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Ruiz, Freddy and Lugilde, Alba

Universidad de Santiago de Compostela (Spain) Universidad Industrial de Santander (Colombia), Universidad de Santiago de Compostela (Spain)

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Freddy Ruiz[Δ], **Alba Lugilde**[∞]

Abstract

The aim of this paper is to study empirically the role of decent work on household consumption in Colombia. Using data from the Large Integrated Household Survey (GEIH) and the Colombian Longitudinal Survey (ELCA) we calculate for Colombia several of the decent work indicators proposed by the International Labour Organization and go one step further constructing their homologous at microeconomic level as measures of the job instability borne by the workers. The constructed indicators measure the poor quality of employment the individuals have which implies uncertainty about future labour income. This work addresses the effect this labour uncertainty has on household consumption. Our results show that being in a situation of vulnerability or labour instability, which generates uncertainty about future income, alters household consumption patterns. This is consistent with the evidence of the existence of precautionary saving in Colombian households.

Keywords: decent work, labour uncertainty, consumption, precautionary savings, ELCA, Colombia

JEL codes: D12, D14, E24

[Δ] fjruizhe@uis.edu.co (+34) 881814339 GAME-IDEGA, Universidad de Santiago de Compostela. Avenida das Ciencias, Chalet 1, Campus Vida, Santiago de Compostela, 15782, A Coruna (Spain).
(+57) 76344000 Ext 2106 Escuela de Economía y Administración, Universidad Industrial de Santander (Colombia).
https://orcid.org/0000-0003-4180-7145
[∞] **http://orcid.org/0000-0001-6602-9162**

1. Introduction

In this work we analyse the effect the labour instability has on consumption of Colombian households. To do that we construct several indicators of job instability based on the decent work indicators recommended by the International Labour Organization (ILO, hereafter). The main feature of this paper is the adaptation of the indicators to the microeconomic level to proxy the uncertainty borne by the workers in Colombia. Another characteristic is the inclusion of these indicators in a consumption model to test the effect they have on household consumption, that is, the existence of precautionary saving in Colombia.

Therefore, the main contribution of this work is to show the effect the labour instability (uncertainty about future income) has on Colombian household consumption and to shed light about the existence of precautionary saving in Colombia. In order to do that, in this paper we analyse the relationship and the impact that the constructed decent work indicators have on household consumption in 2016. This last part is carried out through the estimation of a consumption model at the microeconomic level using the data of the ELCA and including the main variables that affect household consumption in addition to the indicators constructed discussed in the first part of this work (see Alessie & Lusardi, 1997; Attanasio & Pistaferri, 2016; Iregui-Bohórquez & Melo-Becerra, 2016 or Brindusa et al., 2018, among others).

When discussing about the future of work, factors such as technology, innovation and new skills are important. However, developing economy such as Colombian requires, in addition, reviewing some conditions of their labour market that ensure its sustainability and distributive equity. With the approach of the eighth sustainable development objective, proposed at the United Nations Assembly in September 2015, the need to achieve better working conditions and economic growth in 2030 has been established globally. The consumption and savings decisions are important in determining the income and employment of an economy, both in the short term (consumption is the main component of demand, 68.63% of Colombian GDP in 2016) and in long-term economic growth (savings determine investment). Thus, a variation in consumption will have an impact on economic growth in the medium and long term, which justifies an analysis of the consumption of Colombian households and the variables that affect consumption decisions.[1]

At the end of 2016, according to the National Administrative Department of Statistics (DANE, hereafter), the Colombian labour market presented an employment rate of 59.0%, unemployment of 8.7% and underemployment of 26.1% (insufficient hours, inadequate employment due to competencies or income), with the national GINI coefficient of 0.52. In this environment of inequality, the dimensions of decent work must be constantly observed, with the

[1] The variations on consumption and saving (the investment) explain the temporary fluctuations of GDP.

interest of providing an evidence of the participation in the market of workers, especially of the poorest employees or the ones with less training or unstable job positions.

Based on the decent work measurement proposals proposed by Anker, Chernyshev, Egger, Mehran, & Ritter (2003), Ghai (2003), International Labour Office (2012), and the experience of the Colombian case of Pineda Duque, Javier et al. (2013) and Farne, Guerrero, & Carvajal (2016), in this work some of these indicators are calculated for 2016, using data from the Colombian Longitudinal Survey –ELCA- of the Universidad de los Andes (2018) and the Large Integrated Household Survey -GEIH- of the DANE (2018).

Decent work indicators make possible to capture inequality in the income of employees and, since the income of the individual / household is one of the main determinants of household consumption, this inequality in income will affect consumption. On the other hand, if an employee is in a situation of labour instability (measured by the indicator) he/she has a greater uncertainty about continuing to work in the future and about his/her future labour income, therefore one will reduce their consumption and increase savings in response to that situation (saving due to precautionary reasons). In this way both concepts are linked: uncertainty affects household consumption and this labour uncertainty can be measured through different labour market indicators related to the dimensions of decent work proposed by the ILO.

To the best of our knowledge it is the first work analysing the effect the uncertainty (proxied through different work decent indicators) has on household consumption in Colombia. Our results are relevant for the design of economic policy. They shows that obtaining and maintaining desirable values for indicators of decent work should be an economic policy objective for the Colombian government for two main reasons. The first one is because of the direct implication it would have on the labour market while the second is because of the indirect implications on consumption and savings of Colombian households which affect the GDP and long-term economic growth.

After this introduction the work is organized as follow: section two presents, in a first part, the theoretical framework of decent work and, in a second part, the theoretical framework of analysis of the impact of labour uncertainty on consumption decisions. The third section shows the indicators of decent work calculated at the national level and their adaptation to the microeconomic level. This is in order to introduce them into a consumption equation and analyse the impact they have on it. The fourth section analyses, through the estimation of a consumption model, the relationship between the decent work indicators (the proxies of labour uncertainty) and the consumption of Colombian households. Finally, the fifth section concludes the findings.

2. Theoretical framework

2.1. Decent work: concept and discussion

In the context which is based on flexibility of the labour market (Bender & Theodossiou, 2018; Domenech, Ramon Garcia, & Ulloa, 2018; Finnigan & Hale, 2018), the analysis related to work and its conditions require methods that allow to understand in detail their interaction in social, political, economic and individual situations.

Seeking to meet this need to interpret the reality of the labour market, the ILO introduced the concept of decent work. It happened during the 87th conference of the organization through which ILO wanted to provide elements of social, family and personal development which was considered a new international architecture of work. In this way, the concept of decent work has been associated with the existence of employment opportunities, social protection, labour rights and social dialogue (International Labour Office, 1999).

This process brought with it approaches from the political sphere, encouraging the development of categories and concepts, which were consolidated in the international documents and conferences of the ILO in 2001, 2005, 2008 and 2012, favouring the environment that precedes the publication of the last recommended categorization of dimensions and indicators of decent work (International Labour Organization - ILO, 2013).

The dimensions for the analysis of decent work were presented at the beginning of the 21st century but the national and sectoral study of decent work was not achieved until 2012-2013 when the indicators were proposed. In particular, ten dimensions are distinguished (without including the context): employment opportunities, adequate income and productive work, working time, balance between work, personal and family life, jobs which should be abolished, stability and safety at work, equality of opportunities, safe environment, social security and social dialogue between employees and employers (International Labour Organization - ILO, 2013).

It is important to mention that the task of appropriation and analysis of the concept of decent work was not approached openly in the governmental and business programs until the promulgation of the Sustainable Development Goals -SDGs- by the United Nations. Currently, this global commitment determines, for 2030, a goal of achieving a dynamic relationship between decent work and economic growth. This search for a synergy in objective 8 of the SDGs has allowed several governments to establish in their countries a pact for the search for decent work conditions (International Labour Office -ILO, 2019).

Parallel to the political debate, the academic field has been incorporated into the analysis of the topic, presenting an evidence for the three thematic groups, which include the research in the

areas: a. methodological and conceptual structures, b. sectoral or national applications and c. applications to individuals or groups.

A first branch of the literature on decent work discusses the approaches and recommendations for the configuration of these indicators. This papers analyse the forms and concepts of work that could imply improvements in the social relations of the labour market (see, among others, Ahmed, 2003; Anker, 2003; Bescond, Chataignier, & Mehran, 2003; Bonnet, Figueiredo, & Standing, 2003; Fields, 2003; Ghai, 2003; Sachs, 2004; Langan, 2014; Di Ruggiero, Cohen, Cole, & Forman, 2015; Sehnbruch, Burchell, Agloni, & Piasna, 2015; Rai, Brown, & Ruwanpura, 2019).

A second group studies the applications of the concept, by territories or by sectors of production (among them are the works of Egger, 2003; Paredes Gil, Mariana, Lawrence, Roderick J., Flu ckiger, Yves, Lambert, Cedric, & Werna, Edmundo, 2008; Saner, 2010; De Pedraza, Pablo & Villacampa, Alberto, 2011; Santillán & Garza, 2011; Bletsas & Charlesworth, 2013; Padang Wicaksono & Priyadi, 2016; Ayenew et al., 2017; Chen, Perry, Yang, & Yang, 2017; Yao, Parker, Arrowsmith, & Carr, 2017; Haddad & Hellyer, 2018).

A third group integrates an innovative segment in the literature in order to analyse the scale of decent work (DWS - decent work scale). This line is associated with the psychological behaviour of employees with respect to labour market conditions. This research provides tools from psychology that allow us to understand the existence of instability caused by working conditions (see, for example, Duffy, Diemer, Blustein, & Autin, 2016; Douglass, Velez, Conlin, Duffy, & England, 2017; Duffy et al., 2017; Işık, Kozan, & Işık, 2018; Kossen & McIlveen, 2018; Di Fabio & Kenny, 2019).

In Colombia, the indicators of decent work were calculated for the city of Bogotá for the years 2011 and 2012 allowing the comparison of the results between both years. In general, this analysis of decent work, based in a total of 30 indicators (with information in 25) corresponding to 10 dimensions, found a favourable panorama (without this means adequate) to decent work, except in: informality rate, employee training, excessive working hours, occupational sex segregation, rate of non-fatal accidents and proportion of the population of retirement age that receives a pension (Pineda Duque, Javier et al., 2013).

On the other hand, the Escuela Nacional Sindical, which has conducted studies from 2007 to 2016 on decent work, concludes in its latest document that there is a deficit in the guarantees for workers at the national level, that implies that it is necessary to promote economic sectors of greater added value and compliance with fundamental labour rights, favouring social security coverage, unionization and equality, among others (Tangarife López,Carmen Lucía et al., 2018).

2.2. The effect of labour uncertainty on consumption decisions

When there is uncertainty about future income the impact it has on consumption can generate an extra saving called "precautionary saving". Decent work indicators measure labour instability in some way and this generates uncertainty about future labour income which is the main source of income for most individuals. Since it is demonstrated that uncertainty affects household consumption and savings decisions, results interesting to analyse what happens when this uncertainty is measured through different indicators of decent work indicated by the ILO that can be adapted to the microeconomic level (these data allow to measure the household specific risk).[2]

There is no single and unequivocal measure of uncertainty. The precautionary savings literature has not reached a consensus on what measure best reflects the uncertainty and there are a large number of possible measures (both objective and subjective).[3] A wide branch of the literature has estimated the uncertainty through the variability of income as the standard deviation or the variance of income (see Zeldes, 1989; Blundell & M. Stoker, 1999; Kitamura, T., Yonezawa, Y., and Nakasato, M, 2010; among others). A second branch of the literature has estimated the uncertainty trough the consumption variability (Dynan, 1993; Guariglia & Kim, 2003; Baiardi, Manera, & Menegatti, 2013). Since a large part of the uncertainty about future income is explained by the increase in unemployment, a third branch of the literature has preferred to approximate the uncertainty by the probability of continuing to receive labour income in the future. This is closely related to the probability of being employed and, therefore, to the unemployment rate. The majority of consumers obtain their income from work, therefore, losing it is the greatest negative impact on their income, and the risk of future episodes of unemployment is a good indicator of uncertainty (Cuadro-Sáez, 2011; Malley & Moutos, 1996; Sastre, T. J. L. Fernández-Sánchez, 2011).

In the empirical works, the uncertainty about income due to the risk of unemployment is approximated by different variables. Studies based on microeconomic data have approximated the unemployment risk through the ex-ante probability (subjective and/or predicted) of becoming unemployed (losing employment), calculated on the basis of individual characteristics (Lusardi, 1998; Guariglia, 2001; Carroll & Samwick, 2006; Benito, 2006, among others). For example, Barceló and Villanueva (2010) analyse for the Spanish economy the hypothesis that the existence of precautionary saving implies that households perceiving greater job instability postpone their expenses. They approximate the probability of losing the job by the type of contract of the reference person in the household and obtain that the growth of consumption is

[2] Using microeconomic data seems to be the most appropriate way to analyze the effect that labor uncertainty has on consumption decisions since these are taken by the individuals who are the ones who decide how much of their income consume / save.

[3] For a review of the empirical literature on precautionary saving see Lugilde, Bande, & Riveiro, 2018.

greater in households whose income recipients are more exposed to the risk of losing employment than those who are not.

In this paper we construct different uncertainty measures about future labour income that consist on microeconomic adaptations of decent work indicators proposed by the ILO.[4] If the worker is in the labour instability situation measured by the indicator, he/she would have more uncertainty about continuing to work in the future (or about his/her future labour income) and, therefore, he/she would reduce his/her consumption (or would increase savings). To test that we carry out an econometric analysis that responds to the standard theoretical framework of consumption/savings decisions in a context of uncertainty (see Leland, 1968; Sandmo, 1970; Drèze & Modigliani, 1972). Specifically, and given the data availability, we analyse the uncertainty effect on consumption. If there is a precautionary saving, the uncertainty in the current period will increase the saving and therefore will decrease the current consumption, given a level of income, causing a positive future consumption growth and an increase in the slope of the consumption pattern (Zeldes, 1989; Carroll & Rhee, 1994; Attanasio & Weber, 1989; Miles, 1997; or Menegatti, 2010; estimate consumption equations including uncertainty and obtain a positive precautionary saving). We therefore expect a negative relationship between the indicators of labour instability and household consumption. It is the first work analysing of the effect the labour uncertainty has on household consumption in Colombia.

3. Decent work in Colombia: The aggregated and microeconomic analysis

3.1. National level indicators: Colombia

Based on the guidelines for the development of decent work indicators of the ILO (International Labour Organization - ILO, 2013), in this document we take into consideration four of the proposed dimensions. The decision to focus on these four dimensions for the analysis is the result of the access to national information and the possibilities of exploring their behaviour in Colombia at microeconomic level.

The dimensions considered are: a. adequate income and productive work, b. hours of work, c. labour stability and d. social dialogue and union representation. Tables 1 and 2 provide a description of the indicators included in each of these dimensions and their value for Colombia, respectively. The first dimension is adequate income and productive work, which shows the behaviour of the labour market with respect to income paid and their purchasing power. The second dimension, hours of work, presents the duration of the working time. The two latest dimensions represent the conditions and forms of participation in the market by workers and their ability to bargain collectively.

[4] The description of the indicators, the variables they include and how they are constructed is presented in section 3.2. of this work.

Table 1. Decent work indicators

DIMENSIÓN	CODIGO ILO	DECENT WORK STATISTICAL INDICATORS	DEFINITION	SOURCE
ADEQUATE INCOME AND PRODUCTIVE WORK	EARN-1	Low-income workers	Number of workers with income under the national poverty line * 100	GEIH - DANE, 2016
	EARN-2	Rate of poor workers	With income under the 2/3 of the median wage per hour * 100	GEIH - DANE, 2016
	EARN-3	Average Salary per hour	Average Salary per hour (Colombian Pesos - Euros)	GEIH - DANE, 2016
	EARN-4	Average real salary, monthly	Average monthly salary / inflation index for the reference year (Colombian Pesos - Euros)	GEIH - DANE, 2016
HOURS OF WORK	TIME-1	Rate of workers working more than 48 hours per week by sex (regarding main employment)	(Number of workers who work more than 48 hours per week / total of employees) * 100	GEIH - DANE, 2016
LABOR STABILITY	STAB-1	Precarious work rate	(number of workers who work without contract and / or with a temporary contract) * 100	GEIH - DANE, 2016
	SAFE-2	Rate of non-fatal accidents	(Total number of days lost due to work accidents in the reference period / Number of work accidents in the reference period) * 100	Ministerio de Salud de la República de Colombia.
	SECU-4	Rate of workers contributing to a pension	Workers who contribute to a pension / economically active population) * 100	GEIH - DANE, 2016
SOCIAL DIALOGUE AND UNION REPRESENTATION	DIAL-1	Unionization rate	(Number of unionized workers / employed population) * 100	GEIH - DANE, 2016

Source: Definition of the authors based in "Decent Work Indicators - concepts and Definitions" - ILO 2013

For the elaboration of the national indicators of decent work in Colombia, we use the microdata of the GEIH. The sample of this survey for 2016, integrates 248,000 households, distributed in 437 districts. This sample is probabilistic, stratified, conglomerate and multistage (National Administrative Department of Statistics - DANE, 2018). Similarly, the data on occupational accidents of the Ministry of Health of Colombia (2018) was used.

Table 2 shows the value of each of the decent work indicators considered for this document for the year 2016 in Colombia. Regarding the first dimension, adequate income and productive work, 15% of workers received less than the minimum of the national poverty line income, and 27% are considered as poor over the group of workers with incomes. The decent work hours dimension identifies that 29% of workers comply with excessive working hours; by sex there is a difference of 16 percentage points between men and women, with the former reporting the highest participation in the excess of working days. The labour stability dimension presents a Colombian labour market with 57% instability (according to the criteria established in this document) and 67% of the economically active population that does not contribute to a pension. Finally, with the unionization rate is 3.75%.

Tabla 2. Decent work indicators. Colombia 2016

DIMENSIÓN	COD OIT	INDICADORES ESTADÍSTICOS DE TRABAJO DECENTE	2016
ADEQUATE INCOME AND PRODUCTIVE WORK	EARN-1	Rate of low-income workers (%)	15.01
	EARN-2	Rate of poor workers (%)	27.13
	EARN-3	Average Salary per hour (median)	
		Colombian Pesos $ (currents)	3,590.91
		Euros € (currents)	1.14
	EARN-4	Average real salary, monthly	
		Colombian Pesos $ (currents)	963,612
		Euros € (currents)	305.22
HOURS OF WORK	TIME-1	Rate of workers working more than 48 hours per week (%)	29.35
		Man (%)	35.95
		Women (%)	20.21
LABOR STABILITY	STAB-1	Rate of precarious work (%)	57.30
	SAFE-2	Rate of non-fatal accidents (%)	6.52
	SECU-4	Rate of workers contributing to a pension (%)	33.22
SOCIAL DIALOGUE AND UNION REPRESENTATION	DIAL-1	Unionization rate (%)	3.75

Source: Calculations of the authors with base or information: a: great integrated survey of households - GEIH 2008 and 2016 of the Departamento Administrativo Nacional de Estadística – DANE 2008 and 2016. b: Ministerio de Salud de la República de Colombia.

3.2. The indicators at the microeconomic level

In order to analyse the effect the labour uncertainty (measured through the different indicators of labour instability) has on household consumption, we use the "Colombian Longitudinal Survey" (ELCA). It is an official survey developed by the "Centro de Estudios sobre Desarrollo Económico" (CEDE). In the survey around 10.000 households were interviewed in each of the three elaborated waves (2010, 2013 and 2016). The simple is probabilistic, stratified, multi-stage and conglomerate. In this work we use the data from the last wave, 2016, and we construct (given the data availability) six of the indicators proposed by the ILO to measure decent work adapted to the microeconomic level.

From these data we construct six decent work indicators measuring job instability. The indicators are calculated for the household reference person which is the one for which we have data related to employment status.

The first of the indicators ($precarious$) indicates whether the worker has a precarious situation or not, according to the ILO's definition given to the calculation of that indicator at national level, the worker is precarious if doesn't have an indefinite contract. For that, we generate a dummy variable taking value one when the reference person has a fixed-term contract, a verbal contract or has no contract and zero when she/he has an indefinite contract. The second one ($no\ unionized$) consists in a dummy taking value one when the worker is not an union member and zero when is unionized. It is commonly accepted in the literature that the union affiliation has a negative relation with the labour instability (the unionized workers have collective bargaining power) and, therefore, with the uncertainty. The third indicator ($labour\ accident$) indicates whether the reference person was hospitalized during the last twelve months due a work accident (when has value one) or not (taking value zero in that case); this indicator refers in some way to safety in the workplace. The fact that the individual does work more than 48 hours per week could harm her/his personal development and social integration by implying an overload of work, for that this variable ($working\ more\ than\ 48hours$) is the fourth indicator included in this analysis. The opportunity to access to a job remunerated with a fair income is another of the implications of the so-called decent work, so the fifth indicator ($poor\ worker$) reflects whether the individual has a salary below the threshold defined by the ILO, which is 2/3 of the median wage per hour (in the case of Colombia this threshold was $2393.94 pesos in 2016). The last indicator ($does\ not\ contributes\ to\ pension$) is equal to one when the reference person does no contributes to have a pension when retired and zero if contributes to it. This indicator is of special relevance given that it shows a structural weakness of people about their future sustainability after reaching 65 years of age (retirement age).

The sample of the analysis includes the urban households whose reference person is working since we analyse the impact of labour instability on their consumption decisions. From this sub-sample we eliminate those households that have some missing data in any of the indicators since the regressions must be estimated for the same households so that the results are comparable. The final sample included in the analysis comprises 3,501 households.[5]

Table 3. List of indicators included in the analysis and their description

Variable	Brief description
precarious	dummy taking value 1 when the reference person has a fixed-term contract, a verbal contract or has no contract and 0 when she/he has an indefinite contract
no unionized	dummy taking value 1 when the reference person is not unionized and 0 otherwise
work accident	dummy taking value 1 when the reference person was hospitalized in the last 12 months due to a work accident and 0 if she/he was not
works more than 48hours	dummy taking value 1 when the reference person works more than 48 hours per week in his/her main job and 0 otherwise
poor worker	dummy taking value 1 when the hourly wage of the reference person under the 2/3 of the median hourly wage for the country, in which case the worker is considered a poor worker, and 0 when the wage is equal or over it
does not contributes to pension	dummy taking value 1 when the reference person does not contribute for the pension and 0 otherwise

Own elaboration.

Table 4. Labour instability indicators: main descriptive for the households in the sample

	Mean	Median	Sd	Min	Max
precarious	75.69%	-	0.429	0	1
no unionized	97.03%	-	0.170	0	1
work accident	0.49%	-	0.070	0	1
works more than 48hours	64.32%	-	0.479	0	1
poor worker	22.99%	-	0.421	0	1
when the reference person does not contribute for the pension	60.24%	-	0.489	0	1

Own elaboration from the last wave of the ELCA (2016). Variables constructed for the household reference person.

4. Empirical analysis: the effect of different dimensions of decent work on Colombian household consumption

The consumption and saving decisions, as well as the wealth accumulation, are affected by the consumer's economic situation, the uncertainty, different aspects related to the labour market and the credit market and also with the specific characteristics of households or individuals.

[5] The appendix I includes a table with the main characteristics of the sample.

The analysis of the existence of a precautionary reason for saving can be carried out by analysing the effect of uncertainty directly on the saving variable, but also on the consumption or wealth variables. In this work, and given the data availability, we analyse the effect of uncertainty on consumption. In particular, we analyse the effect of labour uncertainty –proxied through different variables- on consumption, addressing this way the existence of precautionary saving also. If there is a precautionary motive for saving, the uncertainty in the current period would increase savings reducing this way consumption, that is, the sign for the uncertainty variables should be negative (showing a negative impact on consumption).

The econometric model relates the current household consumption with a number of covariates collecting the personal, familiar, labour and financial characteristics. Specifically, and assuming that the relation between the dependent and independent variables can be expressed in a log-linear form, the model is:

$$logC_i = \beta_0 + \beta_1 UNC_i + \gamma X_i + \theta Z_i + v_i \quad (1)$$

Where c_i is the consumption of i-th household; β_0 is the intercept; γ y θ are vectors of parameters to be estimated; X_i is a vector of variables which are the main determinants of consumption (income and wealth); Z_i is a vector of variables collecting individual characteristics of each individual / household (size of the family, whether there are children or not, age, gender, educational level ...); UNC_i is the uncertainty measure; v_i is an error term assumed identically and independently distributed. The equation is estimated by OLS (see Carroll 1994; Lusardi 1997; Miles 1997; Guariglia y Rossi 2002; Deidda 2013; or Estrada *et al*. 2014; among others).[6]

The consumption (and saving) decisions depend, in the first place, on the available resources (and / or the ability to borrow -liquidity constraints-). Income is the main determinant of consumption; we introduce the current annual total income of the household as explanatory variable in the econometric model. We include also a dummy indicating the existence or not the credit restrictions and a variable of wealth which is a wealth index calculated by the survey makers from the tenure of different assets by the household.[7] In addition to income or wealth, the consumption and saving of households depend on their own characteristics (preferences) so the common is to include other control variables in the consumption and saving equations.

[6] We include income and consumption in logarithms to eliminate the effect of the different units of measurement in which the variables included in the analysis are expressed. These economic variables are also winsorized at 1% to avoid outliers without eliminate observations.

[7] The variable of credit restrictions was constructed from the information given by the households about whether they have any credit granted for the requested amount or if they have not requested it because they think it would not be given. The household is considered to have credit restrictions when: a) They have applied for a loan that they have not been granted or have been granted for an amount less than that requested b) They have not asked for any credit because they believe they will not be given c) They consider that, even if requested, they would not approve it d) It is reported in credit bureau. The wealth variable is an index calculated by the ELCA, which assesses the services and conditions of the home, as well as the existence of some goods in it; ELCA builds it based on Staveteig, Sarah and Mallick, Lindsay (2014).

Thus, in most regressions, family dummies are included to capture the specific effects of the household. Given the availability of data in our survey, the variables that we include are the size or composition of the family, whether they have children, and the age, gender and education level of the household reference person.[8]

Table 5 resumes the empirical results. Column (1) provides a baseline scenario in which we estimate the consumption model without any of the uncertainty measures. The columns from (2) to (7) show the results of the regressions specified for each of the uncertainty variables considered.

In general, the variables included in the estimations are significant and show the expected signs and the regressions have a relatively high goodness of fit, with an R^2 around 63% and the F-statistic suggests that the null hypothesis of joint insignificance should be rejected.

[8] A description of the variables included in the analysis as well as a table with the main descriptive statistics of them is presented in Appendix I.

Table 5. The effect of the labour instability on the household consumption

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Without indicator	**Precarious**	**Not unionized**	**Work accident**	**Works more than 48hours**	**Poor worker**	**Does not contributes to pension**
lnY	0.667***	0.662***	0.665***	0.667***	0.666***	0.650***	0.662***
	(0.015)	(0.015)	(0.015)	(0.015)	(0.015)	(0.015)	(0.015)
credit restrictions	0.047***	0.049***	0.048***	0.047***	0.047***	0.047***	0.047***
	(0.015)	(0.015)	(0.015)	(0.015)	(0.015)	(0.015)	(0.015)
wealth	0.025***	0.024***	0.025***	0.025***	0.025***	0.024***	0.024***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
size	0.033***	0.033***	0.033***	0.033***	0.033***	0.034***	0.034***
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
children	0.067***	0.065***	0.067***	0.067***	0.065***	0.067***	0.065***
	(0.021)	(0.021)	(0.021)	(0.021)	(0.021)	(0.021)	(0.021)
age	0.001	0.001	0.001	0.001	0.001	0.001*	0.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
man	0.086***	0.083***	0.086***	0.086***	0.083***	0.075***	0.083***
	(0.014)	(0.014)	(0.014)	(0.014)	(0.014)	(0.014)	(0.014)
primary education	-0.007	-0.006	-0.007	-0.007	-0.008	-0.012	-0.007
	(0.030)	(0.030)	(0.030)	(0.030)	(0.030)	(0.030)	(0.030)
secondary education	0.106***	0.102***	0.106***	0.106***	0.105***	0.094***	0.102***
	(0.030)	(0.030)	(0.030)	(0.030)	(0.030)	(0.030)	(0.030)
high education	0.212***	0.204***	0.209***	0.212***	0.214***	0.197***	0.203***
	(0.033)	(0.033)	(0.033)	(0.033)	(0.033)	(0.033)	(0.033)
INDICATOR		**-0.047*** **	**-0.050**	**0.018**	**0.018**	**-0.097*** **	**-0.033** **
		(0.015)	(0.040)	(0.060)	(0.014)	(0.016)	(0.013)
_cons	4.850***	4.964***	4.928***	4.850***	4.851***	5.147***	4.946***
	(0.233)	(0.238)	(0.242)	(0.233)	(0.233)	(0.239)	(0.238)
r2_a	**0.6367**	**0.6375**	**0.6368**	**0.6366**	**0.6367**	**0.6402**	**0.6371**
N	**3501**	**3501**	**3501**	**3501**	**3501**	**3501**	**3501**

Notes: Coefficient estimates. Cluster robust standard errors in parentheses. Significance levels: *** p<0.01 ** p<0.05 * p<0.10.

In general, the results for the standard control variables are in line with the precautionary saving analysis previously published, with the expected signs. The wealth has a positive impact on consumption and the household characteristics show the expected relations. In addition, the estimated coefficients are, in general, robust to the specification as regards the inclusion of different uncertainty measures.

The income is significant and has a positive impact on consumption in all the regressions. The variable collecting the existence of credit restrictions is not significant. Wealth, as well as the number of members of the household, has a positive and significant impact on consumption in all the regressions. The dummy indicating the existence of children in the household also have a positive and significant effect on consumption. This can be explained because children can be a source of security in retirement, thereby reducing savings (Kazarosian, 1997) and, in addition, with more children, consumption is greater and savings capacity decreases (children reduce the potential for benefits or rent) (Miles, 1997).

Regarding to the education dummies, in general, the empirical results show that households with higher educational levels also save more, because an increase in education may imply a lower rate of temporary preference and, therefore, more savings; however, households with a higher level of education also have a higher income (the average income of households in the sample that have high education is three times higher than those who have the lowest educational level and more than twice that those with primary education) and , therefore, greater consumption capacity. This would explain that households with higher education consume more.

Turning now to the labour indicators constructed to proxy the uncertainty borne by the household, only three of them has a significant and negative impact on consumption.

The indicators called $no\ unionized$, $labour\ accident$ and $working\ more\ than\ 48hours$ have a non-significant impact on consumption. In the case of non-unionized workers or those who have suffered a work accident, the non-significance of the variables may be due to the low variability of the variables in the sample, since approximately 97% are not unionized and only around 0.5% have been hospitalized for having suffered a work accident.

The other three indicators ($precarious,\ poor\ worker$ and $does\ not\ contributes\ to\ pension$) have a negative and significant impact on consumption, indicating that workers who have a situation of job instability or poor quality of employment reduce their consumption compared to those whose employment situation is better. The indicators are proxies of uncertainty which negatively affect consumption. Being a “poor worker”, that is, having an hourly wage less than 2/3 of the median national wage per hour, is the indicator having the highest negative impact on consumption, being more or less double that the impact caused by having a job defined as

"precarious" or not contributing to a pension. Despite the different magnitude of the coefficients presented by these three indicators, all of them show that enduring a situation of instability in employment increases the uncertainty of households with respect to their future income and has a negative effect on their consumption.

Households reduce their consumption in the presence of uncertainty about their future labour income which implies, given a level of income, certain amount of precautionary saving. Hence, these results allow us to conclude about the existence of precautionary savings in Colombia.

In a following step we construct a composite indicator of job instability by aggregating the information of the six individual indicators allowing this way to analyse the impact of job instability at multidimensional level.

The intuition over the construction of a composite indicator is that to have a precarious situation in one of the considered dimensions isolated could have no effect on consumption (or have a reduced impact on it) but if the individual has also a situation defined as precarious on other of the dimensions the joint effect on consumption will be higher. For that, since the individual indicators are dummy variables, we sum the six indicators in order to get the composite indicator. The resulting variable takes consecutive values from 0, when the individual has a "good" work situation in all the indicators, to 6, when the individual has an unstable situation in all the individual variables.

The new indicator allows checking whether the simultaneous presence of several situations of job instability has effect on consumption. The higher the value of the indicator the poorest the job situation of the reference person and the higher the uncertainty about continuing working on the future (therefore, the higher the uncertainty about future labour income) so the indicator should impacts negatively on consumption.

Table 6 shows the results for the composite indicator of job instability. In general, the variables included in the estimations are significant and show the expected signs and the regressions have a relatively high goodness of fit, with an R^2 around 63% and the F-statistic suggests that the null hypothesis of joint insignificance should be rejected.

Table 6. The effect of a composite indicator of job instability on household consumption

	(1)
	Composite Indicator
lnY	0.656***
	(0.015)
credit restrictions	0.049***
	(0.015)
wealth	0.024***
	(0.003)
size	0.034***
	(0.004)
children	0.067***
	(0.021)
age	0.001
	(0.001)
man	0.084***
	(0.014)
primary education	-0.007
	(0.030)
secondary education	0.098***
	(0.030)
high education	0.193***
	(0.033)
Composite indicator	**-0.026*** **
	(0.006)
_cons	5.106***
	(0.244)
r2_a	**0.6383**
N	**3501**

Notes: Coefficient estimates. Cluster robust standard errors in parentheses. Significance levels: *** p<0.01 ** p<0.05 * p<0.10.

The composite indicator has a negative and significant impact on consumption indicating that workers reduce their consumption when raising the dimensions in which they have a situation of job instability, that is the greater the value of the indicator (instability in more dimensions) the lower the household consumption.

5. Conclusions

Since the unemployment is one of the main reasons of the income variation, there exist many variables in relation with work that can be used to analyse which individuals are more likely to have savings for precautionary motive. At microeconomic level there are different variables which can be used as proxy of the job uncertainty. In this work we adapt to the microeconomic level some of the indicators of decent work proposed by the ILO and we analyse the effect they have on household consumption. The constructed indicators measure the poor quality of

employment or job instability that implies uncertainty about continuing to work or about the future labour income that they will receive. If there is precautionary saving in Colombia, these indicators will have a negative effect on consumption meaning that those households whose reference person has instability in their work consume less than the other households.

The obtained results show evidence of the existence of precautionary saving in Colombian households measuring labour uncertainty through different variables related to the decent work indicators proposed by the ILO (isolated and on the composite indicator). This result shows that being in a situation of vulnerability or labour instability alters household consumption patterns by generating uncertainty about future income. Therefore, obtaining and maintaining desirable values for indicators of decent work should be an economic policy objective for the Colombian government not only because of the direct implication it would have on its labour market but also because of the indirect implications on consumption and savings of Colombian households that would, in turn, affect the GDP and long-term economic growth.

APPENDIX I:

Table I. A. Description of the variables included in the consumption model

Variable	Name	Brief description
Consumption	lnC	Household annual consumption, in logarithms
Income	lnY	Household annual income, in logarithms
Credit restrictions	credit restrictions	Dummy taking value 1 when the household: a) They have applied for a loan that they have not been granted or have been granted for an amount less than that requested b) They have not asked for any credit because they believe they will not be given c) They consider that, even if requested, they would not approve it d) It is reported in credit bureau
Wealth	wealth	Index calculated by the ELCA, which assesses the services and conditions of the home, as well as the existence of some goods in it
Family size	size	Number of household members
Children	children	Dummy taking value 1 when there are children in the household, 0 otherwise
Age	age	Age of the reference person
Sex	man	Dummy taking value 1 when the reference person is a man and 0 when is a woman
Educational level	without education	Educational level of the reference person: None
	primary education	Educational level of the reference person: Primary
	secondary education	Educational level of the reference person: Secundary
	high education	Educational level of the reference person: High (technician, technological, university graduate or postgraduate)

Own elaboration.

Table I.B. Main characteristics of the sample

	Mean	Sd	Min.	Máx.
annual consumption	1.42E+07	9391474	720000	5.40E+07
lnC	16.28	0.62	13.49	17.80
annual income	1.90E+07	1.15E+07	6000000	4.20E+07
lnY	16.58	0.61	15.61	17.55
credit restrictions	16.4%	0.37	0	1
wealth	0.25	2.24	-14.88	9.34
children	3.91	1.72	1	16
hijos	82.2%	0.38	0	1
age	46.43	11.05	20	88
man	65.3%	0.48	0	1
without education	4.6%	0.21	0	1
primary education	28.3%	0.45	0	1
secondary education	44.5%	0.50	0	1
high education	22.6%	0.42	0	1
Sample size: 3,501 households				

Own elaboration.

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