

# COVID-19 Mitigation Measures and Their Impact on Subjective Wellbeing

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## ABSTRACT

This study assesses the actual magnitude and scope of the impacts of the COVID-19 mitigation measures at the individual level, with special interest in subjective well-being (SWB), its relevance and how these negative effects are making it difficult to comply with the physical distancing policies. This is a comparative prospective cohort study conducted in six Latin American cities (Bogotá, Buenos Aires, Guayaquil, Lima, Santo Domingo, and Santiago de Chile). A multivariate linear regression model was used to assess the impact of variables related to COVID-19 on SWB, using the life satisfaction variable. The linear regression model controlled for personality dimensions, demographic and socioeconomic characteristics, and city fixed effects. We found the greatest reduction in wellbeing associated with loss of work or income, with variations in personality type, and socioeconomic factors such as type of employment and marital status. Factors associated with social capital provide a significant level of SWB protection.

## KEYWORDS

COVID-19, Disaster Risk, Pandemic, Physical Distancing, Social Capital, Subjective Wellbeing, Vulnerable Groups

## INTRODUCTION

The COVID-19 pandemic has signified a new kind of disaster for the world, of perhaps the highest magnitude, longest duration, and most extensive geographical distribution in recent history, expanding the already extensive list of natural and anthropogenic devastating events.

Usually, the negative consequences of disasters tend to be assessed based on factors such as number of events, loss of life, property damage, and economic losses, however, there is an impact at the subjective level of individuals that profoundly affects the wellbeing of those who are exposed to the risk or have experienced a disaster, a circumstance for which no formal and systematic actions have yet been prepared to measure, avoid, mitigate and to provide the necessary support to achieve an

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early recovery. This subjective wellbeing (SWB) refers to how a person performs an overall assessment of his/her life, considering two large dimensions: happiness and satisfaction (Diener et al. 2003).

The COVID-19 pandemic is a biological disaster event, the risk for which has increased significantly due to globalization, expansion of cities, and agricultural borders. This type of risk has a systemic character which implies a concatenation of impacts and a high complexity, making it strongly difficult to manage and demanding a comprehensive and inclusive approach (Lavell and Lavell 2020). The systemic nature of the risk has been clearly observed as the pandemic has materialized in most countries across the world. The primary effects of COVID-19—the severity and high transmission rate of the disease—generated the need for strong confinement measures that consequently affected employment, income, mental health, education, etc., resulting in a concatenation of impacts of various kinds, not limited to health.

As is often the case in disaster events, the highest levels of COVID-19 cases and deaths were observed in the most vulnerable and unprotected sectors of society in Latin American and Caribbean countries (LAC) where important socio-territorial inequalities exist. Heavily fragmented, LAC cities are a mosaic of unequal areas under environmental conditions, provision of services, population density, income, access to housing, health, education, overcrowding and others, reflecting the prevalence of deficient urban development models. To the severe and direct consequences of the pandemic: disease and death, must be added the negative effect generated by the mitigation actions taken to contain the disease, where, in addition to the enormous economic losses, the impact is recorded at the sociocultural and psychological level, creating circumstances detrimental to the population's subjective wellbeing. On the other hand, the social capital offers an opportunity to study new social dimensions that contribute to the resilience of communities (Castro-Correa et al., 2020), that is, in their ability to absorb the impact of a crisis or stress.

This study analyzes the loss of SWB conditions that people have suffered due to the effects of the measures taken to control the COVID-19 pandemic, through a comparative analysis of the differentiating factors of this problem, associated with socio-territorial aspects in different LAC cities.

## **Subjective Wellbeing and Social Capital**

The notion of subjective wellbeing had extensive development in the 1980s, driven by the social and health sciences, where the issue was addressed through its association with discomfort and disease, but lacked sympathetic and explanatory models of what would later be called the positive dimension of life (Barrientos 2005).

Subjective wellbeing refers to a person's overall assessment of his or her life by considering it as a whole, distinguishing two structuring elements: emotional and affective, and cognitive and evaluative (Barrientos 2005). Thus, subjective wellbeing is conceptualized as composed of two dimensions, satisfaction with life and happiness, the first expressed as a cognitive affirmation and the second as an emotional state (Barrientos 2005). The cognitive dimension has been called satisfaction with life (*vis-à-vis* family, friends, study, work, free time, etc.), understood as the degree by which an individual perceives his conscious goals as achieved (Barrientos 2005; Cardenas et al. 2012). The emotional dimension corresponds to a psychological state of an emotional type, present at the universal level.

SWB is affected/modified by several characteristics, such as gender, age, educational level, health condition, marital status (Karabchuk and Soboleva 2020), income, unemployment, religious commitment (Azizan and Mahmud 2018), race (Okulicz-Kozaryn 2019), and more recently it has been related to the impact of protective measures geared to face COVID-19, particularly physical isolation (Johnson, Saletti-Cuevas and Tumas 2020; San Martin-Ahumada 2020).

For the purposes of this study, we consider that SWB refers to how a person performs an overall assessment of his life considering two large dimensions: happiness and satisfaction. The first related to emotional and affective aspects, independent of the level of development achieved by the socioeconomic system in which that individual is immersed. The second related to cognitive and

evaluative aspects, also called life satisfaction, is understood as the degree by which an individual perceives the achievement of his conscious goals (Boarini 2005, Cardenas et al. 2012).

From a disaster risk reduction and a resilience perspective, social capital impacts a community's ability to absorb an impact and overcome the situations generated, affecting the speed and effectiveness of initial responses, as well as the long-term recovery process (González-Muzzio 2013; Navarro-Cueto, Vallejo-Villalta, and Navarro-Bernal 2017; Castro-Correa et al., 2020). Social capital "consists of a number of adaptive capacities that relate to social structures and the network of interconnection between them" as well as "social support, understood as the aid received; and the sense of community and attachment to the place" (González-Muzzio 2013: 4-5). The social sciences recognize three main forms of social capital: (1) *Bonding*, relationships developed between members of the same group or community through the development of trust and cooperation that reflects social cohesion; (2) *Bridging*, relationships expressed horizontally between different groups or communities through the generation of collaborative or partnership networks; and (3) *Linking*, relationships vertically integrated between groups and communities with administrative bodies such as local governments, and other institutions and organizations at different levels (Navarro-Cueto, Vallejo-Villalta, and Navarro-Bernal 2017; Aldrich and Meyer, 2015). These types of shared capital are not mutually exclusive, can coexist in a community, where the existing or predominant type of capital will have a direct effect on the resilience level. According to Navarro-Cueto, Vallejo-Villalta, and Navarro-Bernal (2017), not all types of relationships contribute in the same way to resilience.

Several Latin American studies highlight the contribution of social capital—particularly social networks, social trust, and social norms—to SWB (Mochón and de Juan Díaz 2016; Beytía 2016; Velasquez 2016; Herrera, Fernandez, and Barros 2016). Although these studies have not been carried out during situations of major stress or shock, the current situation of the pandemic generates the appropriate scenario to explore this relationship during extreme circumstances.

In this study, the authors have expanded the measurement of social capital, incorporating the dimension of family cohesion to the traditional bonding, bridging, and linking types. Likewise, the scope of the binding type has been extended to relationships with instances of power within the same community, in order to respond to the predominant type of social capital existing in informal settings—as opposed to the classical interpretation of the linking type, where the relationships are explicit and formal, and usually limited to authorities or institutionalized levels of power in society (Sarmiento et al. 2020, Sarmiento et al. 2022).

## Study Area

The study considered six Latin American cities (Bogotá, Buenos Aires, Guayaquil, Lima, Santo Domingo and Santiago de Chile), which were selected based on their different public health policies (physical distancing, partial/full lockdown, among others). The study recognizes that cities are the territorial level where national policies for care, control and mitigation of COVID-19, in particular the physical distancing measures, materialize. The selection of cities also sought a diversity in size, social and cultural composition, and economic vocation, to analyze the fulfillment of these measures and their impact on SWB, as well as the factors that deepen or diminish this impact.

## METHODS

The study design responds to 3 research questions:

1. How COVID-19 selected variables affected SWB?
2. Did the support received by individuals during the pandemic compensate the loss of SWB caused by COVID-19?
3. Is there a protective effect of social capital?

The data was collected through the Latinwell survey on the Qualtrics platform, an instrument developed in this study to assess subjective wellbeing (SWB) and social capital in cities from Latin America. The Latinwell survey includes five groups of variables. i) SWB, it was assessed asking respondents to rate their satisfaction using a 7-point Likert scale (completely unsatisfied/completely satisfied) to the question, commonly used in the SWB literature (OECD 2018), “*In general, how satisfied are you with your life?*” ii) COVID-19 related variables, they included questions assessing the health and economic impact of the pandemic on the respondents and other members of their household, questions about compliance to public policies implemented to control the transmission of the pandemic, and questions related to monetary and non-monetary support received by the respondents and other members of their household. iii) Social capital, it was assessed using an index composed of four sub-indices: Family Cohesion (FC) that measures relationships within a family group, Bonding (Bo) reflects relationships between members of the same group or community, Bridging (Br) refers to horizontal relationships between different groups or communities, and Linking (L) addresses vertical relationships between individuals and groups with those who hold power (Ateca-Amestoy, Cortes-Aguilar, and Moro-Egido 2014). The Social Capital Index (SCI) is the normalized average of the four sub-indices and ranges from 0 to 1 (highest social capital). iv) Personality dimensions, they were assessed using the Ten-Item Personality Inventory (TIPI), one of the most widely accepted model of broad personality traits that uses both the positive and negative poles of five dimensions: extraversion, agreeableness, conscientiousness, emotional stability, and openness to experiences (Gosling, Rentfrow, and Swann 2003; Renau et al. 2013). v) Demographic and socioeconomic characteristics, they included questions from the Latinobarometer, a survey using a probabilistic sampling designed to represent the populations of 18 Latin American countries (Latinobarometro Corporation 2018).

The Latinwell survey was implemented online and distributed to residents aged 20 to 64 from six large cities of Latin America: Buenos Aires (Argentina), Bogota (Colombia), Guayaquil (Ecuador), Lima (Peru), Santiago (Chile), and Santo Domingo (Dominican Republic). A non-probability sampling design was used through two web-based recruitment platforms. A total of 1,689 respondents were recruited from September 11<sup>th</sup> to November 8<sup>th</sup>, 2020 using Facebook’s advertising model to construct samples by age and city of residence. Facebook is a promising platform for survey sampling and recruitment in social science (Schneider and Harknett 2019), but its use is still limited in the LAC region. Additionally, 5,252 respondents were recruited from December 4<sup>th</sup> to December 13<sup>th</sup> using the Offerwise opt-in online panel (Offerwise 2020). The Offerwise panel in the LAC region covers the six countries included in the study with over 1.3 million panelists. Complete responses were obtained for 614 respondents (36.4%) in Facebook, and 2,239 respondents (42.6%) in Offerwise. To explore the representativity of the Latinwell sample, the demographic and socioeconomic characteristics were compared with the 2016–2018 series of the Latinobarometer for each of the six cities under analysis.

A multivariate linear regression model was used to evaluate the impact of COVID-19 related variables on SWB as follows:

$$LS_{ij} = \beta_1 X_{1ij} + \beta_2 X_{2ij} + \beta_3 X_{3ij} + \beta_4 X_{4ij} + \alpha_1 Z_{1ij} + \alpha_2 Z_{2ij} + \theta_j + \varepsilon_{ij} \quad (1)$$

SWB was assessed using the life satisfaction variable  $LS_{ij}$  that takes values from 1 to 7 (highest satisfaction) for all individuals  $i$  residing in city  $j$ .  $X_1$  corresponds to variables assessing the health and economic impact of the pandemic on the respondents and other members of their household.  $X_2$  includes questions about compliance to public policies implemented to control the transmission of the pandemic.  $X_3$  are variables related to monetary and non-monetary support received by the respondents and other members of their household.  $X_4$  corresponds to the social capital index. Finally, the linear regression model controls personality dimensions ( $Z_1$ ), demographic and socioeconomic characteristics ( $Z_2$ ) and city fixed effects ( $\theta$ ).

The estimated coefficients are used to answer our research questions and test our three hypotheses. i) It is expected that health and economic impacts of COVID-19 on individuals ( $X_1$  variables) were negatively associated with life satisfaction:  $\beta_1 < 0$ . ii) It is expected that the monetary and non-monetary support received by individuals during the pandemic ( $X_3$  variables) increased SWB in a magnitude ( $\beta_3$ ) that was not sufficient to compensate for the deterioration of SWB associated with the restrictive policies to control the pandemic ( $X_2$  variables) and its consequences on the health and finances of individuals ( $X_1$  variables):  $\beta_3 + \beta_2 + \beta_1 < 0$ . Finally, iii) we hypothesize that individuals with a higher social capital index ( $X_4$  variables) were more protected against the effect of the pandemic on life satisfaction:  $\beta_4 > 0$ . Estimation of the linear regression model (1) is performed in StataMP v.16 using robust standard errors. A Variance Inflation Factor (VIF) is assessed to rule out multicollinearity.

## RESULTS

Descriptive statistics of the Latinwell data are presented in Table 1 by city. Life satisfaction, which ranges from 1 to 7 (with 7 highest satisfaction), is similar among cities, with Bogota and Santiago having the highest levels in the region. While this sample is not representative of each city, it is worth highlighting that Lima and Guayaquil had the largest fraction of individuals with COVID-19 diagnosis in consistency with the national statistic of COVID-19 incidence. In most cities, about one-third of individuals lost their employment due to the pandemic, and one-half had salary cuts. However, monetary assistance was received by around 20% of individuals with a large variation among cities. Nearly 37% of Santiago residents received monetary assistance while only 5.7% of residents of Guayaquil got financial support.

Table 1 shows how the socioeconomic and demographic control variables compare to city representative samples obtained from Latinobarometer. Tests for differences in means are performed for each socioeconomic and demographic characteristic, and their statistical significance levels are presented in the table. Age from the Latinwell sample is similar to Latinobarometer in Buenos Aires, Santiago and Lima, but it is lower in the rest of the cities. Latinwell oversamples females in most cities, except in Bogota and Guayaquil. There are important discrepancies in education and job status, but small discrepancies in civil or marital status. These results justify controlling for multiple variables in the regression analysis.

Table 2 presents the result of our multivariate regression analysis of SWB during the pandemic. The first column (1) includes city fixed effects, and controls for demographics, socio economic characteristics, and personality dimensions. The second column (2) adds a group of variables that assesses the impact of COVID-19 on the individual and other members of the household. The third column (3) adds variables that assess the individual compliance with public policies implemented to control COVID-19 in the cities. The fourth column (4) adds public assistance programs received by the individual and other members of the household. Finally, the fifth column (5) adds the social capital index.

Table 2 shows that some health and economic impacts of COVID-19 on individuals were negatively associated with life satisfaction ( $\beta_1 < 0$ ), confirming our first hypothesis. Job stability and loss of income are result of the pandemic's mitigation measures that were strongly related with SWB, confirming previous findings (Azizan and Mahmud 2018). In a context of uncertainty and crisis caused by a biological emergency, people express favorable subjective well-being when they maintained a stable economic situation such as having a dependable job or maintaining an income, but subjective well-being is affected when job is lost or, when regular income was lost. Our study showed that receiving isolated or partial financial or material support does not influence the SWB.

Table 1. Determinants of subjective wellbeing during the COVID-19 pandemic

Variable	Buenos Aires	Santiago	Bogota	Santo Domingo	Guayaquil	Lima
Life satisfaction ( $LS$ ) <sup>a</sup>	4.5	4.7	4.8	4.6	4.5	4.6
COVID-19 impact ( $X_1$ )						
Diagnosed with COVID-19	3.70%	5.12%	6.63%	10.77%	14.43%	17.66%
Death of a close friend	4.38%	2.16%	1.02%	3.03%	2.01%	2.06%
Lost employment	19.53%	32.08%	36.22%	29.97%	38.26%	31.19%
Other family member lost employment	7.07%	11.86%	18.37%	18.18%	18.12%	16.74%
Lost income	43.77%	44.47%	61.48%	51.18%	62.08%	52.75%
Other family member lost income	11.11%	16.71%	15.31%	16.16%	19.80%	18.12%
Compliance with COVID-19 public policies ( $X_2$ ) <sup>b</sup>						
Stay at home	2.8	2.7	2.7	2.6	2.6	2.7
Washing hands	2.8	2.9	2.8	2.8	2.8	2.9
Surface disinfection	2.6	2.6	2.5	2.5	2.6	2.7
Mask use	2.9	2.9	3.0	3.0	3.0	2.9
Physical distancing	2.8	2.8	2.7	2.8	2.8	2.8
Public transportation use	0.9	1.8	1.7	1.7	1.7	1.8
Social activities (restaurants/bars/theaters)	0.3	0.8	1.1	1.0	1.4	1.1
COVID-19 public assistance ( $X_3$ )						
Received monetary assistance	22.22%	36.93%	13.01%	29.29%	5.70%	22.02%
Other member received monetary assistance	6.06%	7.82%	6.12%	8.75%	2.68%	6.65%
Received non-monetary assistance	10.77%	59.57%	16.33%	19.53%	14.43%	10.78%
Other member received non-monetary assistance	2.69%	7.55%	5.61%	8.75%	6.04%	3.44%
Social Capital Index ( $X_4$ ) <sup>c</sup>						
<b>SCI</b>	<b>0.37</b>	<b>0.48</b>	<b>0.45</b>	<b>0.53</b>	<b>0.46</b>	<b>0.52</b>
Family Cohesion (FC)	0.63	0.70	0.64	0.68	0.60	0.63
Bonding (Bo)	0.46	0.60	0.52	0.63	0.54	0.61
Bridging (Br)	0.14	0.22	0.25	0.40	0.32	0.41
Linking (L)	0.26	0.41	0.39	0.41	0.36	0.42
Personality dimensions <sup>d</sup> ( $Z_1$ )						
Extraversion	3.9	3.8	3.7	3.7	3.8	3.9
Agreeableness	5.1	5.2	5.2	5.4	5.3	5.3
Conscientiousness	5.3	5.5	5.6	5.5	5.3	5.4
Emotional Stability	4.2	4.7	4.8	5.0	4.9	4.9
Openness to Experiences	5.0	5.1	5.1	5.3	5.1	5.1
Socioeconomic and demographic characteristics ( $Z_2$ )						
Age (in years) <sup>e</sup>	45.1	42.3	37.1***	34.4***	37.6**	38.7
Married <sup>f</sup>	55.22%	49.87%	50.77%**	50.51%***	56.71%*	54.13%

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Table 1. Continued

Variable	Buenos Aires	Santiago	Bogota	Santo Domingo	Guayaquil	Lima
Divorced †	23.57%*	13.75%	11.48%**	9.43%	8.72%*	14.22%**
Female †	76.09%***	70.08%***	56.12%	56.23%**	54.7%	60.32%***
Catholic religion †	46.13%***	49.60%	62.24%*	40.07%	56.38%***	70.18%
Evangelic religion †	2.36%***	7.28%***	7.40%	26.26%***	18.12%	8.49%**
No religion †	10.1%***	21.29%***	13.01%	11.78%***	13.76%***	6.42%
Education <sup>e</sup> †	4.19***	4.40***	4.44***	4.15***	4.25***	4.57***
Mestizo race †	15.82%**	33.42%***	39.80%	33.335	76.51%***	68.12%**
Black race †	77.15%***	47.17%***	37.76%	13.80%	14.77%***	21.56%***
Other race no-white †	1.68%	1.62%	3.32%**	36.70%	5.70%	4.82%
Independent worker †	24.92%	13.48%***	24.49%***	25.25%***	29.19%	31.42%**
Dependent worker †	44.11%***	50.94%***	39.54%***	50.17%***	33.89%***	40.6%***
Retired †	4.71%***	1.89%***	1.79%***	0.01%**	1.68%	0.92%***
Student †	4.38%	3.23%**	2.30%***	8.08%***	4.36%***	3.67%**
Living alone	15.49%	9.16%	7.91%	11.11%	5.37%	4.59%
Income <sup>f</sup>	10.2	11.8	7.4	8.8	9.4	9.8
Sample size	297	371	392	297	298	436

† This characteristic is compared to the same variable in the Latinobarometer sample. A test of difference in means is performed and the significance value reported with \* if the null hypothesis of equal means is rejected with a probability of 5% or less, with \*\* if the p-value is less than 1%, and \*\*\* if the p-value is less than 0.1%.

<sup>a</sup>Average of a 7-point Likert scale (completely unsatisfied=1/completely satisfied=7).<sup>b</sup> Average of a scale from 0 (no compliance) to 3 (full compliance). <sup>c</sup> Average of indexes ranging from 0 (lowest level of social capital) to 1 (highest level). <sup>d</sup> Average of scale from 1 (lowest level of personality trait) to 7 (highest level). <sup>e</sup> Average of index from 1 (some primary school) to 5 (complete bachelor degree). <sup>f</sup> Average of scale from 0 (no income) to 21 (USD6,000 or higher per month)

In general, the economic impact on SWB was stronger than the health impact. COVID-19 diagnosis or the death of a close friend were not significant, except when social capital was included as a control.

Table 2 also confirms our second hypothesis. However, our study finds that compliance to COVID-19 public policies such as staying at home, mask use, or physical distance did not place a statistically significant toll on SWB ( $\beta_2 = 0$ ). Most importantly, receiving public assistance directly or through other members of the household did not increase SWB ( $\beta_3 = 0$ ). While monetary assistance has a slightly positive association with SWB, it was not statistically significant. This finding is consistent with Romero, Gómez-Fraguela, and Villar (2012) who did not find major changes in perceived well-being when people are passive recipients of supportive actions. Overall, the COVID-19 public policies were not sufficient to compensate for the deterioration of SWB associated with the consequences on the pandemic on the health and finances of individuals.

Our study finds that social capital (column (5) Table 2) has a positive and statistically significant effect on SWB during the COVID-19 pandemic ( $\beta_4 > 0$ ). Specifically, we found that individuals who express trust and ties with other members within the same social group showed the highest levels of perceived well-being in contrast to other members of society who did not perceive the same levels of trust and ties with others. The SWB of individuals with higher trust for their social group remained high even when physically isolated as the latter group.

The results show no significant difference in SWB among cities using Buenos Aires as the reference group. Only Bogota shows a higher SWB that is statistically significant and robust across

Table 2. Determinants of subjective wellbeing during the COVID-19 pandemic in six Latin American cities

Variable	(1)	(2)	(3)	(4)	(5)
COVID-19 impact ( $X_1$ )					
Diagnosed with COVID-19		0.066	0.069	0.07	0.075
Death of a close friend		-0.35	-0.369	-0.368	-0.553*
Lost employment		-0.304**	-0.295**	-0.298**	-0.283**
Other member lost employm.		-0.171	-0.162	-0.163	-0.167
Lost income		-0.198*	-0.197*	-0.188*	-0.193*
Other member lost income		0.005	0.007	0.003	-0.012
Compliance with COVID-19 public policies ( $X_2$ )					
Stay at home			-0.098	-0.108	-0.118
Washing hands			0.166	0.171	0.16
Surface desinfection			-0.021	-0.021	-0.028
Mask use			0.008	0.016	0.02
Physical distancing			-0.003	-0.005	-0.04
Public transportation use			-0.025	-0.027	-0.04
Social activities (restaurants/bars/theaters)			-0.014	-0.011	-0.008
COVID-19 public assistance ( $X_3$ )					
Received monetary assistance				0.038	0.021
Other member received monetary assistance				0.142	0.162
Received non-monetary assistance				-0.047	-0.088
Other member received non-monetary assistance				0.050	0.054
Social Capital Index ( $X_4$ )					
					0.855***
City-fixed effects ( $\theta$ )					
Santiago	0.071	0.168	0.181	0.201	0.172
Bogota	0.255	0.344*	0.359*	0.364*	0.338*
Santo Domingo	-0.166	-0.06	-0.049	-0.052	-0.13
Guayaquil	-0.184	-0.086	-0.074	-0.051	-0.048
Lima	-0.09	-0.004	-0.002	-0.005	-0.075
Personality dimensions ( $Z_1$ )					
Extraversion	0.106**	0.103**	0.104**	0.106**	0.078*
Agreeableness	0.053	0.076*	0.074*	0.07	0.061
Conscientiousness	0.085*	0.080*	0.075*	0.07	0.076*
Emotional Stability	0.122***	0.113**	0.112**	0.114**	0.102**
Openness to Experiences	0.039	0.046	0.043	0.045	0.037
Socioeconomic and demographic characteristics ( $Z_2$ )					
Age	-0.006	-0.007	-0.007	-0.007	-0.007
Married	0.255**	0.261**	0.248**	0.254**	0.228*

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Table 2. Continued

Variable	(1)	(2)	(3)	(4)	(5)
Divorced	-0.022	0.006	-0.001	-0.009	0.012
Living alone	-0.178	-0.151	-0.146	-0.135	-0.11
Female	0.078	0.041	0.042	0.049	0.055
Catholic religion	0.055	0.052	0.044	0.046	-0.008
Evangelic religion	0.076	0.054	0.055	0.052	-0.086
No religion	-0.025	-0.018	-0.027	-0.042	-0.068
Education	0.028	0.036	0.035	0.037	0.019
Mestizo race	0.075	0.064	0.07	0.075	0.05
Black race	0.31	0.284	0.28	0.278	0.284
Other race no-white	-0.205	-0.223	-0.219	-0.212	-0.229
Independent worker	0.094	0.093	0.091	0.107	0.091
Dependent worker	0.471***	0.365***	0.365***	0.371***	0.363**
Retired	0.426	0.336	0.35	0.385	0.583*
Student	0.258	0.124	0.127	0.123	0.165
Income	0.025**	0.019*	0.018*	0.017*	0.016
Constant	2.115***	2.296***	2.284***	2.243***	2.421***
N	2,284	2,230	2,230	2,222	2,091
R2 adjusted	0.060	0.068	0.067	0.066	0.079

Significance level: \*p-value<0.05; \*\*p-value<0.01; \*\*\*p-value<0.001

columns on adding more control variables. In our scale from 1 to 7 in SWB, Bogota citizens had near 0.40 higher SWB than citizens of other cities.

Among demographic and socio-economic characteristics, being married increase SWB, which is consistent with previous studies that show causal effect between partnership and SWB (Chen and van Ours 2018), the same as being a dependent worker. This finding is relevant since most of previous studies have focused on the impact of unemployment, temporary work (Inanc 2018) and job insecurity (Hu et al. 2021), but few of them has deepened into regular work and SWB. Income is positively associated with SWB but is statistically insignificant after controlling for the social capital index, which can be explained by other variables that may be correlated with income as Boarini et. al (2012) showed. The study finds no gender differences in life satisfaction. However, Jhonson, Saletti-Cuevas & Tumas (2020) found differences in the impact on well-being according to the educational level and gender of the population in their study on Argentina. They state that these indicators reflect the inequality of cultural and material resources which have a differential impact on mental health as a consequence of the pandemic. In this way, they observed that women present a greater feeling of fear and anguish, often related to the socialization of their role as caregivers.

The present study confirmed the findings of Sutin et al. (2020) where some personality traits, such as emotional stability and extraversion, are statistically significant and positively associated with SWB, and are related to a satisfactory response during the COVID-19 pandemic.

The present study has some limitations: (1) The use of online platforms such as Facebook affects the representativeness or the capacity of the sample to reproduce the characteristics of the population; (2) The correlational and cross-sectional nature of the study does not allow us to capture the dynamics of the relationships between SWB, demographic variables, personality traits, COVID-19 mitigation

measures and social capital; and (3) This study focuses on large cities of Latin America, and the impact of the pandemic on smaller cities is largely unknown.

To address the above limitations, this study will be extended to five regions in Chile using the Latinwell survey in different socio-territorial contexts, and it will consider a second phase in a few months, to become a longitudinal study. Results and analysis will be presented in subsequent studies.

## **CONCLUSION**

The effects of the COVID-19 pandemic on employment and income have led to a significant deterioration in SWB. Beyond the disease itself, there is an association between the deterioration of SWB and some types of personality, job stability, and marital status, particularly being divorced or separated.

The study found that in a health emergency scenario where the measures involve confinement, the social capital provides a significant level of SWB protection. The study shows that the social capital index, expanded with family cohesion and linking dimensions, was strongly associated with SWB during the pandemic. Further investigation on the role and composition of social capital will be performed in subsequent studies.

It was noted that while monetary and non-monetary aid —food—has reduced the pressing needs of the community, it has failed to compensate for the wellbeing lost due to the COVID-19 impact.

It is essential to identify the population most vulnerable to the mental health consequences of the COVID-19 pandemic. This study provides an important step to understand this critical issue and shed light on potential policy actions to protect SWB. In particular, the study suggests that strengthening the social capital of those most vulnerable citizens of society can enhance their SWB, and potentially improve the community's resilience and adherence to public health policies designed to control the pandemic.

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