Labour Force Survey (LFS) in the measures of equitable and sustainable well-being (BES): concepts and indicators

Federica Pintaldi, Maria Elena Pontecorvo

ISTAT, Istituto Nazionale di Statistica, Dipartimento per le Statistiche Sociali ed Ambientali; pintaldi@istat.it, mariaelena.pontecorvo@istat.it

Abstract

Labour Force Survey (LFS) in Italy is involved in the project to measure equitable and sustainable well-being (BES) since 2013. This project – born as joint initiative of Cnel and Istat – is part of the international debate on "Gdp and beyond", as recommended by OECD and Stiglitz Commission. The central idea is that economic parameters alone are inadequate to evaluate the progress of societies and should be complemented by social and environmental information and by measures of inequality and sustainability.

In this contest, *Work and life balance* is identified as one of the 12 dimensions for the measurement of well-being in Italy. LFS is the main source for the analysis of this dimension: 10 of the 14 indicators come from LFS.

In this paper we will discuss about some indicators created specifically within the project and calculated from variables that already exist (non-participation rate and share of part-time workers on total employment) and new indicators constructed by new variables (job satisfaction and insecurity indicators).

In general, we will show the appropriateness of indicators chosen to grasp the phenomena of interest, even by comparison with alternative indicators. Comparisons between European countries will be presented where possible, while in case of indicators available only for Italy, regional differences will be shown.

Finally, we will summarize the relationship among indicators using principal component analysis. In this way it is possible to understand how the multidimensionality of the phenomenon can be explained with few dimensions, in relation to different links among the variables.

This analysis could be useful also to provide some suggestions both to create new indicators by existent variables, and to add new variables in LFS in view of the next EU-LFS Regulation.

1. Introduction

Labour Force Survey (LFS) in Italy is involved in the project to measure Equitable and Sustainable Well-being (in Italian, "BES") since 2013. This project – born as joint initiative of Cnel and Istat – is part of the international debate on "Gdp and beyond", as recommended by OECD and Stiglitz Commission. The central idea is that economic parameters alone are inadequate to evaluate the progress of societies and should be complemented by social and environmental information and by measures of inequality and sustainability. The Commission established the objective of building a set of social well-being indicators to be joined to GDP. The concept of well-being is seen as a multidimensional concept that cannot be summarized in a single index, but is defined by multiple dimensions (including equitable distribution of wealth, quality of the environment, access to education and health services, leisure, security, etc.). In Italian experience, the team of experts, researchers and social partners worked in continuous interchange with the theoretical framework of reference. First of all, some general points were identified to define dimensions and indicators of well-being: focus on individual well-being rather than country level; focus on the indicators which are important for Italy, keeping in mind the

specificities of the country with regional disaggregation and international comparisons wherever possible; subjective indicators in every dimensions but also as a single dimension. In addition, two aspects led the choice of indicators: a balance between the relevance and availability of indicators (considering the information already available, the possibility of building new indicators from existing data and by new variables); the balance between exhaustiveness and parsimony of the number of indicators. According to this criteria, 12 dimensions were identified (*Health*, *Education and training*, *Work and life balance*, *Economic well-being*, *Social relationship*, *Politics and Institutions*, *Safety*, *Subjective well-being*, *Landscape and cultural heritage*, *Environment*, *Research and innovation*, *Quality of services*) for a total of about 130 indicators.

Over the last few years, attention to the BES indicators has grown from different perspectives. At national level, BES has become an integral part of the decision-making process of economic and financial planning, alongside GDP, both in identifying budget-related objectives and in evaluating the results of the actions put in place. A recent reform of the law on accounting and public finance (L.163/2016) established that the Economic and Finance Document (DEF) must give an accounting of the main factors of well-being in the past three years and, for the same variables, must predict future trends and the impact of policies. Italy is one of the first advanced countries to give itself such a task (DEF, 2017).

Moreover, also at local level the link between budgeting and programming has become closer, by identifying strategic objectives and evaluating the socio-economic conditions of the territory. About this, some regions have begun to introduce BES indicators into regional programming.

Since 2016, Istat is also involved for the identification of a first set of indicators for monitoring the Sustainable Development Goals (SDGs) included in the 2030 Agenda adopted by the UN-Assembly General. SDGs indicators are partially overlapped with BES indicators: 19 indicators of BES are also used in SDGs. The similarities between the two sets of indicators are multiple: in both cases the set of indicators has been chosen in the light of a long-established literature, not tied to a rigid theoretical, but rather attributable to the contexts that generated them. The common scope is to offer a framework of quantitative information supplemented and enriched for measuring the welfare and sustainable development (Istat, 2016).

2. LFS indicators in well-being dimensions

LFS plays an important role in the equitable and sustainable well-being analysis. In fact, among about 40 sources used in BES report (internal and external to Istat) LFS is the second by the number of indicators provided (16 out of 130, 12.3%). Of course, most indicators are used in the *Work and Life Balance* dimension but other indicators are used in *Education and Training* and in *Research and innovation* dimensions (Tab. 1).

In particular, regarding the *Education and Training* dimension there are the following indicators: share of people with tertiary education, share of people with at least upper secondary education, share of early leavers from education and training, share of young not in education, employment, or training (Neet) and share of people who participate in long-life learning. Moreover, regarding *Research and innovation* dimension the indicator from LFS is the share of knowledge workers on employment is provided.

Finally, in the dimension *Work and life balance* there are 14 indicators, of which 10 from LFS and 4 from others sources (Time use, National accounts, and Inail).

Table 1. Dimensions and	l number of	f indicators	of BES
-------------------------	-------------	--------------	--------

Dimensions	No. of indicators	Indicators by LFS
1.Health	14	-
2. Education and training	11	5
3.Work and life balance	14	10
4.Economic well-being	10	-
5.Social relationship	9	-
6.Politics and Institutions	12	-
7.Safety	11	-
8.Subjective well-being	4	-
9.Landscape and cultural heritage	12	-
10.Enviroment	15	-
11.Research and innovation	7	1
12.Quality of services	11	-
Total	130	16

In particular, the dimension *Work and life balance* considers a "good occupation" as a job well paid, reasonably secure, corresponding to competences and balanced between working time and social and family life. After all, the presence of a "good occupation" has a positive impact on the level of well-being. The sub-dimensions and the indicators were been chosen to represent the contribution that the employment status may give to well-being in the Italian society. In order to select indicators, it was considered the contribution of Unece Task Force on the Measurement of Quality of Employment (Unece, 2010 and 2015). Moving from the "quantitative" perspective of labor participation to "quality" of work, considering also the subjective perspective of job satisfaction, the dimension is articulated in four sub-dimensions:

1. <u>Participation and social inclusion</u>. It defines the quantitative aspect of work participation and allows to highlight situations at higher risk of poverty and social exclusion, underlining the socio-economic effects of a low-intensity occupation.

2. <u>Quality of work</u>. The second sub-dimension focuses attention on employment characteristics in terms of regulatory and stability of job, salary, competences and work safety.

3. <u>Work and life balance</u>. A "good occupation" in a country is also measured on the possibility that women with children are able to reconcile work and family life.

4. <u>Job satisfaction and insecurity</u>. The last sub-dimension intends to capture the subjective aspects of wellbeing at work, investigating perceived insecurity in the loss of employment and job satisfaction. Several studies adopted job satisfaction as a reasonable proxy for estimating the overall quality of work perceived by workers. The number of indicators is not the same in the sub-dimensions; it ranges from a minimum of two indicators (sub-dimensions 1 and 4) to a maximum of seven in sub-dimension about quality of work (Tab. 2).

Dimension	Indicator
1. Participation	Employment rate of people 20-64 years old
and social inclusion	Non-participation rate of people 15-74 years old
2. Quality of work	Share of involuntary part time on total employment
	Transition rate (12 months) from non-standard to standard employment
	Share of employed persons with temporary jobs for at least 5 years
	Share of employees with below 2/3 of median hourly earnings (low pay)
	Share of over-qualified employed persons (overeducation)
	Incidence rate of fatal occupational injuries or injuries leading to permanent disability (Source: Inail)
	• Share of employed persons not in regular occupation (Source: National accounts)
	Ratio of employment rate for women 25-49 years with children under compulsory school age to the employment rate of women 25-49 years without children
3. Work and life balance	• Share of population aged 15-64 years that work over 60 hours per week (including paid work and household work) (Source: <i>Time use</i>)
	• Share of household work time carried out by women in a couple on the total of the household work time (Source: <i>Time use</i>)
4. Job satisfaction	Job satisfaction (mean of score from 0 to 10 of eight aspects of work)
and insecurity	Share of employed persons who perceived insecurity of employment

Table 2. Sub-dimensions and indicators about the dimension Work and life balance

2. Focus on some indicators

This section focuses on some indicators that required specific reflections. In some cases this reflection has led to the choice of indicators other than those traditionally used calculated from existing variables (non-participation rate and involuntary part time), in other cases it has led to insert new variables in the questionnaire (subjective indicators of satisfaction and insecurity of employment) to build new indicators.

- 'Non-participation rate'

The non-participation rate intends to reflect the complexity of the Italian labour market by capturing also that part of the inactive population that is available to work. Indeed, the indicator extends the unemployment rate by including a numerator and denominator persons outside the labour force with expressed available for work. A part of potential labour force¹ is considered: inactive persons who are available to work but don't seek it in the past 4 weeks. This group takes on particular significance in Italy, where the phenomenon of "discouragement" is wide, as well as inactive job search behaviours. Although the non-participation rate is not an European indicator, it can be calculated from individual aggregates. A comparison among different countries points out that the use of the unemployment rate is sometimes misleading because the phenomenon occurs in very different ways across in the countries for economic and institutional reasons (Reyneri, Pintaldi 2013). The international definition of unemployment based on the concept of "active research" is more effective in

¹Potential labour force, defined according to the standardized European methodology, are inactive persons marginal attachment to the labour force. Potential additional labour force consists of two subgroups: persons who are available to work but don't seek it, and persons who seek work but are not immediately available to start working (link Eurostat). In non-partecipation rate we consider only persons available for work but not seeking it.

countries with a broad network of employment services and unemployed benefits, where this type of research is more frequent, and less effective in contexts with limited labour market, job opportunities and few channels to seek work. Indeed in Italy, the welfare system is limited, the job search is mostly based on informal channels and discouragement and other forms of marginal attachment to the labour force are very strong. Because of its relevance the rate of non-participation is among the indicators chosen both in the Economic and Finance Document as well as for monitoring the Sustainable Development Goals (see par.1)



Figure 1. Unemployment rate and non-participation rate by countries. 2015

By using the non-participation rate, the gap between Italy and EU28 is significantly higher: 13.2 percentage points vs. 2.5 using unemployment rate). In EU28 ranking, Italy is 23rd for unemployment rate and 26th for non-participation rate (Fig. 1).

In Italy the non-participation rate is also more appropriate to highlight territorial, gender and age inequalities (Fig. 2).





Source: Istat, Labour force survey

- 'Involuntary part time'

The percentage of employed persons who work in part-time involuntarily can be an indication of underemployment and a person's weak labour market status.

In the BES report, the percentage of involuntary part-time is calculated on total employment and not on the total of part-time as calculated by Eurostat. The formula used, already presented in the Unece Handbook (2015), wants to take into account the effective size of the phenomenon regardless of the part-time diffusion.





In some case, in fact, the percentage of involuntary part time on the total part-time may be very high in the presence of a relatively low volume of part time workers. For example, in Italy the percentage of involuntary part time on total part-time is much higher for men than for women (75.9%, 59.7% respectively), but, the percentage of employed persons who accepted part-time work in absence of full-time job opportunities is much lower for men (Fig. 3). Despite the share of part-time is similar between Italy and EU28, the percentage of involuntary part-time is more than twice as then EU28. The situation is particularly severe for women, whose gap exceeds ten percentage points.

Considering only the female component, Italy is the country with the highest incidence of involuntary part time compared to all EU28 (Fig. 4). The figure 4 also shows the difference between the two alternative indicators. Similar values of indicator calculated on the total part time in Italy and Bulgaria correspond to very different intensity of the phenomenon. We can say that only in cases where the values of both indicators are lowe part time is really a conciliation opportunity, because many people prefer to work part time (e.g. Netherlands).





'Job satisfaction' and 'Perceived insecurity of employment'

In *Work and life balance* dimension, two indicators refer to the subjective aspect: a) 'Job satisfaction' as a mean of satisfaction, giving a score from 0 to 10 in eight aspects (earnings, working relationships, opportunities of past and future career/business, number of working hours, stability of work, distance home-work, type of work, interesting for their work); b) 'Perceived insecurity of employment' as a percentage of employed people who in the next 6 months believe it is likely to lose their job and it is unlikely to find a similar one on the total of employed people. These two indicators could not be constructed from the data available in recent years and for that reason new variables have been introduced in LFS survey since 2013².

 $^{^{2}}$ At 8th Workshop on Labour Force Survey Methodology the methodological details of the inclusion of new questions in LFS questionnaire and the results of the pilot test have already been discussed. In this section, the data standard used in the

Data shows a quite good level of satisfaction: in 2015 the mean is equal to a score of 7.2. Overall, highest satisfaction of persons concerns interest, type of work, distance home-work and working relationships. The lowest score are related to career and earning (Fig. 5).

Figure 5. Job satisfaction by dimension (a) dimension and working hours (b), dimension and professional status (c), Share of employed persons who perceived insecurity of employment by professional status (d). Italy, 2015



Who is in involuntary part time is more unsatisfied in a lot of aspects while who voluntarily chooses a part-time work is more satisfied with working time and earning also comparing with full time worker. Regarding the position, permanent employees are the most satisfied, especially for stability of work, fixed-term employees and freelancer are slightly more satisfied with working relationship and self-employed are more satisfied with type of work, interest, and distance home-work.

3. Principal component analysis

In order to analyze the relationship among the variables chosen for the dimension *Work and life balance*, we made PCA for data referring to 2015. Our analysis used Italian national data broken down by Nuts 2 areas (Regions). As a matter of facts, Italian regional economies and labour markets present deep differences – in

BES report are presented. (see della Ratta-Rinaldi, Marzilli, Pintaldi, Pontecorvo, Tibaldi, *Measuring job satisfaction in Italian Labour force survey*, Gdansk, 2013).

terms of GDP per capita, sectorial specialization, labour market participation, job opportunities, working conditions, etc. – which go over the main and usually quoted North/South divide. In our exercise the 21 Italian regions are therefore considered as if they were different countries. For each region we collected the variables of the dimension *Work and life balance*, except the variable share of household work time carried out by women in a couple on the total of the household work time because it's not available at regional level.

Preliminary analysis of correlation matrix shows that a lot of variables are highly correlated to each other. More in detail, correlation among employment rate 20-64 years, non-participation rate 15-74 years, share of employees with below 2/3 of median hourly earnings (low pay), share of employed persons not in regular occupation (irregular work), share of persons 15-64 years that work over 60 hours for week, mean of job satisfaction, share of employed persons who feel their work unsecure (job insecurity) exceeds in modulus 0.8.

As for the other variables considering the most high correlation, share of involuntary part time has a correlation around 0.7 positive with two variables (non-participation rate and irregular work) and negative with employment rate and job satisfaction; share of employed persons with temporary jobs for at least 5 years (temporary job) has a positive correlation around 0.65 with low pay and irregular work; transition rate (12 months) from non-standard to standard employment has a negative correlation (-0.6) with job insecurity and positive (0.5) with employment rate; ratio of employment rate for women 25-49 years with/without children 0-5 years (ratio of employment rate for women) has a positive correlation (0.5) with employment rate and negative correlation around -0.5 with non-participation rate, temporary job and irregular work.

The last two variables show low correlations with the others: share of over-qualified employed persons (overeducation) has only a correlation around 0.4 positive with ratio of employment rate for women with/without children and negative with job satisfaction; rate of fatal occupational injuries leading to permanent disability has all correlations lesser then 0.4.

PCA allows to simplify the description of relations among all variables with few components. A first strong result is the clear indication of a single main dimension underlying our variables. As a matter of facts, after a varimax rotation, the first principal component explains over 59% of overall variability. The second component explains 14% of variability. As a consequence, the first factorial plane accounts for a large part of observed variation and can thus be used to observe relations among variables (Fig. 6).

Table 3 – Total	Variance Ex	plained
-----------------	-------------	---------

Component	Initial Eigenvalues		Loadings			
		Varianc	Cumulati		Varianc	Cumulati
	Total	е	ve %	Total	е	ve %
1	7.8	59.8	59.8	7.7	59.4	59.4
2	1.8	13.9	73.7	1.9	14.3	73.7
3	1.2	9.1	82.8			
4	.8	6.5	89.3			
5	.5	3.7	93.0			
6	.4	3.0	96.0			
7	.2	1.7	97.6			
8	.1	1.0	98.6			
9	.1	.6	99.2			
10	.1	.4	99.6			
11	.0	.2	99.9			
12	.0	.1	100.0			
13	.0	.0	100.0			





On the positive semi-axis of the first component lay projections of irregular occupation, low pay, job insecurity, non-participation rate, involuntary part time and temporary job at least 5 years (Fig. 7). At the opposite, in negative semi-axis, projections of employment rate, job satisfaction, ratio of employment rate women with/without children and transition to standard employment. Therefore, the first component represents the "Lack of job opportunities" highlighting the strong link between quantity and quality of work: low participation in the labour market is accompanied by a worsening quality of work. Indeed, the second component represent the dimension of overeducation (correlation is 0.88) link with more participation to labour market of women with children (+0.69) and lower with job satisfaction (-0.49), while the others variables are not relevant to define the component.





Projecting Italian regions on the factorial plane provides immediate insight of territorial differences on the opportunity in the labour of market in Italy, showing once again a North/Centre/South divide. As a matter of facts, Northern regions clearly stand on the left side of the plane; also central ones are on the left but nearer to the middle (exception Lazio in the right), whereas all regions of South lay on the left side (Fig. 8).

In general, while the distance between North and Center is contained, the distance of the South from other parts of the country is much stronger in terms of opportunity of employment.

Specifically, in the regions with higher levels of employment, the phenomenon of irregular employment, low pay, precarious long-term and involuntary part-time are less present. In addition, the best working conditions are reflected in greater satisfaction for the work done and a lesser insecurity of losing the job and failing to find another.



Figure 8. Plot of Italian regions' component scores. Italy, 2015

References

- Della Ratta-Rinaldi, Marzilli, Pintaldi, Pontecorvo, Tibaldi, 2013, *Measuring job satisfaction in Italian Labour force survey*, 8th Workshop on Labour Force Survey Methodology, Gdansk.
- Hall, J., Giovannini, E., Morrone A., and Ranuzzi G. (2010), A Framework to Measure the Progress of Societies, OECD Statistics Working Papers, 2010/5, OECD Publishing <u>http://www.oecd-</u> <u>ilibrary.org/economics/aframework-to-measure-the-progress-of-societies_5km4k7mnrkzw-en</u>
- Istat, 2016, Indicators for un sustainable development goals (SDGs) http://www.istat.it/en/files/2016/12/SDGsdoc_EN.pdf
- Reyneri E., Pintaldi F., 2013, Dieci domande su un mercato del lavoro in crisi, Il Mulino.
- Sabbadini L. L., *The development of official statistics in Italy with a life quality approach*, 9° Isqols Conference, 2009.
- Stiglitz J. E., 2003, La globalizzazione e i suoi oppositori, Torino, Enauidi.
- Stiglitz J. E., Sen A., Fitoussi J. P., 2009, Report by the Commission on the Measurement of Economic Performance and Social Progress.
- Stiglitz J. E., Sen A., Fitoussi J. P., 2010, *La misura sbagliata delle nostre vite. Perché il pil non basta più per valutare benessere e progresso sociale*, Parma, Etas.
- Unece, 2010, *Measuring quality of employment. Country pilot report*, Geneva, United Nations.
- Unece, 2015, Handbook on Measuring Quality of Employment. A Statistical framework, Geneva, UN
- Ministry of Economy and Finance, Economic and Finance Document 2017 <u>http://www.mef.gov.it/en/focus/article_0031.html</u>