

TURNOVER BEHAVIOUR OF IT PROFESSIONALS IN THE NETHERLANDS

The role of HR practices and organizational job embeddedness

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Date: 22 – 01 – 2020

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Acknowledgements

This thesis is written as part of my graduation period of my master Business Administration with the specialization Strategic Marketing and Digital Business. My first supervisor, Dr. A. Priante, supported me during this period. Hereby, I would like to thank her in particular. Her supervisory role was of great value during my graduation period. Also, her critical view and her generosity with her time have enabled me to write a thesis of which I am truly satisfied. In addition, I would like to thank my second supervisor, drs. ir. J.C. Kuijpers. His feedback was also of great value during the process of writing my thesis, especially the statistical part. Moreover, I want to thank H. Brunnekreeft for his support at Brunelco Electronic Innovators. I enjoyed following my graduation period at this company. Lastly, I would like to thank my family and friends for their support.

Abstract

Employee turnover is a phenomenon that many organizations in The Netherlands are facing today, especially in the IT sector. Literature that explains the underlying factors for turnover behaviour in the IT sector is scarce. Therefore, this study aims to extend employee turnover literature by investigating the impact of satisfaction with human resource (HR) practices and on-the-job embeddedness on turnover intention. In addition, the mediating effect of on-the-job embeddedness on the relationship between satisfaction with HR practices and turnover intention is tested.

The literature review provides relevant literature about the four different HR policy areas that are included in this study, job embeddedness and turnover intention. These four HR policy areas are: satisfaction with employee influence, rewards systems, human resource flow and work systems. Based on this theoretical foundation the research hypothesis are formulated.

In order to obtain empirical results, data were collected through a quantitative survey from 110 IT professionals from different disciplines in The Netherlands. First, we performed confirmatory factory analysis in IBM SPSS Statistics 25 to test our scales. Thereafter, we used regression analysis and the bootstrapping method to test our hypothesis. In addition, we deepened the understanding of the mediating effect of on-the-job embeddedness.

The results of our study reveal that the level of satisfaction with all four HR practices is related to on-the-job embeddedness, except HR flow. Furthermore, only satisfaction with reward systems and satisfaction with work systems are significant predictors of turnover intention. In addition, this study provides evidence of a mediating effect of on-the-job embeddedness on the relationship between satisfaction with reward systems and turnover intention and satisfaction with work systems and turnover intention.

The results from this study provide multiple useful theoretical contributions to literature and practical implications for organizations and IT managers seeking to actively develop effective retention strategies for their IT professionals. The most important theoretical contribution is that satisfaction with HR practices, on-the-job embeddedness and turnover intention are measured at once, which provides us with multiple new insights. In addition, the most important practical implication is that HR managers need to focus more on the individual HR practices instead of the collective since each practice has different effects on both on-the-job embeddedness and turnover intention.

Keywords – *HR practices, Job embeddedness, IT professionals & Turnover intention*

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1 Introduction

Voluntary turnover of IT professionals is a common phenomenon which many organizations are facing today. An employee's turnover intention can be defined as an individual's estimated probability that they are permanently leaving their organization at some point in the near future (Vandenberg & Nelson, 1999). In the Netherlands, the region "Twente" seems to suffer most. More than 40% of the companies indicated that they had staff shortage at the end of 2019 (Centraal Bureau voor de Statistiek, 2018). The costs for high turnover rates cause not only 'visible' costs for recruitment and selection. Also hidden costs need to be made due to the low motivation, the loss of specialized skills and tacit corporate knowledge (Holtom, Mitchell, Lee, & Eberly, 2008; Moore & Burke, 2002; Owens & Khazanchi, 2011). Therefore, turnover intention of employees are likely to affect an organization's operations and effectiveness. Understanding how and why people decide to leave an organization is necessary to understand how to prevent them from making such a decision (Holtom, Mitchell, Lee, & Inderrieden, 2005).

Deepening the understanding of the factors explaining turnover intention is particularly important in the IT sector (Guha & Chakrabarti, 2016; Oosthuizen, Coetzee & Munro, 2016). As most organizations nowadays intensively use information technology (IT) as a primary component in their business, the demand for skilled IT professionals remains strong and is expected to increase in the future (Erturk & Vurgun, 2015). Given these characteristics of the IT labour market, firms are challenged to develop effective retention strategies for their IT professionals. Prior studies found that retaining, developing and attracting qualified IT employees is in the top three IT executive management concerns for the future (Luftman, Kempaiah, & Nash, 2008). This has driven up salaries of the highly demanded IT professionals and made it more difficult to retain them. Proper management of these IT professionals is crucial in the building of excellent firm performance, since employees have been established as the most valuable asset to an organization (Armstrong-Stassen & Lee, 2009; Wirtz, Heracleous, & Pangarkar, 2008).

The importance of recruiting and retaining the right people, and managing human resources (HR) have become vital in the success of all organizations. In addition, good management of people has also been identified as one of the most important factors in promoting employees to become more embedded in the organization (Bergiel, Nguyen, Clenney, & Taylor, 2009). Therefore, it is important to give employees the feeling of really being part of the organization by implementing the right HR practices. Mitchell, Holtom, Lee, Sablynski and Erez (2001) introduced job embeddedness theory, which focuses on why people stay, and describes the feeling of being enmeshed in a social system. Job embeddedness emphasizes the accumulated and non-affective reasons as to why employees are willing to remain (Mitchell et al., 2001).

Another concept that has been linked to turnover behaviour frequently is satisfaction with human resource (HR) practices. Branham (2005) stated that most common the reasons why people stay or leave are closely related to HR practices. HR practices are viewed as the means through which employee perceptions, attitudes, and attitudes are shaped (Jose & Mampilly, 2012). Hence, the role of HR practices in enhancing job embeddedness cannot be overlooked. Nonetheless, despite the bulk of evidence indicating the effect of job embeddedness on turnover intention (Felps, Mitchell & Hekman, 2009; Lee, Mitchell, Syblanski, Burton, & Holtom, 2004; Mitchell et al., 2001), surprisingly little is known about how job embeddedness amongst employees can be promoted by HR practices. Therefore, it is suggested that a good understanding of how employees become embedded in the workplace in order to keep them from quitting will contribute to both theory and practice (Bambacas & Kulik, 2013; Ghosh & Gurunathan, 2015). In order to investigate the formulated objectives of this study the following central research question is formulated:

How do satisfaction with HR practices and Job Embeddedness affect turnover intention of IT professionals in the Netherlands?

The significance of this research complements existing research in academic literature, which suffers from a number of shortcomings and important gaps. First, how job embeddedness is derived, or what causes employees to embed in their jobs and keep them with their organization still requires investigation (Dechawatanapaisal, 2018). In addition, Mitchell et al. (2001) stated that it is essential to further test job embeddedness different contexts to improve the generalizability of the construct. Therefore, this study responds to these research calls by testing on-the-job embeddedness as an outcome variable with the level of satisfaction with the four HR practices as predictors.

Second, while most research focussed on the direct relationship between job embeddedness and turnover, few studies investigated the relationship of HR practices, job embeddedness and turnover intention at once (Felps, Mitchell & Hekman, 2009; Lee, Mitchell, Syblanski, Burton, & Holtom, 2004; Mitchell et al., 2001; Wheeler et al. 2010). Therefore, this study aims at extending existing literature by studying HR practices and organizational job embeddedness to investigate which of the two constructs is a stronger predictor of turnover intention.

Third, we examine if there are both direct and indirect effects of satisfaction with HR practices on turnover intention through on-the-job embeddedness. Our contribution here is that we use the bootstrapping method by Preacher and Hayes (1965) to test both the direct and indirect effect for significance. Thereafter, we will use the outcome of the test to deepen the understanding of the mediating effect by using the approach of Zhao, Lynch and Chen (2010).

Practically, this thesis helps shaping management policies on attraction, recruitment and retention of labour in the IT industry. Management of firms in the IT industry will also benefit from the recommendations and get a better understanding of the link between perceived HR practices, turnover intention of employees, and how to enhance employees' job embeddedness in organizations. Multiple studies focussed on HRM factors that have been posited to affect the turnover of employees (Winterton, 2004). This study is not intended to analyse these factors, but to advance current research by empirically testing these factors with job embeddedness. The focus in this study is on four HR practices namely, HR flow, employee influence, work systems and reward systems. These HR practices have been used frequently in turnover literature and demonstrated to have influence on employee turnover intention (Allen, Shore, & Griffeth, 2003; Shaw, Delery, Jenkins, & Gupta, 1998; Stinglhamber & Vandenberghe, 2003).

To achieve the study's objective a literature study was done to develop the theoretical foundation for the study, leading to hypothesis development. Thereafter, a quantitative survey was conducted with 110 IT professionals who are working within IT in the Netherlands for a minimum of one year. We conducted regression analysis to test the formulated hypothesis and examine the links between HR practices, job embeddedness and turnover intention. The paper concludes with a discussion of implications, the limitations of the study, contributions to literature and directions for future research.

2 Literature review

In this chapter we review relevant literature concerned with human resource practices, job embeddedness and turnover intention. We used these relevant theories to build the theoretical foundations of the study. At the end of each sub-chapter we formulate a research hypothesis. Finally, we provide our conceptual model.

2.1 Turnover intention

Turnover intention can be defined as a psychological tendency to leave one's current employment, operationalized to estimate the probability that an employee will be leaving his or her organization in the near future (Mobley, 1982; Mowday, Porter, & Steers, 1982). Multiple conceptual and empirical models show that turnover intention is the strongest indicator of actual turnover (Tett & Meyer, 1993). Turnover can be voluntary or involuntary. Voluntary turnover is defined as the decision of an employee to leave an organization, involuntary turnover is the decision of an employer to terminate the employment relationship (Shaw et al., 1998). Generally voluntary turnover is very costly and undesirable for organizations. However, not all turnover is perceived as dysfunctional by organizations. Turnover can improve possibilities for flexibility and innovation, and can reduce company blindness (Torka, 2003). However, Benson (2006) found in his study that in practice well-performing employees are more likely to leave than those who underperform due to more general and marketable skills.

2.2 Social exchange theory

Over the years, researchers have been progressively adopting the social exchange theory to study the factors that explain employee-employer relations (Bambacas & Kulik, 2013; Tanova & Holtom, 2008). When viewed as an exchange, the employment relationship can be characterized as consisting of social and/or economic exchanges (Aryee, Budhwar, & Chen, 2002). According to Blau (1964) social exchanges are 'voluntary actions' which may be initiated by an organization's treatment of its employees, with the expectation that such treatment will eventually be reciprocated. However, the exact nature and extent of the future returns are dependent on the discretion of the person making them (Haas & Deseran, 1981). On this basis, when organizations provide evidence of 'goodwill' toward their employees, these employees are likely to feel obliged to reciprocate the 'good deed' back to the organization (Aryee et al., 2002; Gouldner, 1960). Generally, it is noted that reciprocating behaviours go beyond contractual agreement behaviours (Gouldner, 1960). As such, positive social exchanges can result in mutual benefits to both the employing organization and the workforce.

Managers and supervisors have been found to be critical agents in social exchange processes (Graen, Scandura & Novak, 1986). For instance, it has been observed that employees interpret management behaviours as indicative of organization responses (Aryee et al., 2002). If employees

view management actions as positively, they reciprocate with attitudes and behaviours valued by the organization. This is in line with findings of previous studies, where Human Resource (HR) practices signal the commitment of managers to and trust in employees (Guzzo & Noonan, 1994). Therefore, the motivational processes of social exchange (Blau, 1964) was used in this study to explain the expected link between the level of satisfaction with HR practices and IT professionals' attitudinal outcomes such as job embeddedness and turnover intention.

2.3 Satisfaction human resource practices

Human resource practices (HR practices) are outcomes of human resource management strategies (Noe, Hollenbeck, Gerhart & Wright, 2017). However, in some organizations HR practices exist without a strategy or even go against the HRM strategy. HR practices can be described as the actual enactment of HR policies, usually by line managers. HR policies and the way they are intended do not so much influence employee attitudes, as by the way team leaders and line managers actually implement these policies on a day-to-day basis (Kinnie, Hutchinson, Purcell, Rayton, & Swart, 2005). Wright and Boswell (2002) state that any research that is attempting to demonstrate a relationship between HRM and firm performance, stands on firmer ground when actual HR practices are assessed rather than intended policies. Therefore, it is important to focus on how HR practices are experienced by IT professionals (Bowen & Ostroff, 2004). Thus, in study we will focus on satisfaction with HR practices and use the framework of Beer, Spector, Lawrence, Mills & Walton (1984) to identify four main HR policy areas.

These four main HR policy areas are: employee influence, reward systems, human resource flow and work systems. Based on the social exchange theory, high perceived satisfaction with HR practices is expected to lower turnover intention of IT professionals since the norm of reciprocity indicates that people are likely to feel obligated to "repay" the organization (Eisenberger, Fasolo, & Davis-LaMastro, 1990; Shore & Wayne, 1993). Furthermore, several other studies found a significant negative relationship between satisfaction with HR practices and turnover intention (Juhdi, Pa'wan, & Hansaram, 2013; Paré & Tremblay, 2007). In summary, based on evidence from literature we suggest that a higher level of satisfaction with the four HR practices (employee influence, reward systems, human resource flow and work systems), will lead to lower turnover intention of IT professionals. In the next section, we explain satisfaction with employee influence, reward systems, human resource flow and work systems, and their expected relation to turnover intention of IT professionals.

2.3.1 Satisfaction employee influence

Policies in the area of employee influence provide the basis for the development of policies in the other three areas. Employee influence can be defined as the hearing of employee's interests, and the possibility for employees to help shape a company's HR policies. It is about the delegated levels of authority, responsibility and power of employees (Beer et al., 1984). Most employees find it important that an organization is open for their input, and that the organization is likely to act on that input (Allen et al., 2003). Employees can influence with respect to diverse matters, such as business goals, rewards, career progression, working conditions, employment security or the task itself (Beer et al., 1984). Multiple studies found significant correlation between participation in decision making and turnover behaviour (e.g. Kumar & Jauhari, 2016). Based on these findings and the social exchange theory, we argue that the higher is the IT professional's level of satisfaction with perceived influence, the lower is the turnover intention. Therefore, we formulate the following hypothesis:

Hypothesis (H1a): Satisfaction with employee influence is negatively associated with turnover intention of IT professionals in The Netherlands.

2.3.2 Reward systems

Rewards are described as the cumulative financial and non-financial compensation employees receive in return for their services in an organization (Bergiel et al., 2009). Reward system practices are about the extent to which rewards are tied to individual versus organizational performance, the mix between intrinsic and extrinsic rewards, and the extent to which compensation is used as an incentive (Whitener, 2001). Intrinsic rewards (appreciation, honesty, achievement) and extrinsic rewards (salary, promotion, welfare benefits) are different and therefore important aspects in discussing reward systems (Beer et al., 1984). Financial benefits are often recognized as a potential antecedents of commitment to an organization and intention to stay for employees. Another important aspect in discussing satisfaction with reward systems is the equity of pay related to the external and internal market (Beer et al., 1984). Shaw et al. (1998) found that HR practices that signal investments in human capital should reduce organizational turnover. Other studies found that salary partially explained the variance in turnover intention (Batt & Valcour, 2003). In addition, based on social exchange theory, we posit that the higher satisfaction with reward systems, the lower the turnover intention of IT professionals. Therefore, we hypothesize the following:

Hypothesis (H1b): Satisfaction with reward systems is negatively associated with turnover intention of IT professionals in The Netherlands.

2.3.3 Human resource flow

Human resource (HR) flow is a term used to describe the process by which employees pass through the organization (Heery & Moon, 2008). It includes the flow of people into, through and out of an organization. Related matters are: career development, job security and advancement (Beer et al., 1984). Recruitment and selection are involved in the flow into the organization. Recruitment can be described as the process of attracting and creating a pool of job candidates and selecting the person that suits the job requirements best. To enable a firm to stay competitive and attract and retain good employees, an excellent selection process is vital. Therefore, recruitment and selection are important skill which add value to the inventory of the organization (Hayes & Ninemeier, 2009). Through implementation of effective recruitment and selection strategies, employees that are satisfied can be retained and turnover intention reduced. Other researchers further reinforced this by revealing that the objective of selection is to recruit the right people for a vacant position, which in the end reduces voluntary turnover (Rioux & Bernthal, 1999). Therefore, providing a realistic picture of the job demands and conditions during the selection process is important to prevent dissatisfaction.

Developmental appraisal is another aspect of HR flow. Development appraisal aims at reviewing whether performance appraisal is used to develop employees (Whitener, 2001). According to Whitener (2001), employees are likely to perceive well-designed and developmental performance systems as an indication of the support and commitment from the organization to them. Also internal growth opportunities significantly correlate with an employee's commitment to an organization (Allen et al., 2003). Batt and Valcour (2003) found that programs for career development and job security explained part of the variance in employee turnover intention. Internal career opportunities is another important element in explaining turnover. Bedeian (1991) found that when there are no proper career opportunities within the organization, individuals with high career commitment are more likely to leave the organization.

In literature, training and development are frequently identified as key components of HR practices that have significant effect on job satisfaction and employee turnover intention (Martin, 2011). In the same way, other researchers state that organizations that provide no activities for personal development face higher turnover than organizations that provide training opportunities to IT professionals (Paré & Tremblay, 2007). Therefore, we hypothesize the following:

Hypothesis (H1c): Satisfaction with HR flow is negatively associated with turnover intention of IT professionals in The Netherlands.

2.3.4 Work systems

A work system is a system in which human participants and/or machines perform work using information, technology, and other resources to produce products/services for internal or external customers. It is about the definition and design of work and the alignment of people (Becker & Huselid, 1998). High performance work systems have proven to be particularly valuable (Zungbey, Osei Bonsu, Ntow, & Sokro, 2019). According to Posthuma, Campion, Masimonva, & Campion (2013), high performance work systems have been attributed to higher individual performance and lower employee turnover intention. High performance work systems represent a systematic and integrated approach of managing human resources that align human resource functions to the achievement of a firm's strategy (Jiang, Liu, McKay, Lee, & Mitchell, 2012). Managers must face the task of arranging people, activities, information and technologies at all levels of an organization. In other words, they define and design the work. As a result, management choices about these arrangements affect the quality of the decision of employees, the coordination between functions and tasks, the extent to which people are committed to organizational goals and the extent to which people's competencies are utilized (Beer et al., 1984). Gould-Williams (2004) found that job variety and team working correlate significantly negative with turnover intention. In addition, based on the social exchange theory, we expect IT professionals that are satisfied with their work systems, are less likely to have a high turnover intention. Hence, we propose the following:

Hypothesis (H1d): Satisfaction with work systems is negatively associated with turnover intention of IT professionals in The Netherlands.

2.4 Job embeddedness

Job embeddedness is defined as “the combined forces that keep a person from leaving his or her job” (Lee et al., 2004). Although job embeddedness is originally used as one overall job embeddedness construct by Mitchell et al. (2001), much subsequent research separates job embeddedness in two major dimensions, namely, organizational and community embeddedness (Dechawatanpaisal, 2018; Jiang et al., 2012; Lee et al., 2014; Tian, Cordery & Gamble, 2016). Whereas community embeddedness (off-the-job embeddedness) focusses on aspects of the community that embed the individual in their job, organizational (on-the-job) embeddedness focuses on aspects of the organizational environment that embed the individual (Mitchell et al., 2001). Prior research has shown that the organizational dimension is directly associated to organization-related factors such as HR practices (Allen, 2006; Bambacas & Kulik, 2013; Bergiel et al., 2009). Here, we focus on organizational job embeddedness because we are interested in examining firm level human resource practices. Organizational job embeddedness consists of three components: links, sacrifice and fit.

Links refer to “formal or informal connections between a person and institutions or other people” (Mitchell et al., 2001, p. 1104), which are financial, psychological, and/or social and effectively tie employees to the organization. Sacrifice is defined as the “perceived cost of material or psychological benefits that may be forfeited by leaving a job” (Mitchell et al., 2001, p. 1105). Fit describes “an employee’s perceived compatibility or comfort with an organization and with his or her environment” (Mitchell et al., 2001, p. 1104). Although comprised of the three components, the large majority of studies have examined job embeddedness at the dimensional (organizational) level. We follow these studies by examining organizational job embeddedness, which not surprisingly found to positively predict turnover intention and actual turnover (Lee et al., 2004; Mitchell et al., 2001). Hereafter, we will use the term on-the-job embeddedness.

2.5 On-the-job embeddedness as mediator variable

HR practices enable employees to obtain sufficient resources to meet work demands and gain additional resources, following personal investment (i.e. stay) (Wheeler et al., 2010; Tian et al., 2016). On the other hand, poor HR practices threaten or deplete the resources employees should gain from their organization which makes it unable for them to meet work demands or obtain the expected return on the investment of resources. In this situation, employees may think about quitting (Dechawatanpaisal, 2018). However, empirical evidence that reveal the magnitude of the direct effects of HR practices on turnover is relatively small (Bambacas & Kulik, 2013). Therefore, multiple researchers suggest that a direct perception might not be a proximal determinant of

turnover decision, and that a mediating relationship should be considered in addition to the direct effect (Agarwala, 2003; Tanova & Holtom, 2008; Jian et al., 2012).

Bergiel et al. (2009), for example, found a full mediating effect of job embeddedness on the relationship between growth opportunities and turnover intention, and rewards and turnover intention. In addition, he found partial mediation of job embeddedness between supervisor support and turnover intention. Other research also emphasize that HR management can play an important role in embedding employees in the organization (Bambacas & Kulik, 2013; Brown, Hyatt, & Benson, 2010; Tian et al., 2016). This is mainly caused by the fact that well designed HR policies can create tighter connections between employees in an organization (Cheng & Cascio, 2009). Therefore, HR practices are assumed to decrease or increase an employees' embeddedness in the organization and finally affect their decision to leave or stay at an organization.

The theory of job embeddedness expects that employees remain in an organization because they have a number of formal and informal networks with their co-workers as well as the desire to benefit from several opportunities in the organization (Bambacas & Kulik, 2013). When organizations follow HR practices in true manner and spirit, they also care about employee social networks in the organization, which will attach employees to the organization. In addition, higher investment in training and growth opportunities will contribute to a better fit within the organization (Khattak, Mehmood, Mumtaz, Rehman, & Rehman, 2012). If employees think about quitting their present job, they will also think about the material benefits which are attached to the current job that he or she has to sacrifice (Dechawatanapaisal, 2018).

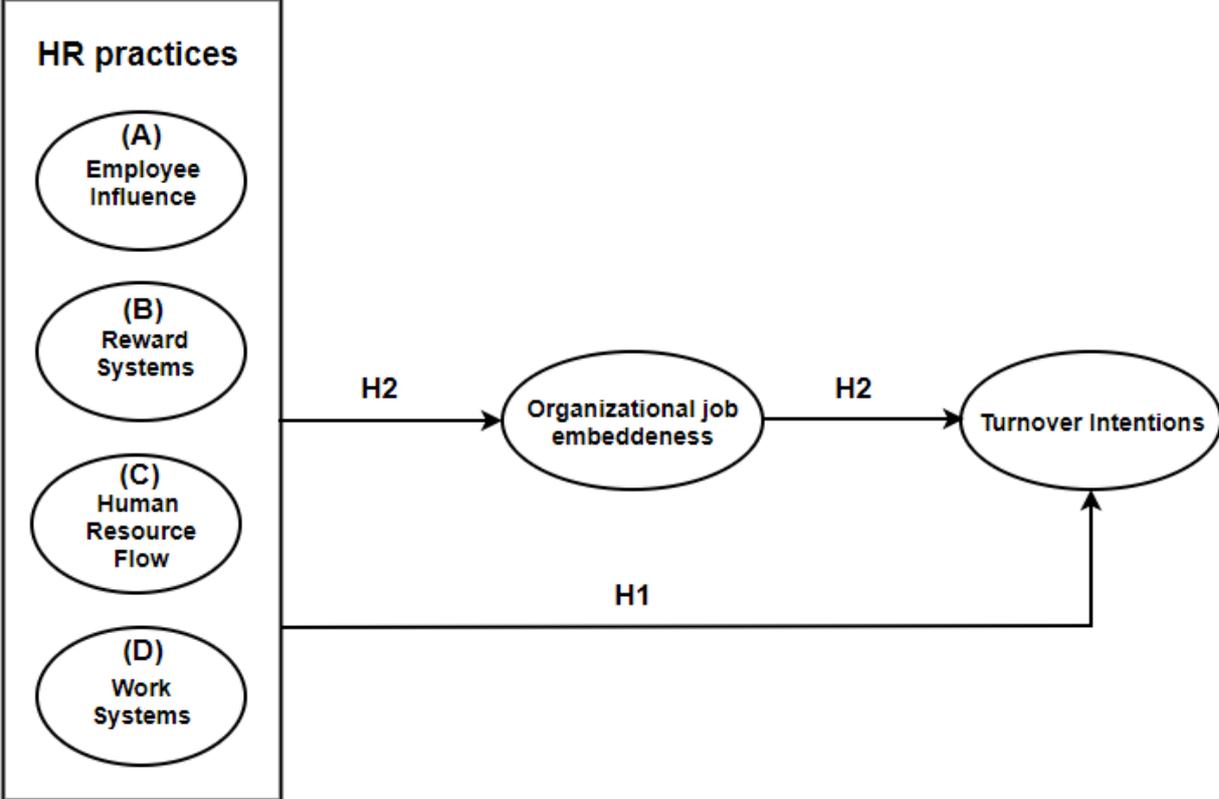
Therefore, we expect that satisfaction with HR practices will have positive effects on organizational job embeddedness, which in turn influence employee turnover intention. Hence, we hypothesize:

- **H2a:** On-the-job embeddedness mediates the relationship between employee influence and turnover intention
- **H2b:** On-the-job embeddedness mediates the relationship between rewards systems and turnover intention
- **H2c:** On-the-job embeddedness mediates the relationship between HR flow and turnover intention
- **H2d:** On-the-job embeddedness mediates the relationship between work systems and turnover intention

2.6 Conceptual model

We designed research framework in figure 2.1 based on the explained theory and the formulated hypothesis in this chapter. The framework combines the level of satisfaction with the four HR practices, on-the-job embeddedness and turnover intentions of IT professionals in The Netherlands.

Figure 2.11 – Research framework



3 Methodology

In this chapter we discuss the methodology that we used to answer the research question and to test the hypotheses. First, we describe how we collected the data. Second, we explain which scales we used to measure the variables. Third, we explain how we validated the scales that we used. Finally, we explain how we analysed the data and tested the research hypotheses.

3.1 Sample population criteria

Our sample consists of IT professionals within the Netherlands. We sampled IT employees in The Netherlands for the following reasons. First, the region was selected because the ICT sector in The Netherlands is hampered by the shortage of qualified IT personnel (CBS, 2019). At present, recruiting new staff is the main solution to the staff shortage, however, in 2020, the training and retention of current staff will be a top priority (Berenschot & Sylva, 2019). Therefore, this research focusses on IT professionals in The Netherlands. Surveys are conducted with IT professionals from IT related firms in the Netherlands. Sample criteria for selection where that respondents should have at least a bachelor degree and need to be currently working in an IT related function for minimal one year. These are the official requirements defined by Fogle (2019) to be an Information Technology (IT) professional. Since this is a quantitative study, the sampling used to select participants is random because it allows for an equal selection of individuals (Ingham-Broomfield, 2014). The sample size was N=196 and respondents were selected from a database provided by Brunelco Electronic Innovators.

3.2 Data collection and procedure

Data was collected via the use of an online survey administered electronically through the web-based systems Qualtrics XM. A survey link (URL) was sent to the 196 identified respondents via their official e-mail addresses. The survey included an introduction letter that informed the participants about the purposes and procedures of the study. This letter and survey can be found in Appendix 1. To avoid missing data, each question needed to receive an answer before the participant could complete the survey. For translation of the survey a translation – back translation procedure is used to ensure that the meaning of an item in Dutch was an accurate reflection of the original meaning in English (Brislin, 1980). This means a bilingual person translated the Dutch survey items back to English with no major misinterpretations. The respondents were assured that their responses would remain confidential and anonymous. Out of the 196 surveys that were distributed, 110 returned, which represents a response rate of 56 %. Table 3.1 shows the demographic characteristics of the sample.

Table 3.1 demographic characteristics

Variable	Category	% of respondents
(1) Gender in percentage	Male	80.9%
	Female	19.1%
(2) Age of respondents (ordered in categories)	20 – 30	46.4%
	30 – 40	28.2%
	40 -50	18.2%
	50 – 60	5.5%
	60 >	1.8%
(3) Highest level of finished education in percentage	None	0.00%
	High school	0.00%
	Bachelor	75.5%
	Master	24.5%
(4) Distribution amongst sectors in percentage	Trade and services	3.6%
	ICT	43.6%
	Justice, security and public administration	5.5%
	Media and communication	2.0%
	Education, culture and science	0.9%
	Engineering, production and construction	22.7%
	Tourism, recreation and hospitality	1.8%
	Other	19.1%
(5) Province	Friesland	2.7%
	Groningen	4.5%
	Drenthe	2.7%
	Overijssel	43.6%
	Flevoland	4.5%
	Gelderland	5.5%
	Utrecht	7.3%
	Noord-Holland	9.1%
	Zuid-Holland	4.5%
	Brabant	10.0%
Limburg	5.5%	
(6) Percentage that had a job offer in the past year	Yes	67.3%
	No	32.7%
(7) Length of employment of current employer in categories	1 – 3 year	56.4%
	3 – 5 year	19.1%
	5 – 10 year	10.9%
	10 – 20 year	10.0%
	20 year >	3.6%

Table 3.1 shows that the majority (80.9%) of the respondents was male. However, this is not surprising because only 15% of all IT professionals in the Netherlands is female (CBS, 2019). Furthermore, we see that there are no respondents younger than 20 in the dataset, and only 1.6% older than 60. The majority (74.7%) is younger than 40. The table also shows that 75.5% of the respondents obtained a bachelor degree, and 24.5% a master degree and that that most respondents (43.6%) are working in the ICT sector. Also 22.7% of the respondents in Engineering, production and construction. 63.7% of the respondents had a job offer in the past year, this indicates the high

demand for IT professionals on the labour market. Most respondents (43.6%) are working for an organization in the province Overijssel.

3.3 Measures

In this section, the scales that were used in the survey to measure the variables turnover intention, on-the-job embeddedness and HR practices are explained. All the survey items can be found in Appendix 1.

Dependent variable

- Turnover intention (item 61-66)

We measured turnover intention using the turnover intention scale (TIS-6). In particular, we used the adapted scale version of Bothma and Roodt (2013), who tested the reliability of this scale, as well as its factorial, criterion-predictive and differential quality. This scale consists of six items.

Bothma and Roodt (2013) tested the reliability of this shortened scale for measuring turnover intention and for predicting actual turnover. The results of the study confirm the scale's reliability, as well as its factorial, criterion-predictive and differential validity. The scale is selected for this study because of its proven validity and reliability. This scale consists of 6 items and is measured on a five-point Likert scale ranging from 1 = "strongly disagree" to 5 = "strongly agree".

Independent variables

The first set of independent variables measures the level of satisfaction with the four HR practices. All four HR practices were measured on a five-point Likert scale ranging from 1 = "very dissatisfied" to 5 = "very satisfied". For employee influence, work systems and HR flow we used the scale developed by Torka and Schyns (2008). To measure satisfaction with rewards systems the scale developed by Heuvel and Thierry (1995) is used.

- Satisfaction with Employee influence (item 1-6)

Satisfaction with employee influence is measured using the scale of 6 items developed by Torka and Schyns (2008). Two sub-dimensions are measured in the survey: satisfaction with voice and satisfaction with participation in decision making. Each of these dimensions was measured by using three items.

- Satisfaction with reward systems (item 7-14)

Satisfaction with reward systems is measured using the scale developed by Heuvel and Thierry (1995). Both primary and secondary rewards are measured. Intrinsic rewards are about appreciation, honesty and achievement. Extrinsic rewards are about salary, promotion and welfare benefits (Beer et al., 1984).

- Satisfaction with HR flow (item 15 – 18)

Satisfaction with HR flow is measured using a scale of four items developed by Torka et al. (2008). Three dimension are measured in the survey: training & development (2 items) and horizontal & vertical mobility/ internal career opportunities (2 items).

- Satisfaction with work systems (item 19-26)

Satisfaction with work systems is measured using a scale of eight items developed by Torka et al. (2008). Each of the items a represent a different dimension: challenge, autonomy, feedback, alternation, with personality, task significance and task identity.

- Job embeddedness (item 27-58)

For the operationalization of job embeddedness the existing variables and survey items from Lee et al. (2004) are used. Most items correspond directly to the items from Mitchell et al. (2001). As Mitchell et al. (2001) and Lee et al. (2004) did, we calculated the average of the items for on-the-job embeddedness for each respondent. On-the-job embeddedness is measured on a five-point Likert scale ranging from 1 = “strongly disagree” to 5 = “strongly agree”.

Control variables (Items 65-70)

The importance of including control variables in regression has been frequently emphasized (e.g. Becker, 2005). A study done by Peltokorpi, Allen and Froesse (2015) pointed out that age, level of education, gender, and length of tenure are related to turnover intention. In addition, Belete (2018) found variation in turnover intention between employees in different sectors and provinces. In addition, we expect that having had a job offer in the past year will also be related to turnover intention. Therefore, we control for gender, age, educational level, sector, job offer and province in all our regression models. In table 3.1 we show how these control variables are constructed.

3.4 Reliability and validity of scales

First, we conducted confirmatory factor analysis (CFA) to evaluate the scales in the measurement model and indicate how well the identified measures predict the latent variables (Byrne, 2010). In addition, reliability was assessed using Cronbach's alpha. Given our sample size (N=110) and the number of relationships we are testing simultaneously, we used the composite (or parcel) formation technique, as commonly used in HRM research (Williams & O'Boyle, 2008). We used the 'total aggregated method' to form item parcels, in which all the items for a scale are summed and averaged (Landis, Beal & Tesluk, 2000). Given that our CFA analyses already demonstrated that all variables are distinct from each other, the "total aggregation approach" is believed to be appropriate for the model testing in our study.

Since all measures were collected during the same period of time using the same survey from self-reporting informants, potential problems arising from common-method bias were evaluated using Harman's single factor test (Podsakoff, Mackenzie & Podsakoff, 2012). All the variables were loaded in a CFA to test whether a single factor might account for the majority of the covariance among the measures. The unrotated factor outcome showed the single factor explained 38 percent of the total variance, which is lower than the critical threshold value of 50 percent, indicating that common method bias does not seem to be a concern in this data set.

According to multiple researchers items from established scales should have a minimal loading of 50% on the intended factor in order to control for measurement validity (Awang, 2014; Chin, Gopal, & Salisbury, 1997; Hair, Black, Babin, Anderson, & Tatham, 2006; MacCallum, Widaman, Preacher, & Hong, 2001). Therefore, upon inspection of the CFA model, we list-wise deleted several items from the dataset. The remaining items share at least 52% of their variance with their designated construct. In addition, reliability was assessed using Cronbach's alpha. All the values were greater than 0.7, which indicates a high level of internal consistency (Bland & Altman, 1997).

Table 3.2 Factor loading & Cronbach's alpha.

Construct	Number of Items	Cronbach's Alpha	Construct loadings
Employee Influence	6	.87	.52 - .71
Reward systems	7	.86	.49 - .75
HR flow	4	.85	.60 - .73
Works systems	5	.85	.57 - .77
On-the-job embeddedness	18	.85	.62 - .93
Turnover intention (TI)	5	.86	.72 - .89

3.5 Hypothesis testing

Second, Hypothesis 1 (H1a, 1b, 1c and 1d) and Hypothesis 2 (H2a, 2b, 2c and 2d) were tested using multiple regression in IBM SPSS Statistics 25. In all models we control for sex, age, educational level, sector, province and job offer. For testing both hypothesis, we use the four-step approach of Baron and Kenny (1986), Judd and Kenny (1981) and James and Brett (1984). The first step is showing that the causal variable (satisfaction with HR practices) is correlated with the outcome (Turnover Intention) by using these variables in a regression equation. This step establishes that there is an effect that may be mediated (Baron & Kenny, 1986). In the second step, we used a regression equation to test if the causal variable (HR practices) is correlated with the mediator (on-the-job embeddedness). In the third step we use a regression equation to show if the mediator affects the outcome when both HR practices and job embeddedness are predictors. In this step it is not sufficient just to correlate the mediator with the outcome because the mediator and the outcome may be correlated because they are both caused by the causal variable HR practices (Baron & Kenny, 1986). In the last step, we use to results of the regression analysis to investigate if there is a full or partial mediating effect.

The amount of mediation is called the indirect effect. According to Preacher and Hayes (2008) and Baron and Kenny (1986) bootstrapping is in our study the best option to test the significance of the indirect effect. Because the assumption of normality of the sampling distribution of the total and specific indirect effects is questionable, particularly in small samples (<N250) as in our study, we bootstrapped the indirect effect of satisfaction with HR practices on turnover intention using the SPSS macro (Preacher and Hayes, 2008). Bootstrapping is non-parametric method based on resampling with replacement which is done 5000 times in our study. From each of these samples the indirect effect is computed and a sampling distribution is generated. Because the mean of the bootstrapped distribution will not exactly equal the indirect effect a correction for bias is made. The confidence interval is computed to check if zero is in the interval. If zero is not in the interval, we can be confident that indirect effect is different from zero, which indicates that the indirect effect is significant and mediation is established. Preacher and Hayes (2008) have written a SPSS macro that we downloaded for this study. We used the 'indirect' macro in our analysis. Since we have multiple control variables in our model and the 'indirect' macro allows adding control variables, this macro was most appropriate.

3.6 Mediation analysis

Third, we more deeply investigated the nature of the mediating effect of job embeddedness by following the approach of Zhao et al. (2010), who reconsidered the test for mediation by Baron and Kenny (1986). The authors found that the classification of full, partial, and no mediation by Baron and Kenny (1986) is somewhat coarse and misleading, and, they identified five new patterns consistent with mediation and two with non-mediation:

1. Complementary mediation: Mediated effect ($a * b$) and direct effect (c) both exist and point at the same direction.
2. Competitive mediation: Mediated effect ($a * b$) and direct effect (c) both exist and point in opposite directions.
3. Indirect-only mediation: Mediated effect ($a * b$) exists, but no direct effect.
4. Direct-only nonmediation: Direct effect (c) exists, but no indirect effect.
5. No-effect nonmediation: Neither direct effect nor indirect effect exists.

After testing the Hypothesis, we used the above classifications to provide the reader with a more precise understanding of the mediating effect.

4 Results

This chapter shows the results of our analysis. First, we show the descriptive statistics to provide an overview of the data. Then, we present the results of our regression analysis to test our hypothesis. Last, we illustrate the analysis pertaining the mediating effect of on-the-job embeddedness on the relationship between satisfaction with HR practices and turnover intention.

4.1 Descriptive statistics

Table 4.1 shows a descriptive overview of the data. The table shows that the IT professional in our study are on average mostly satisfied with their work systems (scale= “1 very dissatisfied”, 5= “very satisfied”). On the other hand, IT professionals are least satisfied with the HR flow. However, HR flow also has the highest range amongst respondents.

Table 4.1 Descriptive statistics of the variables

	Range	Minimum	Maximum	Mean	Std. Deviation
Turnover intention	3.40	1.00	4.40	2.63	.81
On-the-job embeddedness	2.12	1.25	3.37	2.34	.48
Employee influence	3.00	2.00	5.00	3.56	.69
Reward systems	2.57	2.00	4.57	3.40	.70
HR flow	3.75	1.25	5.00	3.36	.80
Work systems	2.80	2.20	5.00	3.91	.61
Gender	1	1	2	1.19	.39
Age	4	2	6	2.88	1.01
Educational level	1	3	4	3.25	.43
Sector	10	2	12	6.10	3.57
Job offer	1	1	2	1.33	.47
Province	10	1	11	5.75	2.69

Table 4.2 shows the bivariate correlations between the variables in the model. All satisfaction with HR practices are positively related to on-the-job embeddedness ($r = .419 - .705, P < 0.01$). Furthermore, satisfaction with the four HR practices ($r = -.516 - .619, P < 0.01$) and on-the-job embeddedness ($r = -0.662, P < 0.01$) are negatively related to turnover intention. Job embeddedness has the strongest correlation with turnover intention ($r = -.662, P < 0.01$), thereafter, satisfaction with reward systems ($r = -.619, P < 0.01$), third satisfaction with work systems ($r = -.539, P < 0.01$), fourth, satisfaction with HR flow ($r = -.525, P < 0.01$) and fifth, satisfaction with employee influence ($r = -.516, P < 0.01$). In addition, the control variables age, educational level and gender show significant correlations with turnover intention.

Table 4.2 Bivariate correlations between variables

Item	1	2	3	4	5	6	7	8	9	10	11
Turnover intention											
Job embeddedness	-.662**										
Employee influence	-.516**	.705**									
Reward systems	-.619**	.510**	.383**								
HR flow	-.525**	.419**	.625**	.534**							
Work systems	-.539**	.639**	.612**	.503**	-.468**						
Gender	.200*	.079	-.198*	-.034	-.111	-.001					
Age	.191*	.163	-0.71	-.237*	-.423**	-.077	.080				
Educational level	.241*	-.222*	-.150	-.161	-.065	-.126	.099	.088			
Sector	-.124	.119	.048	.164	-.019	.252**	-.176	-.146	-.123		
Job offer	-.143	.012	.068	.174	.069	-.025	-.043	.024	.052	.084	
Province	.073	-.110	-.037	.017	-.043	.008	.158	-.075	.251**	-.190*	-.114

** . Correlation is significant at 0.01 level(2-tailed). * . Correlation is significant at 0.05 level (2-tailed)

Table 4.3 shows the variance inflation factors (VIFs) and the collinearity tolerance. We checked for multicollinearity and this did not indicate any problems since the VIF's did not exceed the critical threshold of 10 and none of the collinearity tolerances is lower than zero (Hair, Anderson, Tatham & Black, 1995; Miles, 2014).

Table 4.3 Test for multicollinearity

Variable	Collinearity tolerance	VIF
On-the-job embeddedness	.16	6.33
Employee influence	.25	3.90
HR flow	.29	3.43
Reward systems	.31	3.14
Work Systems	.37	2.70
Age	.65	1.52
Sector	.77	1.31
Gender	.79	1.27
Education	.83	1.21
Province	.83	1.21
Job offer	.86	1.16

4.2 Testing of hypothesis

We report our results in line with the 4-step procedure of Baron and Kenny's (1986) to test the hypothesis. In the first step we test Hypothesis 1a, 1b, 1c and 1d by examining if the level of satisfaction with the four HR practices (independent variables) are significantly negative associated with turnover intention (dependent variable) by using these variables in a regression equation. In the second step we use a regression equation to examine if satisfaction with HR practices is correlated with on-the-job embeddedness (mediator). In the third step we examine if on-the-job embeddedness affects turnover intention if we control for the level of satisfaction with HR practices. In the last step we use the results of the regression analysis to investigate if there is a mediating effect and to test Hypothesis 2a, 2b, 2c and 2d.

- H1a: Satisfaction with employee influence is significantly negative associated with turnover intention of IT professionals in The Netherlands.
- H1b: Satisfaction with reward systems is significantly negative associated with turnover intention of IT professionals in The Netherlands.
- H1c: Satisfaction with HR flow is significantly negative associated with turnover intention of IT professionals in The Netherlands.
- H1d: Satisfaction with work systems is significantly negative associated with turnover intention of IT professionals in The Netherlands.
- H2a: On-the-job embeddedness mediates the relationship between satisfaction with employee influence and turnover intention of IT professionals in The Netherlands.
- H2b: On-the-job embeddedness mediates the relationship between satisfaction with reward systems and turnover intention of IT professionals in The Netherlands.
- H2c: On-the-job embeddedness mediates the relationship between satisfaction with HR flow and turnover intention of IT professionals in The Netherlands.
- H2d: On-the-job embeddedness mediates the relationship between satisfaction with work systems and turnover intention of IT professionals in The Netherlands.

Step 1: The effect of satisfaction with HR practices on turnover intention (H1a, 1b,1 c and 1d)

Table 4.4 show significant relationships between reward systems and turnover intention ($\beta = -.561$, $P < 0.01$) and between work systems ($\beta = -.316$, $P < 0.05$) and turnover intention. Employee influence ($\beta = -.145$, $P > 0.05$) and HR flow ($\beta = -.154$, $P > 0.05$) show insignificant relationships with turnover intention. Thus, H1b and H1d are supported, and H1a and H1c are rejected. The estimates of the paths from reward systems and work systems were significant. The other two satisfaction with HR practices, employee influence and HR flow, failed to reach significance. Therefore, only reward systems and work systems with Baron and Kenny's (1986) obligations, and are considered for the mediation test.

Table 4.4 Multiple regression analysis with HR practices as a predictor of turnover intention

Path	B	Std. Error	p-value
Employee influence	-.145	.143	.276
Reward systems	-.561**	.127	.000
HR flow	-.154	.129	.338
Work systems	-.316*	.148	.024
Gender	.289	.150	.057
Age	.017	.066	.799
Education	.216	.138	.119
Sector	.011	.018	.522
Province	.007	.022	.756
Job offer	-.121	.123	.327

** . Correlation is significant at 0.01 level(2-tailed).
 * . Correlation is significant at 0.05 level (2-tailed)

- Hypothesis 1a: - Rejected
- Hypothesis 1b: - Supported
- Hypothesis 1c: - Rejected
- Hypothesis 1d: - Supported

Step 2: The effect of satisfaction with HR practices on on-the-job embeddedness

In this step we used on-the-job embeddedness as the outcome variable in a regression equation, and the level of satisfaction with the four HR practices as predictors. A significant relationship between the predictor and the mediator is required in this step. The estimates of the path from three of the four HR practices are significant, namely employee influence ($\beta = .364$, $P < 0.01$), reward systems ($\beta = .227$, $P < 0.01$) and work systems ($\beta = .111$, $P < 0.05$). Satisfaction with HR flow failed to reach significance ($\beta = .053$, $P > 0.05$).

Table 4.5 Multiple regression analysis with HR practices as a predictor of job embeddedness

Path	B	Std. Error	p-value
Employee influence	.364**	.050	.000
Reward systems	.227**	.042	.000
HR flow	.053	.046	.245
Work systems	.111*	.053	.040
Gender	.198**	.060	.001
Age	.059*	.027	.030
Education	-.117*	.056	.038
Sector	.005	.007	.445
Province	-.012	.009	.195
Job offer	-.112*	0.50	.026

** . Correlation is significant at 0.01 level(2-tailed).
 * . Correlation is significant at 0.05 level (2-tailed)

Step 3: Testing if the mediating variable (on-the-job embeddedness) is related to turnover intention when we control for satisfaction with HR practices.

In this step we executed a multiple regression analysis with satisfaction with HR practices an job embeddedness as predictors of turnover intention, to test if the mediator affects the outcome variable. Table 4.6 shows the results. We find that on-the-job embeddedness is a strong predictor of turnover intention ($\beta = -1.460$, $P < 0.01$) when we controlled for satisfaction with HR practices.

Table 4.6 Multiple regression analysis with HR practices an job embeddedness as predictors of turnover intention

Path	B	Std. Error	p-value
Employee influence	.395**	.125	.002
Reward systems	-.097	.097	.315
HR flow	-.032	.093	.734
Work systems	-.140	.110	.205
On-the-job embeddedness	-1.460**	.110	.000
Gender	.578**	.128	.000
Age	.102	.055	.065
Education	.046	.114	.690
Sector	.019	.014	.182
Province	-.010	.018	.578
Job offer	-.285**	.103	.007

Step 4: Examining if there is a mediating effect of on-the-job embeddedness (H2a, 2b, 2c and 2d).

Table 4.6 shows that when the on-the-job embeddedness is added to the regression equation, the variables that were earlier shown significant predictors of turnover intention, become insignificant. Namely, the effect of reward systems is marginally weakened ($\beta = -.097, P = .315$). Simultaneously, the effect of work systems is also reduced to non-significance ($\beta = -.140, P = .205$). According to Baron and Kenny (1986), full mediation only occurs if inclusion of the mediation variable drops the relationship between the independent variable and dependent variable to zero. This is not the case, so our results indicate partial mediation. Partial mediation implies that there is not only a significant relationship between the mediator and the dependent variable, but also some direct relationship between the independent and dependent variable.

However, the reduction in variance explained by the independent variable must be significant as determined by one of several tests. Therefore, we performed the bootstrapping procedure with 95 percent bias-corrected confidence intervals, using 5000 resamples (Table 4.7). The method provides point estimates and confidence intervals by which we can assess the significance or non-significance of an indirect (mediation) effect (Preacher & Hayes, 2008). If zero is not within the confidence interval, the indirect effect is significant (Zhao et al., 2010). The results in table 4.7 show that in addition to the direct effect, also the indirect effect of reward systems and work systems on turnover intention through job embeddedness is significant (-1.08 to -.720). Hence, we have enough evidence to support hypothesis H2b and H2d and to reject H2a and H2c.

Table 4.7 Bootstrap analysis of Indirect effect of HR practices on turnover intention through job embeddedness

Path	LL95CI	UL95CI
Employee influence → on-the-job embeddedness → turnover intention	-1.08	-.720
Reward systems → on-the-job embeddedness → turnover intention	-.645	-.383
HR flow → on-the-job embeddedness → turnover intention	-.696	-.434
Work systems → on-the-job embeddedness → turnover intention	-.815	-.510

- Hypothesis 2a: - Rejected
- Hypothesis 2b: - Supported
- Hypothesis 2c: - Rejected
- Hypothesis 2d: - Supported

However, table 4.7 shows that also employee influence and HR flow show significant indirect effects on turnover intention through job embeddedness. Therefore, we use the five types of mediation proposed by Zhao et al. (2010) to further specify our mediating effects. Since the indirect effect of employee influence and HR flow is significant but the direct effect is not, *Indirect-only mediation* is the case. On the other hand, reward systems and work systems both have a significant negative direct impact on turnover intention, and a significant negative indirect impact on turnover intention through job embeddedness. This indicates *Complementary mediation*.

5 Discussion and conclusion

In this chapter we discuss the findings of the study and we answer the central research question. We also explain the theoretical contributions and practical implications. Finally, we explain the limitations of our study and the directions for future research.

5.1 Conceptual model after data analysis

This study investigated how satisfaction with HR practices and job embeddedness affect turnover intention of IT professionals in The Netherlands. This resulted in multiple research hypothesis.

Figure 5.1 shows which of the hypothesized relationships is found to be statically significant. The green arrows indicate significance, whereas the red lines indicate insignificance. As you can see, hypothesis H1a, H1c, H2a and H2c are rejected, and H1b, H1d, H2b and H2d are supported.

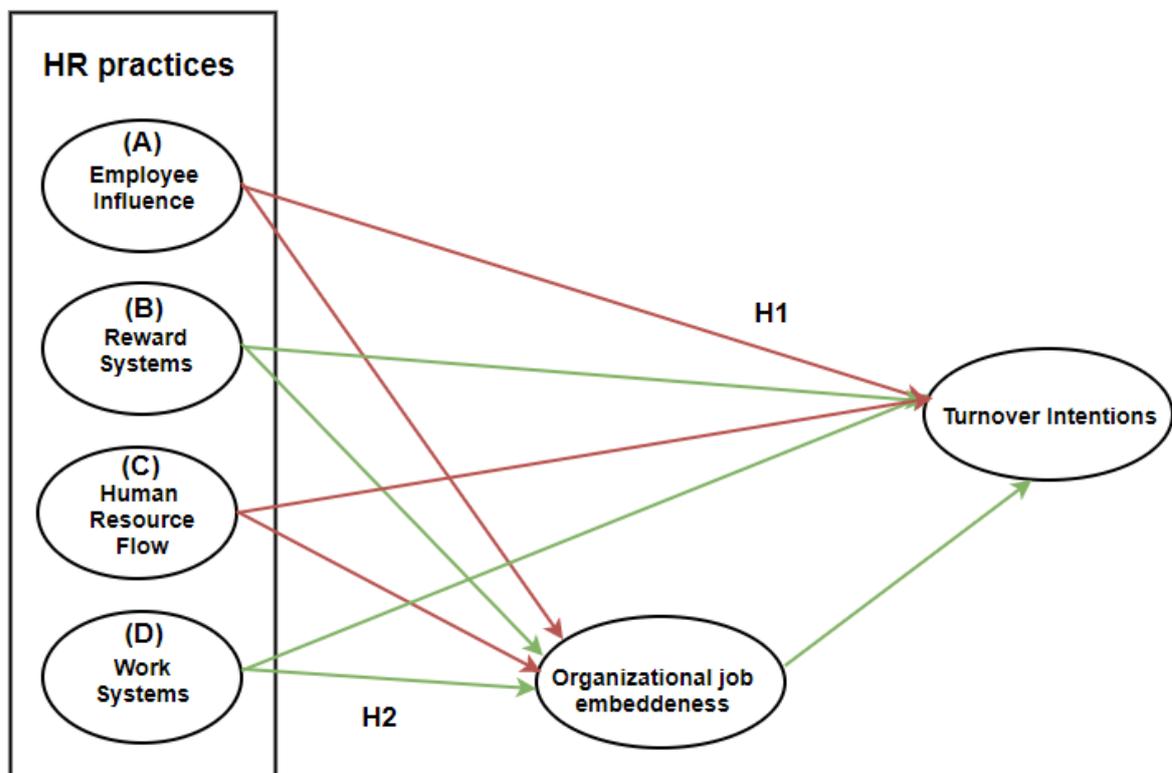


Figure 5.1 Conceptual model after data analysis

5.2 Conclusion and discussion

In this study, we aimed at answering the following research question: How do satisfaction with HR practices and on-the-job embeddedness affect turnover intention of IT professionals in The Netherlands? In order to answer this research question, we conducted a quantitative survey. After we collected the data, we used factor analysis to validate our scales and regression analysis to examine the relationships between the variables and to test our hypothesis. In this chapter we explain our main findings.

5.2.1 HR practices and turnover intention

While we hypothesized that all four HR practices would contribute to decreased turnover intention, we found that only reward systems and work systems are significant predictors of turnover intention, where reward systems is the strongest predictor. In other words, the more dissatisfied an IT professional is about how he or she is rewarded, the higher the likelihood that he or she has the intention to leave the organization. This is in line with the expectations, multiple studies found a significant relationship between reward systems and turnover intention (DeConinck & Stilwell, 2004; Singh & Loncar, 2010; Vandenberghe & Tremblay, 2008). However, the number of studies that found reward systems as the most important predictor of turnover intentions is limited (Juhdi, Pa'wan & Hansaram, 2011; Aburumman, Salleh, Omar & Abadi, 2019). Therefore, we suggest that the level of satisfaction with reward systems is more important for IT professionals than for other populations, or that IT professionals are in general less satisfied about reward systems. Furthermore, work systems is a significant predictor of turnover intention of IT professionals. Work Systems of organizations define and design the work of employees (e.g. decision autonomy, coordination responsibilities, work hours and flexibility). The fit between these systems and the employee and the level of satisfaction about work systems of an organization are proven to be very important. The significant negative effect is in line with what we expected, since recent studies also found a negative relationship between satisfaction with Work Systems and Turnover Intention (Bartram, Casimir, Djurkovic, Leggat, & Stanton, 2012; Jensen, Patel, & Messersmith, 2013; Zungbey et al., 2019).

However, our study also found that employee influence and human resource flow are no significant predictors of turnover intention, hence we could not confirm the expected hypothesis H1a and H1c. A study done by McClean, Burriss and Detert (2013) found that perceived deficit of influence only leads to turnover behaviour when the individual disagrees with how his manager manages. Thus, it could be an underlying factor that IT professionals in general agree with how their manager manages. Furthermore, our study revealed that satisfaction with HR flow has no significant effect on turnover intention of IT professionals. This shows that career & training opportunities are subordinated to rewards and work systems in the decision to stay or leave at an organization.

5.2.2 HR practices, job embeddedness and turnover intention

Second, the results of the study reveal that on-the-job embeddedness is a stronger predictor of turnover intention of IT professional than HR practices. After executing the four-step test for mediation by Baron and Kenny (1986), only reward systems and work system showed to be predictors of turnover intention when on-the-job embeddedness is added to the model. However, on-the-job embeddedness reduced both significant direct effect to insignificant direct effects. This means that none of the HR practices has a direct effect IT professionals intent to leave, but rather an indirect effect via on-the-job embeddedness. This finding is in line with results from previous research (Allen, 2006; Bergiel et al., 2009). Showing that an organization's HR approach perceived as favourable by employees, which provides them with benefits and resources, is more successful at supporting their feelings of embeddedness on-the-job, and that this feeling of attachment to the organization indirectly encourages IT professionals to stay.

Both reward systems and work systems are found to be partial mediated by on-the-job embeddedness in relation to turnover intention. This indicates that on-the-job embeddedness partial explains the relationship between the two HR practices and turnover intention. Unfavourable reward systems may withhold employees from becoming embedded, and stimulate them to abandon their organization in order to acquire more or better resources from other organization (i.e. higher pay). This is in line with findings from (Tian et al., 2016). Concerning work systems, our study found that well-designed work systems may support employees to become more embedded, which makes turnover behaviour more difficult.

In addition, the control variables gender and job offer are significant predictors of on-the-job embeddedness and turnover intention. Earlier research already found gender as a significant predictor of turnover intention (e.g. Hayes, 2015). This confirms our finding that women are on average more embedded in their jobs, and have lower turnover intention. Nonetheless, until today no evidence was found for a significant relation between job offer and turnover intention.

5.2.3 Conclusion

Given the above, we conclude that the level of embeddedness in the job is a more important aspect in the consideration of leaving a job than their level of satisfaction with HR practices. However, to promote embeddedness, respectively the level of satisfaction with reward systems and work systems are most important for IT professionals in The Netherlands.

5.3 Theoretical contributions

This study contributes to human resource management, job embeddedness and turnover literature in multiple ways. First, our study contributes to the generalizability of job embeddedness literature by responding to the research call of Mitchell et al. (2001) to test job embeddedness in the IT sector. The contribution here is that our study extends job embeddedness literature with the finding that employee influence and reward systems are the most important promoters of on-the-job embeddedness of IT professionals in The Netherlands. In addition, our study improves the generalizability of job embeddedness theory since we showed that job embeddedness is the most important predictor of turnover intention for IT professionals in The Netherlands.

Second, to our knowledge this study is the first one that investigates satisfaction with HR practices, on-the-job embeddedness and turnover intention together. As a result, we respond to the research call of Wheeler et al. (2010) "Scholars still have much to discover about the full potential of job embeddedness as an important variable in human resource management literature" (Wheeler, Harris, & Harvey, 2010, p. 183). We found that on-the-job embeddedness is a much stronger predictor of turnover intention than satisfaction with HR practices. Thus, our study extends current employee turnover literature by providing evidence that on-the-job embeddedness is more important in assessing turnover intention than the level of satisfaction with HR practices. On the other hand, our study contrasts existing human resource management literature since we provided evidence that on-the-job embeddedness is a better determinant for turnover intentions of IT professionals than the level of satisfaction with HR practices. This contrasts earlier studies that stated that satisfaction with HR practices is the most important aspect to assess for organizations when predicting turnover intentions (Bawa & Jantan, 2005; Sanjeevkumar & Wang, 2012).

Third, our mediation analysis extends job embeddedness literature by further specifying the nature of the mediating effect between satisfaction with HR practices and turnover intention. In the relationship between employee influence, on-the-job embeddedness and turnover intention we found indirect-only mediation, just as in the relationship between HR flow, on-the-job embeddedness and turnover intention. Furthermore, we found that on-the-job embeddedness complementary mediates the relationship between reward systems and turnover intention and work systems and turnover intention. On the other hand, our study found that having had a job offer in the past year showed significance correlation with both on-the-job embeddedness and turnover intention. This indicates that employees which had a job offer in the past year, feel less embedded in their job, and are consequently more likely to leave.

5.4 Practical implications

The results from this study provide multiple useful practical implications for organizations and IT managers seeking to actively develop effective retention strategies for their IT professionals. First, to help build deeper contractual and perceptual forces that embed employees, organizations can look for several tactics and strategies from a variety of HR practices. However, based on the findings of our study, we suggest that organization might need to pay closer attention to individual HR practices, and determine how each HR practice shapes responses to embeddedness. A collective approach might not be optimal, since each HR practices is distinctive in nature, and is likely to have a different impact on the reactions of employees. As found in our study, HR flow does not support on-the-job embeddedness. Since training opportunities is an important indicator of HR flow, organizations that over-emphasize the bundled HR practices might be taking the risk of enhancing the competencies and marketability of employee, which may increase their decision to leave the organization. Therefore, it could be useful for organizations to focus more on enhancing satisfaction with employee influence, reward systems and work systems.

Second, it is needed for organizations to recognize that in general the level of satisfaction with HR practices not directly influences turnover intention, but rather they stimulate employees to become more embedded in the workplace which in the end lowers their intention to leave. In this study we found that satisfaction with rewards systems and work systems play a vital role in this equation. This supports the findings of (Allen et al., 2010) that organizations can improve their retention strategy with effective HR practices that promote on-the-job embeddedness. This implicates that organization can accomplish this by providing attractive pay benefits. However, to make these rewards attractive, organizations need to take the required responsibility and level of skill into account, but also the internal and external market. Furthermore, the reward systems might be evaluated periodically to cope with changing organizational needs and the changing work environment (e.g. work complexity, enhanced knowledge and skills, cost of living). Extrinsic rewards might only be a quick remedy for an employee turnover problem. Therefore, it is important for organizations to focus on designing intrinsic rewards that appreciate the value of employees on a continuous basis to support a long term employer-employee relationship. For example, organizations can define a career roadmap together with IT professionals that fit their personal preferences and goals, helping them to see the possible career paths within the organization. This would result in a higher sacrifice when one decides to leave the organization.

Third, the findings provide an important reminder to HR managers that providing employees with opportunities to become involved in decision-making , through the provision of increased control over and participation in decisions at work, has the potential to make them more satisfied with employee influence and as a result more embedded in the organization. Such opportunity-

enhancing HR practices will increase the control of employees over their working lives and should not be neglected when implementing HR practices.

Fourth, since our study provides evidence that turnover intention vary between males and females, it can be helpful for HR managers to use different approaches for males and females.

5.5 Limitations and directions for future research

This study has five limitations. First, our study measured turnover intention of IT professionals, which may not result in actual turnover. Scholars found that turnover intention can be a poor predictor of actual turnover (Jung, 2010; Kirschenbaum & Weisberg, 1990). Therefore, a longitudinal study can be considered to test our measurement model over a longer period of time. Also alternative data sources can be considered. For instance, data from studies with actual voluntary turnover could provide new insights.

Second, our sample (N=110) was relatively small. To improve the generalizability of our findings more studies should be performed with larger sample sizes. In addition, this research only consists of quantitative data. Therefore, some of the explanations cannot be checked and underlying reasons for the relationships are not explained in this study. Therefore, the results of this study can be useful for other studies to provide a basis for qualitative interviews. For example, future research could focus more on why reward systems are important for IT professionals.

Third, another potential limitation is that we directed our efforts to on-the-job embeddedness only. In doing so, we adopted the suggestion of existing studies that on-the-job embeddedness would be more relevant to HR practices and turnover intention (Allen, 2006, Bambacas & Kulik, 2013; Bergiel et al., 2009). However, off-the-job embeddedness such as community and family embeddedness may also influence turnover intention. Therefore, it may lead to meaningful research results in future research when off-the-job embeddedness is added.

Fourth, this study provided evidence that shed light on the effect of satisfaction with HR practices on on-the-job embeddedness and turnover intention from IT professionals in The Netherlands. Thus, the results of study cannot be generalized for employees in other nations or continents. Future studies should expand the scope of the sampling and strengthen the generalizability of the study. However, the results of our study provide a good basis for testing these variables in other contexts.

Fifth, in the relationship between satisfaction with HR practices and turnover intention we did not found complete mediation of on-the-job embeddedness. Therefore, it could be useful to investigate which other underlying factors can be used to explain turnover behaviour. For example, it could be examined if there are multiple mediators or just one. Also, future research could also add job satisfaction to the research framework to see if this provides new useful insights.

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Appendix 1 – Survey questions

Introduction to survey

Geachte respondent,

Allereerst wil ik u hartelijk danken voor deelname aan dit onderzoek. Mijn naam is Koen ter Hogt en ik ben Master student Bedrijfskunde aan de Universiteit Twente. Ter afronding van deze studie doe ik onderzoek naar factoren die invloed hebben op het verloop van IT personeel in Nederland.

Deelname aan het onderzoek zal ongeveer 10 minuten van uw tijd in beslag nemen.

Ik vertrouw op uw eerlijkheid tijdens het invullen van de vragenlijst, uw antwoorden zullen deze studie dan ook zeer succesvol maken. Uw data zal veilig opgeslagen worden en alleen onderzoekers zullen er toegang tot hebben.

Mocht u vragen of opmerkingen hebben over het onderzoek, neem dan contact met mij op via k.terhogt@student.utwente.nl

Bedankt voor uw deelname aan dit onderzoek!

Dear respondent,

First of all, I would like to thank you very much for taking part in this study. My name is Koen ter Hogt and I am a Master student of Business Administration at the University of Twente. For my final thesis, I am doing research into factors that influence the turnover of IT personnel in the Netherlands.

Participation in the research will take about 10 minutes of your time.

I rely on your honesty when filling out the survey, your answers will make this study very successful. Your data will be stored securely and only research will have access to it.

If you have any questions or comments about the study, please contact me at k.terhogt@student.utwente.nl

Thank you for participating in this survey!

Satisfaction with Employee influence

(5-point Likert-type-scales)

Voice

1. **The degree in which you are being asked for you opinion about (changes in) your function**
2. **The degree in which you are being asked for you opinion about (changes in) departmental matters**
3. **The degree in which you are being asked for you opinion about matters which concern the company you work for as a whole**

Participation in decision making

4. **The degree in which you actively have influence on (changes in) your function**
5. **The degree in which you actively have influence on (changes in) your department**
6. **The degree in which you actively have influence on (changes in) matters that concern the company you work for as a whole**

Satisfaction with Reward systems

(5-point Likert-type-scales)

7. **The amount of salary you receive for your job**
8. **The amount of salary you receive, considering your professional knowledge**
9. **Your salary compared to what you could earn elsewhere in a comparable function**
10. **Your salary considering your achievements**

11. **The secondary labour conditions at this job**
12. **The value of the secondary labour conditions at this job**
13. **The amount of secondary labour condition compared to other organizations**
14. **The amount of choices concerning your secondary labour conditions**

Satisfaction with HR flow

(5-point Likert-type-scales)

15. **The quality of (on-the-job) training for your current function (training & development)**
16. **The possibilities to attend training (training & development)**
17. **The possibilities to get a different but not higher function at the company you work for (career opportunities)**
18. **The possibilities to get a higher function at the company your work for (career opportunities)**

Satisfaction with Work Systems

(5-point Likert-type-scales)

19. **The variation in your function (alternation)**
20. **The challenge which your function offers (challenge)**
21. **The possibilities to plan your own job (autonomy)**
22. **The clarity about what to do in your function (role ambiguity)**
23. The function appraisal (or feedback) you receive from your supervisor (feedback)
24. The fit between your activities at work and your personal talents and abilities (fit)
25. **The importance of your job in the eyes of others (like customers, colleagues) (task significance)**
26. **The complexity of your job (task identity)**

Job embeddedness

Fit - Community

(5-point Likert-type-scales)

27. I really love the place where I live
28. This community I live in is a good match for me,,
29. I think of the community where I live as home
30. The area where I live offers the leisure activities that I like (e.g. sports, outdoors, cultural, arts)

Fit - Organization

(5-point Likert-type scales)

31. **My job utilizes my skills and talents well**
32. **I feel like I am a good match for this organization**
33. **I feel personally valued by the organization I work for**
34. **I like my work schedule (e.g. flextime, shifts)**
35. **I fit with the organization's culture**
36. I like the authority and responsibility I have at this company

Link - Community

(5-point Likert-type-scales)

37. Are you currently married?
38. If you are married, does your spouse work outside the home?
39. Do you own the home you live in? (mortgaged or outright)
40. My family roots are in the community where I live in

Links - Organization

(5-point Likert-type-scales)

41. **How long have you been in your present position?**
42. **How long have you worked for this organization?**
43. **How long have you worked in this (IT) industry?**
44. **How many co-workers do you interact with regularly?**
45. **How many co-workers are highly dependent on you?**
46. **How many work team are you on?**

Sacrifice - Organization

(5-point Likert-type scales)

47. **I have a lot of freedom on this job to decide how to pursue my goals**
48. **The perks on this job are outstanding**
49. **I feel that people at work respect me a great deal**
50. I would incur very few costs if I let this organization
51. **I would sacrifice a lot If I left this job**
52. My promotional opportunities are excellent here
53. **I am well compensated for my level of performance**
54. **The benefits are good on this job**
55. **I believe the prospects for continuing employment with this company are excellent**

Sacrifice - Community

(5-point Likert-type scales)

56. Leaving this community would be very hard
57. People respect me a lot in my community
58. My neighbourhood is safe

Turnover intention

59. **How often do you dream about getting another job that will better suit your personal needs? (a)**
60. **How often are you frustrated when not given the opportunity at work to achieve your personal work-related goals? (a)**
61. **How often have you considered leaving your job? (a)**
62. **How likely are you to accept another job at the same compensation level should it be offered to you? (b)**
63. **To what extent is your current job satisfying your personal needs? (c)**
64. How often do you look forward to another day at work? (d)

(a)scale: 1 = Never to 5 = Always

(b)scale: 1 = Highly unlikely to 5 = Highly likely

(c)scale: Reverse coding used to compute item mean scale. Item mean scale 1 = to a very large extent to 5 = To no extent

(d)scale: Reverse coding used to compute item mean scale. Item means scale 1 = Always to 5 = Never.

Employee characteristics

65. Sex (categories: male, female)

66. Age (<20, 20-30, 30-40, 40-50, 50-60, 60-70)

67. Highest educational degree (categories: none, high school, bachelor, master, doctor)

68. Did you receive any job offer in the last year? (yes/no)

69. Sector of activity of current organization

70. In which province do you work?

Appendix 2 – Factor loadings

Item	ON_JE
My job utilizes my skills and talents well ^a	.64
I feel like I am a good match for this organization ^a	.74
I feel personally valued by the organization I work for ^a	.81
I like my work schedule (e.g. flextime, shifts) ^a	.77
I fit with the organization's culture ^a	.77
How long have you been in your present position? ^b	.76
How long have you worked in this industry? ^b	.83
How long have you worked for this organization? ^b	.93
How many work teams are you on? ^b	.75
How many co-workers are highly dependent on you? ^b	.83
How many co-workers do you interact with regularly? ^b	.76
I have a lot of freedom on this job to decide how to pursue my goals ^a	.63
The benefits are good on this job ^a	.71
I am well compensated for my level of performance ^a	.65
The perks on this job are outstanding ^a	.68
I believe the prospects for continuing employment with this company are excellent ^a	.78
I would sacrifice a lot if I left this job ^a	.75
I feel that people at work respect me great deal ^a	.62

Notes: Responses of the items with ^a were recorded on a 5-point Likert scale, where: 1= strongly disagree, 5= strongly agree. Responses of the items with ^b were recorded as open questions.

Extraction Method: Principal Component Analysis

Rotation Method: Varimax with Kaiser Normalization