Quality of work in Italy in a multidimensional perspective

Results from the Third Isfol Survey on Quality of work

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Introduction

Starting from sharing the multidimensional approach to quality of work introduced by Luciano Gallino and Michele La Rosa in the 80s, this paper aims at defining and measuring quality of work in Italy by using descriptive and multivariate analyses. The data set that we use for this purpose is the Third Isfol Survey on Quality of Work (IsfolQdL) that has been carried out in 2010 on a sample of 5,000 workers.

We start by introducing the theoretical framework of our application in Section 1 that concludes by sharing a definition of five relevant dimensions in the quality of work in line with Gallino & La Rosa: ergonomic, complexity, autonomy, control and economic dimensions.

IsfolQdL, described in Section 2, allows one to observe elementary indicators of the quality of work for Italian workers. The construction of the different dimensions from the elementary indicators can be found in Section 3 where descriptive analysis confirms their independence and we proceed with their orthogonalization.

The results of a multivariate analysis on the determinants of quality of work is presented in Section 4 where we show the estimation results obtained by regressing the different dimensions of the quality of work on individual, firm and job characteristics and carry out cluster analysis to highlight how workers cluster in different groups.

The final section together with a summary of the main results obtained sketches further developments.

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1. Theoretical framework

In literature there is no unambiguous definition of the concept of ‘quality of work’. This latest stems from the field of studies on working conditions, contained within the wider one on the Taylorist model crisis between the ‘70s and the ‘80s. In this respect the ‘quality of work’ topic has been initially analysed in terms of assessment of the exchange underpinning the labour relationship, and the focus has been mainly on the ‘working conditions’ understood as the result of dynamics and power relationships emerging at work and within negotiation procedures. In the Anglo-Saxon approach, on the other hand, ‘working conditions’ traditionally has to do with the ergonomic aspects of the workplace and those relating to the worker’s health.

The concept of ‘quality of work’ used for our purposes broadens the one of ‘working conditions’ and expands the one initially investigated as a result of the exchange and negotiation process implicit in the labour relationships. Our concept of ‘quality of work’ is multidimensional. Beside the physical environment and working conditions of the worker’s health, it comprehends: (a) the contractual situation of employees; (b) the objectives and organizational practices of companies; (c) the social climate at workplace, namely, attitudes and needs of workers, correspondence between the worker’s expectations and job’s characteristics, the perception that the employees have, in terms of satisfaction of their work and the possibility of developing their skills through vocational training activities.

In the Italian tradition of studies on working conditions, being Gallino and La Rosa its main authors, the concept of quality of work has been conceptualized through a multidimensional approach. Each of such dimensions is referred to a different category of needs of the individual and the correspondent level of satisfaction (Gallino, 1983; La Rosa, 1998; Isfol, 2004). The dimensions can be identified as follows:

1. the *ergonomic dimension*, which reflects the needs regarding the quality and safety of the working environment, the quality and safety of the working processes and the psychological needs;

2. the *complexity dimension*, which regards the needs related to creativity and involvement in the problem-solving processes, skills development and experience in the job;

3. the *autonomy dimension*, which relates to the needs of being free in decision-making processes regarding own job, of self-determining working-related behavior, of self-determining rules to be followed to develop assigned tasks;

4. the *control dimension*, which regards the need of controlling general conditions of work, as the production object, its purpose, the organization, activities to be assigned to own and others decisional centers;

5. the *economic dimension*, related to the need of satisfying basic and essential needs for survival and which represents an important aspects to be considered when studying working conditions.

According to this approach, the concept of quality of work is *open*, namely it recognizes the opportunity of expanding and integrating the dimensions or individual aspects of work. It is characterised also by the *absence of a hierarchy* between the dimensions, not necessarily correlated and, indeed, mutually independent.

2. Third Isfol Quality of work survey

Isfol carries out a periodical survey aimed at measuring the concept on quality of work in Italy. The survey is conducted every four years and its third round took place in 2010. The project is inspired to the European Working Conditions Survey carried out by the Eurofound.

The survey has been conducted in its last round on a 5,000 units sample, and a three-stage sampling design (city, household, individuals) stratifying the units of the first stage.

The sample is representative of the Italian employed population aged 15 years and more. In the estimation phase an estimator founded on model-assisted estimation theory, based on regression estimators, was developed. Regarding the estimation problem super-population models (Dorfman et al., 2000) have been used. The constraint system was obtained from the estimates of LFS made by Istat in 2010.

The questionnaire operationalizes the five dimensions of the quality of work described above, articulating them in items and sub-items (variables), and has been modified from one round to another in order to consider and allow for investigation as well emerging trends and new phenomena related to the topic. However, most of the items included in the first round questionnaire have not been modified in order to describe trends in working conditions in Italy over the last decade.

3. The construction of the different dimensions

The Third Isfol quality of work survey was designed from the very beginning with the aim of using a multidimensional concept of quality of work built upon five independent dimensions.

At first, the five dimensions were operationalized in questionnaire's items and thereafter five orthogonal composite indicators were calculated. The methodology used for this purpose is shown in the following section.

Scheme 1: List of indicators selected to identify dimensions of quality of work

Economic dimension

- non standard employment contract
- lack of employment contract or payment of social contributions
- company that last year has made staff reductions
- perception of job insecurity
- perception of the possibility of dismissal or salary reduction

- low income

Ergonomic dimension

- lack of computer-use at work
- use of machinery/automated systems
- heaviness of work in terms of physical effort
- stressful job
- presence of discrimination against at the workplace
- episodes of violation of rights at the workplace
- episodes of sexual harassment at the workplace
- health risk due to the job
- diseases or injuries caused by work
- involuntary part-time
- night shifts
- work on weekends
- inflexible working time
- difficulties in reconciling work and non-work commitments

Complexity dimension

- perception of worsening of career development
- skills and educational mismatch
- lack of training courses in the last year
- lack of career development
- perception of miss-appreciation at work
- lack of motivation

Autonomy dimension

- prevalence of repetitive tasks
- the pace of work depends on the direct monitoring of a supervisor
- the work does not respect precise quality standards or does not provide a personal assessment of quality
- lack of people to supervise
- worsening perception of the autonomy degree

Control dimension

- unable to choose: strategies and goals to be achieved, work methods and techniques, program of own activities, order of the tasks of work
- to work in a team that cannot plan and organize the work
- work under direct supervision of a superior
- inability to decide: when to take a break or a permit of few hours off work
- lack of complex tasks on the job

Indicators of each dimension of quality of work are calculated empirically as a sum of the variables. Associating an increasing score to each variable in relation to the decreasing "quality" of the specific dimension[1] was the first step, after selecting and recoding the variables relating to each dimension. Subsequently, scores associated to each variable have been summed for each dimension. The outcome of such a process has been the building of five synthetic indicators, each representing a different dimension of the quality of work. Variation of indicators depends upon the number and type of variables (dichotomic or polythomic variables).

Since the literature of reference, as mentioned above, considers the dimensions of the quality of work among them conceptually unrelated, a central aspect of the

[1]The score is equal to one in the case of the dichotomic variable and enhances the modality that indicates poor quality of work, while in the case of polythomic variables the weight associated is defined in a rational way.

methodology implemented is the assessment of the degree of correlation between composite indicators. Correlation analysis performed shows both the validity of the theoretical conceptualization, and the accuracy of the operationalization, and in particular, those aspects regarding measurement issues, confirming the reduced bond between indicators. The results, in fact, show that any of the dimensions is strongly correlated with the others (Tab. 1). However, in order to make subsequent analysis most accurate, considering each dimension totally uncorrelated with others, synthetic indicators were statistically orthogonal transformed, operationalizing the theoretical paradigm for data analysis. To this purpose, a Principal Components Analyses (PCA) has been carried out in order to extract all of the factors generated. All the information produced by the dimensions built before multivariate analysis has been maintained, with the advantage of having turned the dimensions in orthogonal factors.

Table 1: Pearson's correlation matrix between the dimensions of quality of work

	Economic	Ergonomic	Complexity	Autonomy	Control
Economic	1.000	0.127	0.348	0.259	0.209
Ergonomic		1.000	0.236	0.182	0.114
Complexity			1.000	0.266	0.230
Autonomy				1.000	0.317
Control					1.000

Source: Our elaborations on ISFOL Third Quality of Work Survey

In table 2 the correlation matrix between the original dimensions and factors originating from PCA is displayed. Finally, the five factors, renamed according to the maximum correlation, have been normalized by imposing a range of variation between 0 and 100, in a creasing scale of the quality measured: 0= minimum quality; 100= maximum quality.

Table 3: Pearson's correlation matrix between the dimensions of quality of work "rough" and orthogonal factors obtained from PCA

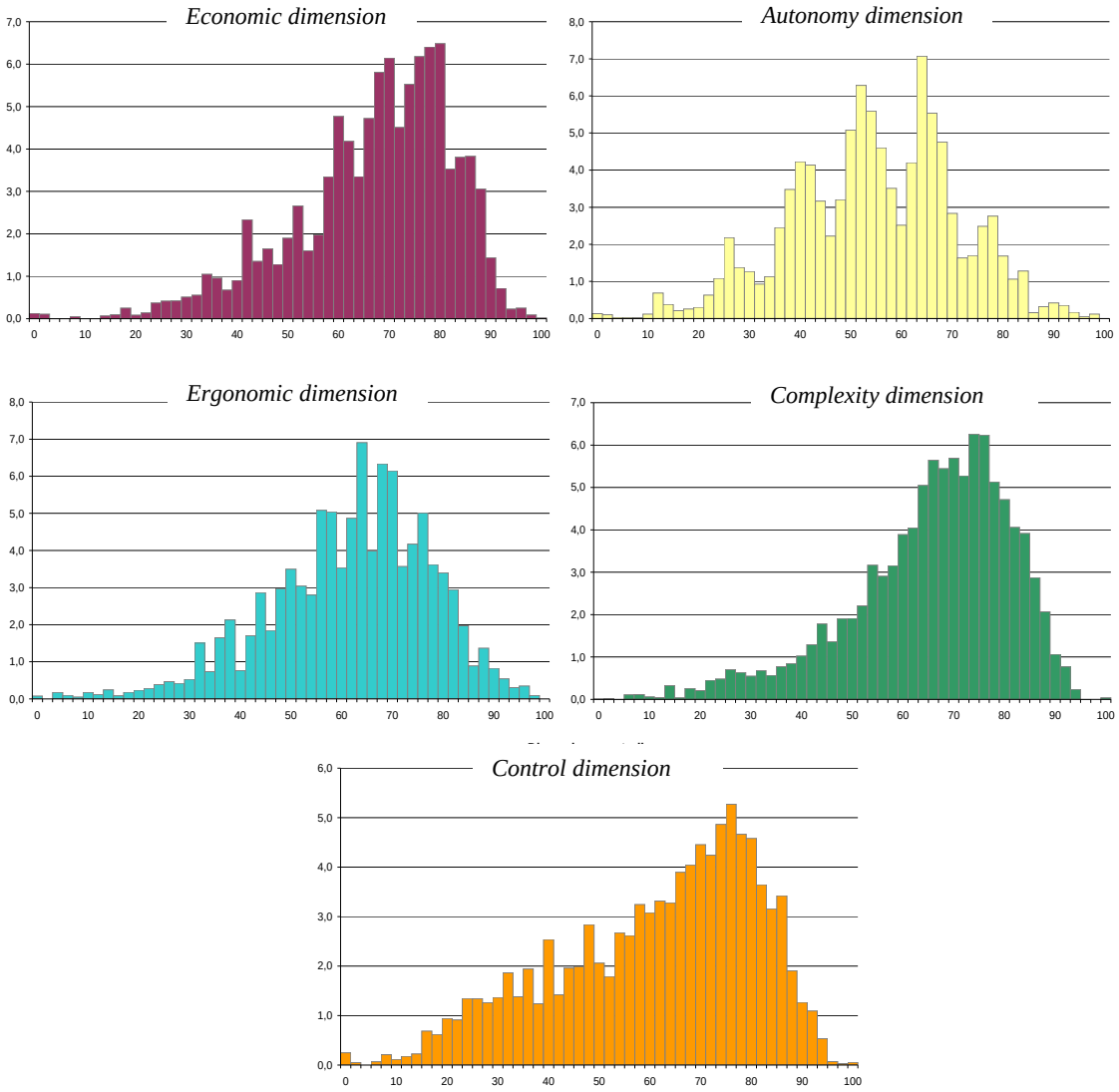
	Orthogonal composite indicators				
Dimensione	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
Economic	0.050	0.089	0.975	0.114	0.163
Ergonomic	0.989	0.044	0.048	0.079	0.106
Complexity	0.113	0.101	0.167	0.115	0.967
Autonomy	0.083	0.151	0.115	0.972	0.114
Control	0.045	0.979	0.088	0.148	0.098

Source: Our elaborations on ISFOL Third Quality of Work Survey

Figure 1 shows the frequency distributions of the synthetic indicators orthogonally transformed. Regarding the economic dimension, it can be noted that the average value associated to this indicator is estimated at 68.1, the median is estimated at 70.7; 75% of the population taken into consideration ranks below a value of 60.1. Evidence, therefore, is that the distribution is highly asymmetrical, with a large proportion of employees having a high value of the indicator. A similar evidence has

been found analysing the control dimension (mean = 62.3, median = 66.6, and 75th percentile = 48.8) and, even more evident, in the complexity dimension (mean = 67.7, median = 70.2 and 75th percentile = 58.4). In contrast, the autonomy dimension is characterized by a more symmetrical frequency distribution, to mean that most of the employed has a synthetic indicator value that focuses on core values of distribution (mean = 55.5, median = 55.6 and 75th percentile = 43.8). The ergonomic dimension, finally, has a performance comparable to that of the autonomy dimension (mean = 62.6, median = 64.7 and 75th percentile = 53.0).

Figure 1: Frequency distribution of the work quality dimensions, Year 2010



Source: Our elaborations on ISFOL Third Quality of Work Survey

4. What is behind the quality of work dimensions?

OLS regression models

In this section we investigate the determinants of the different dimensions of the quality of work identified in the previous sections. OLS regression models for each dimension have been estimated on the sample of 4,768 workers[2]. Quality of work dimensions have been regressed on a set of variables according to worker's characteristics (gender, age, education, working experience and tenure, area where the worker lives), firm's variables (industry, firm's dimension, whether public or private, firm's status with regard to the crisis) and job characteristics (type of contract, self-employment status, skill levels).

A first set of results concerns the impact of individual characteristics related to gender, human capital investment and living area.

Working women experience an increase in the ergonomic dimension of their work (+4.0%) at the expenses of their achievements in terms of the economic (-4.0%) and autonomy (-1.4%) dimensions that deteriorate. Though the definition of the quality of work dimensions does not overlap, this result is consistent with the European Foundation for the Improvement of Living and Working Conditions analysis on the Fifth European Working Conditions Survey (EWCS) that took place in 2010 showing on average lower achievements for women in terms of wages and better achievements in terms of the physical environment and working time load. This is consistent also with the results from multivariate analysis on EWCS 2005 microdata by Muñoz de Bustillo, Fernández-Macías, Antón, and Esteve (2011).

With respect to having a level of education lower than high school, workers with high school level of education show improvements in control (+2.0%), ergonomic (+4.0%) and economic (+1.6%) dimensions with no significant improvement in autonomy. On the other hand having a degree or a higher level of education improves the level also of the autonomy (+2.8%) dimension together with a higher effect on control (+7.0%), ergonomic (+5.6%) and economic (+5.0%) dimensions. With respect to having a lower than high school level of education however workers with a higher level of education experience a decrease in the level of complexity of their work: -4.0% for workers with high school education and -10.0% for workers with degree or higher level of education.

Turning to on the job human capital past work experience (previous to current job) has only a negative effect on the complexity of one's work that decreases by 0.2%. A similar reduction occurs in the complexity of work when tenure increases with a positive low impact on the economic dimension that increases by 0.07%.

The negative impact of individual's investment in human capital on workers' perception on the complexity of their job could be related to the lack of fulfilment of

[2] The sample excludes those who are employed in the Army.

their expectations in terms of career and work content as expressed by workers' satisfaction on different work dimensions.

With respect to living in the North of Italy the economic dimension of the quality of work deteriorates if the worker lives in the Centre (-1.0%) or in the South of Italy (-3.0%).

According to the observable characteristics of the firm (in terms of the local unit's dimension, sector, and status of crisis) where the individual works we can see how the quality of work changes.

As the size of the firm increases ergonomic and control dimensions deteriorate whereas only for local unit with 50 or over employees the economic dimension improves by 1.7%. The other dimensions (complexity and autonomy) are not affected by the size of the local unit in terms of number of employees.

With respect to working in firms in the Other Services Sector working in the Agriculture sector has a negative impact on the ergonomic dimension (-3.5%). Working in the Manufacturing Sector decreases the level of control (-2.4%) but increases autonomy (+4.0%) and the economic (+1.6%) dimensions. Those working in the building sector with respect to those who are employed in firms in the Other services sector experience an increase in control (+3.7%) with no significant effect on other quality of work dimensions. Working in the trade sector with respect to other services has a positive impact on the economic (+2.3%) dimension with a reduction in complexity (-2.4%) and autonomy (-3.6%).

Public Sector employees are found to have an increase in the economic dimension by 2% without any effect on the other quality of work dimensions with respect to those working in the private sector.

Working in a firm hit by the crisis (i.e. a firm that experienced employment reduction or the use of wage supplementation funds in the year before the worker's interview) has a negative impact on different quality of work dimensions. The experience of the crisis reduces the quality of the economic dimension by 15%, followed by a negative impact on the ergonomic and complexity dimensions by 3% whereas control and autonomy have not been affected by the crisis.

We have then analysed the impact of different characteristics of the job (whether temporary, part-time, self-employed and with different skills) on the current quality of work.

Part-time work is found to have a positive impact on the ergonomic dimension of the quality of work that includes also worker's perception on the degree of work life balance that improves by 6% at the expenses of the complexity (-5%) and economic (-8%) dimensions, this is consistent with the literature showing negative impact on career perspectives, level of complexity, wages and wider economic condition of working part-time.

The estimates show a negative impact of being in a temporary work on the economic (-19%) and the control (-6%) quality of work dimensions.

Self-employed workers with respect to full-time permanent employees score better in the control (+18%) and autonomy (+2%) dimensions but their achievements in the economic (-8%) and ergonomic (-2%) dimensions deteriorate.

Consistently with the literature (Addabbo, Solinas, 2012) our estimates show a deterioration of different quality of work dimensions as the level of skills in the job decreases. In fact unskilled workers with regards to highly skilled workers experience a decrease in the level reached be different quality of work dimensions: control (-8%), economic (-3%), complexity (-10%) and autonomy (-5%) and no significant effect on the ergonomic dimension. When compared with highly skilled workers those with intermediate skills show a decrease in the level of all working dimensions with a higher negative effect on control (-7%) and autonomy (-3%) followed by complexity (-2.7%) ergonomic (-1.7%) and economic dimensions (-1.4%).

Table 4: OLS estimates on quality of work dimensions, Year 2010

Variables	Control	Ergonomic	Economic	Complexity	Autonomy
Individual characteristics					
Woman	1.017	4.254***	-3.935***	0.45	-1.410*
	(0.837)	(0.814)	(0.566)	(0.727)	(0.848)
High School	2.086**	4.394***	1.568**	-3.973***	0.92
	(1.05)	(0.936)	(0.690)	(0.842)	(1.056)
Degree & over	7.051***	5.606***	5.324***	-10.12***	2.837**
	(1.33)	(1.23)	(0.907)	(1.29)	(1.34)
Past work experience	0.75	-0.0357	0.024	-0.206***	0.01
	(0.0471)	(0.0402)	(0.0299)	(0.0404)	(0.0434)
Tenure	0.07	0.01	0.0661**	-0.162***	-0.0120
	(0.0432)	(0.0360)	(0.0295)	(0.0340)	(0.0394)
Centre	-0.158	-1.525	-1.202**	0.06	0.09
	(0.937)	(0.976)	(0.605)	(0.813)	(0.939)
South	-1.056	-1.120	-3.366***	-0.0849	-0.941
	(0.925)	(0.822)	(0.681)	(0.753)	(0.927)
Firms' characteristics					
16-49	-3.738***	-2.334**	0.73	-0.985	-0.340
	(1.23)	(1.11)	(0.792)	(1.01)	(1.11)
50 and over	-5.959***	-3.598***	1.707**	-0.786	0.77
	(1.14)	(1.03)	(0.671)	(0.951)	(1.10)
Agriculture	3.451	-4.257**	-0.666	-2.542	0.4
	(2.1)	(1.85)	(1.7)	(1.81)	(1.58)
Manufacturing	-2.363**	0.31	1.629**	-0.970	4.079***
	(1.19)	(1.20)	(0.797)	(1.01)	(1.18)
Building	3.663**	-1.066	-1.207	-0.492	0.54
	(1.52)	(1.38)	(1.37)	(1.23)	(1.85)
Trade	0.64	0.81	2.303***	-2.398**	-3.637***
	(1.2)	(1.14)	(0.818)	(1.15)	(1.36)
Public	1.374	0.4	2.157***	0.78	0.64
	(1.08)	(1.09)	(0.683)	(0.918)	(1.002)
Crisis	0.94	-3.228***	-14.74***	-2.841***	0.46
	(1.03)	(0.879)	(0.749)	(0.889)	(1.065)
Job characteristics					
Part-time	-1.931	5.698***	-7.671***	-4.678***	0.03
	(1.19)	(1.42)	(0.839)	(1.097)	(1.23)
Temporary	-5.939***	-0.139	-19.48***	0.84	-1.246
	(1.24)	(1.15)	(0.975)	(1.04)	(1.28)
Self employed	17.59***	-2.097**	-8.188***	-0.995	2.435**
	(1.06)	(0.998)	(0.876)	(0.956)	(1.15)
Intermediate Skills	-6.785***	-1.736**	-1.387**	-2.663***	-3.252***
	(0.822)	(0.859)	(0.640)	(0.873)	(0.957)
Unskilled	-8.013***	0.22	-2.894**	-9.587***	-4.848***
	(1.88)	(1.32)	(1.23)	(1.67)	(1.66)
Constant	61.89***	61.51***	76.00***	78.09***	56.41***
	(1.72)	(1.63)	(1.24)	(1.6)	(1.99)
Obs.	4768	4768	4768	4768	4768
R^2	0.35	0.1	0.43	0.07	0.05

Robust Standard errors in brackets

*** p<0.01, ** p<0.05, * p<0.1

Source: Our elaborations on ISFOL Third Quality of Work Survey

Cluster analysis

The five orthogonal dimensions of quality of work presented in the previous section are used to define groups through cluster analysis. The K-means algorithm has been applied to identify and divide the sample into groups, while the decision regarding the number of clusters to detect has been driven by the Calinsky-Harabasz index.

This methodology suggested dividing the sample into six groups and further analyses showed that the process lead to clear interpretations of the clusters. Table 5 shows the first moment of the different dimensions for each cluster together with their size. The results show the presence of a fairly big group of individuals that enjoys a good quality of work in each dimensions (Cluster 6) and five groups of workers that have a low quality of work just in one dimension (from Cluster 1 to Cluster 5).

Table 5: Mean of quality of work dimensions by cluster, Year 2010

	Ergonomic	Control	Economic	Autonomy	Complexity	Obs.
Cluster 1: Low Autonomy	69.5	67.8	76.0	37.6	73.7	896
Cluster 2: Low Complexity	62.0	59.6	74.1	53.1	35.2	593
Cluster 3: Low Economic	66.0	66.6	40.6	52.2	64.9	618
Cluster 4: Low Control	63.4	31.5	69.5	58.1	70.8	696
Cluster 5: Low Ergonomic	42.3	71.8	70.4	59.4	71.2	758
Cluster 6: Good Quality of work	72.2	71.1	72.3	68.0	69.2	1207
Total	62.8	62.3	68.1	55.5	66.7	4768

Source: Our elaborations on ISFOL Third Quality of Work Survey

The probability of being in each cluster having as a reference cluster 6, i.e. the group of individuals with a good quality of work in all dimensions has then been estimated by using a multinomial logistic regression. The multinomial logistic regression (Maddala 1983) provides a set of coefficients for each of the five comparisons, from cluster 1 to cluster 5. The coefficients for the reference group (cluster 6) were all set to zeros, as the coefficients for the reference group for a dummy-coded variable. The independent variables in this Multinomial Logistic Regression are the same ones that will be used to estimate the determinants of each quality of work dimensions i.e.: individual, job and firm's characteristics. The results of the multinomial logistic regression on the probability of being in cluster 1, cluster 2, cluster 3, cluster 4 and cluster 5 having as a reference group cluster 6 are presented in Table 6.

The probability of being in cluster 1 (facing low autonomy) and in cluster 2 (facing low complexity) with respects to have a good position in all dimensions decreases with higher educational level and increase with lower professional skills. The results also showed that who is employed in a part time position have a higher probability of being in cluster 1 and in cluster 2 than those who work in a full time position.

The probability of being in cluster 3 (facing low economic dimension of quality of work) decreases with a higher level of education (degree and over). The unskilled workers have a higher probability of facing a lower level of economic dimension of work in comparison to high skilled workers. With respect to those who have a full-time

permanent job, those who are employed as a temporary workers or in a part-time work have a higher probability of being in cluster 3. The probability of being in cluster 3 is significantly higher for those who work in agriculture and in the building sector and lower for those who work in the public sector in comparison to workers in “other services sector”. The probability of facing a lower level of economic dimension is also lower for those who are employed in a medium firm and higher for those who are working in a firm hit by the crisis. Being woman and living in the South of Italy increase the probability of being in the group of those who have a lower achievement in the economic dimension of work.

The probability of being in cluster 4 (facing low control) decreases with higher levels of education. The probability of being in cluster 4 is significantly higher for those who work in the manufacturing sector and lower for those who are in the public sector in comparison to workers in 'other services' sector. The probability of facing a lower level of control is also higher for those who are employed in a temporary position, those who have a part time job and those who are working in a firm hit by the crisis. Living in the South increases the probability of being in the group with a lower level of control.

The probability of being in cluster 5 (facing low ergonomic) decreases with higher levels of education and increases with lower professional skills. The probability of being in cluster 5 is significantly higher for those who work in agriculture and in the building sector in comparison to workers in “other services sector”.

Table 6: Multinomial logistic regression on cluster belonging: baseline Cluster 6, Year 2010

	Cluster 1: Low Autonomy	Cluster 2: Low Complexity	Cluster 3: Low Economic	Cluster 4: Low Control	Cluster 5: Low Ergonomic
Individual characteristics					
Woman	0.163	-0.079	0.669***	-0.024	-0.299
	(-0.99)	(-0.46)	-3.44	(-0.13)	(-1.39)
High School	-0.417**	0.428*	-0.331	-0.454**	-0.786***
	(1.98)	(-1.71)	(-1.34)	-2.12	-3.43
Degree & over	-0.641**	-1.117***	-0.792**	-1.729***	-0.795***
	(-2.42)	(-3.56)	(-2.53)	(-5.38)	(-2.92)
Past work experience	-0.02**	0.016	-0.007	-0.002	-0.004
	(-2.21)	(-1.43)	(-0.71)	(-0.22)	(-0.46)
Tenure	-0.005	0.01	0.001	-0.003	-0.007
	(-0.63)	(-1.07)	(-0.12)	(-0.36)	(-0.8)
Centre	-0.005	-0.218	-0.229	-0.354	0.344
	(-0.03)	(-1.05)	(-1)	(-1.46)	-1.45
South	-0.204	-0.065	0.645***	0.54***	-0.211
	(-1.1)	(-0.33)	(3.13)	(2.8)	(-1.12)
Firms' characteristics					
16-49	-0.337	-0.299	-0.617***	-0.021	-0.181
	(-1.23)	(-1.09)	(-2.95)	(-0.81)	(-1.08)
50 and over	0.079	-0.002	-0.14	0.17	-0.23
	(0.41)	(-0.01)	(-0.53)	(0.81)	(1.01)
Agriculture	0.461	0.282	1.368***	0.347	2.21***
	(1.2)	(1.21)	(2.5)	(1.5)	(5.18)
Manufacturing	-0.033	0.3	-0.068	0.6***	0.047
	(-0.14)	(1.21)	(-0.25)	(2.63)	(0.18)
Building	0.327	0.155	1.064***	0.301	0.821***
	(1.37)	(0.36)	(2.71)	(0.83)	(2.58)
Trade	-0.335	-0.199	-0.005	-0.186	0.195
	(-1.32)	(-0.67)	(-0.02)	(-0.63)	(-0.69)
Public	-0.002	-0.218	-1.02***	-0.453**	-0.145
	(-0.01)	(-1.08)	(-4.38)	(-2.18)	(-0.71)
Crisis	-0.232	0.212***	1.428***	0.785***	0.203
	(-1.23)	(1.19)	(6.91)	(4.03)	(1.25)
Job characteristics					
Part-time	0.541**	0.65**	1.016***	0.714***	-0.297
	(2.18)	(2.46)	(3.98)	(2.84)	(-0.82)
Temporary	0.034	0.107	2.207***	1.591***	0.011
	(0.11)	(0.29)	(7.69)	(5.36)	(0.03)
Intermediate Skills	0.358**	1.132***	0.275	1.698***	0.369**
	(2.12)	(5.35)	(1.3)	(8.23)	(1.99)
Unskilled	1.04***	2.396***	0.928**	2.211***	0.646**
	(2.87)	(5.89)	(2.28)	(5.73)	(2.37)
Constant	-0.271	-2.473***	1.276***	-1.467***	0.3
	(-0.75)	(-5.72)	(3.17)	(3.71)	(0.82)

Robust Standard errors in brackets
*** p<0.01, ** p<0.05, * p<0.1
Source: Our elaborations on ISFOL Third Quality of Work Survey

Conclusions

Quality of work is considered in this paper in its multidimensionality in agreement with a perspective that departs from the working conditions approach and dates back to Luciano Gallino & Michele La Rosa suggestions. This opening up to different dimensions can be recognized in the design of Isfol Third Survey on Quality of work in Italy that keeps measurable elementary indicators accruing to five distinct dimensions: ergonomic, complexity, autonomy, control and economic.

Elementary indicators have been used to define and measure each on f the above 5 dimensions in this paper. Their measurement and statistical analyses confirm their independence. Descriptive statistics show the worse condition in terms of different quality of work dimensions of temporary workers and, especially with regards of the economic dimension, for women and part-timers.

The five orthogonal variables have then be analysed by using cluster analysis. We applied the K-means algorithm and by using Calinsky-Harabasz index we have detected six clusters that have been then compared according to gender, education, sector, type of work and area.

Multivariate analysis performed on the whole sample of workers confirms the worse achievements in terms of quality of work by temporary workers and lower skilled workers. Women achieve a lower level in terms of the economic and complexity dimensions. Part-timers seem to experience an improvement in the ergonomic dimension (that includes also work life balance) at the expenses of the economic and complexity dimensions that deteriorate for part-timers. The ergonomic and control dimensions of quality of work deteriorate as the dimension of the firm's unit, in terms of number of employees, the worker is in increases. The economic dimension shows a worse fit with regards to workers living in the North for workers living in the Centre-South of Italy. Higher level of education improves all working conditions but complexity that decreases also with past work experience showing an opening up of the gap between increased expectation on work content and career and actual work with a worsening on job satisfaction.

Further developments include multivariate analysis by gender with regards to the economic and ergonomic dimensions to detect different impact of the same regressors by gender and a finer analysis on the characteristics that can increase workers' probability to be in a given cluster.

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