Rewards and faculty turnover: An individual differences approach

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Abstract: The perception of dissatisfaction with rewards is associated with the growing number of faculty members who express their intention to leave the university (TI). Our study has two aims. First, to analyze the phenomenon of TI based on faculty members’ perception of both extrinsic as intrinsic rewards (EIR), considering the moderating effect of age, seniority, and education level. Secondly, to analyze whether the relationships among the EIR are stronger or weaker for specific faculty members, considering their individual differences. We developed and tested a hypothetical model using binary logistic regression with full-time faculty members working in business schools in Colombia. As for age, seniority and education level, no moderator effect was found between EIR and TI. However, we found support for the idea that some specific extrinsic and intrinsic variables impact TI and reveal individual perceptions of faculty members’ satisfaction increasing the probability of staying or withdrawing from university. We also used multiple correspondence analyses and found support for the idea that there are different levels of association between extrinsic and intrinsic rewards for certain groups of faculty members in relation to TI. The propensity of TI was characterized in three scenarios made of different groups of faculty members. Our findings illustrate that, to fully understand the EIR and TI relationship, scholars must adopt a perspective and

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PUBLIC INTEREST STATEMENT

This research finds that rewards such as satisfaction with working conditions, fair salary, clarity in the role played and developing personal initiative at work are the most valued by university faculty members in public and private business schools. However, the most relevant finding for the institutions that are interested in attracting and retaining the best human talent, lies in the possibility of identifying different levels of interest (high, moderate, low) of the faculty members against the institutional rewards. This valuable finding, which considers individual differences, allows higher education institutions to discover clusters of faculty members who have common interests and share socio-demographic characteristics. Consequently, it gives decision makers the opportunity to develop policies and actions focused on optimizing the perception of satisfaction with institutional rewards reducing the intention to quit, generating commitment, and improving the quality of learning and institutional results.
methodology that distinguishes the forces of association between EIR from the perspective of individual difference. Practical implications, limitations and future studies are discussed.

**Subjects:** Higher Education; Human Resources; Decision-Making; Strategy

**Keywords:** Higher education; faculty turnover; turnover intention; rewards; individual differences

### 1. Introduction

Usually, studies on TI in organizations are related to inadequate and even toxic leadership (Ahmad et al., 2018; Bakkal et al., 2019), unmet work expectations, a relentless work environment, long working hours, excessive stress, limited career growth, few promotion opportunities, unattractive compensation packages, employee poaching, among others (Boyar et al., 2012; Kim & Kao, 2014).

TI also occurs in higher education (Rosser, 2004) due to two situations: changing institutional affiliations (Cartter, 1976) or quitting academia (Finkelstein, 1984) as a result of organizational deterioration, financial issues, low participation in decision making (Smart, 1990), stressful working conditions, exhaustion (Dorenkamp & Weiß, 2017; Fuhrmann et al., 1994), low levels of work placement and commitment (Takawira et al., 2014), wage inequality and dissatisfaction (Kim & Rehg, 2018), and misunderstanding about unique needs of each generational cohort (Grobler & Rensburg, 2019). Besides generating high turnover rates, these factors are expensive for institutional reputation (Kim & Rehg, 2018) and learning quality (Daly & Dee, 2006).

Although TI has not been widely studied in Latin America; it has been found that TI has a negative impact on the objectives and development of the university, because it forces it to permanently reorganize the work environment (Puebla et al., 2018). In this regard, some Latin American researchers have approached this phenomenon tangentially, highlighting the following aspects. First, the growing concern of universities in the region for the loss of teaching staff, especially the best trained, due to the fluctuation in the workforce of university faculty members (Puebla et al., 2018). Second, the Latin American faculty has been dominated by part-time staff and low levels of salaries leading to job insecurity, and forcing faculty members to develop their profession in more than one university center (Lamarr & Marquina, 2013; Melo et al., 2017; Sánchez, 2017). Third, labor flexibility has led to the pauperization of the teaching profession in universities (Campos, 2005). In Colombia TI has the following manifestations. Every time the media covers TI, they point out that the working and salary conditions of the faculty members are worse over time despite the increasing number of enrolled students. Indeed, to reduce costs Colombian universities are increasingly hiring faculty per taught hour, and they pay less than 12 wages a year (Monsalve, 2018), these faculty members constitute approximately 60% of the payroll in several Latin American countries (Lamarr & Marquina, 2013). Therefore, highly qualified faculty members, who have unfavorable salary conditions, end up working in industry sectors because they find better job opportunities or in other (few) universities with better working conditions. These universities in Colombia constitute only 17.4% of the total number of universities (Ministerio de Educación Nacional (2018) [Ministry of National Education]. All these practices promoted by the universities increase salary dissatisfaction, directly affects the pursuit of doctoral studies (Monsalve, 2018), and negatively impacts the research output, the quality of student learning and results (Melo et al., 2017).

Consequently, TI in higher education is a phenomenon that also occurs in Latin American countries, severely affecting faculty members, and whose occurrence not only prevents achieving and maintaining social development, but also hinders the promotion of accelerated change in science and technology as the basis for the social development (Puebla et al., 2018); and therefore,
TI becomes an urgent issue for Latin American countries seeking to change this scenario in their favor, and for Latin American universities, in the sense that they must strive to provide better treatment to their teaching staff, resulting in improvements in working and living conditions (Puebla et al., 2017).

Previous studies have shown that these manifestations of dissatisfaction that produce TI are directly related to perceptions of dissatisfaction with the organizational rewards that employees receive (Williams et al., 2008, 2006). When institutions offer rewards that satisfy employees, this action has a positive impact on their satisfaction (Froese et al., 2019), and a negative impact on TI (Froese et al., 2019; De Gieter & Hofmans, 2015). Hence the importance, that organizations understand the factors that stimulate the permanence of employees in their roles (Ahmad et al., 2018), and develop programs to retain valuable employees (Boxall, 1996; Ju & Li, 2019). As well as being willing to mitigate the impacts of voluntary rotation (Park & Shaw, 2013). Therefore, it is important to involve seminal theories of motivation such as Vroom’s expectancy theory (1964), Adams’s equity theory (1965), and Lawler’s discrepancy theory (1971) because they show that the employees’ perception with satisfaction rewards generates positives behaviors and reduces TI.

Regarding the relationship between rewards and TI, we identified gaps in the literature raised by De Gieter and Hofmans (2015) and De la Torre-ruiz et al. (2017) (as set out below), and our aim is to resolve them in this study. First, we explore the need to adopt a broader conceptualization of rewards and reward satisfaction, incorporating extrinsic and intrinsic rewards to find out if faculty members’ intention to leave is affected by satisfaction with these types of rewards; we also examine the extent to which age, seniority and education level act as moderators in the relationship between EIR and TI (De Gieter & Hofmans, 2015). Second, we analyze whether the relationships among the EIR are stronger or weaker for specific faculty members (De la Torre-ruiz et al., 2017), considering their individual differences (De Gieter & Hofmans, 2015). Studying these relationships is particularly interesting for business schools in Colombia because the high faculty turnover rate is a major concern in education management, as it leads to the loss of talented faculty and an associated reduction in education quality, research output, and university prestige (Robyn & Du Preez, 2013).

2. Research literature

Early studies on employee turnover identified the reasons to leave organizations (April & Simon, 1958; Mobley, 1977, 1982b; Price, 1977). Subsequent studies examined the factors that made high-performance employees leave an institution. The findings showed that from the studied factors that precede the final decision, TI is the strongest predictor of employee turnover (Griffeth et al., 2000; Juma & Lee, 2012). For this reason, TI should be prioritized over the actual rotation, which is more difficult to predict (Bluedorn, 1982; Mobley et al., 1978; Price & Mueller, 1981).

Different meta-analyses have pointed to two central aspects to consider in TI studies. First, they pointed out the importance of going beyond the determination of causal relationships and enriching the analysis involving moderating variables (Cotton & Tuttle, 1986; Griffeth et al., 2000). Second, they recommended the need to involve in TI analysis the contributions of disciplines such as economics, sociology, and psychology (Mor Barak et al., 2001). The economy is important because employees’ knowledge and capacity should be considered as cumulative capital that can be preserved over time (Strober, 1990) to reduce recruitment, selection, and training costs (Park & Shaw, 2013). Psychology is also important to identify the perceptions and attitudes towards working conditions since these lead to committed or quitting behaviors (Kim & Kao, 2014). Sociology is important because it highlights that people are linked to institutions in exchange for rewards (Blau, 1964). From these considerations it is important to point out three issues. First, that the way an institution directs individual talent management policy can encourage or reduce leaving and staying behaviors and attitudes (economic perspective). Second, that the value that employees place on rewards (Vroom, 1964) and on feeling fairly treated (Adams, 1965) greatly influences them (sociological perspective). Third, that the level of satisfaction
obtained by employees—a psychological perspective—is the most important factor for them (Lawler, 1971).

Nauta et al. (2009) suggested that there are two reasons for TI: push and pull. The institution consciously pushes the employees when they are fired, and unconsciously when it unintentionally pushes them to want to leave the institution. The latter case is examined in this study because we focused on the voluntary intention to leave the university. The institution pulls the employee when the labor market offers continuous improvement opportunities. Both situations, pull and push voluntary leaving of high-performance employees negatively affects business performance (Choi et al., 2012; Kim & Rehg, 2018; Kwon & Rupp, 2013; Park & Shaw, 2013; Price, 1977; Schwab, 1991) because institutions continue competing for valuable human capital to improve the performance, and lower the competition’s competitive advantage (Gardner, 2005). When the institution disregards these two TI modalities there are negative consequences, because TI has high organizational costs (Jo, 2008); therefore, the institution must manage TI rather than minimize it (An, 2019).

It is almost impossible for any institution to know their employees’ turnover intentions. Rather, it must anticipate and encourage employability through constant communication to discuss their future decisions, ensure a positive and satisfactory working environment, a high-performance level (Ahmad & Yekta, 2010; Burns & Christie, 2013; Wei, 2015), and develop employee retention policies for the most valuable workers (Ahmad et al., 2018; Ju & Li, 2019; Wei, 2015) as they are critical for value creation (Coff, 1997). In addition, the institution must manage employees in a differentiated way so that they have a positive vision of the institution, achieve their best performance and seek to stay in the institution (Coff, 1997; Ju & Li, 2019; Kang et al., 2007; Lepak & Snell, 2002; Wei, 2015).

2.1. Rewards and faculty turnover
The importance of rewards for institutions lies in the fact that they are highly correlated with the capacity to generate value and with other factors such as education level, experience, motivation, networks (Shaw et al., 2005), position and responsibilities (Elfenbein et al., 2010); and are also negatively correlated with TI (Williams et al., 2008, 2006). Hence, reward management is developed as a process of attraction, motivation and retention of those employees who generate more value. Therefore, it seeks to focus not only on financial rewards, but on other types of complementary rewards (Chiang & Birtch, 2012). Nevertheless, one of the reasons why faculty members are dissatisfied with EIR in universities (Dorenkamp & Weiß, 2017) is because they perceive that there is inequality in the granting of rewards, and most of what they discover about rewards and promotions occur informally, in contact with other faculty members, which leads to misunderstandings and higher TI (Kim & Rehg, 2018; De la Torre-ruiz et al., 2017; Mamiseishvili et al., 2016). Hence, it is important that institutional policies and rewards aimed at faculty members are perceived by them as fair and successful (Jaeger & Thornton, 2006), because rewards have great value among individuals from different cultures (Mamiseishvili & Lee, 2018), and conditions must be created to support them (Mamiseishvili et al., 2016).

This approach is consistent with De Gieter and Hofmans (2015), who argue that in the relationship between rewards and TI, there has been widespread neglect, not only on the level of individual needs, but also of the employee’s satisfaction level that they experience with a reward, which affects behaviors and attitudes of different employees. De Gieter and Hofmans (2015) noted a gap in the literature related to the need to adopt a broader conceptualization of organizational rewards and their levels of satisfaction, including individual differences. De la Torre-ruiz et al. (2017) pointed out a second gap in the literature, related to the importance of analyzing whether the relationships between rewards are stronger or weaker for specific employees. Considering these two gaps in the literature, as well as the importance of rewards among faculty members, in this article we aim to fill these reported gaps. First, we adopt a broader conceptualization of EIR and their levels of satisfaction, including individual differences, for which we address the wide range of EIR. Secondly, we conduct
a detailed analysis that identifies strengths or weaknesses among the most appreciated rewards by faculty members and characterizes them according to their interests.

EIR were identified by Porter and Lawler (1968) and refer to the different forms of tangible and intangible benefits that an employee receives in a labor relationship (Bratton & Gold, 2017; Herzberg, 1966; Kalleberg, 1977). Katz and Van Maanen (1977) found a third element of organizational rewards: social rewards. Social rewards are the positive interpersonal relations in the work environment, whereas extrinsic rewards are the tangible benefits paid to the employees in their institutions and intrinsic rewards are the intangible benefits (Malhotra et al., 2007). While EIR refer to benefits, social rewards refer to relationships. In this sense, it is worth noting Choi et al.’s findings (2012) that showed that social rewards are not relevant to faculty members due to the nature of their work; this is the reason why these types of rewards are not considered in this study.

Even though employees with greater benefits have a better combination of factors -i.e. education level, seniority, experience, motivation, relationships, knowledge, skills, and abilities- to be quickly promoted in the institution, they also have greater responsibilities, more authority and negotiation power; this makes them factors with an important impact on TI, and they are also part of the demographic characteristics and observable human assets (Campbell et al., 2012). Hence, if these employees leave their job because they feel dissatisfied, underpaid, or unmotivated, then the institution may lose its critical assets (Coff, 1997). However, previous studies have shown that employees with higher salaries and education levels tend to quit the institution because they are more committed to themselves than to their employer (Juma & Lee, 2012; Von Glinow, 1988).

It is necessary to know how the literature operationalizes EIR and helps the reader to better understand these concepts. EIRs are part of organizational rewards and refer to all financial and non-financial benefits earned by employees (Newman & Sheikh, 2012); and they are intended to motivate performance and maintain membership (Mottaz, 1988). Regarding extrinsic rewards, Malhotra et al. (2007) maintain that they do not come from the content of the work itself, and include tangible and material benefits, such as: working conditions (Rust et al., 1996), satisfaction with wages, satisfaction with additional benefits and promotion opportunities (Malhotra et al., 2007). While intrinsic rewards refer to all kinds of intangible benefits arising from the content of the job, and psychologically affect the employee (Williamson et al., 2009). These rewards include: clarity of role (Teas et al., 1979), autonomy (Hackman & Oldham, 1976), feedback (Hackman & Oldham, 1976; Young et al., 1998), participation in decision-making (Teas, 1983), training and skills variety (Malhotra et al., 2007).

Rewards have been studied in more detail in relation to organizational commitment. For example, Malhotra et al. (2007) conducted a study involving all the dimensions of extrinsic, intrinsic, and social rewards, and found positive correlations and statistical significance. Nazir et al. (2016) included the impact of organizational commitment on TI and found statistical significance in all relationships. Both Newman and Sheikh (2012) and Juma and Lee (2012) examined whether EIR could be used as an incentive to increase employee retention and commitment and recommended the analysis of the relationship between EIR and TI. However, most of the research that has studied the relation between EIR and TI has focused on analyzing certain rewards in a solitary way against TI (Williams et al., 2006, 2008; Campbell et al., 2012; Nicolaou & Souitaris, 2015; Subramanian & Shin, 2013; among others). It is noteworthy that De Gieter and Hofmans (2015) departed from this practice and studied the relationship between financial, material, and psychological rewards on TI; they found that rewards influence on TI depended on individual differences of the employees and recommended future studies that adopt a broader conceptualization of rewards, and satisfaction with them, considering individual differences and involving moderating variables. Additionally, De la Torre-ruiz et al. (2017) also recommended future studies to analyze whether the relationships between EIRs are stronger or weaker in specific employees. This study examines the relationship between EIR and TI considering the gaps identified by both researchers.
Previous studies not only highlight the increasing relevance of EIR on TI, but also show that employee satisfaction shapes employees' attitudes towards TI. Consequently, an employee's TI decision cannot be solely explained by financial reasons (Campbell et al., 2012), other motivational and aspirational problems, interests and options must be considered within a context delimited by the profile of the individual that, in some way, shows their philosophy of life (Voiculescu, 2009). With the interest of approaching their understanding, we studied full-time faculty members' satisfaction with EIR, and we seek to answer the following research questions: (a) what types of EIR have an effect on TI?; (b) are there different strength relationships between EIR for certain groups of faculty members?; and (c) do age, seniority and education level of the faculty members moderate the relationship between EIR and TI?

The operational definitions we use of these EIR, and which guide the formation of hypotheses are based on the literature and have been adapted to the target population of this study. Definitions regarding extrinsic rewards:

(1) Working conditions refer to the key elements that the university provides to faculty members for the development of their work, and that influence their work attitudes (Rust et al., 1996).
(2) Payment satisfaction refers to faculty members' satisfaction with the amount of money received for the work done (Malhotra et al., 2007).
(3) Satisfaction with additional benefits refers to faculty members' perceived satisfaction of the complementary benefits package offered by the university (Malhotra et al., 2007).
(4) Promotion opportunities refers to the adequacy and satisfaction perceived by faculty members regarding institutional promotion policies, and opportunities to advance professionally (Malhotra et al., 2007).

Definitions regarding intrinsic rewards:

(1) Clarity in the role refers to faculty members’ perception of the degree to which the university provides them with enough information, regarding what it expects them to perform in their work (Teas et al., 1979).
(2) Participation in decision-making refers to the degree of influence perceived by faculty members in relation to decisions about their work (Teas, 1983).
(3) Skill variety refers to faculty members' perception of how challenging the job is and the degree to which it requires them to use complex skills to do it (Malhotra et al., 2007).
(4) Autonomy refers to faculty members’ perception of the degree to which the university provides them with freedom, independence and discretion, so that they can program their work and determine the procedures to be used in carrying it out (Hackman & Oldham, 1976).
(5) Feedback refers to faculty members’ perception about the degree to which they receive clear and direct information from their supervisor, related to the effectiveness of their performance, including recognition and praise received (Hackman & Oldham, 1976; Malhotra et al., 2007; Young et al., 1998).
(6) Training refers to faculty members’ perception of the induction and training (continuous and regular) received in relation to the offer of a quality service (Malhotra et al., 2007).

Building on the past research findings already presented, we develop an extensive list of hypotheses involving all forms of operationalization of the dimensions that explain EIR (Malhotra et al., 2007). In relation to extrinsic rewards, we hypothesize that:
H1. The probability of a faculty member quitting can be predicted by his/her perception of extrinsic rewards.

In terms of intrinsic rewards, we hypothesize that:

H2. The probability of a faculty member quitting can be predicted by his/her perception of satisfaction about intrinsic rewards.

Different studies related to TI have followed Cotton and Tuttle (1986) and Griffeth et al. (2000), using different moderating variables (i.e. Froese et al., 2019; Juma & Lee, 2012; Kwon & Rupp, 2013; Park, 2012; Wei, 2015; Williams et al., 2008, 2006). De Gieter and Hofmans (2015) suggested using moderating and mediating variables in the analysis of individual differences and TI, and recommended to use age, seniority, and education level as differentiating characteristics of groups of employees. In this sense, we discovered studies with opposite findings regarding the impact of these three variables on TI. Indeed, Ribando et al. (2017) found that these variables had no impact on TI, neither gender nor experience. However, Topel and Ward (1992) and Buchinsky et al. (2010) found both age and seniority, as education level, did have an impact on TI. Our study aims to add to previous findings, testing whether the age, seniority and education level of faculty members moderate the relationship between EIR and TI, considering individual differences. Specifically, we hypothesize that:

H3: age moderates the relationship between EIR and TI.

H4: seniority moderates the relationship between EIR and TI.

H5: education level moderates the relationship between EIR and TI.

Finally, to determine if the relationships between rewards, as independent variables, are stronger or weaker for some types of faculty members more than other considering their individual differences, we hypothesize that:

H6: there is an association, strong or weak, between EIR for a certain group of faculty members.

In the next section, we will present the methodology that was used to obtain the results presented in the article. Figure 1 shows our model.

3. Methods
Our study is framed within the positivist paradigm, hypothetical-deductive approach, cross-sectional quantitative research design, and convenience sampling with 5% statistical significance. We prefer non-probability sampling over probability sampling, because it offered us the advantage of allowing us to choose all the cases that met all the characteristics indicated by the literature, in a careful and controlled way, and that are important to better understand the TI phenomenon. In this sense, our interest was focused primarily on accessing full-time faculty members with high levels of education, research experience, seniority, and who work in public and private universities. Since the probability sampling would produce a large sample that did not meet the characteristics, we prefer to discard it, despite the advantages related to representativeness and generalization.

We used convenience sampling, since the samples were made up of available cases to which we had access (Battaglia, 2008), so we surveyed all faculty members attending the 5th International Meeting of Researchers in Administration held in Bogotá, Colombia in November 2015. These faculty members work in business schools in their cities of origin. 583 faculty members from 37 cities in Colombia and others faculty members from five countries were provided with the survey.
For the purpose of this study, we limited our sample to 203 faculty members who self-reported as full-time lecturers or professors, who hold a specialization, master’s or Ph.D degree. All faculty members are over 21 years of age and work teaching in undergraduate and graduate programs, researching and/or directing programs in one of the four most important cities in Colombia: Bogotá, Medellín, Cali and Barranquilla. These cities were chosen for two reasons. First, they concentrate the largest number of universities, programs, and students in Colombia. Second, because they have enough resources to offer better rewards to faculty members.

The limitation of our analysis was based on addressing the call to explore in more detail a combination of individual characteristics, work life issues and satisfaction, because they determine faculty members’ intention to leave (Rosser, 2004). In addition, the literature suggests measuring TI in full-time faculty members, who hold a master’s or Ph.D degree, because their main income depends on the university, and they constitute 30% of the payroll, while the remaining 70% is made up of part-time faculty members, whose main income comes from other sources. It is important to note that there are few professors in Colombia with tenured positions. While public universities have the following hierarchy: instructor, assistant, associate, and full professor with specific requirements (Presidencia de la República de Colombia, 2002), in private universities this scale is not common, and only some universities have it. Therefore, this study uses the term faculty member to refer to full-time lecturers or professors, regardless of their academic degree and seniority at university. This study was conducted as an individual level. The survey was developed based on the literature, translated into Spanish, and adapted to the sample. It was reviewed by experts and validated in five pilot groups. The participants had 20 minutes to answer the questionnaire and evaluate the items. We guaranteed confidentiality and anonymity.

3.1. Sample

The questionnaires were given to each participant with a cover letter that guaranteed confidentiality and voluntary participation. We received 130 valid responses (64.0%). 64.6% were men and 35.4% were women. 33.8% were over 50 years old, 31.5% were from 41 to 50 years old, 28.5% were from 31 to 40 years old, and 6.2% were from 21 to 30 years old. Seniority: more than 5 years (61.5%), from 3
to 5 years (13.8%), and less than 3 years (24.7%). Education level: Ph.D (17.7%), master’s degree (78.5%), and specialist’s degree (3.8%). Position: directors (76.9%) and faculty member researchers (23.1%). Marital status: married (66.1%), divorced (10.8%), and single (23.1%). Type of contract: full-time (50%) and indefinite term (50%). Accredited universities (63.9%), non-accredited universities (36.1%). Number of publications in the previous year: none (30.8%), one (25.4%), two (28.5%), three (8.5%), four (3.9%), five (2.2%), six (0.7%). Annual income (USD): from 3,783 USD to 11,360 USD (13.8%), from 11,361 USD to 18,940 USD (36.9%), from 18,941 USD to 30,315 USD (28.5%), from 30,316 USD to 38,935 USD (13.8%), more than 38,935 USD (6.9%).

3.2. Measurement
We used all dimensions that explain EIR (Malhotra et al., 2007). The extrinsic rewards were measured considering the following aspects: working conditions (WC), salary satisfaction (PS), satisfaction with the benefits (SB), and promotion opportunities (PO). For instance: “I am satisfied with my salary for the work I perform”. The intrinsic rewards were measured considering the following aspects: clear roles (RC), skill variety (SV), autonomy (AT), feedback (FB), training (TR) and participation in decision-making processes (PDM). For instance: “my job allows me to use all my skills and talents”. To measure TI, we used the instrument defined by Mobley (1977), and we chose the most radical option that explains it: “I will quit the university as soon as possible”. We use the 7-point Likert scale. Following Ribando et al. (2017), we convert the dependent variable TI into a dichotomous variable reflecting intention to leave coded as 1 (scores 4 to 7) and no intention to leave coded as 0 (scores 1 to 3).

Topel and Ward (1992) and Buchinsky et al. (2010) highlighted the importance of the impact of age, seniority, and education level on TI; for this reason, we selected them as moderator variables.

We use the following control variables, which were suggested by the academic literature related to TI, which is why we indicate the authors: salary and institutional status (Juma & Lee, 2012), gender, position (Chen & Aryee, 2007), marital status (Ismail et al., 2011), experience (Choi et al., 2012), type of contract (Gilder, 2003) and number of publications (Carpenter et al., 2014).

3.3. Data analyses
We used the R-Project statistical language and programming software. Since the TI variable is binomial (1 = to leave, 0 = to stay), we use a binary logistic regression model (Ribando et al., 2017), with several explanatory variables that analyze their importance and identify the causation strength of the faculty members’ intentions to quit. We extended the model and included moderator variables and its interactions with age, seniority, and education level, to assess if TI factors are based on these moderators. We also use multiple correspondence analyses to identify the intention of leaving or staying in the institution. First, the most frequent categories, according to demographic variables; second, the strongest associations between these variables; and third, three different levels of association – high, moderate, low – between the rewards evaluated, which correspond to specific groups of faculty members.

We tested the quality of the information to ensure the statistical independence of errors and the lack of multicollinearity (Durbin-Watson: 2.086, FIV<10). Then, we ran a binary multivariate logistic regression analysis because the explanatory variables were different and might not comply with the strict assumptions of a parametric regression classical model. As a result, the best fit model was the Logit, since it allows estimating how high the TI is. Logit model was characterized by the dependent variable TI and 31 explanatory variables: 28 independent variables EIR and three moderator variables.

4. Results
Table 1 shows the model can classify (discriminate) individuals (faculty members), according to the TI, similarly to how they would behave (Chi-square = 6.2243; p-value = 0.6221). Table 2 shows a small difference between the “independent” and “full” models (−2LL), which means that the
model has a good fit. Since $R^2_{Nagelkerke}$ (0.5560) is greater than 50%, this is synonymous with causation because the independent variables, including the moderator variables are interacting in an optimal way to explain TI.

The adjusted logit model correctly classifies 81.40% of cases -significant discrimination efficiency. It is also sensitive to variations in 87.50%, and specific, because it measures what it should in 71.43%. Table 3 also shows the number of cases accurately classified for those who intend to quit (1) and those who do not (0).

Lastly, the ROC curve in Figure 2 shows the logit’s discrimination force and establishes that the theoretical probability that a faculty member thinking on leaving is 88.60%. Theoretically it is higher than the previous rate. Since the quality of the fitted model was statistically significant, eliminating the variables that do not stochastically contribute to such fit could unbalance the model and decreases the discrimination quality; therefore, we decided not to eliminate any of the independent variables.

We can predict TI probability based on the faculty member’s perception of the four statistically significant EIR (Table 4). These variables had a significant impact on the faculty, were statistically significant at 5% and 10% and support the following hypotheses. Therefore, the following hypotheses were accepted: Related to extrinsic rewards (H1), satisfaction with working conditions (ER. WC2; $\theta = -1.0637$; $p$-value = 0.0379), and fair salary (ER.PS2; $\theta = -0.8644$; $p$-value = 0.0576); and related to intrinsic rewards (H2), clear roles (IR.RC2; $\theta = -1.1268$; $p$-value = 0.0378), and personal initiative (IR.AT1; $\theta = -1.0475$; $p$-value = 0.0119). First hypothesis concern satisfaction in the workplace regarding space, lighting, ventilation, noise level, privacy, etc. Second hypothesis concern satisfaction with fair wages. Third hypothesis highlights the importance of knowing exactly

| Statistic | Chi-square | DF | Pr > Chi2 |
|-----------|------------|----|-----------|
| Hosmer-Lemeshow Statistic | 6.2243 | 8 | 0.6221 |

| Statistic | Independent | Full |
|-----------|-------------|------|
| Observations | 129 | 129 |
| Sum of weights | 129,0000 | 129,0000 |
| DF | 128 | 97 |
| $-2 \text{ Log(Likelihood)}$ | 171,3089 | 103,5483 |
| $R^2_{McFadden}$ | 0.0000 | 0.3956 |
| $R^2_{Cox and Snell}$ | 0.0000 | 0.4086 |
| $R^2_{Nagelkerke}$ | 0.0000 | 0.5560 |

Table 2. Goodness of fit statistics

| from/to | 0 | 1 | Total | % correct |
|---------|---|---|-------|-----------|
| 0       | 70 | 10 | 80    | 87.50%    |
| 1       | 14 | 35 | 49    | 71.43%    |
| Total   | 84 | 45 | 129   | 81.40%    |

Table 3. Classification table for the estimation sample
**Figure 2. ROC curve.**

![ROC Curve (AUC=0.8860)](image)

**Table 4. Type II analysis**

| Source  | DF | Chi-square (Wald) | Pr > Wald | Chi-square (LR) | Pr > LR |
|---------|----|-------------------|-----------|-----------------|---------|
| ER.WC1  | 1  | 23679             | 0.1239    | 27232           | 0.0989  |
| ER.WC2  | 1  | 36187             | 0.0571    | 43101           | 0.0379**|
| ER.PS1  | 1  | 0.0108            | 0.9173    | 0.0107          | 0.9174  |
| ER.PS2  | 1  | 33482             | 0.0673    | 36065           | 0.0576* |
| ER.SB1  | 1  | 0.3753            | 0.5401    | 0.3890          | 0.5328  |
| ER.SB2  | 1  | 0.3857            | 0.5346    | 0.3890          | 0.5328  |
| ER.PO1  | 1  | 0.2949            | 0.0871    | 0.2943          | 0.5875  |
| ER.PO2  | 1  | 19046             | 0.1676    | 20005           | 0.1572  |
| ER.PO3  | 1  | 24266             | 0.1193    | 27051           | 0.1000  |
| ER.PO4  | 1  | 0.0617            | 0.8039    | 0.0624          | 0.8028  |
| IR.RC1  | 1  | 0.0203            | 0.8867    | 0.0203          | 0.8867  |
| IR.RC2  | 1  | 37060             | 0.0542    | 43159           | 0.0378**|
| IR.RC3  | 1  | 22374             | 0.1347    | 26439           | 0.1039  |
| IR.RC4  | 1  | 12604             | 0.2616    | 13243           | 0.2498  |
| IR.SV1  | 1  | 16333             | 0.2012    | 17246           | 0.1891  |
| IR.SV2  | 1  | 0.7286            | 0.3933    | 0.7793          | 0.3774  |
| IR.SV3  | 1  | 11007             | 0.2941    | 11851           | 0.2763  |
| IR.AT1  | 1  | 53307             | 0.0210    | 63186           | 0.0119**|
| IR.AT2  | 1  | 0.9695            | 0.3248    | 0.9963          | 0.3182  |
| IR.AT3  | 1  | 13416             | 0.2646    | 13784           | 0.2404  |
| IR.FB1  | 1  | 0.4415            | 0.5064    | 0.4485          | 0.5031  |
| IR.FB2  | 1  | 0.9527            | 0.3290    | 0.9673          | 0.3254  |

(Continued)
what is expected from the faculty member at work. Fourth hypothesis notes the value of autonomy, i.e. the personal initiative to complete activities. The other hypotheses that did not reach statistical significance and that belong to the subsets of hypotheses H1 and H2 were rejected. Similarly, since none of the moderator variables age, seniority and education level were statistically significant, we rejected hypothesis H3, H4 and H5 (Table 4).

The plane in Figure 3 represents the result of the multiple correspondence analysis, and a variable was introduced for each dimension of the EIR, in addition to salary, gender, age, education level and seniority. This plan was constructed based on two criteria, which allow for

| Source       | DF | Chi-square (Wald) | Pr > Wald | Chi-square (LR) | Pr > LR |
|--------------|----|-------------------|-----------|-----------------|--------|
| IR.TR1       | 1  | 0.3152            | 0.5745    | 0.3139          | 0.5753 |
| IR.TR2       | 1  | 0.2640            | 0.6074    | 0.2684          | 0.6044 |
| IR.TR3       | 1  | 1.4444            | 0.2294    | 1.4758          | 0.2244 |
| IR. PDM1     | 1  | 0.9245            | 0.3363    | 0.9500          | 0.3297 |
| IR. PDM2     | 1  | 0.0031            | 0.9557    | 0.0031          | 0.9557 |
| IR. PDM3     | 1  | 0.3064            | 0.5799    | 0.3092          | 0.5782 |
| Seniority    | 1  | 0.0336            | 0.8546    | 0.0335          | 0.8547 |
| Age          | 1  | 0.5025            | 0.4784    | 0.5059          | 0.4769 |
| Postgrade    | 1  | 0.5008            | 0.4791    | 0.5104          | 0.4750 |

(**p-value <0.05; *p-value <0.1)

Figure 3. Multiple correspondence analysis plane.
the identification of the highest frequencies and strongest associations between the variables. According to the first criterion, the categories closest to the origin (0,0) are the most frequent, while the furthest are those with the lowest occurrence. For example, the plane shows that more men than women were surveyed. According to the second criterion, the closeness between labels indicates stronger associations. For example, the plane shows that the majority of female faculty members, who are under 40 years old, master’s degree, seniority >3 years and annual salary in thousands, between USD 3,7 USD and 11,3 USD or between USD 11,3 USD and 18,9, USD and have a greater tendency to leave; while male faculty members over who are over 40 years old, with a Ph.D degree, seniority 1–3 years, and an annual salary in thousands, over USD 18,9 USD tend to stay.

This plane also shows that EIR regrouped at low (1,2), moderate (3–5), and high (6,7) levels seeking to identify whether there were different types of association between these rewards. Indeed, most EIR were grouped at high levels in the left cluster (high = 81.8%, moderate = 18.2%), which correspond to male faculty members who indicated intention to stay; while in the right cluster faculty members who perceive low levels of EIR and intend to quit correspond to female faculty members (low = 46.2%, moderate = 53.8%). In accordance with these results, Figure 3 shows two fully characterized faculty member clusters, which clearly manifest the existence of associations (strong, moderate, and weak) between the EIRs, as suggested by H6. Therefore hypothesis 6 was accepted. High levels of EIR are associated with male faculty members’ intention to stay; while the low levels of these rewards are associated with female faculty members’ intention to quit. Both clusters indicate specific characteristics of these two groups of faculty members.

Based on the propensity of the fitted model, we developed TI probability charts that simulate 36 scenarios for faculty members, considering different age ranges, seniority, and education level; we present the most relevant in this paper. For instance, the first scenario shows that for faculty members who are older than 51 years old and have a master’s degree, TI propensity increases dramatically from 6% to 30% and then to 35% in the three seniority ranges; for Ph.D holders it increases from 12% to 28% at the oldest age category (Figure 4).

Second scenario shows that faculty members between 41–50 years old are the most prone to TI at both levels of education, and in the different seniority ranges. It is noteworthy that faculty members who have more seniority are the most prone to TI, at both levels of education (Figure 5).
The last scenario. Younger faculty members between 31 to 40 years old, and 3–5 years of seniority showed the highest TI propensity (60%) for master’s degree holders and (54%) for Ph.D holders. These showed the most intense TI propensity from 3% to 54% between the first and second seniority ranges (Figure 6).

Table 5 summarizes the previous scenarios, with highest TI percentages in bold, and the least differences correspond in the same age and seniority ranges among faculty members who hold a master’s degree and a Ph.D.

When the salary received by faculty members is included, there is a behavior pattern for master’s degree holders from the second salary range: as the salary increases TI decreases. In
In contrast, there is no pattern for Ph.D holders (Table 6). In contrast, Table 7 shows that in relation to the four EIRs corresponding to the accepted hypotheses H1b, H1d, H2b, H2h, master’s degree holders have a higher TI propensity.

5. Discussion and implications
Recent studies on the relationship between satisfaction with rewards and TI have focused on individual differences (De Gieter & Hofmans, 2015). Previous studies on TI argued that moderating variables should

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### Table 5. Individual differences according to education level vs. TI

| Masters | Age |
|---------|-----|
| Seniority | 31–40 | 41–50 | > 51 |
| < 3 | 33% | 46% | 6% |
| 3 to 5 | 60% | 34% | 30% |
| > 5 | 42% | 46% | 35% |
| Ph.D. | | Age |
| Seniority | 31–40 | 41–50 | > 51 |
| < 3 | 3% | 16% | 12% |
| 3 to 5 | 54% | 21% | 0% |
| > 5 | 0% | 48% | 28% |

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### Table 6. Salary vs. education level for faculty members who showed TI

| USD$ Year | $3,783 to 11,362 USD | $11,362.1 to 18,941 USD | $18,941.1 to 30,316 USD | $30,316.1 to 38,935 USD | > 38,935 USD | Grand total |
|-----------|-----------------------|--------------------------|--------------------------|--------------------------|---------------|-------------|
| TI        | Yes                   | Yes                      | Yes                      | Yes                      | Yes           | Yes         |
| Masters   | 6.2%                  | 12.3%                    | 9.2%                     | 4.6%                     | 0.8%          | 33.1%       |
| % Faculty members who earn this salary | 13.1% | 33.1% | 21.5% | 11.5% | 3.1% |
| Ph.D      | 0.8%                  | 0.8%                     | 3.1%                     | 0.8%                     | 0.0%          | 5.4%        |
| % Faculty members who earn this salary | 0.8% | 3.8% | 6.9% | 2.3% | 3.8% |

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### Table 7. EIR vs. faculty members more prone to TI

| EIR                  | Satisfied with EIR | Dissatisfied with EIR |
|----------------------|--------------------|-----------------------|
| Statistically significant EIR | Ph.D | Master | Ph.D | Master |
| Extrinsic rewards    | Working conditions | 26.3% | 35.2% | 50.0% | 81.8% |
| Fair salary          | 27.8% | 27.4% | 40.0% | 72.4% |
| Intrinsic rewards    | Clear roles       | 23.8% | 39.2% | 100.0% | 60.0% |
| Personal initiative (Autonomy) | 27.3% | 37.6% | 100.0% | 66.7% |
be used to better understand this phenomenon (Cotton & Tuttle, 1986; Griffeth et al., 2000). This study adds to this knowledge in at least three ways. First, we reveal that after analyzing a broad set of EIR, faculty members’ behaviors and attitudes are affected by specific satisfaction with two extrinsic and two intrinsic rewards, that increase the probability of remaining or withdrawing from university (supporting H1b, H1d, H2b, H2f). Secondly, our findings reveal the existence of different levels of association between EIR for certain groups of faculty members (supporting H6). Third, we did not find support for the moderating effect of age, seniority, and level of education (rejecting, H3, H4, H5). These findings are in line with those of Ribando et al. (2017), and in opposition to Topel and Ward (1992), and Buchinsky et al. (2010). Also, we explore the entire set of variables that operationalize the dimensions that explain EIR and find that faculty members’ satisfaction behaves differently compared to variables that are part of the same set. (i.e. For faculty members, it is more important to be satisfied with working conditions than to have adequate working conditions, because satisfaction and adequacy are two different concepts, and both are part of the extrinsic dimension of working conditions). This finding confirms that the consideration of individual differences makes it possible to distinguish between the rewards received and the satisfaction with them; as well as the need to adopt a broader conceptualization of rewards and reward satisfaction (De Gieter & Hofmans, 2015). These findings are consistent with the theories of Vroom (1964), Adams (1965), and Lawler (1971), because intention to stay at or quit the institution coincides with specific groups of faculty members regarding their EIR satisfaction levels (high-moderate-low).

5.1. Turnover intentions
The study of the wide range of EIR allowed us to identify that the following variables are the most valued by faculty members, and the ones that impact TI the most: satisfaction with working conditions, receiving a fair salary, knowing exactly what is expected from their work, and knowing that their work allows them to use personal initiative. The highest perceptions of these variables generate lower TI propensity among male faculty members older than 41 years old with a Ph.D. The lower perceptions of satisfaction with working conditions and fair salary, generate greater TI propensity in female faculty members under 40 years old who hold a master’s degree (Figure 3). Our findings coincide with those of Dorenkamp and Weiß (2017) in the sense that female faculty members dissatisfied with EIR have the highest TI, and therefore, their recommendation related to the need to balance EIRs for female faculty members is confirmed.

We show with concern that two large groups of faculty members have a high TI propensity: those between 31–40 years old with 3-to-5 years of seniority (master’s holders = 60%, Ph.D holders = 54%); and those between 41–50 years old, and more than 5 years of seniority (master’s holders = 46%, Ph.D holders = 48%) (Table 5). Additionally, although Table 6 shows that master’s holders with a better perception of salary received have a lower propensity for TI, 46.2% of them earn an annual salary of less than USD 18,941. USD This high percentage carries a very high risk for the university, because it makes it difficult for master’s holders to obtain their Ph.D’s degree, and increases their perception of inequity and dissatisfaction (Kim & Rehg, 2018); it also threatens the quality of education (Daly & Dee, 2006), and the quality of learning and institutional results (Melo et al., 2017). We are also concerned that, even though Ph.D holders have the lowest propensity to TI in all outcomes (Table 7), fair salary is the variable with the highest propensity for TI among them, coinciding with Juma and Lee (2012) and Von Glinow’s findings (Von Glinow, 1988) in terms of the growing claims of employees with better education and better salary.

Socio-demographic variables like salary, gender, age, seniority, and education level helped to better classify the groups, clearly showing differences in satisfaction with the EIR received. Thus, the most appropriate institutional intervention strategy is to redesign the reward system, considering not only those most appreciated by faculty members, but also those that proved to have the greatest impact on TI. The identification of groups of faculty members more prone to TI offers institutions the opportunity to implement differentiated reward policies, so that the different groups identified perceive an equitable and fair treatment according to their own interests. It is very important that the reward system develops gradual incentives for all faculty members, based on the specific needs of each group, without limiting it solely to socio-demographic characteristics;
this is, because incentive/needs partially explain the individual differences in the relationship between satisfaction with different types of rewards and TI (De Gieter & Hofmans, 2015).

Our results show that our in-depth analysis of the set of variables that operationalize EIR helps institutions to identify strong, moderate and weak associations between the most appreciated rewards for different groups of faculty members; and therefore, to classify them into groups and implement differentiated retention strategies that stimulate a rich and motivating environment. HR departments have the challenge of giving managers some guidance on the design of said policies; and they could start with a strategy that identifies different levels of needs in faculty members, and then combines these findings with annual performance evaluations. Subsequently, institutions should analyze the results of the strategy implemented against TI propensity.

In summary, we have shown three ways in which our study adds to a growing, but still limited, body of literature on EIR and TI in higher education. Additionally, our model is a solid starting point for academics and managers to understand two important aspects. First, that faculty members’ perceptions of satisfaction with EIR generate different behaviors and attitudes towards TI. Second, that the dimensions explained by the EIR have different types of associations—strong, moderate, or weak—for certain groups of faculty members.

5.2. Future research and limitations
We recommend conducting more research to prove if our findings are confirmed in similar contexts (emerging countries) with larger samples, considering the effect of other moderator variables. In analytical terms, we recommend conducting this type of analysis on a regular basis to define a baseline for each university, following up with the perception of full-time faculty members when changing jobs.

Our findings regarding EIR satisfaction and strength relationships between EIR for specific groups of faculty members, cannot be generalized to faculty members from other disciplines, as we have only studied faculty members from (public and private) business schools; it is necessary to carry out additional tests to confirm our findings. Secondly, we did not test the social rewards for the characteristics of the evaluated population; and this should be included if the model is tested in other sectors. Finally, it would be necessary to select specific socio-demographic characteristics according to the sector in which additional tests are required.

6. Conclusion
We found support for the idea that there is a relationship between EIR and TI, for the following EIR for business school faculty members: satisfaction with working conditions, fair salary, clear role expectations, and autonomy. Therefore, it would be inappropriate to assume that these rewards are the same for all types of faculty members, keeping in mind that an increasing number of Latin American universities tend to teach and research within multiple fields, and offer educational programs in different cities in each country. We also found support for the idea that there is presence of strong, moderate, and weak associations between EIR for specific groups of faculty members based on individual socio-demographic differences. Therefore, we emphasize that in order to better understand the relationship between EIR and TI, and to develop relevant institutional strategies for faculty members, it is important to identify the levels of association between EIR considering the individual differences of the identified groups.

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