Original Paper

Pandemic and Subjective Well-being. An Exploratory Study in an Urban Population and Moderator Effect from Cultural Participation

Giorgio Tavano Blessi[1], Enzo Grossi[2] & Matteo Colleoni[3]

[1] IULM University, Milan, Italy

[2] Bracco Imagining, Italy

[3] University Bicocca, Milan, Italy

Abstract

In the last twenty years a growing literature has highlighted the role of social and cultural activities in fostering individual and community well-being. The COVID-19 pandemic had an important impact on individuals and communities, given the lockdown policies enacted, causing the unexpected and forced abandonment of these activities. The present work investigated the impacts caused by the Covid-19, and the consequent suspension of all social and cultural opportunities, on individual subjective well-being.

The analysis is based on two surveys: the first undertaken in January 2020 (t1), and a second carried out one year later in February 2021 (t2), on a sample (n 401) of a town lying in the metropolitan area of Milan (Italy). We used the PGWBI - Psychological General Well-Being Index to assess the psychological aspect and to measure the influence of the social and cultural dimensions.

Overall, the results show an increase in psychological well-being between the t1 and t2 (2020: 62.99; 2021: 65.43). This slight increase is particularly associated with young people and individuals in the student/unemployed categories, where a significant change was recorded. These findings are somewhat counterintuitive in relation to the existing literature in the field. Regarding the impact of lockdown policies on the social and cultural dimensions, the analysis reveals a decline in social and cultural participation between T1 and T2, yet a concurrent positive effect on individual psychological well-being.

Keywords

urban area, cultural activities, COVID-19, pandemic, subjective well-being

1. Introduction

Interest in the relationship between culture, leisure activities and subjective well-being is quite recent and has involved various disciplines, from economics to medicine, from psychology to sociology. This interest rose slowly at the very beginning, given the novelty of the hypothesis revolving around the impact of such activities in different individual realms, but with a growing awareness, not only arising from research but also of the possible policies and actions in society in relation to the evidence provided. Studies undertaken in Western countries have shown that these activities have an impact on several individual spheres. Starting with health, the role of social and cultural activities acts as a possible mediator in relation not only to individual perception but also as a possible form of pro-active therapy, and the importance of these two elements is reported in all gender and age categories (Daykin et al., 2008).

In relation to individual biological functioning, two studies have discovered a deeper correlation between cultural activities and our biological trail. Ventura (2017) found that human cells respond to different possible sounds generated by music and live performance, and showed how these cultural events may also allow us to promote the possible programming of stem cells in relation to our biological functioning. In addition, Grossi (2019) investigated the effect of visual aesthetic experiences in a heritage site over biological (stress reduction) and psychological (well-being enhancement) responses, finding noticeable impacts with a remarkable reduction in salivary cortisol levels.

The relationship between these activities and health do not rely only on health perception since several investigations have also shown a profounder correlation between health perception and longevity / mortality. For example, studies identify that social and cultural participation provide a positive outcome in terms of longevity and so highlight the role of participation, e.g., playing a musical instrument, painting or more passive activities such as attending a concert or reading a book (Hyyppä et al., 2006). Furthermore, a low individual participation level in social and cultural activities leads to a doubling of mortality risk if compared with subjects with a high attendance index, even after checking the usual mortality benchmarking for age, health, education, income, education and other possible indicators (Agahi et al., 2008).

In discussing the role of social and cultural activities, these do not impact only on the physical/tangible individual dimension, but also on the immaterial/intangible, in terms of psychological related to subjective well-being (SWB).

A torrent of literature has tried to estimate the impact of the aforementioned dimensions on SWB. Starting with the studies conducted by Diener (2000) and Michalos (2005), a number of authors (for a general review, Adams, 2011; Brajša-Žganec et al., 2011) have tried to measure how the SWB varies in accordance with participation in different social and cultural activities. There is common agreement that these produce an important positive effect, and in an ideal ranking of different elements affecting well-being e.g., from individual characteristics such as age, gender, education and income to environmental such as residency (urban vs rural), commuting, as well as health and educational/welfare services

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provided, Grossi (2011) found that social and cultural activities rank in third place after the absence of morbidity and income. The mechanism underpinning the positive cause-and-effect dynamics is rooted in the correlation between these and the social dimension. As noted by Erickson (1996) and Christin (2011), social and cultural activities promote an increased psychological well-being level given their orientation in terms of sociability, meaning their capacity to enhance relationships and sense of belonging, as well as providing the full variety of elements which lead the individual to feel and be part of the place where they live and operate in terms of the community social dimension.

The advent of the Covid-19 Pandemic and the adoption of specific restriction measures led to a sudden profound change in the habits and behaviors of individuals. This element has been particularly relevant in Italy, which underwent a rather important lockdown lasting 71 days, from March to May 2020. Yet the pandemic policy responses went beyond the mere lockdown. For the whole of 2020, social and cultural activities were forbidden or at least severely restricted in the number of participants.

The present study aims to address the following objectives, such as how the pandemic phase impacted on individual subjective well-being, and the potential consequences of the lack of participation to cultural and social activities, due to the lockdown policies, on the subjective well-being. The scenario outlined provides the opportunity to establish an experimental condition in relation to the comparison between normal time, before 2020 in the pre-pandemic phase, and extraordinary time, one year after the pandemic, and so in 2021.

Starting from 2020, a great many studies described the impact of the pandemic on individual well-being, providing interesting information. With respect to the psychological aspect, just to name a few consequences, the pandemic had an important impact on the psychological dimensions of individuals in many countries (Wilke et al., 2021). Helliwell (2021) found that physical distance and isolation challenged individuals in terms of social connection, an element that is considered vital for their happiness. Furthermore, Bimonte (2022) discovered that relational goods, such as those generated by social connection and interaction as in the case of social and cultural events, became one of the most important elements for individual happiness during the pandemic phase, along with state of health.

In addition, there is a general consensus that the COVID-19 pandemic and the associated lockdown measures have significantly reduced participation in cultural and social activities (e.g., Gough et al., 2023), affecting individual psychological well-being. In this perspective Gotthard (Gotthard et al., 2023) point out the protective function of cultural activities on psychological well-being, demonstrating the importance of cultural life in times of adversity as with the pandemic.

Our outcomes suggest that at a general level the pandemic seems to have affected a section of individuals as far as the elderly are concerned and those who live on their own and are retired, in other words the vulnerable part of the local social sphere, while for some categories, those who are less than 34 years old, Covid-19 has positively influenced their well-being conditions. With regards to the social and cultural dimensions, the results show the value of the latter in enhancing individual well-being both before and after the pandemic.

2. Method

A survey was conducted on the community of Baranzate, a town located seven kilometers form Milan, which presents a population of 11,700 inhabitants (ISTAT 2021). The sample is based on 401 individuals and it is representative of the 18+ age population (total universe 9,872 inhabitants). The questionnaire was administered through the CAPI system (Computer Assisted Personal Interview). While, in terms of data collection, almost every comparative study in the literature aiming at evaluating the effects of the pandemic on individual subjective well-being opted for the web method (CAWI), this study chose the CAPI method. As verified by Agans (Agans, 2024) the web methodology (CAWI), widely employed in social sciences, has a high percentage of fake participation, which can impact the reliability of the results, while the CAPI system provides reliable participation and thus a final outcome with a good statistical effectiveness. The survey was conducted by Doxa, the Italian pollster company on two different occasions: in January 2020 − by chance the survey was completed just before the beginning of pandemics − and February 2021. Data were collected cover 3 main areas: a. the socio-demographic information for age, gender, civil status, schooling and monthly income; b. health related information relating to the degree of presence/absence of diseases from a check list. All these elements are shown in Table 1. In addition, in order to address the possible influence of the social and cultural dimensions, 14 possible activities were scrutinized in order to provide an estimation of the role of such elements in relation to subjective well-being. The activities have been clustered in a specific Index called Cultural Index (Note 1).

Each subject surveyed in the study had to go through a structured questionnaire asking about the frequency of access to all the activities listed in Table 1 in recent years (how many times in a year did you perform a given activity?). The intensity of access has been measured on a quantitative scale through a composite sum of frequencies, expressing in this way the number of days in a year of at least one activity.

2.1 The Instrument

The well-being individual status has been assumed as a dependent variable, and was registered thanks to the PGWBI. The PGWBI has been adopted since the 1990s (Dupuy, 1990), and this instrument allows us to measure the state of possible subjective well-being or distress, in other words elements related to what we could call the potential perception of individual well-being. The psychometric properties of the PGWBI have been testified and validated in terms of clinical and research aims, as recorded in several studies worldwide. It is based on 22 self-administered queries distributed in six HRQoL domains: vitality, mood of depression, anxiety, self-control, positive well-being, and general health. Each item is rated on a 6-point scale (from 0 to 5) and asks the subject to report his emotional, physical and health conditions in relation to the individual's life over the previous eight weeks. The final score is the result of the global summary of all domains, which may range from 0, the maximum distress level, to 110, where the total score <60 displays severe distress; from 60 to 70 moderate distress; between 71-90 no distress; >90 to 110, well-being (Tavano Blessi et al., 2023). For this study we have adopted a short version of the

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PGWBI in all 6 questions, which explains more than 90% of the variability of the full version, already validated in previous clinical and research projects (Grossi et al, 2006), showing a Cronbach's Alpha from 0.85 to 0.88 as recorded in previous studies.

Independent variables are socio-demographic information such as gender, age, education, civil status, employment, and health conditions / diseases. We have added reporting upon social and cultural access data in a specific section of the questionnaire, and information collected through the interviews has been phrased in quantitative terms (i.e., answers eliciting quantities such as the number of times per year that the respondent participated in any given activities).

2.2 Statistical Analysis

The statistical analysis was carried out by employing different approaches. Firstly, the reliability of the scale employing Cronbach's alpha coefficient has been measured. Secondly, the sample has been weighted following the gender and age distribution in percentage terms on the basis of the 2021 Baranzate municipality census (ISTAT). The algorithm adopted for the weighting calculation has been implemented with SAS 9.4. This is a statistical tool released for the first time in 2013 form SAS company, and provides the possibility for data analyses in linear and multi-regression approaches.

Descriptive and correlation analyses have been carried out for all variables and the same software has also been employed for the evaluation of the efficiency of the weighting procedures. P value < 0.05 was accepted as significant.

3. Sample Characteristics and Descriptive Analysis

The total weighted individuals for the 2020 and 2021 samples are 401. The reliability rate of the full instrument shows a Cronbach's Alpha value of 0.91 in 2020 and 0.89 in 2021. Concerning the weighting efficiency, this method enhanced with SAS 9.4 provides the estimation of how the survey sample characteristics are similar to the universe, and may range from 0 (no efficiency) to 100 (maximum efficiency). Usually, the range level is between 70 and 80 and shows good sample reliability. In this research the value is 83,22 for the 2020 sample and 80,82 for the 2021 sample.

The samples' characteristics are shown in Table 1. The gender repartition is of 48.5 % for female, and 51.5% for male. The PGWBI reports an average value for the overall population in 2020 of 62.99 and in 2021 of 65.43, showing moderate well-being distress. In relation to age, the samples can be compared to the structure as reported by the National Census Bureau (ISTAT). Concerning civil status, both samples show that over 50% are married, between 26% (2021) and 27% (2020) are single, and from 15.8% (2021) to 18.3% (2020) are divorced or widowed.

Table 1. Characteristics of the Study Population and Comparison with the Data from National Italian Census Bureau (ISTAT)

Characteristics	2020	2021	2020 ISTAT	P value
GENDER	(%)	(%)		
Male	51.5	51.5		NS
		48.5		NS
Female	48.5			
AGE	(%)	(%)	(%)	
. 18-24	8.4	8.4	9%	NS
		13.8	12.3	NS
. 25-34	13.8	17.4	19.6	NS
		20.8	18.7	NS
. 35-44	17.4	15.7	17.8	NS
. 45-54	20.8	12.2	11.9	NS
		11.5	10.6	NS
. 55-64	15.7			
. 65-74	12.2			
. > 74	11.5			
EDUCATION	(%)	(%)		
Primary School	12.1	8.2		NS
Secondary School		41.4		NS
	28.1	41.8		NS
High School		8.4		NS
	51.2			
University degree	8.5			
CIVIL STATUS	(%)	(%)		
Married	54.4	58.1		NS
Single	27.1	26.0		NS
Divorced / Widowed	18.3	15.8		NS
EMPLOYMENT	(%)	(%)		
Retired	24.1	26.2		NS
Housewife		8.7		NS
	8.7	7.5		NS
Unemployed	7.1	22.2		NS
Blue collar	23.4	29.2		NS
White collar	30.5	6.2		NS
Student	5.9			
Mean No. Cultural Index	60,72	10,82		< 0.0001
Mean No. Diseases	0,62	0,64		0.908
Mean PGWBI	62,99	65,43		0.338

Over 50% of those parts of the sample hold a higher education degree (high school or university), and about one third of them have a degree or an average education (secondary). while approximately one quarter of the sample is retired, and from 50% (2020) to 40% are employed, those unemployed are 7%, and in this respect the figures are in line with expectations in the population living in Baranzate.

The survey also investigated a number of diseases (Note 2), and this dimension has been analyzed using 5 different classes (0; 1; 2; 3; >3) and through the cumulative number of diseases by introducing a possible index of morbidity. In this perspective, the data show a relevant difference in the health index in the two survey cohorts under investigation (0.62 – 2020; 0.64 – 2021). In relation to Cultural Index

and PGWBI, the difference in the variable distribution in relation to the t1 and t2 samples shows, as expected, a drop in the intensity of participation (from 60,72 in 2020 to 10,82 in 2021), and unexpectedly an increase in the psychological well-being level from 62,99 in 2020 to 65.43 in 2021.

3.1 The Psychological General Well-Being Index − PGWBI.

Table 2 shows the analysis of the PGWBI values in relation to the different characteristics and elements collected within the surveys. Starting with gender, this element does not provide meaningful results in relation to females, while for men it is possible to observe an increase of 5 points from 2020 to 2021. For both categories, the statistically significance of the result is small (*g* -0.251 for males, 0.018 for females) Age produces an interesting element related to the PGWBI. It emerges that the age bracket 18-34 reported an increase in well-being perception after the advent of the pandemic phase, with a robust result in statistical terms for those between 18-24 years old (*g* -0.773). For the rest of the population, it seems that age was slightly affected by the restrictions adopted. With regard to education, it is possible to observe that those holding a university degree may have benefited from the pandemic phase (*g* -0.794) while the other classes show a slight or no change in the PGWBI between the two waves. The analysis of the civil status variable offers the opportunity to observe that the well-being of those who are single benefited from the advent of the pandemic, and at the opposite end of the spectrum, those suffering from new conditions included those retired, divorced/ widowed and housewives. From the data it is also possible to observe the correlation between employment and the PGWBI. As noted for the age variable of those between 18 and 34 years old, the pandemic seems to have engendered positive effects on the subjective well-being of students, most of whom may be logically included in the age parameter described above. Another category showing a positive correlation is the unemployed, which saw an average difference of almost 12 points at the PGBWBI level (*g* -0.741).

As regards state of health, as extensively noted in the literature provided below, this element had the greatest impact on subjective well-being, where the increased number of concomitant diseases and co-morbidity are linearly related to the increase in well-being distress. Data here provide the same tendency, with a delta between the minimum class (0 disease) and maximum (>3 diseases) which became higher in 2021 compared to 2020, showing in this way the possible impact of the pandemic in relation to individual state of health.

Table 2. Comparison between PGWB Values Pre- and Post-pandemic in the 18-34 Sample (P value and Hedges g Effect Size CI 95% Confidence Interval).

	2020 (Pre-pandemic)			2021 (Post-pandemic			*g*	*G CI low*	*G CI up*	*P value*
Variable	Mean	S.D	N	Mean	S.D	N				
MALE	63,03	16,36	207	68,03	22,86	207	-0,251	-0,445	-0,058	0,011
FEMALE	62,95	15,54	194	62,66	15,66	194	0,018	-0,180	0,217	0,855
18-24	70,20	16,99	34	83,03	15,71	34	-0,775	-1,270	-0,281	0,002

25-34	66,38	14,40	55	72,50	18,29	55	-0,370	-0,745	0,006	0,053
35-44	64,91	14,48	70	63,02	22,77	70	-0,099	-0,431	0,232	0,060
45-54	65,04	21,23	84	63,89	26,01	84	0,048	-0,255	0,351	0,754
55-64	58,29	13,58	63	60,22	14,93	63	-0,134	-0,483	0,215	0,450
65-74	62,47	14,07	49	58,29	9,97	49	0,340	-0,058	0,738	0,092
AGE >74	57,02	12,59	46	56,09	10,36	46	0,080	-0,330	0,490	0,701
PRIMARY	57,28	12,76	49	55,12	11,20	33	0,176	-0,267	0,619	0,422
SECONDARY	60,40	13,48	113	64,76	17,78	166	-0,269	-0,509	-0,029	0,021
HIGH_SCHOOL	65,55	16,91	205	64,81	18,40	168	0,042	-0,162	0,246	0,691
UNIVERSITY	64,38	17,75	34	81,88	25,24	34	-0,794	-1,287	-0,301	0,002
SINGLE	65,60	17,05	109	71,48	20,57	105	-0,311	-0,581	-0,041	0,024
MARRIED	62,67	15,54	219	64,63	18,36	233	-0,115	-0,299	0,070	0,221
WIDOWED DIVORCED	60,11	14,58	73	58,44	15,34	63	0,111	-0,225	0,447	0,518
WHITE_COLLAR	64,47	16,21	122	68,72	23,96	117	-0,208	-0,462	0,046	0,111
BLUE_COLLAR	63,45	16,76	94	66,01	21,56	90	-0,132	-0,422	0,158	0,373
HOUSEWIFE	61,55	15,90	35	58,23	12,22	33	0,230	-0,248	0,709	0,337
RETIRED	60,43	14,28	97	57,75	11,39	94	0,206	-0,078	0,491	0,153
UNEMPLOYED	59,61	12,65	29	71,25	17,16	43	-0,742	-1,230	-0,253	0,002
STUDENT	70,19	18,35	24	76,25	15,43	25	-0,352	-0,918	0,214	0,219
0 DISEASE	64,62	16,72	237	69,53	20,47	246	-0,262	-0,441	-0,082	0,004
1 DISEASE	62,05	13,91	114	60,96	14,87	97	0,075	-0,195	0,346	0,587
2 DISEASES	59,13	14,64	31	58,34	13,15	34	0,056	-0,431	0,542	0,822
3 DISEASES	54,09	16,25	12	52,01	13,42	15	-0,191	-0,953	0,570	0,623
>3 DISEASES	64,40	7,61	7	50,59	8,13	9	1,652	0,521	2,784	0,003

With regards the social and cultural, as noted, the activities scrutinized have been clustered in a specific index, the Cultural Index. Table 3 shows the overall distribution of cultural participation frequency in the sample, given the index as explained in section 2.

Table 3. Correlation between the Cultural Index and the PGWBI in the Two Years

Pre-pandemic - 2020			Post-pandemic - 2021		
Mean	S.D.	r	Mean	S.D.	r
60,72	70,71	0.165	10,82	24,24	0.109

As to possible constraints generated by the pandemic, the Cultural index showed an important decrease in frequency and a weak, but always positive, correlation, with the PGWBI for both years. Finally, Table 4 shows the distribution of variables with the positive or negative correlation index within the PGWBI overall score.

Table 4. Variables' Positive or Negative Correlation Index within the PGWBI Overall Score

variable	r2020	r2021
MALE	0,003	0,141
FEMALE	-0,003	-0,141
18-24	0,138	0,281
25-34	0,086	0,149
35-44	-0,003	0,087
45-54	0,066	-0,042
55-64	-0,128	-0,119
65-74	-0,012	-0,141
AGE >74	-0,135	-0,177
PRIMARY	-0,134	-0,163
SECONDARY	-0,103	-0,030
HIGH_SCHOOL	0,165	-0,028
UNIVERSITY	0,027	0,263
SINGLE	0,100	0,189
MARRIED	-0,023	-0,050
WIDOWED/DIVORCED	-0,086	-0,160
WHITE_COLLAR	0,062	0,111
BLUE_COLLAR	0,016	0,016
HOUSEWIFE	-0,028	-0,113
RETIRED	-0,092	-0,224
UNEMPLOYED	-0,059	0,106
STUDENT	0,114	0,146
0 DISEASE	0,124	0,272
1 DISEASE	-0,038	-0,133
2 DISEASES	-0,071	-0,114
3 DISEASES	-0,155	-0,138
>3 DISEASES	0,012	-0,118
CULTURAL INDEX	0,165	0,109

The table shows a different contour of positive and negative correlation indexes in the two samples. In the positive profile, the 2020 and 2021 samples display in the first five positions almost the same variables as for students and thus young, single, no disease, painting the possible portrait of individual characteristics positively correlating to subjective well-being. At the bottom, it is possible to establish the factors negatively associated to individual well-being. With regard to these, characteristics such as age >74, low educational attainment, social status in terms of being retired and in particular health status are the elements that greatly affect individual well-being. Focusing on the Cultural Index, this element remains positively correlated with the PGWBI, even though the participation rate in these activities significantly declined in 2021 compared to 2020.

4. Discussion

The analysis provides some interesting evidence concerning the impact of the pandemic phase and restrictions applied in Italy between January 2020 and February 2021 on subjective well-being, and a possible indication concerning the value of so-called cultural and social activities which contributes largely to the enhancement of a sense of positive well-being in the individual, as noted in the theoretical section of this study.

The general results that emerge from our data is the PGWBI behavior in relation to the advent of Covid-19. We may have expected that well-being would decrease, given the incidence rate and impact made in Italy, and specifically in the Italian Lombardy region, where Baranzate is located, the geographical area in which the pandemic caused the highest occurrence of death and hospital admissions (Bruzzi et al., 2022). Data collected show a counter-intuitive effect, where the t2 sample (2021) shows an average of 65.43 compared to the t1 sample (2020), which reports an average of 62.99.

In discussing the possible reasons behind this surprisingly general result, the first consideration that deserves attention is the impact of Covid-19 on personal aspects in terms of health status, gender, age, education, civil status and employment, as reported in Table 2.

Starting with an analysis of the first element, which is health status, data collected reveals a similar incidence in terms of diseases recorded in 2020 (0,62) in comparison to 2021 (0,64), as reported in Table 1. It is noted that individual health status greatly affects the well-being of individual (see for example Tamosiunas, 2019) ranking, primarily as a potential variable affecting individual psychological well-being. Given this fact, we may expect two consequences: a. an increase in the incidence of disease in 2021, given the pandemic phase, but this is not the case; b. the decrease in the PGWBI level of those recording one disease, and an important effect in those affected by co-morbidity. In this respect, assuming as possible indicators two specific categories, those reporting 0 diseases and >3 diseases (the minimum and maximum categories both statistically significant), we found that in the first case a well-being increase of almost five points, and in the second a decrease of 14 points. If the individual health status and thus morbidity are always connected with the area of psychological distress, as reported in tab.2, the effect of Covid-19 on the samples follows the theoretical indication. As noted by Jones (Jones et al.,

2023) the population was severely affected by the pandemic both emotionally and psychologically, where the fear of Covid-19 was common, and this is reported in the findings of our analysis, with an incidence that became relevant for those with three or more diseases. In relation to the other categories, data show an almost null effect of the pandemic on psychological well-being. There may be several reasons behind what has been outlined. For example, the quality of welfare services and the health support system provided by the different government bodies (from local to regional areas), which are particularly efficient in the Lombardy Region, lying almost at the top of the rankings for regional performance of the Italian National Health System (Bruzzi et al., 2022).

As regards gender, results show that males reacted better to the pandemic in relation to females. The comparison between 2020 and 2021 data highlights that men increase the PGWBI level by almost 5 points where in the female category this remain almost stable. At a general level, several studies (see e.g., Matud et al., 2019) have highlighted that females record higher psychological distress to men, and our results confirm this. The causes will be numerous: the biological difference between genders (Afifi, 2005), the so-called 'illness behavior', the tendency of women to use health services more frequently than men and the result of such behavior in terms of distress (Riecker, 2005). Two other elements may be evaluated in relation to what has been recorded, thanks to the t1 and t2 surveys on females and males. In discussing women, as recorded by several studies (see e.g., Sinha, 2017), their social role has changed over the last forty years. During this time females have seen the quantity and quality of duties (e.g., family, work) increase, which may drive females to feel greater stress and thus distress. Given the pandemic restrictions, the fact that all members of the family (husband, children) were always at home, housework − which in Italy usually falls on females − as well as several other family duties, may all have potentially increased rates of effort and thus distress. In order to confirm or not this hypothesis, we provide an intersectional analysis of the female category in relation to civil status and, for the married, also in relation to employment conditions. With regards civil status, we saw that the PGWBI of women who were married decrease by almost 3 points (63.51− 2020, 60.69 – 202; d 0.165), while among those single an increase of more than 5 points (66.56 − 2020, 72.13 – 2021; d 0.306) and a decrease in widowed/divorced (58.74 – 2020, 55.09 – 2021; d 0.234). In analyzing married women, those having thus responsibility for household duties as described above, and in relation to their employment situation, we observe that for women married and declaring being housewife, thus not employed in other activities, the PGWBI level decreased in 2021 compared to 2020 (61.06 − 2020, 57.33 − 2021; d 0.222), women married but also working in blue-collar jobs seem to have been affected by the pandemic phase (65.46 − 2020, 57.64 – 2021; d 0.438), while those in white-collar employment had a slight decrease in psychological well-being (68.16 – 2020, 67.13 – 2021; d 0.062). The data, if corroborated by a low magnitude of difference between the two groups, may confirm the hypothesis that women engaged in multiple roles − both family and work − were affected by the pandemic. The negative effect was particularly evident among blue-collar workers, whose jobs require leaving home and spending time away, whereas white-collar workers largely benefited from the opportunity to work from home using technology. On the other hand,

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men seem to have benefited from the new conditions, where male psychological well-being is connected to employment and social conditions, and approval generated by these. Subsequently, the sudden adoption by almost all workers of remote working/working from home, may have maintained the previous conditions of psychological well-being, if not increased these, given the social (see the female role above) and economic convenience of staying in their own abode.

With regards to age, several studies supply evidence of the so-called U-shaped relationship with individual well-being. In this respect, a vast analysis builds on an extensive literature review including empirical data, confirming the mid-life dip and thus the presence of the age/well-being association, and also highlights the negative effect of the pandemic in relation to individual age (Blanchflower, 2022). An analysis of the data collected finds a weak statistical relationship between this variable and the PGWBI, although not for younger adults (18 – 24). Despite the latter finding, the analysis provides three possible indications: the first confirms the tendency towards a mid-life dip but does not enhance any element allowing us to observe increasing well-being level in middle life or among the elderly, as noted in the literature. The second finding relates to 2021, when almost all age groups saw their PGWBI scores decline. Closely linked to this is a third observation: the PGWBI score for 18 – 34-year-olds actually rose markedly in t2. One possible explanation is that younger participants (especially those aged 18 – 24) were able to physically not attend school or university, reducing academic pressure (for example, fewer homework assignments). Additionally, pandemic restrictions may have provided them with the comfort of staying at home − benefiting from family-provided services and support − which could also have boosted their well-being. To test this hypothesis, we have thus made a further evaluation, subdividing the sample into two groups according to employment: those studying and/or working. In relation to the first group, it is possible to observe how the PGWBI increases in t2 in comparison to t1 (79.43 – 2021, 74.24 – 2020; d 0.169), while in those working it decreases (64.10 – 2021; 66.10 – 2020; d 0.169). The results, although the statistical validity is weak, may lead in the direction of confirming our hypothesis. For the category between 25 and 34, mostly employed in a working environment instead of an educational one, the increased perception of well-being may well be correlated with the possibility of working from home and the positive effect, as mentioned above. No more information concerning the working environment has been collected to strengthen further analysis.

The civil status well-being determinant is in line with other research (see Grossi, 2012). As regards information collected on the basis of the surveys, there is a fair drop in the well-being level in the divorced/widowed, but this element does not raise the eligibility of this variable as influencing the PGWBI. If on the one hand, the shift from a couple's shared life, as in the case of the married, to the individual alone has been recorded as a possible factor for the decrease in individual well-being, given the loss of interaction in terms of bio-physical and social factors, as noted by Macintyre (1996), on the other it emerges that being married, in particular for men as noted above, and singles for both genders, during the pandemic phase seem to be positive conditions in relation to individual well-being. We do not have further elements for an analysis of the mechanism behind this dynamic, unless we assume, as noted

above, that the combination of restrictions and work-at-home mode may have led to the possible increase of the individual PGWBI.

In discussing the employment variable, it is important to approach it following the indications in the literature, which provides an interesting fact concerning the relationship between employment and individual well-being. This variable seems to have a relevant influence on well-being, and this effect does not rely on the monetary aspect, in other words on material benefit such as access to goods and services thanks to the income produced from standard of employment, but refers to the immaterial benefit generated in the social and psychological realms (Van Der Meer, 2014). If being unemployed has a negative consequence on individual well-being, being employed promotes the conditions to generate important elements in terms of social approval and positioning (the social dimension), in addition to enhancing individual identity thanks to the psychological dimension. Our analysis has provided interesting indicators in relation to what has been presented above, particularly in the comparison of the 2020 and 2021 surveys. The category showing the highest PGWBI level in 2020 was the student one (70.18), which increased in 2021 to 6.06 points, and a possible explanation for this has been already given above in relation to the age variable. The other categories in terms of white collar, blue collar, also show a tiny increase in the level of well-being. The reason for this can be found in the opportunity these individuals have to maintain their working activity if not in the workplace at least in remote working/working-at-home mode. Hence, they were able to retain both their social position, given the possibility of interacting with their pre-existing social networks as well as maintain their identity, given the fact that almost all of them held onto their jobs and thus their working dimension. Two groups show a slight decrease in well-being, and these are for housewives and retirees. As regards the first one, given the fact this is a female role, a possible interpretation recalls what has been already described in the gender sphere. Retirees may have suffered from a lack of physical social interactions and opportunities, which perform an important function in terms of well-being generation, as we will see later on. What is more, this category often has greater difficulties in managing technologies and social tools such as computers, social networks and so on, all helpful in maintaining relationships and exchanges with other individuals. What is unexpected is the radical change of the PGWBI level of the unemployed. Those forming part of this category show an increase of 11.65 points, from 59.60 in 2020 (the lowest level) to 71.25 of 2021 (g -0.741). This is really surprising and we have no information to explain the reasons behind it; hopefully further research will supply possible explanations.

The second discussion area covers the relationship between social and cultural opportunities, and individual subjective well-being. At a general level, the Pearson correlation does not show a strong correlation between the pandemic and the Cultural index, but data and the further analysis give us some possible pointers, particularly in relation to the difference in participation between t1 and t2, (from 60.72/year 2020 to 10.82/years in 2021), and the relation with the PGWBI (r 0.165 in 2020 and 0.109 in 2021). The results allow us to highlight the influence of the socio-cultural dimension on the PGWBI. Although the values present a low effect size, in both samples the social and cultural dimensions are

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always in the set elements positively correlated to individual well-being, even though – because of the pandemic – in 2021 social gatherings severely reduced the amount of participation tin the aforementioned events. The beginning of the pandemic, then, presented the opportunity to verify how the incidence of social and cultural initiatives are important for people's psychological well-being, becoming almost equally impactful whenever the chance to experience them is reduced or lacking, as happened during 2021. A possible explanation of this result is provided by Brown (Brown et al., 2014), who described a situation where the benefits for the individual during social and cultural activities do not stem from the amount of participation but from two elements, apparently separate, but significantly intertwined. On the one hand, almost every socio-cultural initiative is structured as a collective activity which can stimulate relationship opportunities and the definition of a shared experience. The possibility of sharing an experience with other people triggers within the subject a connection formula with a social group, which can generate acknowledgement and the belonging of the individual to a collectivity, with important effects on well-being, as shown in section 1 (see Bimonte, 2022) of this study. On the other hand, when social and cultural activities become scarce, they create an increased value in terms of psychological well-being, displaying a scenario where the correlation between the intensity of participation and individual benefits is almost reversed. The elements shown highlight how said actions play a fundamental part in relieving an individual from the lack of social and relational activities, which the pandemic triggered, due to their nature as drivers for sharing events and participation, and confirm the always positive incidence of the previous dimensions in enhancing individual well-being in both high or low cultural / social intensity contexts (Tavano Blessi et al., 2016).

5. Conclusion

From the middle of the last century, scholars from different disciplines have tried to investigate the elements affecting, positively and negatively, individual subjective well-being. In this respect, there is a common orientation that well-being is not provided only by the opportunities related to ways of gratifying our material needs through a utilitarian approach, e.g., given income disposal and thus the possibility of buying a product/service, but also, as noted in recent years, in terms of satisfying our intangible needs, such as our sense of belonging and identity, in other words fulfilling the elements that 'make' the individual. Paraphrasing Tacitus, the Latin writer, 'non est vivere, sed valere vita est', which can be translated as 'the sense of life is not to be alive, but to be well'. The elements that make for a flourishing life are not related only to the accumulation of material opportunities, but the real value is gained thanks to how an individual is recognized by society, in his own perception of the value of identity, and furthermore through the social opportunities that a person may grasp in the environment in which they live and operate in terms of connection and interaction with others and thus community engagement and positioning.

The pandemic phase can be taken as the so-called 'black swan effect', where an event, totally unexpected, if not even predictable, and of utmost importance, has promoted a sudden change in individual behaviors

and life habits. The main issue of our study, the relationship between social, culture activities and individual subjective well-being, has found therefore possible fertile ground to nurture intriguing considerations. As a matter of the fact, no research has investigated the impact of the aforementioned dimension on a representative population sample by interviewing them directly, neither before or after a massive event such as a pandemic.

In our study, one aspect is noteworthy, and refers to individual psychological well-being. As previously noted, this element depends in principle on the satisfaction of both material and relational needs. The former may be satisfied to a great extent through private activities, whereas participating in social activities mostly addresses the latter. In this perspective, the contribution of cultural and leisure activities does not only have to do with possible participation, and thus the outcomes generated on the physical and psychological dimensions of an individual, but also with the effect in terms of building social relationships and belonging, escaping the possible lock-in effect of loneliness generated by the consumption of material goods and private activities, as explained by Sacco (2009). The developmental well-being approach of cultural and leisure activities thus leads to the possible participation and interaction between individuals, providing further motivation to access socially-oriented cultural activity, generating positive social dynamics feedback which may lead to a reduction in the growth-unhappiness paradox described by Easterlin (2005). In this perspective, culture and leisure activities shift their role from an aspect merely related to entertainment in the individual and community spheres to a much more fascinating function of being intrinsically correlated to several dimensions of contemporary development processes, and in this respect assume a fundamental role in guiding individuals toward the enhancement of their well-being.

In conclusion, if the study cannot be employed in generalizing the findings, it is important to realize that the condition of this 'natural experiment' has been exceptional and, given the results, can neither be employed in other circumstances. In any case, the findings confirm the importance of cultural and leisure activities in supplying positive well-being outcomes as already reported in several studies, and may contribute to the debate about the developmental potential of the aforementioned dimensions in our societies.

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Note

Note1. Activities scrutinized were: attending a concert, theatre play, museum / exhibition; participating in voluntary activity, community activity, social services; going to an event (party, disco), having a walk, meeting / amusement with friends; practicing sport, going to the gym, attending a sports event.

Note 2. Hypertension, heart attack, heart disease, diabetes, angina, cancer, allergy, arthritis, lower back pain, lung diseases, skin diseases, deafness, limited functionality of the upper or lower limbs, blindness, psychiatric disorders and depression.