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Loss of financial well-being in the COVID-19 pandemic: Does job stability make a difference?

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This article aims to assess the loss of financial well-being in the COVID-19 pandemic. The developed theoretical model identifies the impacts of the perception of financial risk and financial anxiety on financial well-being. It also seeks, through a comparative analysis, to assess whether public servants, due to their status of job stability in Brazil, are less likely to have the effects of the pandemic than private employees. A survey was carried out on 1222 Brazilians with structural equation modeling and multi-group invariance tests. The results indicate that lower financial well-being is influenced by the level of financial anxiety and financial risk. Public servants perceive fewer losses in financial well-being, anxiety and risks than other professions. In the pandemic context, where the risks of unemployment and loss of income are increased, job stability works like an insurance, allowing public servants greater financial security and then minor losses of financial well-being. Evidence indicates that in countries where a large percentage of workers have temporary or informal jobs, the challenge of reducing the financial impacts of the pandemic will be great. Interventions to alleviating anxiety and public policies of income transfer and reduction of unemployment are instruments to reduce the loss of financial well-being.

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1. Introduction

The new coronavirus (Sars-CoV-2) spread rapidly around the world which led the World Health Organization to declare the pandemic in March 2020. Without an approved vaccine, countries were forced to adopt measures such as quarantine and social distancing to reduce contagion, flatten the growth curve of the disease and reduce the chances of the collapse of health systems.

Such measures have important psychological, social, and economic effects. From a psychological viewpoint, it has triggered a wide variety of emotional problems, such as anxiety and depression and varying degrees of stress disorders (Cao et al., 2020; Qiu et al., 2020; Wang et al., 2020). As for social aspects, quarantine and social distancing require rapid changes in the behavior of the populations involved and impacted by the disease. These changes, depending on social norms and cultural customs, may be accompanied by undesirable consequences for individuals (Betsch, 2020).

From an economic viewpoint, there is a visible impact on the increase in unemployment and financial hardship of many businesses, especially micro and small ones, and families. According to estimates by the Organization for Economic Cooperation and Development (OECD), the pandemic will directly affect sectors that account for up to one-third of the GDP (Gross Domestic Product) in major economies and a considerable increase in unemployment rates (OECD, 2020a,b). In families, the greater the pessimism about the future household's economic situation, lower financial well-being (Barrafrem et al., 2020). In this scenario, citizens will be at risk of losing their jobs or facing reduced wages. Many informal workers are prevented from earning income because they cannot perform their activities. The most vulnerable population depends exclusively on government support.
financial aid and food donations. Such economic situations can trigger financial anxiety (Pijoh et al., 2020; Salameh et al., 2020) and negatively affect the perception of financial well-being (FWB) (Shoss, 2017; Grinstein-Weiss and Bufe, 2019; Botha et al., 2021), in other words, the perception of being able to sustain current and anticipated desired living standards and financial freedom (Brüggen et al., 2017).

However, there is one category of the workforce, those that serve as public employees, who, thanks to its employment stability, are immune to the possibility of job and income losses during the pandemic. In countries where employment stability exists, as in the case of Brazil and France, governments cannot dismiss civil servants except under specific conditions, which do not include the pandemic. Therefore, for this class of workers, employment stability acts as an insurance against loss of employment and income. Thus, for this group, financial anxiety, and loss of financial well-being during the pandemic may be lower than that presented by other classes in the workforce without this benefit. This is corroborated by the evidence that public employees have greater financial anxiety than employees of private companies (Salameh et al., 2020) and the fact that job insecurity is negatively correlated with financial well-being (Choi et al., 2020).

In this context, our study aims to investigate the loss of financial well-being due to the pandemic, testing the hypothesis that public servants, due to their employment stability, will present lower levels of financial anxiety and a minor loss of financial well-being, when compared to other classes of the workforce. Losing FWB is a relevant socio-economic problem as it relates to other aspects of life, such as the levels of general well-being, happiness, satisfaction, social relationship and overall self-perceived quality of life (Gutter and Copur, 2011). An imbalance in FWB may also be associated with increased levels of anxiety and depression, violent behavior and, consequently, greater demands on the health system (Downing, 2016). Thus, by measuring the impact of the pandemic on the FWB of families can help public managers to better understand the behavior and needs of citizens and, therefore, support public policies to minimize the socio-economic consequences of the pandemic.

Our work thus innovates in at least three aspects. First, by providing new evidence for the emerging literature on the financial impacts of the pandemic. Second, by presenting a pioneering assessment of losing financial well-being during the pandemic. Third, by comparing a specific group of workers, public servants, who due to employment stability have no risk of job and income loss, with other categories in the workforce.

The choice of Brazil as the research scenario is justified mainly by three aspects. First, because it is one of the countries in the world most affected by the pandemic. In January 2021, Brazil ranked second in number of deaths due to the Covid-19 (two hundred and ten thousand deaths in Jan/21), corresponding to approximately 10% of global casualties from the disease. This percentage is much higher than the size of the country’s population in relation to the world population (2.7%), demonstrating the severity of the pandemic in the country. Second, in Brazil a unique labor force setting is presented, which is characterized by a class of public servants who have job stability, thus making their jobs and income guaranteed during the pandemic. Third, because Brazil is a country with high income inequality and a large contingent of vulnerable people, the economic, financial and social impacts of the pandemic can be amplified, when compared to more developed countries with better income distribution.

2. Financial well-being and financial anxiety in the pandemic context

Financial well-being can be defined as a state in which the individual is able to fully meet his current and ongoing financial obligations, feeling secure about his financial future and able to make choices that allow him to enjoy life (CFPB, 2015a). Similarly, Mahendru (2020) defines financial well-being as an individual’s ability to quickly meet his/her current financial obligations and needs of the present and future and his/her temperament towards financial freedom today and tomorrow. In this sense, Plagno (2011) states that when the individual acquires the ability to effectively manage monetary resources towards a financial balance capable of providing budget tranquility, he can achieve financial well-being. For Arber et al. (2014), financial well-being is the individual’s subjective perception regarding his level of satisfaction regarding the adequacy of their income concerning their personal needs. Brüggen et al. (2017) add to this definition financial freedom, i.e., the ability of individuals to make decisions about their lives without worrying about their financial constraints. Joo (2008), in a more direct way, defines financial well-being as an anxiety-free, healthy, and satisfying financial perception.

Financial well-being is influenced by several aspects such as religiosity (Sarofim et al., 2020), differences in access to resources and opportunities (Drever et al., 2015) and socioeconomic and demographic profiles. With gender, the related literature shows that men have higher levels of financial well-being than women (Shim et al., 2009; Gutter and Copur, 2011). For the number of economic dependents and children, the study by Penn (2007) shows that higher levels negatively influence financial well-being. Regarding age, Xiao et al. (2006), Plagno (2011) and Collins and Urban (2020) identified that older individuals have greater financial well-being. Marital status has inconclusive results in the literature, without a clear direction in whether single or married individuals are more prone to financial satisfaction (Gutter and Copur, 2011). The results for different education levels are also inconclusive. For Lown and Ju (1992) and Penn (2007), individuals with higher education are more financially satisfied. But Plagno (2011) reports that individuals with higher levels of education have higher aspirations and, therefore, are less satisfied with their financial situation.

Regarding occupation status, the literature shows retirees have financial satisfaction greater than those who are employed or unemployed. Being unemployed negatively influences financial well-being, as it refers to the loss of income, the impossibility of accumulating savings and a scenario of anxiety related to the financial situation (Plagno, 2011). Choi et al. (2020) showed that job insecurity negatively influences financial well-being. Mahdzan et al. (2020), in turn, found significant differences in financial well-being between workers from different sectors, with public servants having the highest levels of financial well-being.

For different levels of income, Delafrooz and Paim (2011), Gutter and Copur (2011), Mahdzan et al. (2019) and Collins and Urban (2020) observed a positive association between higher income and financial well-being. Thus, individuals with higher monthly income have higher levels of FWB compared to those with low monthly income or without income.

Among these variables, income is the variable likely to suffer the greatest variations because of the coronavirus pandemic due to the enormous economic and financial impacts. World Health Organization estimates indicate that the COVID-19 pandemic will directly affect sectors that account for up to a third of the GDP in major economies and also that unemployment rates will be much higher than at the peak of the global financial 2008 crisis (OECD, 2020a,b). Therefore, reduced income, job loss, inability to honor
commitments and the need to receive government financial assistance are possible consequences of the pandemic on the financial lives of individuals which can affect their perception of financial well-being (Wolters, 2003; De Neve et al., 2018).

The pandemic can also cause financial anxiety, leading to a loss of financial well-being (Pijoh et al., 2020) Financial anxiety can be described as feeling anxious or worried about one’s financial situation (Archuleta et al., 2013). It can also be considered a psychosocial syndrome where individuals have an uneasy and unhealthy attitude toward engaging with and administering their finances effectively (Burchell, 2003) Financial anxiety can be influenced by factors such as money, work and economics (Pijoh et al., 2020) and the household financial situation (Roll et al., 2016). Individuals who are subjected to greater financial adversity are more prone to anxiety disorders (Espinoza and Rudenstine, 2020). Besides, job insecurity, described as the experienced threat to the continuity and stability of employment (Shoss, 2017), is negatively related to financial well-being (Choi et al., 2020). There is also evidence that income shocks and labor market shocks reduce financial well-being (Grinstein-Weiss and Bufe, 2019; Botha et al., 2021) and that unemployment is negatively associated with financial well-being (Brenner et al., 2020) Thus, individuals subject to financial adversities and job insecurity resulting from the pandemic may perceive greater financial risks due to the pandemic and present higher levels of financial anxiety and greater losses of financial well-being.

However, there is a group of individuals who are not subject to job insecurity resulting from the pandemic, stable public servants. In some countries, public servants have job security, a rule that prevents dismissal in pandemic situations. Such employees, besides maintaining their jobs, have guaranteed income during the Sars-Cov-2 pandemic. Therefore, for this group, the financial situation is opposite to that of other types of jobs, a factor that may influence their financial well-being.

3. Framework and hypotheses

Thus, the theoretical model of our research, represented in Fig. 1, shows three hypotheses. Hypotheses H1 and H2 establish that the perception of financial risk (RF) during the pandemic will have a positive impact on financial anxiety (FA) and a negative impact on financial well-being. Hypothesis H3, on the other hand, indicates that financial anxiety negatively impacts financial well-being. To assess whether this model is invariant according to job security, we will use a model invariance test between the two groups (public servants and other works).

4. Method

We conducted a web survey with 1222 individuals in Brazil. Table 1 presents the profile for all respondents.

Most respondents are female and have no children. The average age is 38 years (standard deviation of 12 years). Almost half of the respondents are married or in a stable relationship. Among those with children, most have one or two children. As for financial dependents, some observe that 50.13% of respondents have dependents.

It is observed that the group of public servants has a slightly higher average age (public servants 42 and other workers 38 years old), a higher percentage of married individuals, less children and dependents when compared to the group of other workers. It should also be noted that 86.13% of public servants have postgraduate degrees, which can be justified by the fact that most competitions for the occupation of public positions require postgraduate studies and public tender for admission.

Our data collection strategy was based on a questionnaire composed of five main sections. The first section consists of a single question that assesses the interviewee’s routine during the pandemic. The second section was developed to operationalize the perception of financial well-being, the questions are from the scale proposed by CFPB (2015b). As the original scale was built to assess financial well-being, we made a slight adaptation to assess the loss of financial well-being due to the pandemic. Thus, the response categories were changed to a five-point Likert scale with these statements: 1-Worsened a lot, 2-Worsened, 3-Remaining Equal, 4-Improved, 5-Much improved. Thus, the scale measures the loss of financial well-being, and the lower the responses are, the greater is the loss of financial well-being during the pandemic.

The third section assesses financial anxiety, consisting of seven items, from the Archuleta et al. (2013) scale and an additional item proposed in our study, with all items using five-point Likert response categories (1-Never, 2-Rarely, 3-Sometimes, 4-Often, 5-Always). The next section assesses financial risk due to the pandemic and consists of eight questions created by the authors. For this dimension, there is a five-point Likert probability response scale (1-Not probable, 2-Somewhat improbable, 3-Neutral, 4-Somewhat probable, 5-very probable). The scale items of the instrument are described in Appendices A–C.

All scales showed Cronbach’s Alphas greater than 0.9 (financial well-being = 0.923, financial anxiety = 0.960, financial risk = 0.922) indicating the reliability of the scales. The last section contains questions about the profile and income of the respondents. The instrument was evaluated by three experts for content analysis and a pre-test was performed with ten individuals from different socio-economic profiles.

To apply the questionnaire, the Google Forms platform was used. Invitations to participate in the survey were sent via social media, without promotion, and e-mails. between May 2nd and May 20th, 2020. The instrument was anonymous, without the collection of respondents’ internet protocols. To ensure that the sample had a considerable percentage of public servants, e-mails were sent to institutions and public organizations across the country. Requests for the dissemination of the research were sent to the communication consultants and directors of public institutions in different areas (teaching, judicial, administrative, health, etc.) and levels (ministries, universities, secretariats, etc.).

Descriptive statistics Student’s ‘s’ test, confirmatory factor analysis, structural equation modeling and multi-group analysis were
Table 1
Respondents profile.

| Variable       | Category                        | Percentage (%) |
|----------------|---------------------------------|----------------|
|                | Public servants (n = 519)       |                |
|                | Other workers (n = 762)         |                |
| Gender         | Male                            | 39.69          | 37.40          |
|                | Female                          | 59.73          | 62.20          |
|                | Prefer not to respond           | 0.58           | 0.39           |
| Age            | Up to 28 years                  | 6.94           | 38.71          |
|                | 29 to 36 years                  | 26.97          | 23.62          |
|                | 37 to 47 years                  | 36.99          | 18.64          |
|                | Over 47 years                   | 29.09          | 19.03          |
| Marital status | Single                          | 27.36          | 46.98          |
|                | Married/Stable union            | 60.31          | 42.52          |
|                | Divorced                        | 11.37          | 8.79           |
|                | Widowed                         | 0.19           | 0.92           |
|                | Others                          | 0.77           | 0.79           |
| Education      | Basic education                 | 0.00           | 0.66           |
|                | Elementary school               | 0.19           | 0.39           |
|                | High school                     | 1.93           | 18.37          |
|                | Graduated                       | 11.75          | 25.85          |
|                | Postgraduate studies            | 86.13          | 54.72          |
| Children       | None                            | 44.32          | 63.12          |
|                | One                             | 22.93          | 16.01          |
|                | Tow                             | 24.08          | 14.83          |
|                | Three                           | 5.97           | 4.46           |
|                | Four or more                    | 2.70           | 1.57           |
| Financial dependents | None                     | 27.36          | 49.87          |
|                | One                             | 24.86          | 25.20          |
|                | Tow                             | 24.66          | 14.96          |
|                | Three                           | 14.45          | 6.69           |
|                | Four or more                    | 8.67           | 3.28           |

used as data analysis techniques. Descriptive statistics were used to present the respondents’ profile and perceptions. The chi-square test assesses the association between variables and the t test for differences in means between the two study groups (public servants x other professions).

Confirmatory factor analysis was used to validate the loss of financial well-being, financial anxiety and financial risk constructs. The models are estimated with the variance–covariance matrix estimated by maximum likelihood via the direct procedure. Convergent validity was analyzed by observing the magnitude and statistical significance of standardized coefficients, by the average variance extracted (AVE) by the absolute adjustment indexes: chi-square statistics ($\chi^2$), Root Mean Square Residual (RMR), Root Mean Square Error of Approximation (RMSEA), and by comparative fit indexes: Normed Fit Index (NFI), Tucker–Lewis Index (TLI). For the chi-square/degrees of freedom ratio, recommendations are less than five, for CFI, GFI, NFI and TLI, values greater than 0.950 are suggested and RMR and RMSEA should be below 0.080 and 0.060, respectively (Byrne, 2010; Hair et al., 2014; Hooper et al., 2008; Kline, 2015). For the Average Extracted Variance (AVE) values equal to or greater than 0.5 are desirable (Fornell and Larcker, 1981). Discriminant validity was assessed comparing the AVE and correlations. The estimates the AVE for two factors need to be greater than the square of the correlation between the two constructs (Fornell and Larcker, 1981) and by examining the correlations among the constructs, which must be less than 0.85 (Kline, 2015).

The unidimensionality is evaluated from the standardized residuals related to the indicators of each latent variable. Constructs that have, for a 5% significance level, standardized residuals below 2.58 are considered one-dimensional (Hair et al., 2014).

To estimate the results, the model generating strategy was followed, which aims to find a model that is both substantively meaningful and statistically well fitting (Jöreskog, 1993). It is also the most used among the confirmatory factor analysis strategies (Byrne, 2010). In this strategy, the focus is to locate the source of misfit, and then the model is adjusted and re-estimated to determine a model that better describes the sample data. Following the recommendation of Hair et al. (2014) the re-specification of the model was made considering the modification indexes and including the specification of correlation between errors and the removal of some variables, which were carried out considering the theoretical support.

After validating the proposed model, we performed a multi-group analysis of the model’s invariance among the groups (public servants with job stability versus other professions without job stability), aiming to evaluate if the structure of the model is equivalent in these groups.

The invariance analysis tests a series of nested models, starting from a constraint-free reduced model and imposing an increasing order of constraints. A non-significant chi-squared difference between two models indicates invariance among the examined groups (Cheung and Rensvold, 2002). Also, a failure in one test invalidates the continuity of any test of another parameter (Koufteros and Marcoulides, 2006).

The null hypothesis we tested is the data in each group belongs to the same population, that is, the two groups do not differ, and the covariance effects of not impact structural relations (Byrne, 2010). Hence, we simultaneously submitted the model to a multi-group analysis, which developed a progressive set of constraints (factorial loads, variances, and covariances), to analyze the equivalence for the two groups.

Thus, after knowing the factor loadings of the model for each group, the weighted average of these weights was calculated to determine the levels of financial well-being, financial anxiety and financial risk of the group with job stability and also for the group without job stability. Finally, we performed a mean difference test (t test) to ascertain the existence of significant differences between the two groups.
5. Results

The research sample consists of 1222 Brazilians, of whom 519 (38%) are public servants and 762 (62%) have other professions. To assess the effects of the pandemic on the daily routines of these respondents during the pandemic, questions about their habits were presented as a starting point of the survey (Table 2).

We observed that the majority of respondents in both groups declare that they are leaving home only when it is inevitable. Such results are in line with the recommendations for social distancing that was recommended by public entities and health agencies, and the proportions are close to the desired percentage of the population that must stay at home to minimize the spread of the disease. It is also worth mentioning the wide impact of the pandemic on the respondent’ daily lives since only 1.4% of the respondents in the group of public servants and 2.7% in the group of other professions do not perceive significant changes.

To assess how the pandemic has affected the financial life of the respondents, we asked about the level and the rate of change in income, and also about their financial reserves (Table 3).

The monthly income of most respondents (71.24%) in the group “other professions” has an income below US$ 1110. For public servants, 52.41% have an income between US$ 1100 and US$ 2750. For 79.19% of public servants, the income has remained the same since the beginning of the pandemic, while for other professions this percentage is 47.24%. It is also noteworthy that some public servants declare that their income has been reduced, which can be explained by their working in more than one job and, consequently, their income has been reduced due to the reduction or total loss of income obtained in the other job. We also observed that due to job stability, no public employee lost all income, and among the rest of the workforce 9.84% had total loss of income.

Most public servants had a reserve before the pandemic and have not yet had to use it. But the percentage of individuals who occupy other professions and who have used or are using their reserves is more than double the percentage of public servants in these conditions. For those who have already used the financial reserve, it is no more than double. Also, many (other professions) have not yet used the reserve.

The results demonstrate that job stability in a crisis, such as the pandemic, works as an income guarantee insurance for this part of the population, which, compared to the other groups, already has a better income and can accumulate more financial reserves.

In the next step, to validate the constructs provided for in the theoretical research model, confirmatory factor analysis was performed. The results of the adjustment indexes for all constructs are shown in Table 4.

For the three constructs surveyed, the proposed models refer to the model with all the variables of the original scale and the results indicate that they are inadequate, since the chi-square degrees of freedom ratios are higher than the recommended maximum limit, besides the fact that some adjustment indexes did not reach the minimum values. Thus, in the search for suitable models, two main measures were adopted: removal of non-significant variables with low factor loadings, and the insertion of correlations between the errors of the variables which made theoretical sense. Specifically, the procedures performed to adjust each construct were:

- **Financial well-being (FWB):** elimination of the observed variable FWB3 (load = 0.379) and establishment of covariance between the following errors: FWB1<->FWB2, FWB1<->FWB4, FWB1<->FWB5, FWB1<->FWB6, FWB2<->FWB4, FWB2<->FWB5, FWB2<->FWB6, FWB4<->FWB5, FWB4<->FWB6, FWB5<->FWB6, FWB5<->FWB9, FWB7<->FWB8 and FWB8<->FWB9.
- **Financial anxiety (FA):** the establishment of covariance between the following errors: FA1<->FA2, FA1<->FA8, FA2<->FA3, FA2<->FA6, FA2<->FA7, FA3<->FA6, FA4<->FA5, FA5<->FA6, FA6<->FA7, and FA7<->FA8.
- **Financial risk (FR):** elimination of the observed variables FR2 (load = 0.366), FR4 (load = 0.549) and FR9 (load = 0.533) and establishment of covariance between the following errors: FR1<->FR3, FR1<->FR7, FR3<->FR5, FR3<->FR6, and FR5<->FR8.

These adjustments allow fitting each construct into the fit indexes described in the method’s section. The improvements may be seen by comparing the fit indexes values of the ‘proposed’ and ‘final’ models of each construct, as demonstrated in Table 4.

Once the model adjustment procedures were performed, the Composite Reliability and Cronbach’s Alpha of the constructs were calculated, which presented results above the minimum limits (0.700) indicated by the literature. Also, the Average Variance Extracted (AVE) of each construct was verified to evaluate the Convergent Validity (CV). Table 5 shows the results obtained that presented a value higher than that suggested by Hair et al. (2014) (> 0.5), which indicates a high integration between the observable variables of each construct.

By analyzing Table 5, the values of the correlations between the constructs showed values lower than the square root of the AVE indicating the Discriminant Validity (DV) of the constructs. Therefore, the results of this stage support the decision to maintain the measurement model with the three constructs for the analysis of the integrated model, which joins the measurement models and the structural model. Evaluating the integrated model was performed based on the adjustment indexes and the statistical significance of the estimated regression coefficients (Table 6).

The proposed model initially presented all adequate adjustment indexes, with no added adjustment necessary. Thus, after finding a validated model for measuring the proposed relationships, we looked to test the measurement model’s invariance between groups with and without job stability. Aiming to assess whether the model developed is suitable for both groups and if there are significant differences in modeling that justify the construction of different models for each profile. The procedure was performed using the chi-square difference test and the CFI difference between two nested models. Parameter restrictions between groups were created as recommended by Byrne (2010). Table 7 presents the results of the validation tests for the analysis of invariance between groups.

The comparison of the unrestricted model (Model 1) with the fixed factorial loads model (Model 2) demonstrates that the factorial loads vary between the groups, that is, the model with fixed factorial loads does not fit equally for both groups and the model with free factorial loads. Such evidence demonstrates the non-equivalence in the measurement model for both groups (with and without job stability), when presenting $\Delta \chi^2 = 35.052$ with $\Delta df = 20$, being statistically significant ($p = 0.020$), showing that the models are not invariant between the groups.

Based on this result, we sought to discover where the significant differences were so that the models could have variants, that is, we sought to find out what were the significant differences between the estimated models for the groups with and without job stability. Such verification took place through the comparison of the differences between the critical ratios for parameters, which need to present values greater than or equal to 1.96 to be significant. Thus, the variable FR1 (Critical Ratio = –2.410) and the impact of financial risk on financial well-being (Critical Ratio = –2.147) were identified, which point out the distinction between models for groups with and without stability employment.
Table 2
Participants routine during the pandemic.

| Routine                           | Public servants (with job stability n = 519) | Other workers (without job stability n = 762) |
|----------------------------------|----------------------------------------------|-----------------------------------------------|
| Normal, no changes.             | 1.4                                          | 2.7                                           |
| Leaving home to work.           | 11.4                                         | 17.9                                          |
| Leaving home only when it is inevitable. | 74.1                                         | 66.8                                          |
| Isolated, without leaving home. | 13.2                                         | 12.7                                          |

Table 3
The situation of income and reserves during the pandemic, for public servants and other professions.

| Variable Categories | Public servants (with job stability n = 519) | Other workers (without job stability n = 762) |
|---------------------|-----------------------------------------------|-----------------------------------------------|
| Monthly income      |                                               |                                               |
| Up to US$183.00     | 0.80                                          | 22.57                                         |
| Between US$183.01 and US$367.00 | 2.31                                         | 17.45                                         |
| Between US$367.01 and US$550.00 | 6.55                                         | 13.25                                         |
| Between US$550.01 and US$733.00 | 12.14                                        | 6.82                                          |
| Between US$733.01 and US$1100.00 | 17.34                                        | 11.15                                         |
| Between US$1,100.01 and US$1833.00 | 29.67                                        | 10.89                                         |
| Between US$1,883.01 and US$2750.00 | 22.74                                        | 7.74                                          |
| More than US$2750.00 | 8.46                                         | 10.30                                         |
| Income/Salary        |                                               |                                               |
| My income/salary has increased | 0.58                                          | 2.67                                          |
| It remained the same  | 79.19                                         | 47.24                                         |
| Reduced by less than 20% | 12.52                                        | 11.94                                         |
| It had a reduction of 21% to 50% | 6.74                                         | 16.80                                         |
| It had a reduction of 51% to 70% | 0.58                                         | 5.12                                          |
| Reduced by over 70%    | 0.39                                         | 5.38                                          |
| I have lost all my income, and I am living off the help of friends and relatives | 0.00                                         | 2.89                                          |
| I lost all my income and depend on government assistance | 0.00                                         | 3.41                                          |
| I have lost all my income and have not yet received any assistance | 0.00                                         | 3.54                                          |
| Financial reserves    |                                               |                                               |
| I had no financial reserves before the pandemic | 27.75                                         | 27.82                                         |
| I have a reservation and I have not had to use it yet | 60.12                                         | 48.16                                         |
| I have a reservation, but I am already using it | 9.25                                          | 18.64                                         |
| I had a reservation, but I already used all the resources | 2.89                                          | 5.38                                          |

Table 4
Adjustment statistics for the constructs financial well-being, financial anxiety, and financial risk.

| Fit indexes                                      | Appropriate adjustment levels\(^1\) | Financial well-being | Financial anxiety | Financial risk |
|--------------------------------------------------|-------------------------------------|-----------------------|-------------------|---------------|
|                                                   | Proposed                             | Final                 | Proposed          | Final          | Proposed          | Final          |
| Chi-square (value)                                | 945.59                               | 37.844                | 505.959           | 25.261         | 737.425           | 10.331         |
| Chi-square (probability)                          | 0.00                                | 0.01                  | 0.00              | 0.005          | 0.00              | 0.035          |
| Degrees of freedom                                | 35                                   | 14                    | 20                | 10             | 27                | 4              |
| Chi-square/degrees of freedom                     | 27.017                               | 2.703                 | 25.498            | 2.526          | 27.312            | 2.583          |
| TLI - Tucker–Lewis Index                          | 0.855                               | 0.992                 | 0.936             | 0.996          | 0.874             | 0.996          |
| NFI - Normed Fit Index                            | 0.883                               | 0.995                 | 0.953             | 0.998          | 0.902             | 0.998          |
| RMR - Root Mean Square Residual                   | 0.053                               | 0.011                 | 0.036             | 0.008          | 0.080             | 0.008          |
| RMSEA - R. M. S. Error of Approximation           | 0.143                               | 0.036                 | 0.138             | 0.035          | 0.143             | 0.035          |
| Composite Reliability                             | 0.911                               | 0.957                 | 0.960             | 0.922          |                   |                |
| Cronbach's Alpha                                  | 0.923                               | 0.923                 | 0.960             | 0.922          |                   |                |

Note: \(^1\)Appropriate levels for the adjustment statistics based on Hooper et al. (2008) and Hu and Bentler (1999).
Table 5
Convergent validity and discriminant validity.

| Constructs          | Convergent validity (AVE) | Discriminant validity |
|---------------------|---------------------------|-----------------------|
| Financial well-being (FWB) | 0.536                    | 0.732                 |
| Financial anxiety (FA)    | 0.734                    | -0.635                |
| Financial risk (FR)      | 0.671                    | -0.651                |

Note: Diagonal elements (italic) – square root of the variance shared between the constructs and their measures (AVE). Other values - Correlation between constructs and discriminant validity.

Table 6
Adjustment statistics for the integrated model.

| Fit indexes                        | Appropriate adjustment levels¹ | Integrated model Proposed and final |
|------------------------------------|-------------------------------|-------------------------------------|
| Chi-square (value)                 | –                             | 705.565                             |
| Chi-square (probability)           | > 0.050                       | 0.000                               |
| Degrees of freedom                 | –                             | 206                                 |
| Chi-square/degrees of freedom      | < 5.000                       | 3.425                               |
| TLI - Tucker–Lewis Index           | > 0.950                       | 0.976                               |
| NFI - Normed Fit Index             | > 0.950                       | 0.973                               |
| RMR - Root Mean Square Residual    | < 0.080                       | 0.046                               |
| RMSEA - R. M. S. Error of Approximation | < 0.060                  | 0.044                               |

Note: ¹Appropriate levels for the adjustment statistics based on Hooper et al. (2008) and Hu and Bentler (1999).

Table 7
Goodness-of-fit statistics for tests of invariance among the groups: with and without job stability.

| Model description                        | χ2  | df | Δχ2 | Δdf | Statistical significance | CFI | ΔCFI |
|------------------------------------------|-----|----|-----|-----|----------------------------|-----|------|
| Model 1. Combined baseline models (with and without job stability) | 1002.278 | 412 | -   | -   | 0.977                      | -   | -    |
| Model 2. Measurement weights             | 1037.330 | 432 | 35.052 | 20  | 0.020                       | 0.976 | -0.001 |
| Model 3. Structural weights              | 1042.634 | 435 | 40.356 | 23  | 0.014                       | 0.976 | -0.001 |
| Model 4. Structural residuals            | 1109.076 | 438 | 106.798 | 26  | 0.000                       | 0.974 | -0.003 |
| Model 5. Measurement residuals           | 1250.177 | 482 | 247.899 | 70  | 0.000                       | 0.970 | -0.007 |

Note. χ² = chi-square values; df = degrees of freedom; Δχ² = difference in chi-square values; Δdf = difference in degrees of freedom.

guided by the variable of needing to borrow money and the existing impact of financial risk on their financial well-being.

Fig. 2 shows the estimated results for each group with standardized coefficients and significance of the model relationships.

We confirm the three research hypotheses. Hypotheses H1 and H2 establish that, during the pandemic, the perception of financial risk will have a positive impact on financial anxiety and a negative impact on financial well-being and this we find for both groups. Specifically, in a pandemic, the positive impact of financial risk on financial anxiety is greater in the group without job stability (0.708) compared to the group of public servants (0.680). In addition, we confirm the hypothesis of the negative impact of financial risk on financial well-being, the impact being greater in the group with stability (−0.490). This result is in line with studies that indicate that perceived financial risk is negatively related to financial well-being (Gutter and Copur, 2011; Barrafrem et al., 2021).

Hypothesis H3, which states that financial anxiety negatively impacts financial well-being, was also confirmed, with the greatest impact on the group without stability (−0.384). In short, we found that, due to the pandemic, the greatest impact occurs in increasing the perception of financial risk, increasing financial anxiety, in both groups.

In general, we identified that all relationships had a greater impact on the group without stability when compared to the group with job stability, except for only two relationships, which caused the model to be invariant, the variable FR1 and the impact of financial risk on financial well-being. This shows how much the group without job security is impacted in a pandemic situation, in contrast to the group with this security.

When analyzing the variables with the greatest and lowest impacts in each construct surveyed, we found for both groups that item FR3 ‘You have your income reduced’ is the one with the least impact on the level of perception of financial risk and item FR8, the greatest impact for both groups, denoting the concern of both, regardless of stability, in not having money available for any emergency. In the construct of financial anxiety, we found that the least impact for the stable group is in item FA1 ‘I feel anxious about my financial situation’ and the greatest impact for both is in item FA7 ‘I feel fatigued because I worry about my financial situation’. Finally, on financial well-being, we found that the perception they can handle a large unexpected expense (FWB1) has the least impact on both groups and the greatest impact on making money left over at the end of the month (FWB7).

Finally, we built the three constructs with the weighted average of the factor load weights for each group to identify the possible differences in perception between the group with job stability and those without stability (Table 8).

We observe that for the three constructs analyzed there are significant differences between the groups. The average values indicate that public employees had lower perceptions of risk and financial anxiety and higher perceptions of financial well-being.
The results of the different tests for each item belonging to the constructs, available in Appendices A–C, show these average differences are maintained in all items forming the risk and financial anxiety constructs. As for financial well-being, the difference is not significant for three of the ten items.

6. Discussion and policy implications

The COVID-19 pandemic is an event of broad economic and social impacts. A significant portion of the population is in a situation of a reduced or total loss of income and with no prospect of regularizing the situation in the short term, which is leading to a perception of loss of financial well-being, as evidenced in this study.

How each government reacts to this crisis can have long-term, lasting effects on income differences and the general well-being of the population. Besides expanding investments in the public health system, aiming to guarantee access to treatment for the entire population, regardless of income level, Brazil created an emergency aid program for the most vulnerable, with the transfer of income to 63.5 million people. Such a policy meets the evidence that states that can maintain or even increase spending on essential programs during times of economic decline have the potential to reduce the expansion of income inequality that will occur due to the ability of the rich to easily recover from economic downturns (Franko, 2020).

Without this emergency income transfer policy for the most vulnerable, and having legislation that guarantees employment stability and the income of public servants, the impact of the COVID-19 pandemic on income inequality would probably be even greater. In addition, the lack of emergency aid would inevitably increase social impacts, with even greater growth for homeless people, hunger, and crime.

Since the income transfer policy was operationalized through distributing resources through the banking system, an effect of the pandemic is the financial inclusion of the most vulnerable.
For instance, in the first 6 months of the program, 100 million digital social accounts were opened for the operationalization of emergency aid and other benefits offered due to the pandemic in Brazil (BRASIL, 2020).

With these digital accounts, citizens without access to the financial system can now carry out withdrawals, transfers, and payments through the banking system. Increased financial–sector participation for low-income citizens can have positive effects on well-being and help reduce health disparities (Aguila et al., 2016). However, not all these citizens now financially included can remain in the system after the pandemic. The risk of social exclusion (Fernández-Olit et al., 2018), the lack of internet access and low digital capabilities (Fernández-Olit et al., 2019) are factors that may make it difficult for a significant proportion of the population to stay in the financial system.

Another potential effect of a pandemic is the change in the population’s consumption profile. Brazil was the country that most suffered the economic impacts of its exchange rate devaluation during the pandemic period, with depreciation of 33.6% against the US Dollar. The resulting increase in the price of imported products, added to the evidence of loss of financial well-being, causes individuals to buy less imported products and more domestic products, implying a change in the consumption profile. This scenario creates an opportunity for local companies to use pricing, branding, and marketing communication interventions policies to gain market share (Hampson et al., 2018).

In this scenario, financial anxiety is one of several forms of anxiety that can arise during a pandemic, such as health-related anxiety, daily routine-change anxiety, and anxiety generated by social distancing. Policymakers are strongly encouraged to consider this severe distress and to attend to the public’s economic concerns, and clinicians are encouraged to develop specific, evidence-based interventions aimed at alleviating this source of anxiety (Bareket-Bojmel et al., 2020). Decreasing one’s financial anxiety may lead to better financial well-being and an overall improvement in personal well-being (Archuleta et al., 2020).

The comparison between the groups indicates that public employees have lower perceptions of financial risk and anxiety and lower losses in financial well-being. Such results are in line with the evidence that shows that job insecurity negatively affects financial well-being (Choi et al., 2020). In the pandemic context, where the risks of unemployment and loss of income are increased, job stability works like insurance, allowing this class of workers greater financial tranquility. Another fact that also contributes to the greater financial tranquility of public servants is that they have higher incomes, when compared to other employees. Such evidence indicates that in countries where a large percentage of workers work fewer hours than they would like, have temporary or informal jobs, the challenge of reducing the financial impacts of the pandemic will be great. Individuals with high levels of job insecurity are the first to lose all income and need government policies that guarantee a minimum income and, consequently, the consumption of basic items such as food will be indispensable.

Otherwise, the pandemic could cause even greater levels of income inequality and a larger population in vulnerable conditions. As an alternative to avoid or at least reduce the increase in income inequality due to the pandemic, the public managers can adopt strategies such as government job guarantee, or basic minimum universal income, or higher and longer unemployment benefits. To achieve improvements in financial well-being specially for the most vulnerable population, it is necessary to restore labor force participants’ confidence in labor market prospects, such as a social safety net that includes financial counseling support, as well as policies that enable the reduction of unemployment (Botha et al., 2021).

Thus, as perceived financial well-being is a predictor of overall well-being (Netemeyer et al., 2018), it is understood that the reduction of financial well-being due to the pandemic may have lasting effects on physical health outcomes, including protecting against heart disease and stroke (Boehm and Kubzansky, 2012), life expectancy (Diener and Chan, 2011), job satisfaction and performance (Judge et al., 2010), consumer choices (Gilovich et al., 2015), among others.

### 7. Concluding remarks

In countries with high-income inequality and a high percentage of the population in a vulnerable situation, any reduction in economic activity has a significant impact on the financial lives of many citizens. Therefore, in a pandemic, there is a double challenge for the public manager. Saving lives implies efforts that must be made so the health system does not collapse. And, there is the demand to manage the social, economic and financial

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#### Table A.1

| Code | Item |
|------|------|
| FWB1 | The perception I can handle an unexpected big expense. |
| FWB2 | The perception I am guaranteeing my financial future. |
| FWB3 | My feeling I will never have the things I want in life. |
| FWB4 | My feeling I can enjoy life because of the way I am managing my money. |
| FWB5 | My feeling that I am just surviving financially. |
| FWB6 | My concern that the money I have may not be enough. |
| FWB7 | My ability to make money left over at the end of the month. |
| FWB8 | My ability to keep finances up to date. |
| FWB9 | The control that my finances have over my life. |
| FWB10 | My possibilities to buy a gift (wedding, birthday, etc.) without jeopardizing my monthly finances. |

| Code | Item |
|------|------|
| Mean | Std. Dev. | Mean | Std. Dev. |
| Public servants (with job stability) | Other workers (without job stability) | t-stat |
| FWB1 | 2.57 | 0.83 | 2.47 | 0.96 | 0.055 |
| FWB2 | 2.45 | 0.93 | 2.38 | 1.01 | 0.233 |
| FWB3 | 2.79 | 0.74 | 2.69 | 0.93 | 0.035 |
| FWB4 | 2.76 | 0.89 | 2.71 | 1.01 | 0.347 |
| FWB5 | 2.83 | 0.81 | 2.67 | 0.96 | 0.020 |
| FWB6 | 2.50 | 0.90 | 2.32 | 1.02 | 0.001 |
| FWB7 | 3.00 | 1.07 | 2.78 | 1.20 | 0.001 |
| FWB8 | 2.97 | 0.88 | 2.82 | 1.04 | 0.005 |
| FWB9 | 2.92 | 0.78 | 2.78 | 0.98 | 0.006 |
| FWB10 | 2.69 | 0.91 | 2.39 | 1.05 | 0.000 |

Note: Scale 1-Much worse, 2-Worse, 3-Remain equal, 4-Improved, 5-Greatly improved.
impacts necessary to guarantee the maintenance of economic activity and to protect the most vulnerable, and prepare the country to come out of this crisis in conditions to resume economic growth.

In this sense, this study innovated by pointing out the evidence some of the financial impacts of the pandemic, showing that employment stability is as a relevant factor to ease the loss of financial well-being and a financial anxiety during this period. Such conclusions are relevant for discussing the importance of the performance of public agents when maintaining the financial stability of part of its population allows the country to go through periods of crisis with a lower impact on its economy.

A limitation of this study is that the research was carried out via the internet due to social distancing and many of the respondents did not have children or financial dependents Future research may expand the discussion of the antecedents and consequences of losing financial well-being in the pandemic. Longitudinal studies that monitor the effects of financial inclusion of the vulnerable from digital accounts are also a promising field. Comparative studies among other groups with different financial characteristics can also contribute to the advancement of the identification of groups less susceptible to financial impacts in times of crisis.

CRediT authorship contribution statement

Kelmara Mendes Vieira: Investigation, Methodology, Data curation, Writing – original draft, Review, Funding acquisition. Ani Caroline Grigion Potrich: Investigation, Methodology, Writing – original draft, Review. Aureliano Angel Bressan: Investigation, Methodology, Writing – original draft. Leander Luiz Klein: Investigation, Methodology, Writing – original draft, Review.

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Appendix A

See Table A.1.

Appendix B

See Table B.1.
Appendix C
See Table C.1.

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