

# **The effects of economic inequality on subjective well-being: Comparison of objective and subjective indicators of inequality**

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XVII Congresso Nazionale AIP

Sezione Sociale



Associazione  
Italiana  
di Psicologia



# Economic inequality

**Economic inequality refers to the wealth gap between people at the top and at the bottom of a society.**

**In Italy, the income of the wealthiest quintile of the population is more than six times higher than the income of the poorest quintile (Istat, 2019).**



# Why is economic inequality a problem?

**Most of the important health and social problems of the rich world are more common in more unequal societies**

(Wilkinson & Pickett, 2009; 2018)



Community life and social relations (e.g., trust)



Physical and mental health and life expectancy



Educational performance



Social mobility



Subjective well-being

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**Subjective well-being**

- **Affective**  
How individuals feel as they go about their daily lives
- **Cognitive**  
How individuals evaluate their life as a whole in relation to a self-imposed ideal

# Economic inequality and subjective well-being

**Income inequality is one of many possible determinants of SWB: income inequality impacts SWB and decreasing income inequality will boost SWB**

(Wilkinson & Pickett, 2009; Buttrick, et al., 2017)

**The association between economic inequality, mostly measured by objective indicators such as the Gini Index, and SWB is weak and inconsistent between findings**

(Wilkinson & Pickett, 2009)

**This may be due, in part, to an ecological fallacy, which is the assumption that macro-level relationships necessarily pertain to all individuals in the group**

(Lavrakas, 2008)

# Why measuring subjective economic inequality?

**Considering subjective inequality will improve our understanding of the effects of economic inequality in manifold ways.**

- ➊ Objective measures of inequality are limited
- ➋ Correlations observed in aggregate data can differ from those observed at the individual level, resulting in ecological fallacy (Lavrakas, 2008)
- ➌ Subjective inequality exists at the individual level, and it can thus be assessed whether inequality is associated with other psychological constructs
- ➍ People's perceptions of inequality may be affected by personal, social and cultural factors which cannot be assessed with objective measures



# How to measure subjective economic inequality?

## Estimation

How accurately people perceive inequality:

Diagrammatic measures

(Castillo et al., 2012),

Wage gap estimation

(Jasso, 1999)

## Perceived experience

Asking people to express their own experience of inequality in lay terms without endorsing more difficult evaluations



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# Economic inequality and SWB: The role of anger and economic vulnerability

## Anger toward inequality

Any event that is perceived as a threat (inequality) can provoke **negative emotional reactions** (e.g., anger and anxiety) which impact individuals' SWB (Spielberger & Reheiser, 2009)

## Economic vulnerability

Empirical evidence that inequality is associated with a **higher perception** of economic vulnerability (Roth et al., 2017)

Also, economic vulnerability is a **strong predictor** of both affective well-being (Kahneman & Deaton, 2010) and life satisfaction (Dolan et al., 2008)

# The current study



Does the subjective measure of inequality better predict SWB than objective measure?



Is the relationship between perceived inequality and SWB mediated by economic vulnerability and anger toward inequality?



# Sample

We administered a survey to a representative sample of 1446 Italians (51% were women; Mean age = 42.42, SD = 12.87)

The sample is stratified based on gender, age, working status, education level, and regional area of residency

Participants were recruited from an Ipsos panel from January 12th to 18th 2021



# Survey

## Well-Being

**Psychological general well-being index** (Grossi et al., 2006)

M = 3.59, SD = 0.95;  $\alpha$  = 0.78

**Satisfaction with Life Scale** (SWLS; Diener et al., 1985)

M = 2.95, SD = 0.86;  $\alpha$  = 0.88

## Objective inequality

**Gini index** (Istat, 2019) - Measured at regional level

## Subjective inequality

**Wage gap** (Jasso, 1999; Kuhn, 2020)

M = 0.07, SD = 0.02

**Perceived economic inequality** (ad hoc)

M = 3.95, SD = 0.71;  $\alpha$  = 0.86

## Anger toward inequality

**Ad hoc single item**

M = 3.12, SD = 1.15

## Economic vulnerability

**Economic Vulnerability Scale** (adapted from Mari et al., 2017)

M = 3.08, SD = 0.87;  $\alpha$  = 0.85

## Control variables

**Gender**

**Age**

**Objective SES (income, education, and job qualification)**

**Subjective SES**

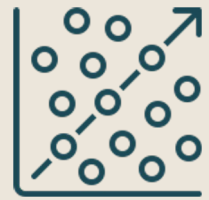
**Perceived social support**

**Personal impact of COVID-19**

**GDP per capita** - Measured at regional level



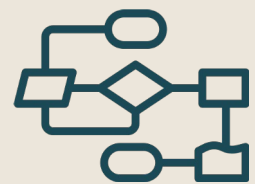
# Analytical Strategy



**Regression analysis** - *lme4* (Bates et al., 2015)

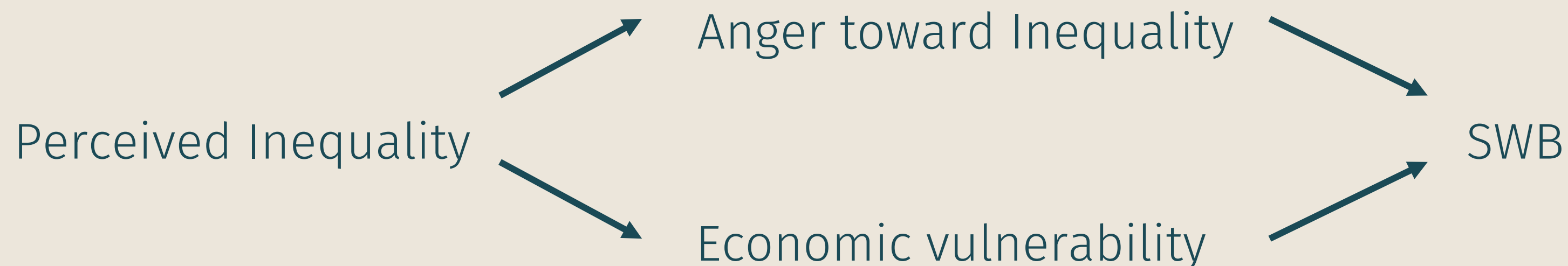
**Multilevel regression analysis** (with 5 regional areas as grouping factor)

Parameter estimation: **REML** (Stegmüller 2013; Elff, et al., 2020)



**Mediation analysis** - *lavaan* (Rosseel, 2012)

Parallel mediation analysis with bootstrap effects estimation (N = 1000)



# Results: Comparing objective and subjective measures

**Does the subjective measure of inequality better predict SWB than objective measure?**

Gini index **is not associated** with  
psychological well-being ( $\beta = 0.02$ , 95% CI [-0.19, 0.22],  $p = .879$ )  
life satisfaction ( $\beta = 0.07$ , 95% CI [-0.05, 0.19],  $p = .277$ )

Perceived economic inequality **is associated** with  
psychological well-being ( $\beta = -0.06$ , 95% CI [-0.10, -0.02],  $p = .006$ )  
life satisfaction ( $\beta = -0.09$ , 95% CI [-0.13, -0.04],  $p < .001$ )

Wage gap estimation **is not associated**  
psychological well-being ( $\beta = 0.01$ , 95% CI [-0.04, 0.05],  $p = .764$ )

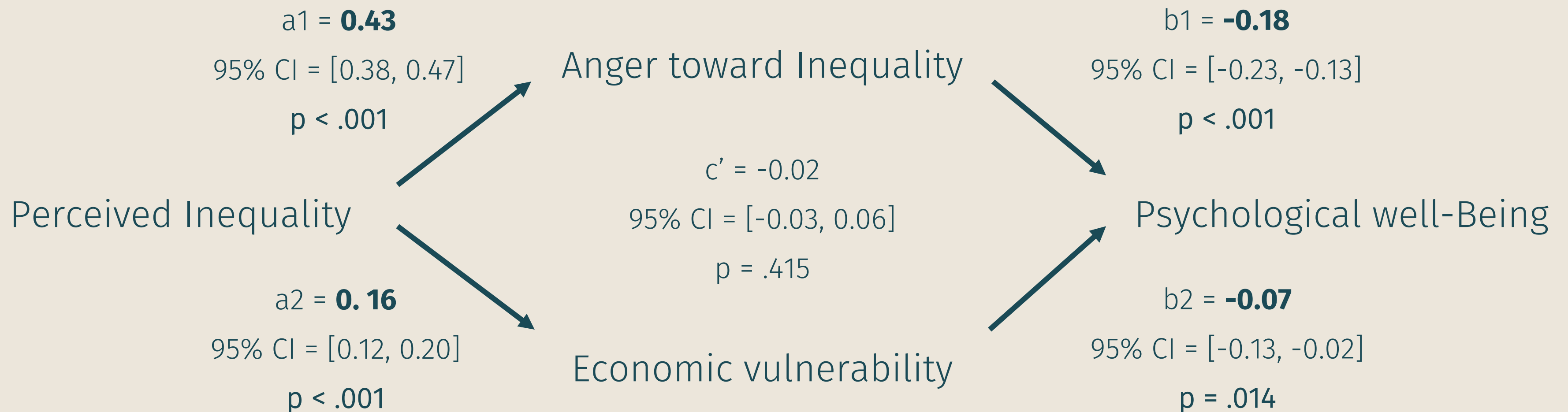




# Results: Mediations

Is the relationship between perceived inequality and SWB mediated by economic vulnerability and anger toward inequality?

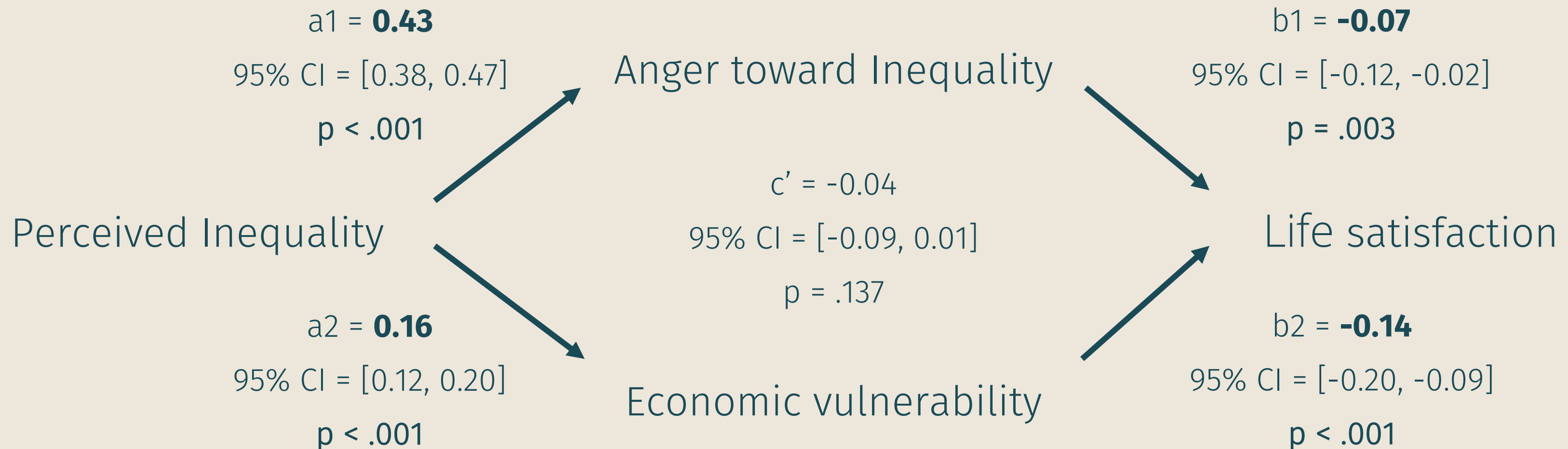
## Psychological well-being



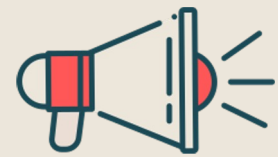
# Results: Mediations

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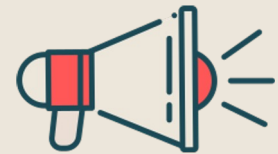
## Life satisfaction



# Conclusions



This is one of the first studies that **explored and compared the effects of objective** (i.e., Gini index) **and subjective** (i.e., perceived inequality) **indicators of economic inequality** on individuals' SWB. Subjective measure better captures individuals' well-being than objective measure. This effect may be framed into foundational findings in social psychology according to which **people's perceptions of an event** (i.e., economic inequality) **have a greater effect** on individuals' cognitions and behaviors than the objective reality of that event (Lewin, 1939).



**Perceived inequality vs. wage gap:** Although both measures can be considered as subjective evaluations of economic inequality, the wage gap measure does not tap into individuals' experience of the phenomenon and the injustice linked to it

# Conclusions



Both perceived anger towards economic inequality and economic vulnerability have **negative indirect effects** that fully mediated the association between perceived economic inequality and SWB

This result suggests that it may not be the perception of economic inequality itself that affects SWB, **but individuals' cognitive** (i.e., economic vulnerability) **and affective** (i.e., anger) **responses to it**

# Thank you for the attention!

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**Thank to my co-authors**

**Roberta Rosa Valtorta**

**Silvia Mari**

**Federica Durante**

**Chiara Volpato**



# Limitations

! The **correlational design** of our study does not allow us to speak about causality confidently

! Our study **focused on the hedonic facets of well-being**. It remains an open question whether the effect of perceived inequality, and the psychological mechanisms that link it with hedonic well-being holds for eudemonic and social models of well-being.

! **Reliance on a representative Italian sample**. Thus, we cannot confidently generalize our results to other populations.



# Well-Being

- **Psychological general well-being index** (Grossi et al., 2006)

4 items (es. “Mi sono sentito/a allegro/a e spensierato/a”)

Response scale: 1 (none of this time) to 6 (all of the time)

$M = 3.59$ ,  $SD = 0.95$ ;  $\alpha = 0.78$

- **Satisfaction with Life Scale** (SWLS; Diener et al., 1985)

5 items (es. “Per molti aspetti la mia vita si avvicina al mio ideale”)

Response scale: 1 (strongly disagree) to 5 (strongly agree)

$M = 2.95$ ,  $SD = 0.86$ ;  $\alpha = 0.88$

## Subjective inequality

- **Wage gap** (Jasso, 1999; Kuhn, 2020)

2 items ("Secondo te, quanto guadagna in media al mese (al netto delle tasse) un dirigente di azienda/operaio non specializzato?")

$M = 0.07$ ,  $SD = 0.02$

- **Perceived economic inequality** (ad hoc)

7 items (es. “In Italia ci sono poche persone molto ricche e tante persone molto povere” or “Non è per niente giusto che ci siano grandi differenze di reddito tra persone ricche e persone povere”)

Response scale: 1 (strongly disagree) to 5 (strongly agree)

$M = 3.95$ ,  $SD = 0.71$ ;  $\alpha = 0.86$

## Economic vulnerability

**Economic Vulnerability Scale** (adapted from Mari et al., 2017)

5 items (es. “Non essere in grado di trovare un lavoro o con la possibilità di perdere quello che già possiede”)

Response scale: 1 (very unlikely) to 5 (very likely)

$M = 3.08$ ,  $SD = 0.87$ ;  $\alpha = 0.85$

## Anger toward inequality

### Ad hoc single item

Quando pensi alla disuguaglianza economica in Italia, in quale grado senti ognuna delle seguenti emozioni:

Response options: Arrabbiato/a, Disgustato/a, Umiliato/a e Fiducioso/a

$M = 3.12$ ,  $SD = 1.15$

## Perceived Social Support

**Perceived social support questionnaire (PSSQ; Lin et al., 2019)**

4 items (e.g., “Conosco parecchie persone con cui mi piace fare delle cose”)

Response scale: 1 (not true at all) to 5 (very true)

$M = 3.06$ ,  $SD = 0.80$ ;  $\alpha = 0.80$

# Subjective socioeconomic status

## MacArthur ladder (Adler et al., 2000)

1 item

“Immagina che questa scala rappresenti la posizione delle persone in Italia. In cima alla scala (10) ci sono le persone che hanno più soldi, più istruzione e i posti di lavoro più rispettati. In fondo (1) ci sono le persone che hanno meno soldi, meno istruzione e meno posti di lavoro rispettati o che non hanno un lavoro. Più in alto si è su questa scala, più si è vicini alle persone in cima; più in basso si è su questa scala, più si è vicini alle persone in fondo.

Dove ti posizioneresti su questa scala?”

Response scale: 1 (at the bottom) to 10 (at the top)

$M = 5.52$ ,  $SD = 1.51$



## Personal impact of COVID-19

### Coronavirus personal impacts questionnaire (CPIQ; Conway et al., 2020)

6 items (e.g., “Il COVID-19 ha avuto un impatto negativo sulla mia vita dal punto di vista finanziario” or “Sto avendo problemi di depressione a causa del Coronavirus (COVID-19)”)

Response scale: 1 (strongly disagree) to 5 (strongly agree)

$M = 2.67$ ,  $SD = 0.87$ ;  $\alpha = 0.85$

# Objective inequality

**Gini index** (Istat, 2019)

Area	Gini 2017	Gini 2018
North-West	0.318	0.316
North-East	0.297	0.294
Center	0.339	0.329
South	0.343	0.347
Islands	0.369	0.372

## Correlations

Variable	1	2	3	4	5	6	7	8	9	10	11	12
1 Life Satisfaction	1											
2 Psychological Well-Being	.51 ***	1										
3 Perceived Economic Inequality	-.14 ***	-.09 ***	1									
4 Wage gap	-.04	.03	.25 ***	1								
5 Objective SES	.18 ***	.14 ***	-.03	.09 ***	1							
6 Subjective SES	.44 ***	.29 ***	-.16 ***	-.08 ***	.35 ***	1						
7 Perceived Social Support	.39 ***	.29 ***	.02	-.02	.12 ***	.22 ***	1					
8 Covid Personal Impact	-.28 ***	-.51 ***	.05 *	-.05 *	-.20 ***	-.25 ***	-.15 ***	1				
9 Economic Vulnerability	-.35 ***	-.41 ***	.20 ***	.01	-.24 ***	-.32 ***	-.15 ***	.56 ***	1			
10 Anger toward EI	-.20 ***	-.31 ***	.43 ***	.08 ***	-.03	-.14 ***	-.03	.24 ***	.28 ***	1		
11 Age	.03	.20 ***	.09 ***	.19 ***	.07 *	-.02	-.06 *	-.14 ***	-.16 ***	-.08 ***	1	
12 Gender [Female]	-.07 *	-.15 ***	.04	-.02	-.12 ***	-.04	-.02	.03	.12 ***	.07 *	-.06 *	1

Note. \*\*\*  $p < .001$ , \*\*  $p < .01$ , \*  $p < .05$ . The correlations with gender were estimated through the point-biserial correlation.

Life Satisfaction	Model 1			Model 2			Model 3		
	Beta	95% CI	p	Beta	95% CI	p	Beta	95% CI	p
Wage gap	-0.03	-0.07 – 0.02	.199	-0.01	-0.05 – 0.04	.680	-0.01	-0.05 – 0.04	.681
Objective SES	-0.01	-0.06 – 0.04	.635	-0.01	-0.06 – 0.04	.650	-0.02	-0.06 – 0.03	.459
Subjective SES	<b>0.34</b>	<b>0.29 – 0.39</b>	<b>&lt;.001</b>	<b>0.33</b>	<b>0.28 – 0.38</b>	<b>&lt;.001</b>	<b>0.31</b>	<b>0.26 – 0.35</b>	<b>&lt;.001</b>
Perceived Social Support	<b>0.30</b>	<b>0.25 – 0.34</b>	<b>&lt;.001</b>	<b>0.30</b>	<b>0.26 – 0.35</b>	<b>&lt;.001</b>	<b>0.30</b>	<b>0.25 – 0.34</b>	<b>&lt;.001</b>
Covid Personal Impact	<b>-0.15</b>	<b>-0.19 – -0.10</b>	<b>&lt;.001</b>	<b>-0.15</b>	<b>-0.19 – -0.10</b>	<b>&lt;.001</b>	<b>-0.06</b>	<b>-0.11 – -0.01</b>	<b>.019</b>
Age	0.04	-0.01 – 0.08	.121	0.04	-0.00 – 0.08	.080	0.02	-0.03 – 0.06	.455
Gender [Female]	-0.08	-0.16 – 0.01	.088	-0.07	-0.15 – 0.02	.126	-0.04	-0.13 – 0.04	.344
Gender [Other]	<b>-0.96</b>	<b>-1.90 – -0.01</b>	<b>.047</b>	-0.93	-1.86 – 0.01	.054	-0.84	-1.77 – 0.08	.075
Perceived Economic Inequality				<b>-0.09</b>	<b>-0.13 – -0.04</b>	<b>&lt; .001</b>	-0.03	-0.08 – 0.02	.195
Economic Vulnerability							<b>-0.14</b>	<b>-0.20 – -0.09</b>	<b>&lt;.001</b>
Anger toward EI							<b>-0.07</b>	<b>-0.12 – -0.02</b>	<b>.004</b>
<i>Regional-Level Variables</i>									
Gini	0.07	-0.06 – 0.19	.300	0.07	-0.06 – 0.19	.301	0.07	-0.05 – 0.19	.277
GDP	0.11	-0.02 – 0.23	.098	0.11	-0.02 – 0.23	.099	0.11	-0.01 – 0.23	.085
Cross-Level Interaction									
Subjective SES X Gini	0.01	-0.03 – 0.05	.576	0.02	-0.03 – 0.06	.439	0.02	-0.02 – 0.06	.415
Perceived Economic Inequality X Gini				0.01	-0.03 – 0.05	.439	0.01	-0.03 – 0.06	.490
R2	<b>.315</b>			<b>.322</b>			<b>.339</b>		



Psychological Well-being	Model 1			Model 2			Model 3		
	Beta	95% CI	p	Beta	95% CI	p	Beta	95% CI	p
Wage gap	-0.01	-0.05 – 0.04	.746	0.01	-0.04 – 0.05	.764	0.01	-0.04 – 0.05	.780
Objective SES	-0.06	-0.10 – -0.01	.014	-0.06	-0.10 – -0.01	.015	-0.05	-0.9 – -0.01	.023
Subjective SES	0.16	0.12 – 0.21	< .001	0.15	0.11 – 0.20	< .001	0.14	0.09 – 0.18	< .001
Perceived Social Support	0.20	0.16 – 0.24	< .001	0.21	0.16 – 0.25	< .001	0.20	0.16 – 0.24	< .001
Covid Personal Impact	-0.43	-0.47 – -0.38	< .001	-0.42	-0.47 – -0.38	< .001	-0.36	-0.41 – -0.31	< .001
Age	0.16	0.11 – 0.20	< .001	0.16	0.12 – 0.20	< .001	0.14	0.09 – 0.18	< .001
Gender [Female]	-0.25	-0.34 – -0.17	< .001	-0.25	-0.33 – -0.17	< .001	-0.22	-0.31 – -0.14	< .001
Gender [Other]	-0.55	-1.45 – 0.35	.230	-0.53	-1.43 – 0.37	.248	-0.45	-1.33 – 0.43	.320
Perceived Economic Inequality				-0.06	-0.10 – -0.02	.006	0.02	-0.02 – 0.07	.324
Economic Vulnerability							-0.06	-0.11 – -0.01	.017
Anger toward EI							-0.18	-0.22 – -0.13	< .001
<i>Regional-Level Variables</i>									
Gini	0.01	-0.19 – 0.22	.893	0.01	-0.19 – 0.22	.895	0.02	-0.19 – 0.22	.879
GDP	0.08	-0.14 – 0.29	.486	0.08	-0.14 – 0.29	.489	0.08	-0.13 – 0.29	.470
Cross-Level Interaction									
Subjective SES X Gini	-0.05	-0.09 – -0.01	.015	-0.05	-0.09 – -0.01	.025	-0.05	-0.09 – -0.01	.014
Perceived Economic Inequality X Gini				0.01	-0.03 – 0.05	.640	0.01	-0.03 – 0.05	.324
R2	.372			.375			.402		