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HUMAN RESOURCE MANAGEMENT
Explaining job satisfaction and intentions to quit from a value-risk perspective

Explicando la satisfacción en el trabajo y las intenciones de renuncia desde una perspectiva de valor y riesgo

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Abstract

Purpose – The purpose of this paper is to investigate the effect of risk aversion (RA) on expected income and job satisfaction (JS) with pay in the case of sales agents under a compensation system based on pay-for-performance.

Design/methodology/approach – Data were collected from 125 sales agents of an outbound call center via questionnaires and controlled experiments. Seemingly unrelated equations using maximum likelihood estimation was employed to estimate the proposed model and test relationships.

Findings – Findings show that income expectations (IE) respond to a model of trade-off between value and risk. The sales agents trade off their expected value of performance (i.e. expected income) with RA. Additionally, IE and actual performance of the salesperson have influence on JS with pay with opposite signs.

Research limitations/implications – The results of this research may need to be modified to consider jobs with compensation systems with a higher proportion of fixed component of the wage than the variable component. Also, a broader concept of JS and not just related to the pay, should be considered.

Practical implications – Given the importance of RA in the attitudes of employees in relation to their expectations, the authors believe that it should be necessary and useful to incorporate measures of RA in the process of selection and recruitment for these jobs.

Originality/value – This paper assessed an important element as the RA at the micro level inside of an organization. This element could be very important for job environments with high uncertainty in income that could influence JS via employee expectations.

Keywords Job satisfaction, Risk aversion, Income expectations

Paper type Research paper

JEL Classification — J63, M12, M59

Resumen

Propósito – El propósito de esta investigación fue investigar el efecto de la aversión al riesgo sobre la remuneración esperada para agentes de ventas, bajo un sistema de compensación basado en resultados, a través de un modelo de ecuaciones estructurales.

Diseño/metodología/enfoque – Los datos fueron recolectados de 125 agentes de ventas de un Call Center de telemarketing y ventas a través de encuestas estructuradas y experimentos controlados. Se utilizó "Seemingly unrelated equations" utilizando estimación por máxima verosimilitud para estimar el modelo propuesto.

Resultados – Los resultados mostraron que las expectativas de remuneración responden a un modelo de compensación entre "valor y riesgo". Los agentes de ventas compensan el valor de su desempeño (en términos de remuneraciones esperadas) con su aversión al riesgo. Adicionalmente, las expectativas de remuneración y el desempeño actual del agente, poseen una influencia significativa en la satisfacción con el sueldo, pero con signos opuestos.

Limitaciones de la Investigación/implicaciones – Los resultados de esta investigación debieran ser tomados con cautela, particularmente en trabajos con sistemas de compensación cuya proporción entre el componente fijo y variable del salario es alto. Además, debiera considerarse un concepto más amplio de satisfacción en el trabajo, y no sólo el de la satisfacción con el sueldo obtenido por el agente de ventas.

Implicaciones prácticas – Dada la importancia de la aversión al riesgo en las actitudes de los empleados en relación a sus expectativas, nosotros sugerimos que es posible y útil, incorporar medidas de aversión al riesgo en los procesos de selección y reclutamiento en este tipo de sistemas de compensación.

Originalidad/Valor – Este trabajo evalúa un elemento importante, tal como lo es la aversión al riesgo, a nivel individual al interior de una organización. Este elemento podría ser muy importante en ambientes de trabajo que se caracterizan por tener alta incertidumbre en las remuneraciones, lo cual puede influir en las satisfacción de los empleados, vía expectativas salariales.

Palabras clave Satisfacción en el trabajo, Aversión al riesgo, Expectativas de remuneración, Remuneración esperada

Tipo de trabajo Trabajo de investigación

There are numerous examples of industries and work activities that use variable compensation schemes based on employee performance. For example, in sales activities, employees are remunerated according to the number of sales achieved during a given period. In manufacturing, bonuses are rewarded for the number of finished products. A combined system of bonuses and earnings per unit of production is intended to provide incentives for workers to exert effort so that the firm may maximize its utility (Cadsby *et al.*, 2007; Thomas and Armin, 2010). However, with this kind of compensation large variations in income may be observed. Depending on the individual's risk attitudes to income[1], these fluctuations may reduce the utility of risk averse workers (Cornelissen *et al.*, 2011; Green and Heywood, 2008).

An issue that has not been sufficiently examined is the relationship between individual risk attitudes and job expectations. Normally, it is assumed that a more ambitious person (with higher expectations) will be willing to take more risk than one with lower expectations (Cramer *et al.*, 2002; Kanbur, 1979; Kihlstrom and Laffont, 1979). But expectations should also have an influence on job satisfaction (JS). According to Locke's value-percept theory, JS should be related to the gap between experiences in the job and expectations (Baur *et al.*, 2014; Yu, 2014). For example, if job performance successfully confirms income expectations (IE), then satisfaction with pay is high and, in consequence, intention to quit (IQ) low (for more recent empirical evidence on the same matter, see Katsikea *et al.*, 2014; Turnley and Feldman, 2000). However, pay satisfaction might not be enough to offset the dissatisfaction caused by uncertainty concerning income for the following month. For every new period, employees have to take a risky decision to stay, because there is no certainty about how much they will earn under the pay-for-performance scheme.

This study proposes that the relationship between individual risk aversion (RA) and IE may be understood with reference to Sarin and Weber's (1993) model of trade-off between value and risk, according to which individuals with higher RA offset this characteristic with lower expectations. Individuals with higher risk tolerance (or risk takers), show greater resilience to variable results (negative or positive), but require higher expected results. Research to date has tended to focus on the relationship between JS, expectations and different moderating variables, but little attention has been paid to the influence of risk attitudes to income on JS and expectations.

This research attempts to advance an empirical examination of the effects in the pay-for-performance environment of an outbound call center of risk attitudes to income on IE, and how satisfaction with pay, job performance and IQ are influenced by these expectations. For the purpose, a model was developed that linked individual risk attitudes to income with IE, satisfaction with pay and, ultimately, IQ. The model built on attitude-behavior logic, using a value-risk approach and expectation gap theory as frameworks.

The aim of the research is not exactly to make advances in understanding the relationship between JS and intentions of quit, but to focus attention on providing an alternative explanation of the formation of expectations, and how these expectations are simultaneously related to other important variables that affect IQ.

Our results provide evidence that there is a trade-off between RA and IE, and that these two characteristics simultaneously affect satisfaction with pay and IQ the organization.

The main contribution of the study is to provide an explanation of how an intrinsic characteristic of a given individual, such as income-related RA, is crucial to JS, as it relates to pay, which in turn affects turnover intentions, particularly in environments where earnings are directly related to results. Furthermore, the paper also proposes a model that brings all the variables together simultaneously.

The paper is organized as follows: second section outlines the conceptual framework on which the empirical model is built; third section explains the methodology and the empirical model to be estimated; fourth section presents the results of the estimation; and the fifth section provides a discussion of the findings alongside insights for future research in the field.

Conceptual framework
This study develops a model based on the value-risk and on expectations gap theory. The model interprets final behavioral intentions (employee IQ their organization), in terms of how they form their IE from their risk attitudes, and how these expectations lead to satisfaction with pay. The approach taken in this study recognizes explicitly, and simultaneously, the importance of employee attitudes toward risk, and their performance at work, as both these factors relate to behavioral IQ. The theoretical construct used to specify the empirical model is summarized and presented in Figure 1.

The model assumes that individuals working under a pay-for-performance compensation regime trade-off their IE against their income-related RA. At the same time, the employees use their IE as a reference point with which to compare their actual performance. The result of this comparison influences satisfaction with pay. If employees do not have the ability to achieve good performance they are forced to exert greater effort in order to offset their failings and the variable income that results from it. If their increased effort is not rewarded according to their expectations then there is a greater likelihood they will quit. Individuals with low RA tend to deal with variations in income more easily. They have higher expectations (ambitions that could

perhaps only be satisfied under the terms of this kind of compensation plan) that help them work harder and eventually achieve better results – though this last aspect depends, of course, on their ability to do the task. The rest of this section develops the theoretical basis of the model.

The value-risk framework

The risk attitudes model, conceptualized in accordance with the risk-return framework of risk choice used in finance (Sarin and Weber, 1993), indicates that people make a trade-off between the expected benefit of the option, usually equivalent to the expected value, and its risk (Weber *et al.*, 2002). This framework is useful for understanding the relationship between perceived risk (i.e. income-related RA) and expected benefits (i.e. IE). Within the customary utility framework, a value-risk model reflects trade-offs between value and risk in decision making. Thus, an evaluation that leads to a decision could consist of two attributes, value and risk (Jia and Dyer, 1996).

If people have a natural tendency toward RA, they should be rewarded for taking that risk. Risk averse people who choose a risky decision, but do not see any reward for it will assign a low evaluation to the alternative. The amount of reward depends on the attitude toward risk reflected in the shape of the associated utility curve. If a person with high-RA opts for a markedly variable income option this should have an expected value high enough to offset the risk. If individuals are subjected to an option with a high level of risk, they will seek a compromise between riskiness and the value of the option. Thus, when the level of risk is high, the value of the option decreases. This is what happens when individuals subjected to environments with high variability in income and high RA tend to anticipate lower values than individuals with lower RA.

Following the notation of Weber *et al.* (2002) and Weber (1997):

$$\text{Preference}(X) = a(\text{Expected benefit}(X)) + b(\text{Perceived risk}(X)) + c \tag{1}$$

where X represents a work environment with a compensation system based on performance. If this option remains the same for the entire universe of individuals then the equation is balanced; high-perceived risk (high variability in income) implies a lower expected value, while low-perceived risk implies greater expected value. This suggests that for a given results-based compensation system the more risk averse
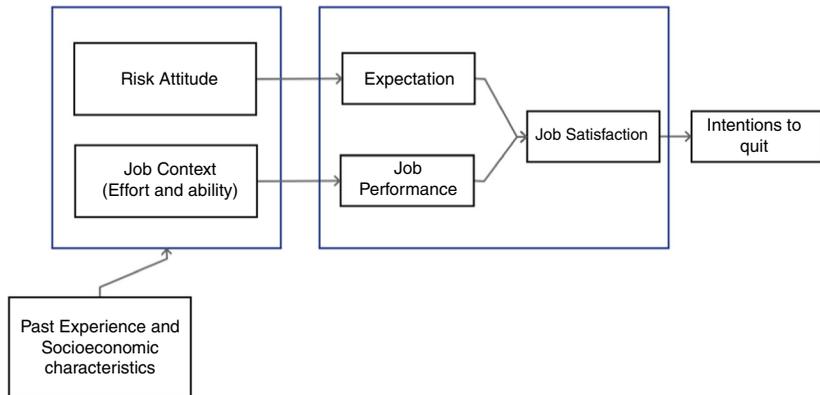

Figure 1.
A conceptual model depicting the relationships between risk attitudes, income expectations, job satisfaction and intention to quit

a subject, the lower their expected income. This expresses an inverse relationship between RA and pay expectations. In summary, we incorporate the impact of RA on an employee's expected income by using a model that includes this relationship at the individual level.

The expectation gap theory

We argue that the expectations employees have concerning their future pay internalize their income-related RA and serve as a reference point for their decisions. Below-expectation performance can produce sufficient enough dissatisfaction to initiate quitting behaviors. This results from the comparison employees make between current performance and expectations, which has an impact on work behavior, as predicted by the met expectation, or expectation gap theory (Irving and Meyer, 1994; Porter and Steers, 1973; Wanous, 1977; Wanous *et al.*, 1992). The theory postulates that when employees' expectations about their jobs are confirmed, JS levels and commitment to the organization increase, and the likelihood that they will develop an IQ is reduced. We define the expectation gap as the result of the comparison between job performance and IE. We argue that this comparison between outcome and expectation is what determines pay satisfaction. Just as in Locke's (1976) definition of JS, we consider satisfaction with pay to be the discrepancy between the pay that workers expect to receive and what they actually earn. The pay of sales agents in the call center is directly related to their results, so performance is taken as the real income achieved for a given period. The wider the (positive) gap, the greater the pay satisfaction because there is positive confirmation of IE, i.e., the outcome is above the reference point. The narrower the gap (or if it is negative), the lower is pay satisfaction, because IE have not been met, i.e., the outcome is lower than the reference point (Heath *et al.*, 1999; Tversky and Kahneman, 1981).

The use of reference points from which the subjects derive utility (satisfaction) or disutility is explained in prospect theory (Kahneman and Tversky, 1984; Tversky and Kahneman, 1981). The outcomes are expressed as positive or negative deviations with respect to a neutral point that is assigned a zero value. The value assigned to a negative deviation (loss) is very different from that which is assigned to a positive value (gain) and is given by the value function, which is different for each person. A feature of this function is that it is concave above the reference point and convex below it, indicating RA in the domain of gains and risk seeking in the domain of losses. An interesting property of the value function is that the response to losses has a much greater impact than a response to earnings. We believe that this difference has profound implications for pay satisfaction and therefore IQ. For example, Ockenfels *et al.* (2014) showed that short-term incentive systems produce an asymmetric effect on satisfaction with pay, depending on whether the result is above the reference point or below.

The job performance-JS link is modeled as a form of attitude-behavior link, according to the idea that satisfaction follows from the rewards received for performance (Baur *et al.*, 2014; Lawler and Porter, 1967; Naylor *et al.*, 1980; Yu, 2014). As we are dealing with income-related RA, we analyze only one dimension of JS: satisfaction with pay. Although we recognize that there are other outcomes for employees, we propose that in variable compensation systems, pay is among the most important.

In summary, satisfaction with pay is modeled as a function of job performance and IE. If the outcome-expectation comparison is true, then we expect to find the coefficients of the model estimation for both variables to be significant and of opposite sign.

Explaining job performance

From the perspective of labor economics, employee performance could be seen as the combined result of the ability to do the task and the effort devoted to it; this represents the job context part of the model. The ability variable captures the heterogeneity of workers. An important implication of the ability of the worker, is that for a given effort level, an individual with higher ability gives higher productivity (Garibaldi, 2006). Another factor that reflects performance is the increased effort exerted by motivated employees (Neal and Hesketh, 2001). We assume that the level of worker effort in each period of time is the result of utility maximization in a dynamic programming sense. But, as pointed out by Lal and Srinivasan (1993, 1988) and Holmstrom and Milgrom (1987), faced with a linear compensation plan workers will contribute a constant rate of effort, thereby reducing the intertemporal maximization problem to the equivalent of a single period. Unlike, for example, Christen *et al.* (2006), we are not interested in explaining effort, so this factor is treated as exogenous to our proposed model. Based on these arguments, ability and effort should have a significant and positive impact on the performance of sales agents.

IQ

The connection between IQ and JS was treated initially by Mobley (1977), and subsequently by various other authors. Hulin *et al.* (1985) present a model of voluntary turnover in which several employee factors (skill, effort and opportunity costs) and job outcomes (prior outcomes, pay, benefits and status) affect IQ – all these factors are associated with JS. More recently, Shahnawaz and Jafri (2009) showed that JS predicted turnover intentions. Bridges *et al.* (2007) confirmed that salespeople whose performance was below their IE have low levels of JS and are therefore more likely to quit, whereas those with performance above their expectations are more likely to stay with the company because their JS is higher. Katsikea *et al.* (2014) also found that among export sales managers JS negatively affects IQ.

We are not interested in the effect of the general construct of JS, but only with pay in relation to intention to remain. From an agency theory perspective, our aim is to describe the effect of participation constraint in order to explain that, when the utility of the employee does not exceed the minimum threshold, he or she will seek outside alternatives. Meta analytic results produced by Cotton and Tuttle (1986) show that satisfaction with pay is negatively related to turnover. This direction of the relationship is stronger for white-collar than for blue-collar workers. Given these findings and for the sake of the parsimony of the model, we establish a direct and negative relationship between satisfaction and IQ.

Methodology and data acquisition

Data sources

The research was carried out at a call center located in Santiago, Chile. We only examined employees working in outbound campaigns at the call center, which involved selling fraud-, theft- and life insurance. All outbound campaigns have a system of variable compensation (linked to approved sales) that is paid on top of a base salary. Thus, the agents are subject to variability in income. The fixed portion of the salary is about CLP\$185,000 (US\$365), and on average an agent achieves a monthly additional salary of CLP\$515,000 (US\$1,050) for approved sales. In the study period, the maximum monthly salary earned by an agent was approximately CLP\$1,500,000 (US\$3,050).

The information required in order to apply the conceptual model came from three sources. The first comprised the responses to a survey of the sales agents that measured JS, IQ and other variables. The second involved an experiment to assess income-related RA (see the following subsection on procedure for measuring RA). The research into these aspects was carried out between February and June 2011. Participants were briefed on the general purpose of the study and told that it was solely for academic purposes. This briefing was carried out by one of the members of the research team. A sample of 125 (34.1 percent men, 65.9 percent women) was randomly selected. All worked full-time and had been at the call center at least one month, ensuring that their responses were based on their work experience. In total, 17 cases were excluded from the analysis due to missing data or because there was a violation of the assumption of rationality in the utility function assessment. Finally, the third source of information consisted of the internal records of the call center: measurements of the hours logged onto the system, hours talked and the number of sales made in a given period.

Procedure for measuring RA
The assessment of the utility function was conducted using personal computer-guided interviews; each lasted between 25 and 30 minutes and was held at the employee's place of work. During the course of the experiment the interviewer remained with the employee to explain and clarify any doubts. Before the start of each experiment the interviewer also offered explanations and talked thorough example questions, enabling the subject to practice.

The assessment of the utility function was carried out using the certainty equivalent method (Farquhar, 1984; Kenney and Raiffa, 1993). The certainty equivalents were obtained according to the method proposed by Abdellaoui and Bleichrodt (2008), using binary choice-based matching. We used seven certainty equivalence questions to elicit the utility function for gains in each subject. For each question, the respondent had to choose between two alternatives, labeled A and B. Alternative A was the chance of receiving one of two incomes, with equal probability. Alternative B was a fixed salary, calculated as the average of the values in Alternative A. The expected utility of the first lottery was 0.5, calculated by scaling $u(US\$3200) = 1$ and $u(US\$255) = 0$. Seven points were assessed, corresponding to utilities of 0.125, 0.250, 0.375, 0.500, 0.625, 0.750 and 0.875 (Pennings and Smidts, 2003). The lottery described above fits the organizational context in which the employees were working, representing the uncertain nature of earnings under a variable compensation scheme. In this manner, we sought to reduce contextual biases in the assessment procedure (Hershey *et al.*, 1984). Because of time constraints this method was appropriate to the context in which the experiment was carried out; it had the further advantage of minimizing the cognitive effort of the decisions made by the employees. As a result of estimating the utility function $u(x)$ by non-lineal regression, a measure of local RA was computed: $r(x) = -u''(x)/u'(x)$ (Pratt, 1964). We have assumed a constant RA with $u(x) = \beta_0(1 - e^{-\beta_1 x})$ where $r(x) = \beta_1$. If $\beta_0 > 0$ and $\beta_1 < 0$, the agent is risk averse[2]. If $\beta_0 < 0$ and $\beta_1 > 0$, the agent is risk prone. Otherwise, the agent is risk neutral.

Measurement
Some of the items used in this study to measure the constructs were taken from scales developed by other researchers. To avoid confusion or misunderstanding, all questions were translated into Spanish and checked by the recruitment and human resources managers of the call center, who validated the survey questions.

JS

JS was measured using the scale developed by Green and Heywood (2008). The scale defines JS according to four different dimensions: overall JS, satisfaction with pay, the level of satisfaction with job stability in this place of employment and satisfaction with the job itself. However, for the following analysis we used only satisfaction with pay as a proxy of utility derived from work (Christen *et al.*, 2006; Friedman, 1978). Satisfaction levels were measured using a seven-point Likert scale where 1 is very unsatisfied and 7 is very satisfied. The coefficient α reliability estimate was 0.77 for the four dimensions.

IQ

IQ was measured using three items modified from the five point scale proposed by Hunt *et al.* (1981). These were[3]: First, which of the following statements best reflects your feelings about your future in the call center over the next year[4]? Second, if you were completely free to choose, would you prefer to continue working in the call center or would you prefer not to? Third, which statement best describes your call center career plans? The coefficient α reliability estimate was 0.76[5].

IE

Monthly IE were self-reported by the agents in the questionnaire. The question was: please tell us about your IE if you continue working in this job over the coming months.

Control variables

Nine individual statistically controlled variables were considered, including: job tenure, gender, children, married and additional financial aid. Tenure is an ordinal variable expressing the number of months that the agent had been working at the call center. Children was coded 1 if the agent had children; married was coded 1 if the agent was married and help was coded 1 if respondents had other financial support. Three further variables (level of agreement with the compensation system[6], preference for type of compensation system[7] and perceived gap between current and expected income[8]) were also used as controls. A final control variable was included as a single item with five levels asking for the level of uncertainty about income felt by the agent at the end of the month.

Performance measures

Information on agent performance was obtained from the automated log of sales activities; performance was examined from the beginning of each employee's activity until two months after completion of the survey. This included: average monthly production (JP), a direct result of sales expressed in the current local currency; effort; and sales agent efficacy (Campbell and Pritchard, 1976). These three measurements are taken directly from the log of sales activities, which monitors each performance variable throughout the working day. As a proxy of effort exerted by the agent to achieve sales (EF), we used the monthly average of talked hours. Talked hours represent the commitment of the agent to meet monthly sales targets. This is equivalent to a measure of the effort exerted to sell the product within the agents daily working hours. Efficacy (AF) is defined as the capability of the employee to make a sale. This efficacy may come from persuasive capacity. As a proxy for this variable, we used the average of ratios between approved sales and finished records. Approved sales are all sales made after approval by the quality control department. Finished records are the databases of customers that have already been contacted, with two possible outcomes: sale or no sale. A high-approved sales: finished records ratio means that the agent has been successful in selling the product.

Specification of the model

Based on the conceptual framework presented in Figure 1, a four-equation simultaneous structural model was formulated to analyze the interdependent relationships that link satisfaction with pay and IQ, from risk attitudes and job context (effort and ability) for the ith individual: first, the relationship between IE and level of income-related risk aversion RA_i; second, the relationship between job performance and effort EF_i, and level of agent efficacy to develop the task AF_i[9]; third, the relationship between satisfaction with pay JS_i, and other variables derived from agency theory such as job performance JP_i, perceived level of income variability (uncertainty of income) I_i, and others derived from expectation theory, such as income expectations IE_i and perceived gap between current and expected income PG_i; and finally, the relationship between JS and intention to quit IQ_i:

$$\log(IE_i) = \alpha_0 + \alpha_{RA}RA_i + \varepsilon_{1i} \tag{2}$$

$$\log(JP_i) = \beta_0 + \beta_{EF}EF_i + \beta_{AF}AF_i + \varepsilon_{2i} \tag{3}$$

$$JS_i = \gamma_0 + \gamma_{JP}\log(JP_i) + \gamma_{IE}\log(IE_i) + \gamma_I I_i + \varepsilon_{3i} \tag{4}$$

$$IQ_i = \delta_o + \delta_{JS}JS + \varepsilon_{4i} \tag{5}$$

The model has four endogenous variables: job performance JP_i, income expectations IE_i, satisfaction with pay JS_i and turnover intentions IQ_i. It has four exogenous variables: risk aversion RA_i, job efficacy AB_i, job effort EF_i and perceived level of income variability I_i. A Durwin-Wu-Hausman test for endogeneity was performed to test simultaneity in each pair of equations used in the model. The results indicate no evidence of simultaneity between the equations. Were the disturbance covariance matrix diagonal, the application of ordinary least squares (OLS) to estimate the model would be straightforward (Lahiri and Schmidt, 1978). However, an analysis of the disturbance covariance matrix reveals that it is not quite diagonal and, therefore, the model is not triangular recursive. Because of this, we opted for a seemingly unrelated regression (Zellner, 1962) using maximum likelihood estimation. This procedure resulted in an efficiency gain over the OLS estimation (Greene, 2003).

Model estimation and results

Table I presents means, standard deviations and intercorrelations among the variables. Income-related RA was significantly related to IE ($r = -0.49$, $p < 0.01$). This indicates that in the presence of increased RA, there is less expectation of income in this results-based compensation system. As expected, satisfaction with pay was inversely related to IQ ($r = -0.50$, $p < 0.01$). In turn, job performance and IE were significantly related to satisfaction with pay ($r = 0.41$, $p < 0.01$ and $r = 0.24$, $p < 0.01$). The results show some evidence of the hypothesized relationships mentioned above. However, these relationships may be contaminated by other indirectly observed effects. For this reason, we proposed a series of simultaneous regressions between variables of interest and the control variables, in order to gain greater understanding of these relationships.

Table II shows the results of the simultaneous estimation. The expectations are explained in Equation (2). Controlled by job tenure (which is significant, with positive effect), RA plays an important role, showing that agents who are more tolerant to risk-taking have higher IE ($\beta = -0.41$, $p < 0.01$, Equation (2)). This result may be

Variables	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Income risk aversion (RA)[a]	−2.13	0.96	1.00													
2. Agent sale efficacy (AF)[b]	−2.32	0.82	−0.17*	1.00												
3. Agent effort (EF)[b]	49.18	18.3	−0.34***	0.09	1.00											
4. Job performance (JP)[b]	12.42	0.88	−0.27***	0.41***	0.53***	1.00										
5. Expected income (IE)[b]	1.90	0.46	−0.49***	0.27***	0.38***	0.66***	1.00									
6. Uncertainty of income (I)	3.04	1.05	0.24***	0.10	−0.16*	−0.15*	−0.19**	1.00								
7. Job satisfaction with pay (JS)	4.46	0.13	−0.03	0.37***	0.13	0.43***	0.24***	−0.22**	1.00							
8. Agreement	8.76	2.81	0.01	0.16*	0.09	0.34***	0.22**	−0.09	0.68***	1.00						
9. Intentions to quit (IQ)	6.40	2.59	−0.10	−0.01	−0.15	−0.10	−0.09	0.23***	−0.44***	−0.30***	1.00					
10. Compensation preference	2.93	1.23	−0.24***	0.21**	0.16*	0.40***	0.37***	−0.09	0.28***	0.29***	−0.29***	1.00				
11. Tenure	4.16	1.38	−0.09	0.16*	0.11	0.38***	0.34***	0.06	0.08	0.0	0.09	0.06	1.00			
12. Gender	0.31	0.47	−0.23**	0.03	−0.02	0.12	0.06	−0.03	0.02	−0.7	0.15	0.07	0.13	1.00		
13. Child	0.68	0.47	0.03	−0.03	0.18**	0.08	0.08	0.11	−0.06	−0.03	0.03	0.02	0.0	−0.18**	1.00	
14. Married	0.31	0.46	0.09	0.03	0.02	0.10	0.04	0.03	0.07	−0.07	0.01	0.12	0.0	−0.07	0.34***	1.00
15. Help	0.39	0.49	−0.12	0.04	−0.01	−0.05	−0.06	0.07	−0.04	−0.03	−0.05	0.0	−0.26***	−0.02	−0.03	0.06

Notes: $n = 125$. [a]These are the values of the coefficients with box-cox transformation. Most negative number represents risk averse agents; [b]these variables were taken as natural logarithm. *$p < 0.10$; **$p < 0.05$; ***$p < 0.01$

Table I.
Descriptive statistics
and correlations
among variables

Parameter	Equation (2)	Equation (3)	Equation (4)	Equation (5)
Intercept	−2.543*** (−7.60)	−1.762*** (−6.47)	6.919*** (6.46)	10.68*** (11.84)
Income risk aversion (RA)[e]	−0.407*** (−5.57)			
Agent sale efficacy (AF)		0.229*** (4.18)		
Agent effort (EF)		0.344*** (5.13)		
Job performance (JP)[a]			1.018*** (4.17)	
Expected income (IE)			−0.394* (−1.91)	
Uncertainty of income (I)			−0.533*** (−3.67)	
Job satisfaction with pay (JS)				−0.306*** (−6.41)
Agreement[b]			0.596*** (9.87)	
Job tenure	0.251*** (4.64)	0.245*** (5.48)	−0.126 (−40)	
Preference[d]	0.228*** (3.67)	0.225*** (4.47)	−0.058 (−0.40)	
Other controls				
Male	−0.170 (−1.06)	0.140 (1.12)	−0.414 (−1.28)	1.050*** (2.38)
Child	0.097 (0.58)	−0.044 (−0.32)	−0.263 (−0.76)	0.225 (0.48)
Married	0.042 (0.25)	0.296** (2.20)	0.082 (0.24)	0.195 (0.41)
Help[c]	−0.121 (−0.79)	−0.040 (−0.33)	−0.103 (−0.33)	−0.097 (−0.23)
RMSE	0.747	0.602	2.082	2.171
R^2	0.436	0.6062	0.3239	0.2925
χ^2	87.38***	166.65***	53.44***	47.50***
n	108	108	108	108

Notes: T-statistics are in parenthesis. [a]Job performance is natural logarithm of average income of the agent; [b]agreement is the level of agreement of the agent with his current compensation system; [c]the value of this indicator is 1 if the agent has another financial support for his living, 0 otherwise; [d]preference is the preference of the compensation system reported by the agent from 100 percent fixed to 100 percent variable; [e]these are the values of the coefficients with box-cox transformation. Most negative number represents a higher risk tolerance, while values near zero represent risk averse agents. *$p < 0.10$; **$p < 0.05$; ***$p < 0.01$ (two tailed t-test)

Table II.
Estimation results

understood from the value-risk paradigm (Bell, 1995; Sarin and Weber, 1993). The agents evaluate the compensation system according to two attributes: value and risk, which they consider to be an investment that is evaluated in terms of its mean return and risk. In our case, the agents appear to make a compromise between risk and IE. Thus, agents with low RA (i.e. greater willingness to take risks), have higher expectations of the remuneration they are likely to receive from the compensation system in which they operates. However, if an agent has high RA it is not necessarily indicative of poor performance, but does have an indirect influence on satisfaction through IE. This result supports the trade-off made by employees between their RA and their IE.

Job-context effects are also relevant. Specifically, the effects of agent effort and agent efficacy are positive and significant over job performance ($\beta = 0.34$, $p < 0.01$ and $\beta = 0.23$, $p < 0.01$, respectively: Equation (3)). This indicates that a greater number of talked hours spent trying to sell a product leads to higher performance. Agent efficacy, which is related to the number of approved sales, has a positive effect on job performance. It is, however, interesting to note that the effect of effort over job performance is 1.5 times larger than the effect of efficacy.

Turning to the results of the estimation of Equation (4), a parsimonious estimation of satisfaction with pay was carried out[10]. The results confirmed that good job

performance is associated with greater satisfaction ($\beta = 1.02$, $p < 0.01$). But the perceived level of variability in income is a factor that decreases pay satisfaction ($\beta = -0.53$, $p < 0.01$). Because the agent has sparse protection against variability in income (low ratio of salary to total compensation), this factor negatively influences satisfaction with pay (Ghosh and John, 2000). Interestingly, the coefficient of expected income is negative and significant ($\beta = -0.39$, $p < 0.1$). This evidence indicates that the sales agents perform a comparison between current performance and their expectations when they are determining JS (Wanous *et al.*, 1992). It also confirms the notion that individuals compare their pay expectations with final outcomes, deriving their level of satisfaction from the exercise.

The estimation of Equation (5) indicates the relationship between JS and IQ. It is observed that the JS effect is negative in relation to IQ ($\beta = -0.31$, $p < 0.01$). This is in line with the literature and, therefore, given a higher level of satisfaction, agents reports lower levels of intention to leave their current jobs.

Discussion

Using simultaneous equations estimation, this study has found that income-related RA, IE, satisfaction with pay and IQ are considered to operate as an inter-related system. The interaction between variables as a whole and not just in a particular part of the system makes it possible to test several hypotheses simultaneously. We examined the effects of income-related RA, on IE as well as the effect of IE and job performance on satisfaction with pay.

Income-related RA among sales agents was measured using an estimation of utility curves for each individual, reflecting information about their risk-taking behavior. In a pay-for-performance compensation system, employees are permanently exposed, because they cannot know with certainty what their earnings will be at the end of the month. Their results have a stochastic component, which is beyond their control. The evidence found in this study was that agents who are not willing to suffer a greater variability in their income (i.e. who showed greater perceived risk) are willing to sacrifice part of their income in order to reduce the risk and therefore report lower IE (that is, their expectations of the compensation system are lower). This phenomenon is similar to that described by Grund and Sliwka (2010) on risk-incentive trade-off, in that there is a trade-off between the probability that employees will work in a performance-based compensation system and their levels of RA. Dohmen and Falk (2011) showed that risk-averse agents tend to prefer compensation systems with fixed payment contracts. However, none of these studies investigated the connection between RA and expectations. Our empirical study suggests that this connection can be explained by the trade-off between value and risk (Sarin and Weber, 1993). Thus, income-related RA is an important factor restricting IE, which in turn are used as benchmarks to compare performance and to determine satisfaction with pay. From a theoretical perspective, the value-risk model provides an appealing alternative explanation of how expectations are formed under risk scenarios in which there is outcome uncertainty, because it considers the risk attitudes felt by employees toward such contexts at an individual level. This is especially important for call centers that are subject to high-staff turnover rates. A relationship between risk tolerance and job survival in jobs with results-based compensation systems could yield interesting results through affective and cognitive evaluations of the desire to leave the organization.

This research has found that pay satisfaction is related to the agent's actual performance and IE. The two variables are of opposite sign but of different magnitude,

providing evidence that the gap between the actual performance of an agent and their expectations helps to explain the variability in JS. In terms of theory, the results obtained are consistent with Locke's (1976) value-percept theory. Expectations play an important role in JS, becoming benchmarks against which agents measure their current performance. Early on, Wotruba and Tyagi (1991) found evidence that expectations were met more frequently among sales agents who were still working, than among those who were not, suggesting that IQ was related to the meeting of expectations. More recently, findings from Irving and Montes (2009) reinforce the hypothesis that unmet expectations are associated with a decrease in satisfaction. This is consistent with our results, in particular, in contexts of high-income uncertainty.

Finally, the negative relationship between satisfaction and turnover intentions found in this research is not new. Meta-analytic studies support this attitudinal mechanism (see, for example, Carsten and Spector, 1987; Cotton and Tuttle, 1986; Tett and Meyer, 1993). In this case, satisfaction with pay has a direct and negative link with turnover intentions, indicating the importance of this dimension of JS to turnover rates at this call center.

Practical implications

In practical terms, the results of this study may point to some tactical and operational decisions in the system for recruiting and selecting staff to reduce high-turnover rates and increase effectiveness. Although the results of this study cannot be generalized to all types of organizations, it is possible to suggest that for compensation systems that use a highly variable component to establish employee income, measurement of RA may be an important criterion in applicant selection. For example, systematic measurements of the perceived risk inherent in the compensation system, and the degree of comfort with this type of system expressed by applicants, could reveal, first, a poor fit between income-related RA and the perceived degree of monthly income variability, and second, mistaken IE due to a perception that the compensation system displays potential risk bias. For example, an applicant might perceive more risk or income uncertainty than is actually offered by the system, with the result that IE will be biased. This may eventually lead to the subsequent development of an IQ, even when the subject has excellent skills for the job. We assume that good performance and good skills for the job are not the only components that ensure the permanence of a sales agent at the call center. It is also a question of whether the subject is comfortable with the uncertain future income working there implies.

Another practical implication that we consider important is the finding that suggests that pay satisfaction is not related to actual performance, but compared to a reference point that we call IE. In a practical sense, good performers may perform consistently well, but their IE may remain unsatisfied. As previously discussed, a result below the reference point (i.e. a negative deviation) has a strong negative effect on satisfaction, and therefore, may convey withdrawal cognitions (DeConinck and Stilwell, 2004). Supervisors should be aware of this, in order to offer support to agents and provide the necessary care to contain possible resignation behavior. This could help minimize the disconfirmation of expected income, look after highly performing agents and avoid turnover.

Limitations of the study

Several limitations of this study should be borne in mind. First, in a compensation system based on outputs such as the kind that operates in outbound call centers, rewards are contingent on performance, and the system is therefore designed to reward

good performers. Performance is gauged only according to the number of sales and all the pressure is on the agent to meet or exceed targets. This is the reason why past and current income from sales has been taken into account when considering job performance. Future research should incorporate other performance measures – for example, mediation effects of leader behavior and self-esteem on the performance-satisfaction relationship (Allen and Griffeth, 2000). It should also be noted that the measure of satisfaction considers only one dimension of overall satisfaction and that it has been gauged using only one item. This necessarily raises concerns about the reliability of the construct. However, as mentioned above, our model seeks to capture only the importance of RA in income and expectations in monetary terms. An expansion of this study is planned, which will consider other determinants in overall JS such as comfort and responsibilities at work (Irving and Meyer, 1994).

Second, results could be improved by increasing the sample size and examining other jobs with compensation systems that have different ratios between the variable and fixed components. An interesting future avenue of research would be to include multidimensional aspects of RA and satisfaction with pay, but with better elicitation methods (Abdellaoui et al., 2011).

Third, the relationship explaining job performance has only been assessed using proxies for efficacy and effort, by using objective measures found in the call center's automatic log. However, these measures could be complemented by using other, subjective, measures derived from surveys of supervisors and employees. Thus, the proposed model could incorporate measures such as role ambiguity and role conflict as independent variables to explain effort, as per Brown and Peterson (1994). Additionally, the incorporation of measures of ability could improve the reproducibility of results. For example, Vinchur et al. (1998) used some sub-dimensions from the Big Five personality categorization to predict sales success. Future research should consider these measures of personality not only as a proxy of ability, but also to explain individual RA.

Notes

1. In this study we talk about attitude to risk to income in an economic sense, as proposed by Pratt (1964), and not in a psychological sense, so that our concept of risk does not capture the constellation of personality variables of a person's predisposition to take risks.

2. A decreasingly risk-averse function $u(x) = \beta_0 x^{\beta_1}$ where $r(x) = -(\beta_1-1)/x$ was also estimated with restriction: $\beta_0 > 0$ and $\beta_1 > 0$. Comparing the root mean squared error (RMSE) and R^2 values of estimations of both types of utility functional forms, it is clear that constant risk aversion fits better than decreasingly risk-aversion assumption.

3. Only three items were taken because other two, designed for the US Army were too specific for the current context.

4. The options were: I probably will quit, I am unsure, I will probably quit and I am definitely not staying here.

5. The options for this question were: I would rather keep working here anyway, I might keep working here, It is not something that worries me at all, Maybe I will stop working here and I n any case I would prefer to stop working here.

6. This construct is a measure of how much the agent is in agreement with his current compensation system which pays his salary. It consists of two questions on a scale of 1-7 (1 = strongly disagree, 7 = strongly agree). The coefficient α reliability estimate was 0.78.

7. Preference of compensation systems coded on a scale from 1 (100 percent fixed, i.e., independent of results) to 5 (100 percent variable, i.e., proportional to results).

8. Response to the question: How far are you from your salary expectations? on a scale from 1 (I am very far) to 5 (I am over it).

9. As Judge *et al.* (2001) suggest, there is no conclusive evidence that the relationship between satisfaction and performance is direct, and that it can be mediated by other variables. Under this situation, we include other exogenous variables that we assume will have an impact on satisfaction with pay: the perceived level of uncertainty of income, and employee compliance with the compensation system.

10. We also estimated the model by modifying Equation 3, using overall job satisfaction (using the measurement scale developed by Green and Heywood (2008)). However, it is interesting to note that under this construct, job performance is not significant. We presume that this is because we used only monetary values to measure job performance. This is why it seems more appropriate to use the satisfaction with pay only.

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