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ORIGINAL RESEARCH

Job Satisfaction and Gender in Italy: A Structural Equation Modeling Approach

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Dedicated in loving memory of Hans Schadee.

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Abstract
The aim of this study was to propose a reliable measurement model for the concept of job satisfaction in Italy and to test its measurement invariance across gender. We used the 2003 and 2009 Italian National Statistical Office (ISTAT) Family and Social Subjects (FSS) data, containing information on 8 dimensions of job satisfaction. The best-fitting model was a four-factor one, including the dimensions of intrinsic, rewards, timing and socio-contextual job satisfaction. Multi-group analysis supported the measurement invariance across gender. Additionally, we evaluated the role of several job and individual characteristics as determinants of job satisfaction for men and women. While for a number of them the patterns of association with job satisfaction were similar over genders, some differences also did emerge.

Keywords Job satisfaction · Gender · Structural equation modeling · Italian labor market

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1 Introduction and Motivation

Job satisfaction might be defined as «a pleasurable or positive emotional state resulting from the appraisal of one's job or job experiences» (Locke, 1976, p. 1304). It is an issue that has been extensively debated in the fields of economics, psychology and sociology (Judge & Church, 2000; Pagan, 2013), not lastly because it relates to a number of individual outcomes valuable at the organizational level, like quitting the job, absenteeism and performance (Cotton & Tuttle, 1986; Hulin et al., 1985; Iaffaldano & Muchinsky, 1985; Tharenou, 1993). Also, low job satisfaction affects worker's anxiety, depression and health in general (Faragher et al., 2013; Spector et al., 1988). In sociology, job satisfaction has been recognised as the main subjective indicator of job quality (Clark, 2005; Oesch & Piccitto, 2019), and it has been argued that studying job satisfaction is important for understanding the workers' labor market behaviour (Hamermesh, 2001).

In this paper, we propose a reliable measurement model for the concept of job satisfaction in Italy, testing its measurement invariance across genders and relating the resulting dimensions of job satisfaction to several individual and job characteristics. To the best of our knowledge, this is the first attempt to evaluate the dimensionality and antecedents of this concept, while accounting for the different values and orientations that men and women carry in their work experience. In the next section, we review the literature, then in Sect. 3, we move to the methods and the data used. Section 4 presents our results, and Sect. 5 concludes.

2 State of the Art

As a personal attitude (Veenhoven, 2008), job satisfaction has been mostly measured with self-rated scales, through the use of questionnaires filled in by workers. Nevertheless, there is no consensus on the measurement of this attitude. First of all, indeed, the literature has extensively discussed the opportunity of measuring job satisfaction either by using one single indicator, referred to a general feeling of a worker towards her own job, or by a set of questions, in order to reflect the multi-dimensionality of the concept (Oshagbemi, 1999; Wanous et al., 1997). Of course, this choice also depends on the purpose of the analysis. Considering job satisfaction as an encompassing concept might be a good strategy if the goal is obtaining a synthetic and comprehensive judgment of job satisfaction, while considering sub-dimensions of job satisfaction, linked to different aspects of work, might be a more effective option for diagnostic purposes (Goulart, 2016).

Moreover, the literature does not agree on the number of dimensions that should be considered when measuring job satisfaction (Saane et al., 2003). A key, well-known distinction refers to the intrinsic and extrinsic dimensions of job satisfaction (Herzberg et al., 1959; Weiss et al., 1967). In general, the first dimension has to do with the work in itself and its content, while the second dimension, vice versa, has to do with the material and economic rewards associated with it. Sometimes however the distinction is not clear-cut: for instance, the possibility of career advancement is associated with higher material rewards, and as such it can belong to the extrinsic dimension of job satisfaction (Mottaz, 1985; Spector, 2021), but at the same time it fosters individual empowerment and self-development, thus tapping into the intrinsic dimension (Herzberg et al., 1959; Vroom, 1964). The distinction between intrinsic and extrinsic components has also been used to aggregate occupations

in social classes, as a dichotomy between work situation and market situation (Lockwood, 1958). The work situation refers to the position of a job, and its incumbents, within the social division of labor and in the hierarchies of the workplaces. It then regards the skills requirements, the degree of discretion and autonomy in fulfilling work-related tasks and duties, as well as the relationships with co-workers. The market situation refers to rewards: the source and the magnitude of the pay, the chances of promotion and upgrading, the stability of the job and its prestige (Gallie, 1996). A further differentiation was introduced by Katz and Van Maanen (1977), who identified three *loci* of satisfaction: (i) task, which refers to the intrinsic rewards associated with the work itself; (ii) organisational, which refers to extrinsic characteristics related to the rewards system, such as pay, promotion opportunities, job security and other fringe benefits; (iii) social, which refers to the quality of interpersonal relationships in the workplace.

However, this literature appears to undervalue two key points. First, these models of job satisfaction were developed in the Fordist era of industrial mass production, where manufacturing plants were the main work environment. Many decades later, technological development, globalization processes and the related patterns of occupational change have deeply modified the structures of Western economies and the social organization of labor (Oesch & Piccitto, 2019). The new patterns of work organization, increasingly focused on just-in-time practices and accountability, give more prominence to the issue of work-related stress (Cox & Griffith, 2010; Fraser, 1983). It is not a case that the OECD job quality framework, built to identify those job attributes that promote the workers' well-being, identifies 'the quality of working environment' as the sole dimension referring to the non-economic aspects of a job. This dimension measures the incidence of job strain, and it is often measured through the incidence of very long working hours (OECD, 2017). Hence, this aspect remained under-explored in the existing models of job satisfaction, while today it deserves adequate consideration.

Secondly, this literature, mainly moving from an objective approach (Brown et al., 2012), undervalues the extent to which job satisfaction, as an attitude, strongly depends on the worker's subjectivity, particularly in terms of work expectations and values (Kalleberg, 1977; Warr, 2007). A key example comes from the paradox of the «contented female worker» (Crosby, 1982), according to which women, despite being employed in lower ranks of the occupational hierarchy (in terms of earnings, authority, prestige), are usually not less satisfied than men with their work, and often even more satisfied (Bender et al., 2005; Bokemeier & Lacy, 1987; Clark, 1997; Luo, 2016; Sloane & Williams, 2000). The paradox has then been explained referring to the different expectations and values of women (Clark, 1997).[1] Indeed, in the light of their late inclusion and frequent marginalisation in the labor market, women may expect less from their jobs (Foong et al., 2018), so that, *ceteris paribus*, they will be more satisfied than their male counterparts (Sousa-Poza & Sousa-Poza, 2003).[2] In this sense, social norms appear to be an important mediator of the male–female gap in job satisfaction (Graham & Chattopadhyay, 2013), and with the ongoing processes of labor market modernization, including the alignment of expectations

[1] Some studies have attempted to explain this paradox with a self-selection process of women into the labor market (Kifle et al., 2014), but evidence does hardly support this explanation (Clark, 1997; Fernández Puente & Sánchez-Sánchez, 2021; Sloane & Williams, 2000).

[2] A recent study on migrant workers in Italy provided evidence that workers who are marginalized in the labor market have lower expectations and are then more satisfied than core workers, net of their job characteristics (Piccitto & Avola, 2023).

over genders, this gender gap should fade away (Kaiser, 2007a, 2007b). Another possible explanation of the paradox is that women attach different meanings to their work experience, giving more value to dimensions such as flexibility, work-life balance and social relations in the workplace, despite having, on average, lower wages and less desirable working conditions (Bender et al., 2005).

The gender difference in work-related values might be particularly strong in those socio-economic contexts where women experience higher gender inequalities (Alesina et al., 2013; Hiller & Baudin, 2016), as in such contexts women are likely to be socialised to value higher those work facets that are more consistent with the role society assigned them (Perugini & Vladisavljevic, 2019). We may then expect Italian men and women to be oriented by different values for what work is concerned. Indeed, the gender gap in labor market participation is still remarkable in Italy, despite a downward trend started in the 70's, and women are still under-represented in the *good* jobs (Piccitto, 2018).

We would then argue that any analyses aiming at exploring the job satisfaction gap by gender using composite indices of job satisfaction should account for the fact that different dimensions of satisfaction may have different meanings among men and women, and that, as a consequence, an invariance check is needed to determine to what extent members of different populations ascribe the same meanings to the scale items (Milfont & Fischer, 2010).

In light of all this, this paper has three main analytical goals: (a) to provide an updated measurement model of job satisfaction; (b) to assess, in a highly gender-unequal context like Italy, whether this model holds true, regardless of the worker's gender; (c) to explore to what extent the determinants of job satisfaction vary by the worker's gender.

3 Method and Data

In order to pursue our first analytical goal, we initially computed descriptive statistics (mean, standard deviation and range of variation) for each job satisfaction item. We calculated the skewness and kurtosis coefficients as well, to check for the univariate normality of our data. Then, relying on a structural equation modeling (SEM) approach, we estimated a set of measurement models of job satisfaction. SEM techniques are particularly suited for our research questions, since they allow to explicitly take into account the measurement error of the indicators used in the model (Bollen, 1989), in order to keep under control the social desirability effect that often affects job satisfaction responses (Krumpal, 2013). To provide an answer to our first analytical goal, we estimated a number of models. Model 1 was a basic one-factor model, with all the job satisfaction items loading on a unique dimension. Model 2 was a correlated (oblique) two-factors model, distinguishing intrinsic and extrinsic job satisfaction, as it is common in the literature. Model 3 distinguished a third factor, related to the timing dimension of job satisfaction, while in Model 4 the work-life balance dimension of job satisfaction was included. Finally, Model 5 was a four-factors model which included a further dimension, related to socio-contextual job satisfaction, and in Model 6 the correlations among the four dimensions were constrained to be equal.

Given that the job satisfaction items (described below) are not cardinal but ordinal, we treated them as imperfect observations on a continuous latent variable. Hence, we used the asymptotic variance–covariance matrices as inputs for our analysis (Browne, 1982, 1984). The adjustment of the different tested models was judged by means of several fit indices,

both absolute and relative, as recommended in the literature (Hu & Bentler, 1999). The selected fit indices were the model Chi-square (χ^2), Root Mean Square Error of Approximation (RMSEA), the Standardized Root Mean Square Residual (SRMR), the Goodness of Fit Index (GFI), the Comparative Fit Index (CFI), the Normed Fit Index (NFI) and the Bollen's Incremental Fit Index (IFI). We included also the Akaike Information Criterion (AIC) and the Bayesian Information Criterion (BIC) values, as additional measures to compare the fit of the different tested models. As usual, a better model fit was signalled by lower values of χ^2, RMSEA, SRMR, AIC and BIC, and higher values of CFI, NFI and IFI. Without going more in-depth in the discussion of each index (for details see Kline, 2015), we report the cut-off generally accepted for a reasonable fit, namely values lower than .08 for RMSEA and 1.0 for SRMR and higher than .90 for GFI, NFI and CFI (Bentler, 1990; Bollen, 1989; Browne & Cudek, 1993).

As for the second goal of the analysis, in order to determine whether our estimated model of job satisfaction was equivalent across gender, we tested for metric invariance by a multi-group specification of the measurement structure. In line with the recommended procedure (Byrne, 2008), we proceeded through a set of hierarchical steps. First, on the basis of theoretical considerations and model fit, we determined our preferred model of job satisfaction for all individuals in our sample. Second, we estimated this model separately for men and women, to evaluate its fit. Third, a configural model was tested simultaneously for men and women, to establish configural invariance. Finally, we specified an equality constraint for factor loadings across the two groups. Even though with SEM it is possible, in line of principle, to add other constraints to factor variances, covariances and mean intercepts, these parameters are generally of less interest (Byrne, 2008; Kline, 2015). The differences in model fit were evaluated using the likelihood-ratio (LR) test, known also as the Chi-square difference test (Bollen, 1989). This test is a null-hypothesis significance test, comparing the constrained model with the less constrained one. If the Chi-square value difference between the two is not statistically significant, this means that the null-hypothesis of no difference between the two models can't be rejected. In other words, it suggests measurement invariance, namely, that the strength of the associations between items and their underlying constructs do not change over groups (Cheung & Rensvold, 2002). As an additional check of measurement invariance, we also referred to the CFI difference (ΔCFI), where a value of ΔCFI smaller than 0.01 suggests that the null hypothesis of invariance should not be rejected (Cheung & Rensvold, 2002).

Finally, to fulfil our last goal, we evaluated the association of some covariates of interest with our four dimensions of job satisfaction. In this way, we inquired to what extent these characteristics affect the different dimensions of job satisfaction separately for men and women. These covariates were selected as important determinants of job satisfaction, and they included both individual characteristics and job features. Among the former, we selected: (a) having tertiary education (0 "No", 1 "Yes"); (b) living in South Italy (0 "No", 1 "Yes"); (c) having at least one child aged not more than 13 years old (0 "No", 1 "Yes"); (d) being married (0 "No", 1 "Yes"). As for job features, we chose: (e) working in the public sector (0 "No", 1 "Yes"); (f) occupational prestige, measured by the Treiman's (1976) Standard International Occupational Prestige Scale; (g) having an open-ended contract (0 "No", 1 "Yes"); (h) working part-time (0 "No", 1 "Yes"). Descriptive statistics of these variables can be found in appendix (see Table 6).

We used the 2003 and 2009 waves of the survey on Family and Social Subjects (FSS from now on) conducted by the Italian National Statistical Office (ISTAT). This survey, part of an integrated system of social surveys (the Multipurpose Survey on Households), has been fielded every five years since 1998, and represents the most encompassing

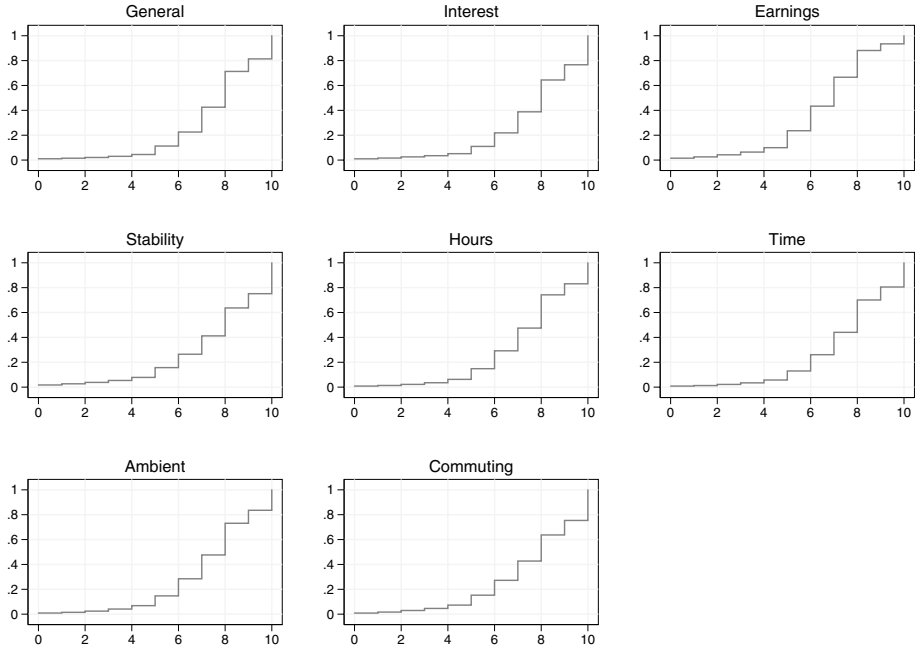

Fig. 1 Cumulative distribution function of job satisfaction items

national statistical source on socio-demographic characteristics and key socio-economic behaviours of the population. The data also included a set of questions on self-reported job satisfaction, asking respondents about their satisfaction with 8 different dimensions of work (questions listed in Table 7 in the appendix). Answers ranged from 0 (at all satisfied) to 10 (extremely satisfied). These indicators have been proved as being a reliable measure of job satisfaction which is not affected by the mode of survey administration (Piccitto et al., 2022). Figure 1 reports the distribution of the respondents on these items.

We focused on all employed individuals aged between 16 and 64. After a list-wise deletion of cases with missing values in the variables included in the model, we ended up with an analytical sample of 22,119 cases.

4 Empirical Results

In Table 1 the descriptive statistics (range of variation, mean and standard deviation) and univariate normality measures (skewness and kurtosis) for all our items of job satisfaction are shown.

Mean values (SD) range between 6.60 (1.95) for satisfaction with earnings and 7.33 (1.98) for interest. Univariate normality measures vary between − 1.174 and − .831 for skewness and .972 and 2.387 for kurtosis, showing that our data do not violate the assumption of univariate normality (Byrne, 2010; Cohen et al., 2003).

In order to get a first glance at the inter-items associations, we calculated the polychoric correlation matrix, accounting for the ordinal nature of our job satisfaction variables. The matrix, shown in Table 2, exhibits moderate to large correlations, ranging from .28

Table 1 Descriptive statistics and univariate normality measures for job satisfaction items

Item	Range	M	SD	Skewness	Kurtosis
General	0–10	7.59	1.88	− 1.105	2.387
Interest	0–10	7.73	1.98	− 1.174	2.104
Earnings	0–10	6.60	1.95	− .831	1.423
Stability	0–10	7.56	2.23	− 1.131	1.424
Hours	0–10	7.37	1.94	− .845	1.298
Time	0–10	7.53	1.94	− .935	1.467
Environment	0–10	7.37	1.97	− .908	1.359
Commuting	0–10	7.58	2.13	− .958	.972

Table 2 Polychoric correlation matrix among job satisfaction items

Item	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
(1) General	1.0							
(2) Interest	.67	1.0						
(3) Earnings	.52	.39	1.0					
(4) Stability	.43	.39	.40	1.0				
(5) Hours	.48	.40	.41	.49	1.0			
(6) Time	.45	.41	.34	.41	.67	1.0		
(7) Environment	.54	.47	.40	.39	.44	.50	1.0	
(8) Commuting	.29	.28	.23	.32	.35	.38	.38	1.0

Table 3 Summary of fit indices for measurement models

	χ^2	*df*	RMSEA	SRMR	GFI	CFI	NFI	AIC	BIC
Model 1	2766.188	20	.079	.079	.861	.621	.620	2798.188	2926.255
Model 2	1937.135	19	.068	.057	.902	.736	.734	1971.135	2107.206
Model 3	984.018	17	.051	.034	.950	.867	.865	1022.018	1174.097
Model 4	1149.948	17	.055	.035	.942	.844	.842	1187.948	1340.028
Model 5	854.747	14	.052	.032	.957	.884	.883	898.747	1074.839
Model 6	1222.026	18	.055	.039	.938	.834	.832	1258.026	1402.102

All values of χ^2 are significant at $p < .001$

between job interest and satisfaction with commuting to .67 between general job satisfaction and job interest, confirming that different domains of satisfaction are strongly interrelated (van Praag et al., 2003). Hence, we estimated our models with the Asymptotically Distribution-Free (ADF from now on) method of estimation (Browne, 1982, 1984). Results of the different models we estimated in order to examine the factorial structure of job satisfaction are presented in Table 3.

As expected, Model 1 exhibits a very poor fit. This is in fact a simple one-factor model, and it does not adequately fit the data: we take this as evidence that the 8 items of job satisfaction that we consider do not refer to a single concept. In Model 2 we isolated a second latent factor associated with the two items that might refer to the intrinsic dimension of job satisfaction, namely interest and general satisfaction with the job (see the items in Table 7 and the correlation matrix in Table 2). This specification

of our model improved the fit substantially (ΔRMSEA = − .011; ΔSRMR = − .022; ΔGFI = .041; ΔCFI = .114), confirming the relevance of a specific dimension describing the worker's general evaluation of his or her job, the dimension typically defined by the literature as the intrinsic dimension of job satisfaction. In Model 3 we added a third latent factor, pointing to the time-related dimension of job satisfaction, indicated here by the items concerning satisfaction with working hours and with the timing of the job (daily, nightly, with shifts, etc.). Also with this model the fit improved substantially (ΔRMSEA = − .017; ΔSRMR = − .023; ΔGFI = .048; ΔCFI = .131). Indeed, this finding is in line with the literature on job quality, according to which the time-related features of a job exert a critical influence of the well-being on workers (Smith et al., 2008). In Model 4 we related to this time-related dimension also the item of satisfaction with commuting. The idea was to extend the time-related dimension to include satisfaction with the work-life balance of a job, of which commuting appears to be a key component (Greenhaus & Beutell, 1985). However, the poorer fit (see Table 3) and the low factor loading (.502) of satisfaction with commuting on this dimension do not corroborate our hypothesis, suggesting instead that this item may refer to a different dimension of job satisfaction, related to the social context in which the job is embedded.

We then estimated a four-items model (Model 5), in which this socio-contextual dimension was indicated by satisfaction related to commuting and to the job environment. This dimension was kept separate from the usual extrinsic dimension, as the latter concerns more the economic rewards related to the job, which in our case include satisfaction with the earnings and with the stability associated with the job. We then distinguished a social-contextual dimension from one related to rewards. This model exhibited a very good fit, according to the standard practice (Hu & Bentler, 1999; Jöreskog & Sörbom, 1993). In the final model, model 6, we constrained the covariances among the four dimensions of job satisfaction to be equal, in order to have a more parsimonious estimation and, substantively, to test whether the four dimensions might be seen as equivalent in their contribution to the overall degree of job satisfaction. However, this modification notably worsened the model fit. Then, Model 5 emerges as the best-fitting among those we tested (see Table 3), distinguishing four dimensions of job satisfaction: intrinsic, rewards, timing and socio-contextual. As shown in Table 4, the standardized factor loadings in this model are quite high, ranging from .525 (satisfaction with commuting) to .903 (general job satisfaction). The correlations among dimensions are also remarkably strong, going from .651 (between timing and intrinsic job satisfaction) to .862 (between socio-contextual and rewards), justifying the reference to job satisfaction as a single concept, albeit with different dimensions. All estimates are significant at $p < .001$.

Having established a satisfying measurement model of job satisfaction, we moved to the second goal of our analysis, namely to provide an empirical answer to the question concerning possible gender differences in job satisfaction (Crosby, 1982).

In order to test the invariance by gender of our model of job satisfaction, we used Model 5, our preferred model, as a baseline model, and we ran it separately for men and women as Model 7 (see Table 5). Results showed a very good fit to the data for both groups. Next, baseline models were simultaneously performed to test configural invariance, which represents the least restrictive and first step of the hierarchical procedure we follow (Horn & McArdle, 1992). As expected, the multi-group analysis improved the model fit. Hence, we proceed on testing the equivalence of factor loading among men and women. The value differences both in χ^2 ($\Delta\chi^2$) and in CFI (ΔCFI) supported the measurement invariance: indeed, the non-significant value of $\Delta\chi^2$ and the ΔCFI lower than .01 are taken as evidence

Table 4 ADF standardized factor loadings and correlations among dimensions for model 5

Items	Dimensions			
	Intrinsic	Rewards	Timing	Socio-contextual
General	.903	–	–	–
Interest	.761	–	–	–
Earnings	–	.628	–	–
Stability	–	.662	–	–
Hours	–	–	.854	–
Time	–	–	.827	–
Environment	–	–	–	.760
Commuting	–	–	–	.525
Intrinsic	1	–	–	–
Rewards	.826	1	–	–
Timing	.651	.784	1	–
Socio-contextual	.779	.862	.782	1

All estimates are significant at $p < .001$

Table 5 Test of measurement invariance across gender

		χ^2	*df*	$\Delta\chi^2$	Δdf	CFI	ΔCFI	RMSEA	SRMR
Model 7	Single group								
	Men (n = 12,345)	489.287	14	–	–	.888	–	.052	.032
	Women (n = 9774)	383.224	14	–	–	.878	–	.052	.031
Model 8	Measurement invariance								
	Baseline model	872.511	28	–	–	.884	–	.037	.032
	Equal factor loadings	876.774	32	4.26[i]	4	.884	.000	.035	.033

All values of χ^2 are significant at $p < .001$

[i] $p = .372$

of equivalence (Vasconcelos-Raposo et al., 2012). ADF factor loadings and correlations among factors for the multi-group analysis are shown in the appendix (see Table 8). As shown in Tiable 8, all the measurement parameters are exactly the same across genders, a piece of evidence signalling a situation of "strict" measurement invariance, a condition usually very hard to meet (Van De Schoot et al., 2015). This ensures that the association between the items and the dimensions of job satisfaction holds regardless the group to which the respondent belongs, and allows to make valid comparisons between men and women.

Finally, we moved to the third goal of our empirical endeavour, focused on the correlates of job satisfaction, as estimated by a model regressing job satisfaction, as defined by our preferred model, on a range of job and individual characteristics. Figures 2 and 3 show the regression weights for job (Fig. 2) and individual (Fig. 3) characteristics, reporting the extent to which the score of each dimension of job satisfaction changes in the presence of these characteristics. Confidence intervals are calculated with the percentile method (Jung et al., 2019). For the standardized occupational prestige, the value reflects the change in each dimension of job satisfaction when the job prestige increases by 1 standard deviation.

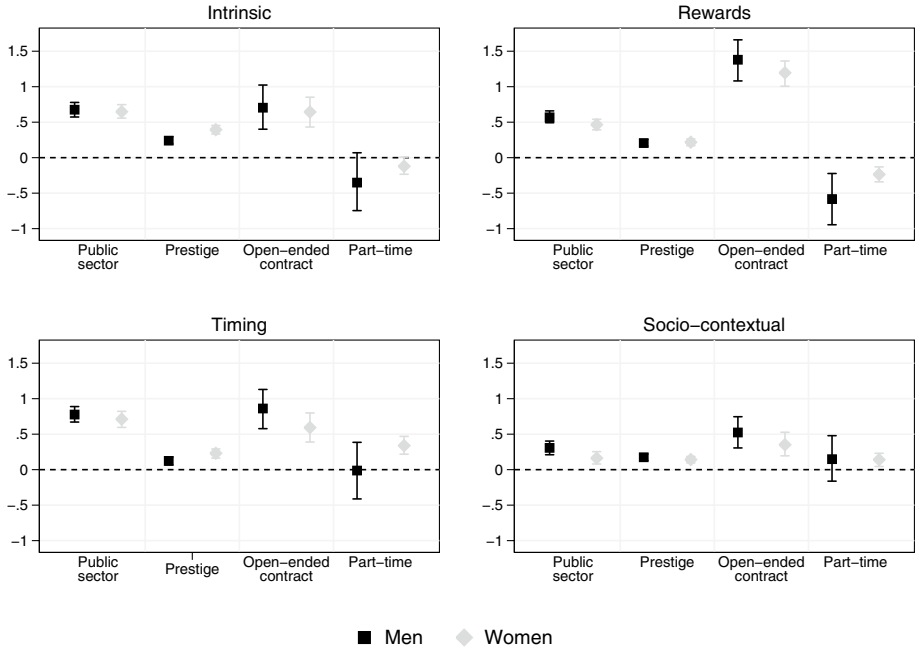

Fig. 2 Regression weights of job characteristics on job satisfaction dimensions

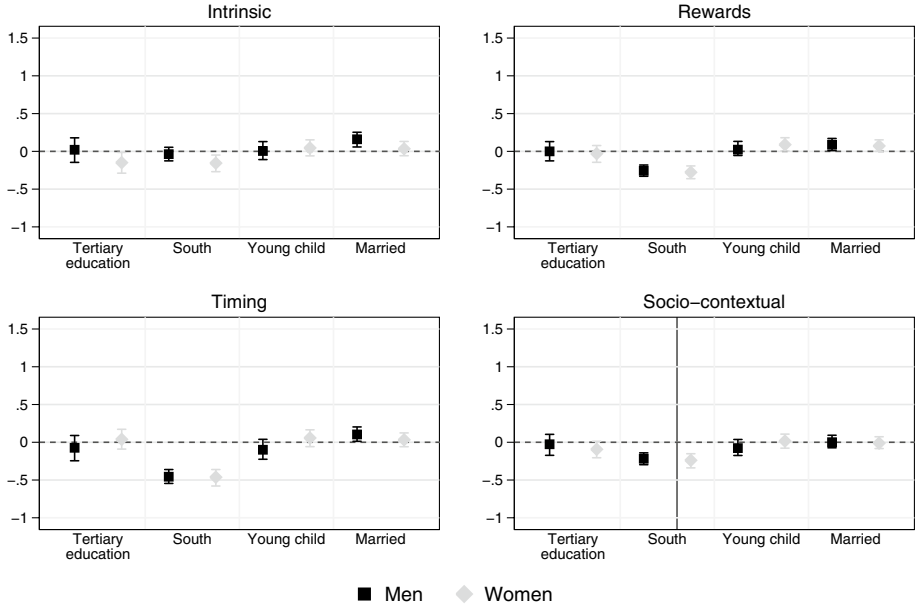

Fig. 3 Regression weights of individual characteristics on job satisfaction dimensions

At first glance, it appears that the job characteristics are more strongly associated than the individual features with our dimensions of job satisfaction. In particular, being employed with an open-ended contract is strongly associated with satisfaction with rewards, increasing it by 1.38 for men and 1.20 for women. This association was expected, since an open-ended contract guarantees higher job stability, increasing in particular this facet of satisfaction. But a positive association with this characteristic is in fact found for all our dimensions of satisfaction, for men and women alike. This suggests that the stability of a job makes a notable difference, in terms of workers' satisfaction, concerning not only the rewards associated to it, but also the quality of the job per se (the intrinsic dimension) as well as a wide range of other desirable characteristics of the job itself (De Cuyper et al., 2008). It is then hardly correct to see job stability as only related to the extrinsic dimension of job satisfaction: indeed, it represents as well a key component of the worker's perception of the job as such. Interestingly, this finding holds true both for men and for women: job stability is then particularly appreciated across genders, as a source of identity and self-recognition (Piccitto, 2022; Steiber, 2013).

Another job characteristic exhibiting a positive association with all dimensions of job satisfaction is working in the public sector, which according to our model increases in particular the satisfaction with timing, by .78 for men and .71 for women. Working hours in the public sector are relatively limited in Italy, and public employees enjoy substantially higher guarantees than their counterparts working in private businesses, concerning unemployment, parenthood and sickness. More in general, these results confirm previous research findings of a general job satisfaction premium existing for public sector workers (Sánchez-Sánchez & Fernández Puente, 2021), especially with respect to non-pecuniary dimensions of satisfaction (Ghinetti, 2007) and to the time-related aspects of the job (D'Addio et al., 2007).

On the other side, the positive association of prestige with satisfaction is weaker, and even at its highest magnitude, concerning intrinsic job satisfaction, it reaches a value of only .24 for men and .39 for women. This result, in line with previous findings (Kaplan et al., 2020), suggests that the average ranking of occupations by their desirability provided by population samples (which is the way the prestige of occupations is calculated) is only weakly related to the actual satisfaction with the same jobs subjectively perceived by workers. However, this result might be to some extent an artefact of the way occupational prestige scales are constructed. Indeed, they are based on the average desirability of an occupation and do hardly take into account the heterogeneity of the jobs classified within the occupation.

The results for part-time jobs are interesting, in particular from a gender perspective. Being employed on a part-time contract is associated with lower intrinsic job satisfaction and satisfaction with rewards, both for men and women. However, the pattern of association differs across genders concerning satisfaction with the timing and with the social context of the job. Part-time increases women's satisfaction with respect to these two dimensions, particularly the one related to time, with a regression coefficient of .34. Vice versa, for men part-time does not exhibit any statistically significant association with neither of these two dimensions of job satisfaction. We see this result as linked to the different cultural prescriptions at play for men and women in the Italian context, and more generally in all contexts where family care is based on the unpaid work of women (Esping-Andersen, 1999). In these contexts, indeed, employed women are weighted by the burden of the so-called «double presence», as they have to deal both with their paid job and homework (Balbo, 1978; Cantalini, 2020). This is probably why they particularly value the opportunities to improve their work-life balance made possible by a part-time contract (Piccitto, 2018). In fact, a key

driver of the association between working-time regime and job satisfaction is whether part-time is voluntary or involuntary chosen by the worker (Piccitto, 2022).

Individual features, on the contrary, show weak associations with the four dimensions of job satisfaction, but for the case of living in the South of the country, a less developed area from both the economic and the socio-cultural point of view (Ballarino & Schadee, 2005). Living in the South is negatively associated with all the dimensions considered, with the sole exception of the intrinsic dimension for men. The magnitude of the association is relatively strong concerning satisfaction related to time, with a value of − .46 for both male and female workers. This result probably depends on the lower average qualification of jobs in the *Mezzogiorno*, where a huge quota of *bad* and often irregular jobs are found (Avola, 2015). Interestingly, being tertiary educated does not guarantee any premium in terms of job satisfaction: indeed, the association of this variable with any of the four dimensions is never statistically significant. This might depend on greater expectations fostered by a high educational degree: since these expectations might often not be met by the actual quality of the job, education does not improve job satisfaction scores, net of job characteristics (Kaplan et al., 2020; Mottaz, 1984). Additional analyses confirm this interpretation: indeed, once we eliminate from the model the characteristics of the job, the coefficients for tertiary education turn out to be positive and statistically significant for all of our four dimensions.[3] The association between education and job satisfaction is further complicated by the condition of overeducation (García-Mainar & Montuenga-Gómez, 2020; Peiro et al., 2010), whose the analysis is out of the scope of this paper. Finally, the worker's familiar situation, in particular being married and having children, shows almost no association with all dimensions of job satisfaction, consistently with previous studies (Hanson & Sloane, 1992; Hodson, 1989). Only among men, being married emerges as a (slightly) positive antecedent of job satisfaction. Having children does not show any association with any dimension of job satisfaction.

5 Conclusions

This paper had a threefold aim: i. to measure the factor structure and dimensionality of job satisfaction in Italy; ii. to test its invariance across genders; iii. to evaluate to what extent job and individual characteristics are related to the different dimensions of job satisfaction among men and women. The issue of job satisfaction is key to many important outcomes, both at the organizational and the societal level: individuals satisfied with their jobs are more productive and motivated while working, and happier and healthier outside of the workplace. To the best of our knowledge, this is the first attempt to evaluate dimensionality and antecedents of this concept while accounting for the different values and orientations that men and women carry in their work experience.

The literature on the measurement of job satisfaction has been set up by the distinction between intrinsic and extrinsic factors (Herzberg et al., 1959; Weiss et al., 1967), with the first dimension having to do with job content and the second with job rewards. Nevertheless, this distinction has not been univocal in terms of the actual content of each dimension, leading to different conceptualizations of job satisfaction. Later on, different scholars have proposed alternative measurement models at a higher dimensionality (Katz & Van Maanen, 1977; Spector, 1985).

[3] Results are available from the authors on request.

Anyway, these attempts seem to be lacking in two different ways. First of all, they were all developed with respect to the Fordist system of production, based mainly on work in manufacturing plants. Technology and globalization have deeply modified the structure of economies (Oesch & Piccitto, 2019), and the volatility of just-in-time post-Fordist production might have exacerbated the issue of work-related stress, with the working-time dimension of job organization as an important source of job strain (Cox & Griffith, 2010; OECD, 2017). Secondly, adopting an objective approach (Brown et al., 2012), this literature has often neglected how job satisfaction, as an attitude, is closely linked to the worker's subjectivity, in terms of values, orientations and expectations (Kalleberg, 1977; Warr, 2007). It should then by no means be taken for granted that the underlying construct has the same structure and meaning over workers who are heterogeneous in many individual attributes. This conclusion is particularly worrisome when comparing job satisfaction of male and female workers: indeed, it has been largely recognised that work-related orientations and expectations differ over genders, as the way men and women value different job characteristics (Bender et al., 2005; Clark, 1997). This is particularly true in those contexts, like Italy, where the gender-based inequality of opportunities is relatively high (Kaiser, 2007a, 2007b; Piccitto, 2022). Hence, without any formal test of the inter-individual equivalence of the concept, any valid comparison between job satisfaction scores is prevented (Van De Schoot et al., 2015).

Taking into consideration these arguments, we tested six different measurement models. Both a crude single-factor model and the standard two-factors model, distinguishing extrinsic and intrinsic job satisfaction, did not fit adequately the data. A factor structure with three dimensions remarkably improved the fit. In this specification, we distinguished a dimension pointing to satisfaction with the timing of the job. In line with the job quality literature (OECD, 2017), this modification was corroborated by the data. The best-fitting model, however, turned out to be a four-factor one, including an additional dimension referring to the socio-contextual dimension of job satisfaction. Hence, we used it as baseline model to test the measurement invariance across male and female workers.

Regarding the second aim of this work, the multi-group analysis has shown that the four-dimensions factorial structure supported measurement invariance across genders: such equivalence demonstrates that the measurement part of the model is the same across groups. Despite measurement invariance being an essential pre-requisite to meaningfully compare job satisfaction scores among different groups of workers (Byrne, 2008), this test has been systematically over-looked in large-scale studies on the determinants of job satisfaction, being inquired only in psychometric tests (Platania et al., 2021; Watson et al., 2007).

With respect to the third aim of this work, our analysis has shed light on the association between job and individual characteristics and dimensions of job satisfaction for men and women. The patterns across genders appear to be quite similar, with the sole exception of part-time work: this condition, indeed, is associated with higher satisfaction concerning the timing of the job among women only. Female workers, indeed, particularly appreciate the possibility provided by a part-time contract of combining paid work and family chores. In general, job characteristics are more strongly associated with job satisfaction than individual features, with having an open-ended contract showing the largest association. Taken together, our results confirm the usefulness of considering different dimensions of job satisfaction so as to fully understand how different job characteristics are conducive to satisfaction (Brown & McIntosh, 2003).

Appendix

See Tables 6, 7 and 8.

Table 6 Analytical sample: descriptive statistics (%)

	Men	Women
Having tertiary education	11.7	19.6
Living in South Italy	38.2	28.2
Having at least one child aged not more than 13 years old	33.3	32.0
Being married	59.9	56.3
Working in public sector	22.5	35.9
Occupational prestige	38.4 (mean)	41.8 (mean)
Having an open-ended contract	89.5	84.4
Working part-time	5.2	24.7

Table 7 Questions on job satisfaction in the FSS

Question	Job satisfaction item
How satisfied are you with your current job?	General
How do you think your job is interesting?	Interest
How satisfied are you with earnings?	Earnings
How satisfied are you with the stability of your job?	Stability
How satisfied are you with the number of working hours?	Hours
How satisfied are you with the working time (daily, night, shift)?	Time
How satisfied are you with the working conditions and environment?	Environment
How satisfied are you with distance from home and commuting time?	Commuting

Table 8 ADF factor loadings (standard errors) and correlations among dimensions for model 8 (equal factor loadings for men and women)

	Dimensions			
Items	Intrinsic	Rewards	Timing	Socio-contextual
General	1.000	–	–	–
Interest	.908	–	–	–
Earnings	–	1.000	–	–
Stability	–	1.217	–	–
Hours	–	–	1.000	–
Time	–	–	1.024	–
Environment	–	–	–	1.000
Commuting	–	–	–	1.327
Intrinsic	1	–	–	–
Rewards	.840	1	–	–
Timing	.652	.774	1	–
Socio-contextual	.856	.776	.776	1

All estimates are significant at $p < .001$

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