in the hiring process has a positive effect on the first wage of recruits, unlike that of a friend or relative. However, the result can be criticized for confounding two separate influences: the skill level required for the job and the hiring channel.

As a first step to correct this limitation, job level variables are added in column 3. Notice that the immediate effect is that the experience variable loses its significance. This happens because the returns to specific human capital are now reflected in the coefficients of job levels, which are not reported here for brevity. However, the findings of the previous model with respect to the recruitment method variables are qualitatively the same, even if the size of the effect is somewhat diminished.

As a second step to control appropriately for the effect of skill embodied in a job, the model of column 4 differentiates between job spells prior to hiring that were related to the task currently carried out in the firm from those that were not. This distinction reveals that only previous spells relevant to the job to which the worker was assigned have any significantly positive effect on the wage received. It is also worth noting that the interaction of university education with labor market experience is positive in the case of job-relevant spells but negative in the case of spells unrelated to the job to which the individual is assigned. Having controlled for the level of the job seekers' specific human capital, we observe that there is an unambiguous association between the recruitment channel and the initial wage. Workers who got a job with the help of an individual with whom they were acquainted through some past work relationship earn a significantly higher wage. It is important to stress that, unlike usual earnings regressions, this model controls for both the position of the workers in the

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(e.g. in the Employment, Wages and Hours of Work Survey). Real starting wages continued to decline in this

hierarchy and the level of their specific experience in great detail. A recommendation coming from a friend or relative has either no effect or, in the case of unskilled jobs, a significantly negative effect on the initial wage<sup>10</sup>.

As a final check of the validity of the results, additional information was used on the employment status immediately prior to recruitment. About a quarter of the workers in the sample had been unemployed before joining the firm, however the incidence of unemployment was unequally spread across the three main hiring channels: workers whose hiring was associated with the recommendation of an old colleague were significantly less likely to have suffered from unemployment (10%) compared to those hired through family and friends (27%) or those who had used no contacts (28%). It could therefore be the case that the hiring channel picks up the effect of unemployment<sup>11</sup>. To control for that, the model of column 4 was applied only to those workers who had made a job-to-job transition. The main findings, presented in column 5, are not affected. A worker who used a family member or a friend as a contact to access an unskilled job suffers an initial wage disadvantage of about 14% after controlling for his job level, his specific experience and his education.

## 5. Summary and conclusions

The main argument used to explain why firms tend to resort to the networks of their employees when they wish to hire new workers has been their ability to reduce their

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sample until 1995, which is a little later than in the whole of the economy.

<sup>10</sup> Consider an extreme example of informal hiring that exerts downward pressure on wages. In quite a few family businesses, some (often female) household members work for little or no pay. Although one can argue that there is a complex mechanism of household labor supply behavior determining these outcomes (and that payments take in-kind forms), it is also true that some vulnerable members get a rougher deal than if they were unconstrained to make their labor services available to the market. However, the family link makes low wage offers more palatable.

<sup>11</sup> I am grateful to a referee for making this suggestion.

uncertainty about the potential productivity of newcomers. This takes place either through what employers perceive as an underlying positive correlation between the abilities of the referrer and the referred or simply because the referrer brings together the two parts in a way that improves the likelihood that the match is successful. Both accounts explain why referred individuals tend to receive higher wages, at least at the early stages of their employment relationship.

Although there is little to disagree with in the above account, in this paper it has been argued that it is a partial and therefore imprecise view. Studies of job-seeking behavior suggest that people who use their social networks relatively more intensively to find employment are those looking for lower skill occupations. In a way, this is intuitive: individuals who are after high-skill jobs usually have their qualifications assessed objectively and verifiably when the prospective employer scrutinizes their curriculum vitae. Considering that productivity in low skill occupations is relatively less sensitive to individual ability differences, is it reasonable to expect that a mere recommendation to an unskilled worker's post is sufficient to affect wages positively, when even large differences in individual ability have a small impact on productivity?

It was proposed that networks have different effects on wage and employment outcomes depending on their composition and the type of vacancies for which they are called for. The hypothesis was tested using evidence on recruitment methods from a sample of production and technical workers employed by a large private Egyptian manufacturing firm. The set of variables used in this study is comprehensive and includes individual specific experience and a detailed account of the job hierarchy. Wages are recorded with precision through the

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firm's personnel files. It is shown that the employer will only raise the initial wage offer if the intermediary can verify that the job applicant possesses the skills that are sought after. This is the case when the referrer is someone who has worked with the job seeker before. The effect was positive in both low and high skill jobs, although it was only consistently significant in the latter case, as the theory would predict.

Conversely, starting wages for those hired thanks to a helping hand by a friend or relative were either the same as for those who got their jobs without another person's intervention or significantly lower in the case of recruitment to unskilled jobs. This may be an indication that firms use the networks of their incumbent employees in order to push down the wages of job seekers filling unskilled vacancy slots. A larger scale survey cannot record individual networks with precision. Within the confines of a single firm study it is possible to map the links across workers and to distinguish whether they were based on kin relationships or on previous common work experience.

The evidence was derived from a developing country setting. One might not expect the effects to be as strong in a developed economy. As jobs are more specialized and embody higher levels of technology, firms spend more to achieve a good match of workers with vacancies. At the same time they face fewer constraints in allocating resources and have more information sources to their disposal. Nevertheless, the mechanisms described here will still be in place and the difference will only be a matter of degree.

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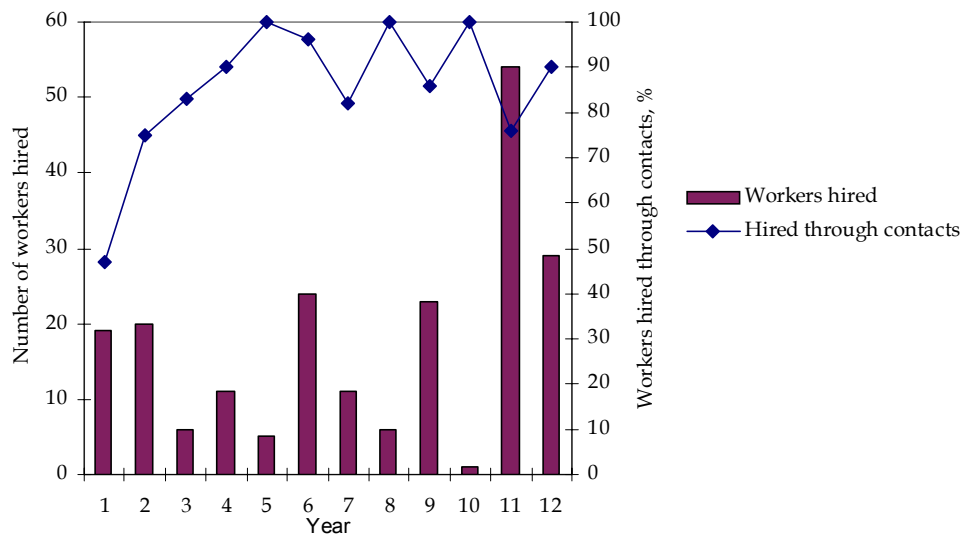
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Figure 1. Number of hired workers by year and proportion hired by means of informal contacts



Note: Contacts include friends and relatives or old colleagues. The remaining workers were hired directly either through classified ads or at the gate.

Table 1. Descriptive statistics

## A. Wage, experience and education

	All workers	Hired to skilled job	Hired to unskilled job	Hired through contact - relative or friend	Hired through contact - old colleague
<i>Real starting wage</i> (in 1999 Egyptian pounds)					
Mean	2.45	4.55	2.04	1.92	3.95
Standard deviation	1.52	2.21	0.90	1.01	2.08
<i>Experience until hiring</i> (average in years)					
Relevant to current job	3.3	8.1	2.3	1.3	8.2
Not relevant to current job	2.8	0.8	3.2	3.0	3.1
Total	6.1	8.9	5.5	4.3	11.3
<i>Education level</i> (%)					
1. Less than secondary (less than 12 years)	17	3	20	15	15
2. General/commercial/agricultural secondary (12 years)	21	3	24	26	12
3. Industrial secondary (12 years)	46	47	46	45	52
4. Higher technical (14 years)	7	6	8	7	15
5. University (16-17 years)	9	41	2	7	6
<i>Number of observations</i>	209	36	173	136	33

## B. Hiring method and entry job level (%)

		Initial job level		Total
		Skilled	Unskilled	
Method of hiring	Without recommendation	6	13	19
	Recommended by a relative or friend	5	60	65
	Recommended by an old colleague	6	10	16
Total		17	83	100

Table 2. Least squares regression of the logarithm of the real starting wage

	1	2	3	4	5
<i>Experience</i>					
Experience until hiring	.0577 (.0190)	.0352 (.0162)	.0143 (.0152)		
Squared	-.0010 (.0006)	-.0005 (.0006)	-.0000 (.0005)		
Job-relevant experience until hiring				.0467 (.0166)	.0632 (.0189)
Squared				-.0013 (.0006)	-.0020 (.0007)
Job-irrelevant experience until hiring				.0134 (.0198)	.0221 (.0225)
Squared				-.0003 (.0008)	-.0005 (.0009)
Interaction among experience components				.0025 (.0018)	.0026 (.0022)
<i>Education</i> <sup>a</sup>					
General, commercial or agricultural secondary education	.0752 (.1297)	.0706 (.1076)	-.0049 (.0999)	.0159 (.1067)	.0613 (.1148)
Industrial secondary education	.1885 (.1279)	.1539 (.1063)	-.0572 (.0997)	.0727 (.1063)	.1452 (.1143)
Technical tertiary education	.1529 (.1441)	.0534 (.1202)	-.0059 (.1133)	-.0030 (.1184)	.0912 (.1358)
University education	.7418 (.1536)	.5120 (.1333)	.1392 (.1348)	.3305 (.1410)	.5851 (.1700)
<i>Education interacted with experience</i>					
Secondary or technical tertiary education interacted with experience	.0086 (.0110)	-.0016 (.0092)	-.0014 (.0085)		
University education interacted with experience	.0275 (.0157)	.0334 (.0132)	.0564 (.0162)		
Secondary or technical tertiary education interacted with job-relevant experience				.0002 (.0082)	-.0004 (.0088)
University education interacted with relevant experience				.0512 (.0156)	.0517 (.0173)
Secondary or technical tertiary education interacted with job-irrelevant experience				-.0083 (.0127)	-.0138 (.0139)
University education interacted with irrelevant experience				-.2388 (.0826)	-.2959 (.0896)
<i>Initial job level (9 variables)</i>					
	No	No	Yes	Yes	Yes
<i>Recruitment characteristics</i> <sup>b</sup>					
Hired through recommendation	-.0846 (.0551)				
Hired through recommendation of friend or relative to a skilled job		.0826 (.0963)	.0553 (.1011)	-.0217 (.0982)	-.0552 (.1206)
old colleague to a skilled job		.5831 (.0879)	.3488 (.1068)	.3721 (.1027)	.3466 (.1168)
friend or relative to an unskilled job		-.2022 (.0481)	-.1154 (.0492)	-.0806 (.0475)	-.1400 (.0577)
old colleague to an unskilled job		.2085 (.0771)	.2537 (.0764)	.2063 (.0753)	.1145 (.0865)
Worker previously hired by the firm	.4765 (.1050)	.2300 (.0942)	.1937 (.0880)	.1239 (.0868)	-.0031 (.1003)
<i>Year of hiring (2 variables)</i>					
	Yes	Yes	Yes	Yes	Yes
<i>Constant</i>					
	.7171 (.1501)	1.022 (.1294)	1.025 (.1169)	1.042 (.1188)	1.079 (.1285)
R <sup>2</sup>	.653	.762	.808	.829	.838
N	209	209	209	209	158 <sup>c</sup>

Notes: <sup>a</sup> Base education category: less than secondary school  
<sup>b</sup> Base recruitment category: without recommendation  
<sup>c</sup> This sub-sample includes workers who made job-to-job transitions only