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Employee Involvement and Job Satisfaction: A Tale of the Millennial Generation

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Employee Involvement and Job Satisfaction: A Tale of the Millennial Generation[1]

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Abstract

The purpose of this paper is to empirically study the effect of employee involvement in the workplace on job satisfaction for millennial workers in Colombia. Data were obtained from a sample of 2103 millennial employees working in 11 companies of different sectors located in the five main cities of Colombia. Ordered probit models were estimated to study the effect of employee involvement on job satisfaction, in general, and how different forms of participative decision-making in the workplace produce different impacts on individual satisfaction with objective and intrinsic aspects of the job, in particular. The empirical results show that, for millennial workers, there is a positive link between employee involvement and job satisfaction. Moreover, there is a higher positive impact on job satisfaction when millennial workers participate in decisions on general aspects of the company than when they participate in specific decisions such as those concerning teamwork or main tasks at work. Another interesting result is that millennial workers attach high importance to intrinsic aspects of their jobs (such as the possibility to use their knowledge in the work), which may improve their satisfaction in a higher participative environment.

Keywords: millennial workers, job satisfaction, employee involvement, Colombia.
JEL Classification: J28, M12, M54, C25

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1. Introduction

Allowing employees to participate in job-related decisions is arguably one of the most popular strategies used by many organizations to increase employees' level of job satisfaction (Harley et al., 2000; Scott et al., 2003; Pacheco and Webber, 2016). Although there is a substantial body of research that links employee involvement in the workplace and job satisfaction, there is scant evidence of this relationship among millennial (or Generation Y) workers. This generation, which in this study represents the individuals who were born between 1980 and 1999 (Strauss and Howe, 1992; Zemke, et al., 2000; Lancaster and Stillman, 2002), is thought to be significantly different in terms of outlooks and preferences, in general, and work values, in particular, when compared to previous generations (see the special issue of Journal of Business and Psychology (2010) on millennials at work for a broad discussion on this topic). According to Morton (2002) and Kong, et al., (2016), one the most important factors for millennial workers is that they expect to be heard in their jobs and therefore prefer autonomy to accomplish the job via empowerment. In this sense, more participative decision-making in the work could produce relevant effects on the well-being and job satisfaction of millennial workers.

Studying the effect of employee involvement on the job satisfaction of millennial workers is also important because organizations could implement strategies that create a more participative work environment for millennial employees that leads to increased job satisfaction and implies more attractive and satisfying jobs for this generation. Job satisfaction may also have an indirect effect on labor productivity because higher satisfaction decreases turnover rates and absenteeism, and increases company commitment (Freeman, 1978; Campione, 2014).

In spite of these arguments and the generation differences in the workplace, limited attention has been directed to this issue, and only recently has empirical evidence been provided, without distinguishing between generations (see for instance, Blanchflower and Oswald, 2004; Baur, 2004, Origo and Pagani, 2008). Therefore, this study explores the effects of employee involvement on job satisfaction for the millennial generation. In particular, we have two research hypotheses. First, different forms of participative decision-making in the workplace produce different impacts on job satisfaction. To test this hypothesis, we empirically study the relationship between different dimensions of employee involvement (namely, participation in decisions concerning the company, teamwork and main tasks at work) and overall job satisfaction. Studying this relationship is especially crucial for organizations, as it may offer some useful information for their strategies of attraction, recruitment and retention of employees from the millennial generation and may particularly promote a combination of different participative work environments in the organization.

Our second research hypothesis is that different forms of participation in job-related decisions may have different impacts on individual satisfaction with objective aspects of the job (such as wage, hours of work, labor benefits, and current working time) and on satisfaction with intrinsic aspects of the job (such as the opportunity to use one's own abilities). This hypothesis is tested by analyzing the impact of the various dimensions of employee involvement mentioned above on different facets of job satisfaction. We expect that a participative work environment has a higher effect on satisfaction with intrinsic aspects of the job than on satisfaction with objective or extrinsic aspects. In this respect, Hansen and Leuty (2012) highlight that stagnant jobs are a great deterrent to millennial

workers, they prefer jobs where they can have opportunities of being creative, using their own abilities and expanding job responsibilities.

To test these hypotheses empirically, we use data from Colombia. Colombia is a middle-income country located in South America and presents an interesting case study for analyzing millennials' job expectations in developing countries. The extant literature on the millennial generation has focused on developed countries, and we know little about this generation in developing countries; therefore, this study attempts to fill this gap in the literature.

Following this introduction, Section 2 contains a brief review of the literature; Section 3 describes the data used for the empirical analysis; in Section 4, we discuss the econometric model used; Section 5 presents the empirical findings, and conclusions are drawn in Section 6.

2. Related research

The literature on job satisfaction has recently resurged due to relevant implications for organizations in designing management strategies and thus reducing turnover and absenteeism and improving employee performance (Wright and Cropanzano, 2004; Pacheco and Webber, 2016). From an empirical point of view, studies have focused on finding the main determinants of job satisfaction. The empirical literature has found that job satisfaction is affected by different factors such as on-the-job-training (Georgellin and Lange, 2007) firm size (Gazioglu and Tansel, 2006), job stability, autonomy, pecuniary compensation (Kovach, 1995; Sousa-Poza and Sousa-Poza, 2000; Skalli et al., 2008), work flexibility (Booth et al., 2002; de Witte and Naswall, 2003; Origo and Pagani, 2008), and work relationships (Sousa-Poza and Sousa-Poza, 2000; Golik, 2013; Campione, 2014; Saridakis et al., 2018), among others.

Although there is a large and growing number of empirical studies on the determinants of job satisfaction, little attention has been directed to the impact of employee involvement in the workplace on job satisfaction. As seminal works about this issue, we have Morse and Reimer (1956), Alutto and Acito (1974), Schuler (1980), Black and Gregersen (1997), and Freeman and Kleiner (2000). In all these studies, a positive relationship is found between participative decision-making in the workplace and job satisfaction. However, comparability and external validity are a concern in these studies, because the analyses were carried out on very specific types of organizations.

Among recent empirical studies, we find the studies by Kim (2002), Wright and Kim (2004), Van der Westhuizen et al. (2012), and Pacheco and Webber (2016). The studies by Kim (2002) and Wright and Kim (2004) were carried out in the specific context of local government agencies in the US, and their results show that participative decision-making was positively related to job satisfaction. Van der Westhuizen et al. (2012) empirically study the relationship between employee participation and job satisfaction, using workers' data in 39 countries in Europe. The authors find that workers experience higher levels of job satisfaction as their freedom to participate in job-related decisions increases. In a similar study, with data for 48 European countries and using univariate and bivariate probit models, Pacheco and Webber (2016) find that employee involvement is an important factor in enhancing job satisfaction, although it is not the only factor, and managers should also pay attention to job and individual characteristics to increase the employees' job satisfaction.

It is important to note that the majority of relevant past studies have focused on workers without distinguishing by the type of generation to which they belong. As mentioned by Lyons et al., (2012), and Lyons and Kuron (2014), there are important generational differences in the workplace, but the empirical evidence reports mixed and inconclusive results, which makes generalizations difficult. To date, there has been no investigation of whether employee involvement enhances job satisfaction among millennial workers and how different forms of participation in job-related decisions may have impact on facets of job satisfaction in this generation of workers. This study attempts demonstrate these relationships.

3. Data and descriptive evidence

We use data from organizations located in Colombia, which is a middle-income country located in South America. Colombia is characterized by positive and stable economic growth, but it presents high levels of poverty and inequality and poor labor conditions.[6] According to Table 1, the annual GDP growth rate in Colombia was 2% in 2016, while the percentage of people living below the poverty line was 5.7%, and the Gini coefficient was 53.5%, very high values compared to those in neighboring countries. Regarding labor market variables, Colombia has a marked heterogeneity in terms of high levels of informal employment and unemployment. In Colombia, six out of ten workers are employed in informal jobs, and the unemployment rate is of approximately 10%, which are the highest rates in Latin America. In relation to the millennial population, using as a proxy the population aged 20-34, Colombia presents a pattern very similar to that in other countries, where millennials represent between 20 and 25% of the total population.[7]

Table 1. Economic and social indicators in Colombia and other countries

	Colombia	Ecuador	Perú	Brazil	Chile	Argentina	México	USA	UK
GDP per capita (2011 PPP $)[a]	13,124	10,424	12,071	14,023	22,706	18,489	16,832	53,445	39,254
GDP growth (annual, %)[b]	2.0	-1.6	3.9	-3.6	1.6	-2.2	2.3	1.5	1.8
Population (thousand)[c]	48,228	16,144	31,376	205,262	17,762	43,417	125,890	319,929	65,397
Population aged 20-34 (thousand)[c]	12,224	4,018	7,964	52,383	4,180	9,982	31,591	66,644	13,036
Gini coefficient[d]	53.5	45.4	44.1	51.5	50.5	42.7	48.2	41.1	32.6
Population living below US$1.90 PPP per day (%)[e]	5.7	3.8	3.1	3.7	0.9	1.7	3.0	-	-
Informal employment (% of total non-agricultural employment) (%)[f]	56.7	52.4	58.4	-	40.1	50.7	-	-	-
Unemployment rate (%)[g]	9.9	5.4	4.9	11.5	6.6	6.6	4.0	4.9	4.8

Notes: PPP: purchasing power parity. [a] Data refer to 2016 (World Bank data); [b] Refer to 2016 (World Bank data); [c] Refer to 2015 (World Populations Prospects: The 2017 Revision (United Nations)); [d] Data refer to the most recent year available during the period 2010-2015 (Human Development Data (1990-2015)); [e] Data refer to the most recent year available during the period 2005-2014 (Human Development Data (1990-2015)); [f] Data refer to the most recent year available during the period 2014-2017 (ILOSTAT); [g] Data refer to 2016 (Word Bank data).

The data used in this paper come from individuals who work in 11 organizations of different economic sectors (industry (5), commerce (1), construction (1), and service (4)) located in the five main cities of Colombia, namely, Bogotá, Medellín, Cali, Barranquilla and Bucaramanga. An online survey was sent to workers of these organizations, and to maximize the survey's response rate, workers were coded for tracking purposes. The human resources department of the organizations sent e-mails reminder, and non-respondents received a personally addressed reminder. The information was collected on personal and family aspects (such as age, gender, education, place of birth, where they

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[6] A more detailed description of Colombia can be found in Royuela and García (2015), and García (2017).
[7] According to Erickson (2008), millennials represent a quarter of the world's population, and they will represent an important part of the workforce in a decade.

currently live, socioeconomic stratification where they currently live[8], parents' education, and if they currently live with their parents), labor characteristics (such as wages, years in the current job, occupation, area of the organization where they work, job satisfaction, and stability), and attitudes and behaviors towards employment (that is, intention to leave the company, manager feedback, behavioral empowerment, psychological empowerment, and work-life balance).

In total, 2516 participants responded to the survey with a response rate of 96.8%. We excluded the incomplete responses to the online survey, which leaves us with a sample of 2436 workers. It is important to note that the population targeted with the online survey included both millennial (≤ 37 years old) and non-millennial (> 37 years old) workers. However, more millennial workers responded the survey than non-millennials: 2157 (88.5%) vs 279 (11.5%), respectively. By using the sample of millennials, which is the target population of this study, and deleting the observations with missing values in any of the variables of interest, we finally have a sample of 2103 workers for the analysis.

In the online survey, participants were asked to provide a rating on a four-point scale with reference to their job satisfaction (1=completely dissatisfied, 2=dissatisfied, 3=satisfied and 4=completely satisfied), taking into account five aspects of their job, namely, satisfaction with the job, pay, hours of work, labor benefits, current workday and opportunity to apply own knowledge in the work. In this study, we use three measures of job satisfaction: overall job satisfaction, satisfaction with objective or extrinsic aspects of the job, and satisfaction with intrinsic aspects of the job. Overall job satisfaction is measured by a single rounded factor in which the six dimensions were equally weighted; extrinsic job satisfaction corresponds to the rounded mean of the values related to job, pay, hours of work, labor benefits and current workday; and intrinsic job satisfaction is related to the opportunity to apply one's own knowledge in the work. The values of the Cronbach's alpha associated with overall and extrinsic job satisfaction are 0.84 and 0.82, respectively, which indicate the reliability of the two measures of job satisfaction.

In terms of the employee involvement in the workplace, our main explanatory variable, the online survey contains questions providing information on different dimensions. In particular, it is possible to obtain information on participation in decisions concerning the company, teamwork and main tasks at work. These variables are measured by the following questions in the online survey: "Have you developed ways to improve the effectiveness and efficiency of your company?", "Have you developed new and better methods to help your team to improve performance?", "Have you developed new ideas to improve the way in which you perform your tasks?" The answers to these questions are measures on a five-point scale (the lowest value corresponds to "strongly disagree" and the highest to "strongly agree"). From this five-point scale, we generate a binary variable for each dimension of employee involvement, with representing 1 agree and 0 disagree. We also create a measure of general employee involvement as a composite indicator based on the three different indicators (Cronbach's alpha = 0.83).

In Table 2, we show some descriptive statistics of overall, extrinsic and intrinsic job satisfaction. We note that millennial workers are quite satisfied with their jobs:

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[8] In Colombia, there is a socioeconomic stratification system ranging from 1 to 6 that divides all cities into high (6) and low (1) income neighborhoods. We grouped these socioeconomic strata into three: low strata (1 and 2), medium strata (3 and 4), and high strata (5 and 6).

approximately 92% of workers are satisfied, and less than 1% are completely dissatisfied. When distinguishing by different facets of job satisfaction, we observe that intrinsic job aspects show higher dispersion and are on average more favorable than extrinsic job aspects: the average scores are 3.44 and 3.28, respectively, and the difference is statistically significant (t=11.5). It is also possible to note that 50% of the millennial workers are completely satisfied in terms of the opportunity to apply their own knowledge in their work. It supports the fact that although the millennial workers do place importance on financial features of a job such as pay and benefits, they place a high level of importance to nonfinancial factors such as chances to demonstrate their talents and career development opportunities (similar results are found by SHRM (2016)).

Table 2. Distribution of overall, extrinsic and intrinsic job satisfaction

	Overall job satisfaction	Extrinsic job satisfaction	Intrinsic job satisfaction
Completely dissatisfied	3 (0.1%)	3 (0.1%)	10 (0.5%)
Dissatisfied	168 (8.0%)	157 (7.5)	116 (5.5%)
Satisfied	1233 (58.6%)	1179 (56.1%)	915 (43.5%)
Completely satisfied	699 (33.2%)	764 (36.3%)	1062 (50.5%)
Total	2103 (100%)	2103 (100%)	2103 (100%)

Notes: Author's calculations.

Table 3 reports the average effect of the employee involvement variables for satisfied and dissatisfied workers. We show descriptive statistics on these variables and other control variables used in the analysis in Table A1 in the Appendix. We consider satisfied workers as the workers who indicated that they were either satisfied or completely satisfied with their jobs, while we consider dissatisfied workers as the workers who reported that they were either dissatisfied or completely dissatisfied.

The data in Table 3 show that satisfied workers present a higher incidence of any form of participation in job-related decisions on job satisfaction, and the differences in mean values are statistically significant, indicating the existence of a positive relationship between job satisfaction and employee involvement. Workers who are satisfied with intrinsic aspects of the job are more likely to participate in decision-making in the workplace. Regarding other observable characteristics, there are no significant differences in terms of gender and age between satisfied and dissatisfied workers, but there are important differences in terms of education: satisfied workers are less educated than dissatisfied workers and this holds for any type of job satisfaction. This result suggests that the education is an important characteristic among millennial workers in determining job satisfaction and its relationship with employee involvement.

<p align="center">Table 3. Average effects of employee involvement variables for satisfied and dissatisfied workers</p>

	Overall job satisfied		
	Satisfied	Dissatisfied	Difference
General emp. involvement	0.931	0.847	0.084*
Types of emp. involvement			
Company	0.779	0.561	0.218*
Teamwork	0.828	0.696	0.132*
Main tasks at work	0.908	0.784	0.124*
Other characteristics			
Women (per cent)	0.555	0.514	0.041
Average age (years)	28.45	28.75	-0.300
High educated (per cent)	0.407	0.695	-0.288*
Total sample (per cent)	0.919	0.081	
	Extrinsic job satisfied		
	Satisfied	Dissatisfied	Difference
General emp. involvement	0.932	0.837	0.094*
Types of emp. involvement			
Company	0.777	0.581	0.196*
Teamwork	0.825	0.719	0.106*
Main tasks at work	0.907	0.787	0.120*
Other characteristics			
Women (per cent)	0.555	0.512	0.043
Average age (years)	28.46	28.71	-0.250
High educated (per cent)	0.410	0.687	-0.277*
Total sample (per cent)	0.924	0.076	
	Intrinsic job satisfied		
	Satisfied	Dissatisfied	Difference
General emp. involvement	0.935	0.770	0.165*
Types of emp. involvement			
Company	0.779	0.484	0.295*
Teamwork	0.831	0.595	0.236*
Main tasks at work	0.907	0.746	0.161*
Other characteristics			
Women (per cent)	0.555	0.508	0.047
Average age (years)	28.47	28.54	-0.070
High educated (per cent)	0.413	0.714	-0.301*
Total sample (per cent)	0.940	0.060	

Notes: Author's calculations. On a scale from 1 to 4, satisfied workers represent those workers with a level of job satisfaction equal to 3 or 4, while dissatisfied workers are those who present a level of job satisfaction equal to 1 or 2. High educated workers are those with university and postgraduate education. * represents statistical significance at 1%.

4. Econometric model

In this section, we present the empirical strategy that we follow to analyze the effect of employee involvement in the workplace on job satisfaction. We adopt the traditional latent variable approach, where the unobserved (continuous) job satisfaction level (JS^*) o the latent variable is determined of the following way:

$$JS_i^* = \alpha + \beta'X_i + \delta'EI_i + \varepsilon_i$$

$$JS_i = j \quad \text{if} \quad \mu_j < JS_i^* < \mu_{j+1} \quad \text{for } j = 1,2,3,4$$

(1)

where X_i is a vector of exogenous controls for the worker I; EI_i represents a vector of employee involvement indicators; α, β and μs are parameters to be estimated; δ is the parameter of interest to be estimated; and ε_i is an error term. Because of the ordinal nature of the dependent variables and the assumption that the error term is normally distributed across observations, an ordered probit model may be used to obtain the estimated parameters.

As mentioned, we have three measures of employee involvement: participation in decisions concerning the company, teamwork and main tasks at work. These three measures are binary variables and are included jointly in the econometric model to take into account the effect of different forms of participation in job-related decisions on job satisfaction. Additionally, we estimated a model using a measure of general employee involvement as a composite indicator based on the three different indicators.

The vector X_i contains the variables that measure a standard set of individual, family, and labor characteristics, as well as variables related to attitudes and behaviors towards employment. In terms of individual attributes, we included years of education, gender, age and its square, civil status, socioeconomic stratification dummies, and city dummies. Turning to family characteristics, we included the presence of children at home and whether the individual lives with his or her parents. As labor characteristics, we included the number of years in the current and its square, occupation dummy variables, and organization dummies. To control for workers' psychological attitude and behaviors towards work, we included variables concerning the workers' perception of their organization in terms of having pride belonging to the organization, being respected and heard, having work stability and considering the manager to be understanding. All these variables are included as binary variables in the econometric model.

5. Results

5.1 Baseline estimates
Table 4 reports the results of the ordered probit model distinguishing by the measures of job satisfaction as dependent variables and general employee involvement and its types as explicatory variables, controlled by other factors mentioned in the above section. The estimates show that employee involvement significantly increases job satisfaction. The estimated marginal effects in Table 5 show that general employee involvement increases the overall probability of being completely satisfied at work by 9.4 percentage points.

In terms of the effects of different forms of participation in job-related decisions, it is possible to note that participation in company-level decisions presents the greatest positive impact on overall job satisfaction, followed by participation decisions on main tasks at work and teamwork. The estimated marginal effects show that employee involvement in decisions on the company level increases the overall probability of being completely satisfied by 9 percentage points, whereas this probability increases by approximately 7 and 4 percentage points when the employee involvement is related to main tasks at work and teamwork, respectively. These results suggest that millennial workers may be more satisfied (and hence more productive) if they can be involved in the decision-making process and guide the course of not just their own tasks or the tasks of a team but more general aspects of the organization.

Table 4. Ordered probit estimations of job satisfaction

	Job satisfaction		
	Overall	Extrinsic	Intrinsic
Types of emp. involvement			
Company	0.295***	0.251***	0.439***
	(0.0708)	(0.0696)	(0.0667)
Teamwork	0.127*	0.118*	0.214***
	(0.0733)	(0.0712)	(0.0715)
Main tasks at work	0.224**	0.187**	0.250***
	(0.0930)	(0.0922)	(0.0913)
N	2103	2103	2103
Pseudo R2	0.167	0.160	0.114
General emp. involvement	0.304***	0.288***	0.506***
	(0.1004)	(0.1014)	(0.0988)
N	2103	2103	2103
Pseudo R2	0.157	0.153	0.095

Notes: Author's calculations.
Robust standard errors in parentheses.   *** p<0.01, ** p<0.05, * p<0.1

Table 5. Marginal effects of the ordered probit model

	Overall job satisfaction			
	CD	D	S	CS
Types of emp. involvement				
Company	-0.0013*	-0.0315***	-0.0576***	0.0905***
	(0.0007)	(0.0078)	(0.0137)	(0.0215)
Teamwork	-0.0005	-0.0135*	-0.0246*	0.0388*
	(0.0004)	(0.0078)	(0.0143)	(0.0224)
Main tasks at work	-0.0010	-0.0239**	-0.0436**	0.0686**
	(0.0006)	(0.0099)	(0.0182)	(0.0284)
General emp. involvement	-0.0013*	-0.0329***	-0.0599***	0.0942***
	(0.0008)	(0.0109)	(0.0199)	(0.0311)
	Extrinsic job satisfaction			
Types of emp. involvement				
Company	-0.0009*	-0.0260***	-0.0530***	0.0799***
	(0.0005)	(0.0074)	(0.0146)	(0.0220)
Teamwork	-0.0004	-0.0122*	0.0249*	0.0376*
	(0.0003)	(0.0073)	(0.0151)	(0.0226)
Main tasks at work	-0.0006	-0.0193**	-0.0395**	0.0596**
	(0.0004)	(0.0095)	(0.0195)	(0.0293)
General emp. involvement	-0.0001	-0.0301***	-0.0614***	0.0926***
	(0.0006)	(0.0107)	(0.0217)	(0.0325)
	Intrinsic job satisfaction			
Types of emp. involvement				
Company	-0.0049***	-0.0375***	-0.1120***	0.1545***
	(0.0014)	(0.0063)	(0.0167)	(0.0229)
Teamwork	-0.0024**	-0.0183***	-0.0547***	0.0754***
	(0.0009)	(0.0062)	(0.0182)	(0.0250)
Main tasks at work	-0.0028**	-0.0214***	-0.0640***	0.0882***
	(0.0012)	(0.0078)	(0.0233)	(0.0320)
General emp. involvement	-0.0055***	-0.0446***	-0.1324***	0.1826***
	(0.0018)	(0.0091)	(0.0257)	(0.0351)

Notes: Author's calculations.
Robust standard errors in parentheses.   *** p<0.01, ** p<0.05, * p<0.1
CD: completely dissatisfied; D: dissatisfied; S: satisfied; CS: completely satisfied.

The estimates by type of job satisfaction in Table 4 show that general employee involvement has a positive effect on both extrinsic and intrinsic job satisfaction, and this positive impact is higher when considering satisfaction relative to intrinsic aspects of the job. Notice, according to the marginal effects in Table 5, that general employee involvement doubles the probability of being completely satisfied with intrinsic aspects as opposed to being completely satisfied with extrinsic aspects: 18 vs 9 percentage points.

The findings distinguished by type of employee involvement reveal that the different forms of participation in job-related decisions have a positive impact on different facets of job satisfaction. In particular, the results highlight that participation in decisions on the company level presents the highest positive effect on both extrinsic and intrinsic job satisfaction, and in turn, this positive impact is more pronounced when considering satisfaction relative to intrinsic aspects of the job. In this case, the estimated marginal effects show that when millennial workers participate in decisions that involve aspects of the functioning of the organization, the probability of being completely satisfied with intrinsic aspects increases by 15 percentage points.

Overall, the results suggest that millennial workers confer higher importance to non-monetary aspects of the job, which are more likely to be improved by a participative work environment related to decision-making on the company level than by a participative work environment related to decision-making concerning their own tasks in the workplace or teamwork. These findings are in line with the findings of Kultalahti and Viitala (2014), who study millennials' perceptions of work motivation from a qualitative perspective and show that intrinsic aspects, such as interesting work content, work flexibility, a possibility to learn and develop at work, a good atmosphere in the work community and a nice supervisor, are key factors of motivation at work for millennials.

5.2 Instrumental variables

One aspect to be considered in the estimation is the endogeneity bias caused by the simultaneous determination between job satisfaction and employee involvement: satisfied workers end up in job-related decisions roles and workers who make job-related decisions are more satisfied. It is also possible to think this endogenous problem to the existence of unobservable worker or workplace characteristics that are correlated with both job satisfaction and employee involvement. For instance, the management style might be such an unobservable factor. It is possible that an effective manager simultaneously provides higher job satisfaction for workers and employs techniques to create a more participative work environment for them. Thus, part of the effect of employee involvement on job satisfaction might in fact be due to the effect of management style on job satisfaction, resulting in biased and inconsistent estimates (Heckman, 1978 and 1979).

In the recent empirical literature on job satisfaction, there are several ways to address the potential endogeneity problem. For instance, Di Paolo (2016), McCausland et al. (2005), and Mohr and Zoghi (2006) use econometric models that simultaneously estimate the job satisfaction equation and the endogenous variable equation. On the other hand, Linz (2003), Bauer (2004), and Origo and Pagani (2008), taking advantage of detailed employee surveys. included a large set of variables on individual characteristics, as well as variables on workers' psychological attitude and behaviors towards work and life, to control for unobservable individual characteristics and thus mitigating the endogeneity problem.

In this study, we follow both strategies to address the concern of the potential endogeneity of employee involvement. Our models currently include a set of variables that control for individual, family, labor characteristics, as well as aspects related to attitudes and behaviors in employment, which may capture unobservable individual effects. However, we think that this set of controls is not sufficient to correct the endogeneity problem, so that we choose to estimate the job satisfaction equation and the employee involvement equation simultaneously. The use of a nonlinear model to fit the data complicates the estimation, and a two-stage procedure commonly proposed for linear estimations may lead to wrong conclusions (Heckman, 1978; de Ven and Praag, 1981; Wooldridge, 2002). Therefore, we follow the approach proposed by Miranda and Rabe-Hesketh (2006), which consists in a maximum likelihood estimation that simultaneously estimates both equations and allows by an ordinal response in the dependent variable that depends on an endogenous dummy variable.

Heckman (1978) and Wilde (2000) demonstrate that multiple-equation non-linear models with an endogenous dummy regressor do not require the use of an identification restriction to estimate the effects consistently. However, Miranda and Rabe-Hesketh (2006) recommend using at least one exclusion restriction as a good practice to identify the system of equations. We use the years of education of the mother, father and spouse as exclusion restrictions for the identification. In many studies, family background variables have been used as exclusion restrictions in labor market output models (Blackburn and Neumark, 1993 and 1995; Parker and Van Praag, 2006), and they have shown two main advantages compared with other exclusion restrictions: they are available in many datasets, and they present strong correlations with the endogenous variable (Hoogerheide, et al., 2012). The basic idea behind these exclusion restrictions is that the family background can to some extent explain the performance of individuals at work in terms of being more or less active and proactive in their jobs, but they do not explain the degree of job satisfaction, which is determined more by labor aspects than by family aspects.

Table 6 displays the estimates obtained using this approach in the case of general employee involvement.[9] We can observe that of the three identifying exclusion restrictions, the father´s education is the most statistically significant variable and presents a positive impact, indicating that individuals whose fathers are better educated tend to participate significantly more in job-related decisions. In terms of the estimates, the results are quantitatively similar to those found in Table 3: employee involvement increases job satisfaction, and this positive impact is higher on intrinsic job satisfaction than on extrinsic aspects of the job.

To test the endogeneity of employee involvement, Miranda and Rabe-Hesketh (2006) propose a test on the correlation between the residual terms of the job satisfaction equation and the employee involvement equation, namely, rho. If rho = 0, the employee involvement variable will be exogenous, while if rho ≠ 0, employee involvement variable is correlated with the residual term of the job satisfaction equation and therefore will be endogenous. A simple likelihood-ratio test (LR test) can be used to test the null hypothesis that rho = 0. At the bottom of Table 6, we report this test, and we find that the null

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[9] The findings distinguishing by type of participation in job-related decisions are very similar, and they are available from the authors upon request.

hypothesis is not rejected at the 1% level of significance, which suggests that the employee involvement variable is exogenous, and consistent estimators of β and δ are obtained by fitting model (1) with an ordinary ordered probit regression. These results are consistent with the fact that the estimations are very similar using the simultaneous approach and the ordinary approach.

Table 6. Simultaneous estimates of the ordered probit model of job satisfaction

	First-stage Dependent var.: general emp. involvement	Second-stage Dependent var.: job satisfaction		
		Overall	Extrinsic	Intrinsic
General emp. involvement		0.305**	0.300**	0.602***
		(0.1355)	(0.1334)	(0.1275)
Mother's years of education	-0.040*			
	(0.0209)			
Father's years of education	0.049**			
	(0.0204)			
spouse's years of education	0.001			
	(0.0264)			
N	2103	2103	2103	2103
Ho: rho=0				
LR test chi2(1)		0.0018	0.0053	1.2682
P-value		0.9663	0.9418	0.2601

Notes: Author's calculations.
Robust standard errors in parentheses.   *** p<0.01, ** p<0.05, * p<0.1
Rho represents the correlation between the residual terms of the job satisfaction equation and the employee involvement equation. If rho = 0, employee involvement variable will be exogenous, while if rho ≠ 0, employee involvement variable is correlated with the residual term of the job satisfaction equation and therefore will be endogenous.

6. Conclusions

In this paper, we investigated the relationship between employee involvement in the workplace and job satisfaction for millennial workers. The aim of our analysis was to empirically prove the hypothesis that millennial workers prefer a more participative work environment, which leads to higher well-being and job satisfaction in this generation of workers. We also analyzed whether different forms of participative decision-making in the workplace, that is, participation in decisions concerning the company, concerning teamwork and main tasks at work, produce different impacts on overall, extrinsic and intrinsic job satisfaction.

Through the use of data of millennial workers from Colombia, our results show a positive link between employee involvement and job satisfaction. In quantitative terms, the results evidence that employee involvement increases the overall probability of being completely satisfied at work by 9.4 percentage points. We also found that there is a more positive impact on job satisfaction when millennial workers participate in decisions on general aspects of company than when they participate in specific decisions such as decisions concerning teamwork or main tasks at work. This suggests that millennial workers may be more satisfied if they are heard at the highest levels of the organization, where their participation may have a higher impact.

Another interesting result is that the positive effect of employee involvement on job satisfaction is greater when considering intrinsic aspects than when considering extrinsic aspects. This pattern holds when we distinguish by different forms of participation in job-related decisions, and it is possible to note that participation in decisions on the company level presents the highest positive impact. These results imply that millennial workers attach higher importance to intrinsic aspects of their jobs (such as the possibility to use

their knowledge in the work), which may improve their satisfaction in a participative environment.

This study presents some limitations that may be points to future research analysis. First, given the cross-sectional nature of the data, we are unable to include individual fixed effects and control for the time invariant personality traits of workers in our sample. Second, data were collected via self-report of workers, which could imply a bias by the individual's feelings at the time they answered the online survey, thus affecting measurement of the variables used in the analysis. Third, future research should include millennial workers employed in the informal sector, that is, activities not regulated or protected by the state. According to García (2017) and, Medina and Schneider (2017) in Colombia roughly six out of ten employees are not covered by the social security system (health insurance and pension system) and the informal economy accounts for around 33% of GDP. In this study, we made use of data of formal organizations and given the sizeable of the informal sector, it is important to take into account millennial workers in this sector to consider more closely the reality of these countries and build a more adjusted labor profile of the millennial workers in developing economies.

References

Alutto, J. and Acito, E. (1974). "Decisional Participation and Sources of Job Satisfaction: A Study of Manufacturing Personnel", *The Academy of Management Journal*, 17(1): 160-167.

Bauer, T. (2004). "High Performance Workplace Practices and Job Satisfaction: Evidence from Europe", *IZA Discussion Paper*, No. 1265.

Black, J. and Gregersen, H. (1997). "Participative Decision-making: An Integration of Multiple Dimensions", *Human Relations*, 50(7): 859-878.

Blackburn, M. and Neumark, D. (1993). "Omitted-ability Bias and the Increase in the Return to Schooling", *Journal of Labor Economics*, 11(3): 521–544.

Blackburn, M. and Neumark, D. (1995). "Are OLS Estimates of the Return to Schooling Biased Downward? Another Look", *The Review of Economics and Statistics*, 77(2): 217–230.

Blanchflower, D. and Oswald, A. (2004). "Wellbeing Over Time in Britain and the USA", *Journal of Public Economics*, 88(7/8): 359-1386.

Booth, A., Francesconi, M. and Frank, J. (2002). "Temporary Jobs: Stepping Stones or Dead ends?", *Economic Journal*, 112(480): 189-213.

Campione, W. A. (2014). "The Influence of Supervisor Race, Gender, Age, and Cohort on Millennials' job satisfaction", *Journal of Business Diversity*, 14(1): 18-34.

Di Paolo. A. (2016). "(Endogenous) Occupational Choices and Job Satisfaction among Recent Spanish PhD Recipients", *International Journal of Manpower*, 37(3): 511-535.

Erickson, T. (2008). *Plugged in: The Generation Y Guide to Thriving at Work*, Harvard Business Press, Boston, MA.

Freeman, R. (1978). "Job Satisfaction as an Economic Variable", *American Economic Review*, 68(2): 135-141.

Freeman, R. and Kleiner, M. (2000), "Who Benefits most from Employee Involvement: Firms or workers?", *American Economic Review*, 90(2): 219-23.

García G. (2017). "Labor Informality: Choice or Sign of Segmentation? A Quantile Regression Approach at the Regional Level for Colombia", *Review of Development Economics*, 21(4): 985-1017.

Gazioglu, S. and Tansel, A. (2006). "Job Satisfaction in Britain: Individual and Job Related factors", *Applied Economics*, 38(10): 1163-1171.

Georgellis, Y. and Lange, T. (2007). "Participation in Continuous, On-the-job Training and the Impact on Job Satisfaction: Longitudinal Evidence from the German Labour Market", *International Journal of Human Resource Management*, 18(6): 969-985.

Golik, M. (2013). "Las Expectativas de Equilibrio entre Vida Laboral y Vida Privada y las Elecciones Laborales de la Nueva Generación. *Cuadernos de Administración*, 26(46): 107-133.

Hansen, J. and Leuty, M. (2012). "Work Values Across Generations", *Journal of Career Assessment*, 20(1): 34-52.

Harley, B., Ramsey, H., and Scholarios, D. (2000). "Employee Direct Participation in Britain and Australia: Evidence from AWIRS95 and WERS98", *Asia Pacific Journal of Human Resources*, 38(2): 42-54.

Heckman, J. (1978). "Dummy Endogenous Variables in a Simultaneous Equation System", *Econometrica*, 46(4): 931–959.

Heckman, J. (1979). "Sample Selection Bias as a Specification Error", *Econometrica*, 47(1): 153–162.

Hoogerheide, L., Block, J., and Thurik, R. (2012). "Family Background Variables as Instruments for Education in Income Regressions: A Bayesian Analysis", *Economics of Education Review*, 31(5): 515–523.

Journal of Business and Psychology (2010). Special Issue on Millennials and the World of Work: What You Didn't Know You Didn't Know, 25(2).

Kim, S. (2002). "Participative Management and Job Satisfaction: Lessons for Management Leadership", *Public Administration Review*, 62(2) pp. 231-241.

Kong, H., Sun, N., and Yan, Q. (2016). "New Generation, Psychological Empowerment: Can Empowerment Lead to Career Competencies and Career satisfaction?", *International Journal of Contemporary Hospitality Management*, 28(11): 2553-2569.

Kovach, K.A. (1995). "Employee Motivation: Addressing a Crucial Factor in your Organization's Performance", *Employment Relations Today*, 22(2): 93-107.

Kultalahti, S. and Viitala, R. (2014). "Sufficient Challenges and a Weekend Ahead – Generation Y Describing Motivation at Work", *Journal of Organizational Change Management*, 27(4): 569-582.

Lancaster, L.C. and Stillman, D. (2002). *When Generations Collide*, Harper Business, New York, NY.

Linz, S. (2003). "Job Satisfaction Among Russian Workers", *International Journal of Manpower*, 24(6): 626-52.

Lyons, S. T., Schweitzer, L., Ng, E. S., and Kuron, L. K. J. (2012). "Comparing Apples to Apples: A Qualitative Investigation of Career Mobility Patterns Across Four Generations, *Career Development International*, 17(4): 333–357.

Lyons, S. and Kuron, L. (2014). "Generational Differences in the Workplace: A Review of the Evidence and Directions for Future Research", *Journal of Organizational Behavior*, 35(S1): S139-S157.

McCausland, W., Pouliakas, K. and Theodossiou, I. (2005). "Some are Punished and Some are Rewarded: A Study of the Impact of Performance Pay on Job Satisfaction", *International Journal of Manpower*, 26(7/8): 636-59.

Medina, L. and Schneider, F. (2017). "Shadow Economies Around the World: What Did We Learn Over the Last 20 Years?", *IMF Working Paper*, WP/18/17, International Monetary Found.

Miranda, A. and Rabe-Hesketh, S. (2006). "Maximum Likelihood Estimation of Endogenous Switching and Sample Selection Models for Binary, Ordinal, and Count Variables", *The Stata Journal*, 6(3): 285-308.

Mohr, R. and Zoghi, C. (2006). "Is job enrichment really enriching?", *BLS Working Paper*, No. 389.

Morse, N. and Reimer, E. (1956). "The Experimental Change of a Major Organizational variable", *Journal of Abnormal and Social Psychology*, 52(1): 120-129.

Morton, I. (2002). "Targeting Generation Y", *Public Relations Quarterly*, 47(2): 46-48.

Origo, F. and Pagani, L. (2008) "Workplace Flexibility and Job Satisfaction: Some Evidence from Europe", *International Journal of Manpower*, 29(6): 539-566.

Pacheco, G. and Webber, D. (2016). "Job Satisfaction: How Crucial is Participative Decision Making?", *Personnel Review*, 45(1): 183-200.

Parker, S. and Van Praag, C. (2006). "Schooling, Capital Constraints, and Entrepreneurial Performance: The Endogenous Triangle", *Journal of Business & Economic Statistics*, 24(4): 416–431.

Royuela, V. and García, G. (2015). "Economic and Social Convergence in Colombia", *Regional Studies* 49(2): 219–39.

Schuler, R. (1980). "A Role and Expectancy Perception Model of Participation in Decision Making", *The Academy of Management Journal*, 23(2): 331-340.

Saridakis, G., Lai, Y., Muñoz, R. and Gourlay, S. (2018). "Exploring the Relationship Between Job Satisfaction and Organizational Commitment: An Instrumental Variable Approach", *The International Journal of Human Resource Management*, forthcoming, https://doi.org/10.1080/09585192.2017.1423100

Scott, K., Bishop, J., and Chen, X. (2003). "An Examination of the Relationship of Employee Involvement with Job Satisfaction, Employee Cooperation, and Intention to Quit in US Invested Enterprise in China", *The International Journal of Organizational Analysis*, 11(1): 3-19.

SHRM-Society for Human Resource Management (2016). 2016 Employee Job Satisfaction and Engagement: Revitalizing a Changing Workforce. https://www.shrm.org/hr-today/trends-and-forecasting/research-and-surveys/Documents/2016-Employee-Job-Satisfaction-and-Engagement-Report.pdf (accessed June 20, 2018).

Skalli, A., Theodossiou, I. and Vasileiou, E. (2008). "Jobs as Lancaster Goods: Facets of Job Satisfaction and Overall Job Satisfaction", *The Journal of Socio-Economics*, 37(5): 1906-1920.

Strauss, W. and Howe, N. (1992). *Generations: The history of America's future, 1584 to 2069*, William Morrow and Company, New York, NY.

Sousa-Poza, A. and Sousa-Poza, A.A. (2000). "Well-being at Work: A Cross-national Analysis of the Levels and Determinants of Job Satisfaction", *The Journal of Socio-Economics*, 29(6): 517-538.

Van der Westhuizen, D., Pacheco, G. and Webber, D. (2012). "Culture, Participative Decision Making and Job satisfaction", *International Journal of Human Resource Management*, 23(13): 2661-2679.

de Ven, W. and Praag, B. (1981). "The Demand for Deductibles in Private Health Insurance: A Probit Model with Sample Selection", *Journal of Econometrics*, 17(2): 229–252.

Wilde, J. (2000). "Identification of Multiple Equation Probit Models with Endogenous Dummy Regressors", *Economics Letters*, 69(3): 309–312.

de Witte, H. and Naswall, K. (2003). "'Objective' vs 'Subjective' Job Insecurity: Consequences of Temporary Work for Job Satisfaction and Organizational Commitment in Four European Countries", *Economic and Industrial Democracy*, 24(2): 149-89.

Wooldridge, J. (2002). *Econometric Analysis of Cross Section and Panel Data*. Cambridge, MA: MIT Press.

Wright, T. and Cropanzano, R. (2004). "The Role of Psychological Well-being in Job Performance: A Fresh Look at an Age-old Quest". *Organizational Dynamics*, 33(4): 338-351.

Wright, B. and Kim, S. (2004). "Participation's Influence on Job Satisfaction: The Importance of Job Characteristics", *Review of Public Personnel Administration*, 24(1): 18-40.

Zemke, R., Raines, C., and Filipczak, B. (2000). *Generations at Work: Managing the Clash of Veterans, Boomers, Xers, and Nexters in Your Workplace*. Toronto: Amacom.

Appendix

Table A1. Variables description

Name	Description	Mean	Std. Dev.
General emp. involvement	1 if agree with general employee involvement	0.925	0.264
Company emp. involvement	1 if agree with participating in decisions on the company	0.762	0.426
Teamwork emp. involvement	1 if agree with participating in decisions on the teamwork	0.817	0.387
Main tasks at work emp. involvement	1 if agree with participating in decisions on the main tasks at work	0.898	0.303
Age	Age (continuous)	28.477	4.742
Squared age	Squared age (continuous)	833.435	269.359
Gender	1 if male	0.447	0.497
Years of education	Years of education (continuous)	15.113	3.100
Married	1 if married	0.476	0.499
Have children	1 if has children	0.488	0.499
Live with parents	1 if lives with parents	0.391	0.488
Tenure in current employment	Tenure in current employment (continuous)	3.281	3.433
Squared tenure	Squared tenure (continuous)	22.542	42.168
Proud	1 if proud to belong to this company	0.964	0.185
Respected	1 if feels respected as an employee	0.921	0.268
Hear proposal	1 if hears proposal as an employee	0.811	0.391
Boss	1 if the boss is understanding when he/she feeds the workers	0.843	0.363
Stability	1 if the work is stable	0.969	0.173
Live in Cali (reference)	1 if lives in Cali	0.345	0.475
Live in Bogotá	1 if lives in Bogotá	0.254	0.435
Live in Barranquilla	1 if lives in Barranquilla	0.139	0.346
Live in Medellín	1 if lives in Medellín	0.152	0.359
Live in Bucaramanga	1 if lives in Bucaramanga	0.109	0.312
Low strata (reference)	1 if socioeconomic stratification is low	0.448	0.497
Medium strata (reference)	1 if socioeconomic stratification is medium	0.445	0.497
High strata (reference)	1 if socioeconomic stratification is high	0.106	0.307
General management, director or top management (reference)	1 if general management, director or top management	0.012	0.110
Skilled white-collar workers	1 if skilled white-collar workers	0.056	0.231
Administrative worker	1 if administrative worker	0.468	0.499
Sales worker	1 if sales worker	0.169	0.375
Skilled manual worker	1 if skilled manual worker	0.101	0.301
Unskilled manual worker	1 if unskilled manual worker	0.192	0.394
Work in Popsy (reference)	1 if works in the Popsy company	0.188	0.391
Work in IRCC-Nutresa	1 if works in the IRCC-Nutresa company	0.160	0.366
Work in Team	1 if works in the Team company	0.122	0.328
Work in Bimbo	1 if works in the Bimbo company	0.131	0.338
Work in Argos	1 if works in the Argos company	0.085	0.278
Work in Alquería	1 if works in the Alquería company	0.060	0.238
Work in Logyca	1 if works in the Logyca company	0.048	0.214
Work in Comertex	1 if works in the Comertex company	0.033	0.179
Work in Aviatur	1 if works in the Aviatur company	0.022	0.149
Work in Gases de Occidente	1 if works in the Gases de Occidente company	0.028	0.165
Work in Celsia	1 if works in the Celsia company	0.120	0.325

Notes: Author's calculations.