Turnover intentions of employees of information technology outsourcing suppliers in Vietnam

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Abstract: Voluntary employee turnover creates considerable direct and indirect cost for a company. It can also harm customers. In the case of information technology (IT) outsourcing, the turnover often decreases the quality of delivered services because the newly assigned employees need to adjust to the new tasks and customer. Reports indicate that turnover of IT employees in offshore locations is very high. The research on this phenomenon is still limited and inconclusive, but there are indications that the standard model of employee turnover developed for Western industrialised countries does not apply equally for emerging economies, which are prime destinations for IT outsourcing. We analyse which factors determine employee turnover at IT outsourcing suppliers in Vietnam, a growing IT outsourcing destination. The results show that compensation and job alternatives play an important role, as in Western countries. However, relationships with superiors and peers also significantly affect employee turnover intention, which reflects cultural differences.

Keywords: employee turnover; IT outsourcing; offshoring; job satisfaction; job alternatives; social context; Vietnam.

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1 Introduction

The ability of an information technology outsourcing (ITO) supplier to keep employee turnover low constitutes an important supplier firm capability. In ITO research, supplier firm capabilities have been studied much less than client firm capabilities and characteristics or outsourcing relationship characteristics (Lacity et al., 2010). The issue of the supplier's human resources has gained relatively little attention given that these resources are instrumental to the execution of the outsourcing contract.

Employee turnover has been studied extensively within organisational behaviour research, and a number of studies have examined the IT profession in particular. The

reason for interest in the IT profession is that most IT jobs require extensive education and knowledge. Those who possess the currently needed knowledge are often in short supply and can demand high salaries and good working conditions. Good job opportunities can lead to a relatively high turnover.

Most of the studies on the turnover of IT professionals were conducted in the USA, where the phenomenon was first analysed. Meanwhile, a significant part of IT work for Western countries is carried out offshore in countries with a higher supply of IT workers and lower wages. The problems of employee turnover become bigger when work is offshored because of different cultures, different time zones, and less direct contact between employees of the client and the majority of supplier employees. All these aspects lead to a situation where employees at the ITO firm become more alienated from their work than those in onshore outsourcing or firm-internal IT departments. In addition, highly skilled IT labour is now becoming scarce in offshoring locations. Because these countries' economies are growing, the salaries also grow. These aspects and developments lead to a turnover of IT professionals in developing and newly industrialised countries that is much higher than in developed countries. Vijayakumar et al. (2012) report attrition levels of 40% in the IT industry in India, while they amount to only about 5% in other Indian high-tech companies like Hindustan Aeronautics Limited. Sangroengrob and Techachaicherdchoo (2010) report turnover rates of 80% for Thailand. So far, relatively few systematic studies of the phenomenon are available, as shown in the next section. Therefore, the goal of this research is to analyse the reasons for turnover among IT employees of firms that specialise in ITO in an Asian developing country.

In the following, a brief review of previous research on turnover of IT professionals in Asian developing countries is given. After the review, we develop a research model, which is then tested using data collected in Vietnam. This is followed by a discussion of results and limitations. The paper ends with conclusions and a research outlook.

2 Previous research

2.1 Introduction

First, a brief distinction between ITO and business process outsourcing (BPO) studies must be made. BPO studies concentrate on call centres or employees who perform very structured and relatively simple jobs. Such jobs are obviously different from software development and maintenance or technical jobs in IT. For example, Sengupta and Gupta (2012) position their work on BPO jobs that are "monotonous, less skilled, less challenging…" Sree Rekha and Kamalanabhan (2010) give the exact occupations of their respondents from BPO companies, which make it clear that they are mostly not IT specialists. Gaan (2011) explicitly selected IT professionals in BPO companies so as not to confound her research results. Unfortunately, not every paper on BPO/ITES (IT-enabled services) states explicitly the occupation of respondents, but the actual target population only becomes obvious through careful reading. Kanwar et al. (2012) surveyed both types of workers. This allowed for an explicit comparison between the two groups in the context of voluntary turnover. They found that IT workers are less committed to their organisation and less satisfied with their job and, consequently, more willing to leave

than (other) workers in companies offering BPO/ITES (Kanwar et al., 2012). Therefore, we include BPO/ITES studies only if they clearly relate to sophisticated IT work.

Further, we disregard papers on developed countries like Japan, South Korea and Singapore because they are usually not destinations for ITO and their companies usually have more developed organisational structures. Of course, they also may suffer from turnover of IT professionals.

Related studies have appeared in a wide variety of journals or proceedings ranging from computer-oriented publications to those covering the social sciences, some of which are not widely available. The literature review below is, therefore, not exhaustive, but it represents many different models and variables, and covers several developing Asian countries.

Finally, we organise the review based on work by Lacity et al. (2008), who analyse the Indian market through interviews with 25 IT employees. They conclude that the 'standard' research model of turnover intention that has been applied to the US market needs to be adapted to different cultures. The standard model considers job satisfaction (JS) and organisational commitment (OC) as determinants of turnover intention (TOI). In India, employees did not relate to the concept of OC independently of their attitude towards their company. Therefore, Lacity and colleagues (2008) replace OC with satisfaction with the organisation where the employee works. Further, social issues like living close to the family (external factor) and work-life balance (partly external factor) turned out to be important. Lacity et al. (2008) propose on this basis a model that contains JS, organisational satisfaction, and social aspects as antecedents of TOI, but they do not empirically test this model. We identified 11 papers relating to turnover of employees in ITO in developing Asian countries that test a model of ITO with empirical data. They are described in the next two sections and then summarised in Table 1. Based on Lacity et al. (2008), we analyse especially how they treat the issue of OC and social aspects.

2.2 Organisational commitment

First, we analyse how the papers treat OC. Rahman et al. (2008) interviewed 74 IT professionals in Rawalpindi/Islamabad and calculated correlations between JS, OC, and job opportunities and TOI. All correlation coefficients have expected signs (no significance reported), but the correlations of JS and OC with TOI are very small ($r < 0.007$). Sangroengrob and Techachaicherdchoo (2010) developed a model for Thailand with JS, OC, and work commitment as variables influencing TOI. They discuss several definitions of work commitment, but it is not clear either which of the definitions they apply or which items they use to measure it. The results of the empirical test of their model among 99 employees in Bangkok suggest that JS and OC only influence TOI via work commitment. Gaan (2011) determines that JS rather than OC affects TOI based on a survey in Bangalore. She assumes that occupational commitment might be more important than OC in this context. Kanwar et al. (2012) analyse the impact of OC and JS in two groups in Delhi: IT professionals vs. other employees in the ITES sector. They confirm their model and show that the two groups are different, as explained above. Their results further show that JS influences TOI directly and via OC. Kannan and Vivekanandan (2012) analysed the views of software testing professionals in Chennai and decided to use JS, organisation satisfaction, life satisfaction, and interpersonal relationship with supervisor as factors of TOI. Organisation satisfaction, as suggested by

Lacity et al. (2008), and relationship with supervisor are shown to be relevant. Chalil and Prasad (2014) research the impact of work environment (two sub-dimensions), burnout (three sub-dimensions), JS (two sub-dimensions), and affective commitment on TOI of software professionals. They study a single organisation in India and find that intrinsic JS has the strongest indirect impact via affective commitment while extrinsic job satisfaction has no impact. Emotional exhaustion, distributive justice, and organisational politics influence intrinsic JS with expected signs. Affective commitment itself decreases the TOI. Pathak and Srivastava (2017) surveyed workers in the IT and communication sector in Delhi. They assume that the impact of OC, represented by its three components (affective, normative, and continuance commitment), is moderated by psychological empowerment. All hypotheses except for continuance commitment are confirmed. To summarise, the results on the suitability of OC for the analysis of TOI in these countries are inconclusive. Sometimes organisation satisfaction is used instead of OC. In another case, work commitment is considered the main driver of TOI. In other cases, OC was tested but the impact was very small or it was dominated by JS. In some cases, just parts of OC (the affective and normative parts) showed significance.

2.3 Social aspects

Next we look at the use of social context variables. Boyar et al. (2012) surveyed job incumbents working in the IT/BPO sector in India. With 3,478 respondents, it was by far the largest survey reported here. Their main goal was to determine whether the family situation as an indicator of existing financial responsibilities relates to turnover. They find that for respondents who are assumed to have financial family obligations (a moderating social context variable), managerial support, job content, and work-related stress play a smaller role in turnover decisions than for those without such obligations. As stated in the above section, Kannan and Vivekanandan (2012) found that the relationship with supervisor was a significant factor of TOI for software-testing professionals in Chennai. Vijayakumar et al. (2012) surveyed IT employees in Bangalore using ten independent variables, including relationships with other employees and supervisors. They identify five of them (including relationships with other employees) as significant based on descriptive statistics. Sukriket (2014) surveyed programmers in software companies located in a software park in Bangkok. The companies are small, each employing about 10 to 15 programmers. TOI was regressed on ten variables that relate to JS directly and with no interactions. Four of them are significantly related to TOI: nature of work, job conditions, relationship with supervisors, and fringe benefits. Nguyen (2014) analysed the TOI of IT employees in Vietnam assuming that only emotional exhaustion influences it directly. Emotional exhaustion in his model is affected by several factors, including social context variables. The results show that social context does not significantly influence emotional exhaustion, but these (and all other antecedents) were not allowed to affect TOI directly. The survey was administered to students at two universities in Ho Chi Minh City (HCMC) and some employees in IT companies. It is not clear whether the students work full- or part-time. In summary, social context variables were used in several studies and were found to be relevant in four out of five reported studies. The reported research points to social context variables that did not receive

attention in models for Western countries. In a meta-analysis of turnover in IT (Joseph et al., 2007), only one paper contained such variables (Lee, 2002). This paper related to a highly developed country, Singapore, but the great majority of people and employees in Singapore are Chinese, and their cultural values resemble more those of other Asian people than Western countries, especially with respect to power distance and individualism. Therefore, the paper may already have been an indication of which factors may be important in developing Asian countries.

2.4 Summary

Table 1 summarises the referenced papers. It shows that the papers considered almost 30 different variables, of which more than half turned out to be significant, although the effect was sometimes relatively small. Some constructs consisted of several items while others were represented by only one question. There are two shortcomings in many of the cited contributions. First, all papers except those of Kannan and Vivekanandan (2012), Boyar et al. (2012) and Rahman et al. (2008) consider only internal or push factors that "push the employee towards the exit door" (Sukriket, 2014). The factors may explain the desire of an employee to leave, but the employee will probably not start an active search for alternative job offerings (an example of a pull factor) if he or she perceives that such alternatives do not exist. Second, several of the reported studies (Kannan and Vivekanandan, 2012; Sukriket, 2014; Rahman et al., 2008) calculated only a simple correlation or regression (with no mediation, moderation, or any other interaction). Such models cannot reveal the possibly complex relationships among factors of turnover. In one case, group comparisons were made with (M)ANOVA but without testing the differences for significance (Boyar et al., 2012).

Our study attempts to overcome the two shortcomings and consider social context variables at the same time. We conduct our study in Vietnam for the following reasons. It is a relatively new and growing ITO destination. The market receives new business because of its growing economy and growing talent pool and 'old' business moving from destinations like China, usually due to lower costs. However, new competition also arises from countries like Cambodia where costs are even lower. It is a dynamic market with significant potential (growing number of well-educated workers, growing foreign investment) but also with threats (bureaucracy and outside competition). The study on Vietnam reported above (Nguyen, 2014) concentrated on emotional exhaustion and mainly surveyed students. Further, Vietnam is culturally different from the other observed Far Eastern countries as measured by Hofstede's cultural dimensions (Hofstede, n.y.). This is especially true for the dimension of individualism (India 48, Vietnam 20). It resembles Thailand in individualism but differs from it on other cultural dimensions.

Table 2 shows the original four cultural dimensions for the four Asian countries mentioned in the literature review. In addition, we show the respective values for the USA to recall the similarities and differences with one Western country.

The USA takes the minimum value for power distance and the maximum for individualism. These values are far apart from the corresponding values of all the other countries. The differences between the USA and the Asian countries on the other two dimensions are not always so pronounced. For these reasons, we concentrate on the first two dimensions in the following.

Table 1 Papers on turnover intentions of IT professionals in emerging economies in Asia (sorted by country and year)

Author	*Year*	*Country*	*N*	*Observed independent variables*	*In*	*Ex*	*Ind. variables revealed significant*	*Interaction*
Gaan	2011	IN	308	JS, OC	Y	N	All	Mediation
Kannan and Vivekanandan	2012	IN	135	JS, organisation satisfaction, life satisfaction, supervisor	Y	Y	Organisation satisfaction, supervisor	No
Vijayakumar et al.	2012	IN	80	Responsibilities, other employees, hiring, supervisor, performance appraisal, rules, working conditions, perks, organisation, ergonomics	Y	N	Responsibilities, other employees, rules, working conditions, ergonomics	No
Kanwar et al.	2012	IN	313	OC, JS	Y	N	JS directly and via OC	Mediation
Boyar et al.	2012	IN	3478	Family situation, managerial support, peer support, job content, work-related stress, geographical location	Y	Y	Managerial support, job content, work-related stress play bigger role as turnover reasons if no fin. obligation	Group comp.
Chalil and Prasad	2014	IN	100	Burnout (3 dim.), work environment (2 dim.), JS (2 dim.), affirmative commitment	Y	N	Most influence from intrinsic JS via affirmative commitment	Mediation
Pathak and Srivastava	2017	IN	293	Affirmative, normative, and continuance OC, psychological empowerment	Y	N	Affirmative and normative OC, psychological empowerment	Moderation
Rahman et al.	2008	PK	74	JS, OC, job opportunities	Y	Y	Strongest correlation for job opportunities (no sign. reported)	No
Sangroengrob and Techachaicherdchoo	2010	TH	99	JS, OC, work commitment	Y	N	JS, OC only via work commitment	Mediation
Sukriket	2014	TH	400	JS, recognition, benefits, job conditions, communication, nature of work, co-workers, operating procedure, supervision, pay	Y	N	Nature of work, job conditions, supervisor, benefits	No
Nguyen	2014	VN	194	Job demands, supervisory support, colleagues' support, role ambiguity, role conflict, career opportunities, emotional exhaustion	Y	N	Job demands, role ambiguity, role conflict, career opportunities, emotional exhaustion	Mediation

Note: In – internal factors; Ex – external factors.

Table 2 Hofstede's (n.y.) four cultural dimensions for selected countries

Country	*Power distance*	*Individualism*	*Masculinity*	*Uncertainty avoidance*
India	77	48	56	40
Pakistan	55	14	50	70
Thailand	64	20	34	64
Vietnam	70	20	40	30
USA	40	91	62	46

3 Research model

Because actual employee turnover is difficult to measure, we model and measure the intended turnover like most studies on turnover. Joseph et al. (2007) identified only two out of 33 studies on IT turnover that consider actual turnover. Research has confirmed that TOI is a good predictor of turnover (Hom et al., 1992). Based on discussions with managers of an ITO company where the pre-test was conducted and with representatives of an industry association in Vietnam, we formulated the dependent variable positively as the intention to stay on the job. The difference in the formulations 'intention to leave' and 'intention to stay' was analysed by Joseph et al. (2007). They found a significant difference only with respect to the antecedent compensation in such a way that it had a stronger effect on intention to stay than on intention to leave.

Our departing model is based on organisational equilibrium theory (March and Simon, 1958), which assumes that individuals will stay in an organisation as long as they perceive the inducements (pay, working conditions, etc.) to be as big as or greater than their contributions (time, effort, etc.). This perception is influenced by an individual's desire to move and his or her opportunity to move. Desire to move is often modelled by JS and OC. We omit OC for several reasons. Joseph et al. (2007) found in their meta-analysis that it is highly correlated with JS and retained the latter construct because of better conceptual fit. As described above, Lacity et al. (2008) found that the concept was meaningless to their interview partners in India. In the reported empirical research, some authors have used the concept but others have concluded based on their studies that occupational (Gaan, 2011) or work commitment (Sangroengrob and Techachaicherdchoo, 2010) might be more important concepts in the country of their research. The results with respect to OC in organisational behaviour research are inconclusive as well (e.g., van Dick et al., 2004). The opportunity to move is measured by perceived job alternatives.

Job satisfaction (push factor) and perceived job alternatives (pull factor) as antecedents of TOI correspond to the meta-analytic model derived in Joseph et al. (2007), where they are called proximal factors. They influence TOI directly but are influenced themselves by other variables (called distal factors in this context). Proximal factors mediate the influence of the distal factors on TOI. Based on extant research, the hypotheses with respect to these two proximal constructs are these:

H1 Job satisfaction has a positive impact on the intention to stay in the job.

H2 Good job alternatives have a negative impact on the intention to stay in the job.

We follow the theory of met expectations (Porter and Steers, 1973) to determine factors of job satisfaction. It presumes that unmet expectations lead to turnover (intentions). Previous research (Joseph et al., 2007) suggests that *compensation* (pay) and *career opportunities* within the current company (promotability) are among the strongest predictors of job satisfaction (and perceived job alternatives). Therefore, we incorporate these two variables into our model. Further, we capture job-related factors (Joseph et al., 2007) and type of work (e.g., Boyar et al., 2012) in the variable *job content*. Here we choose aspects that are easy to relate to rather than more abstract concepts like role ambiguity and role conflict (used in some studies in the USA), which are more likely to be misinterpreted in another cultural environment. As discussed above, there is evidence that a turnover model for an Asian country should contain social context variables. Lee (2002) considered social support variables as the only determinants of job satisfaction. All the papers reviewed in the subsection Social Aspects studied either managerial and/or co-worker support as a potential factor of TOI. Based on all this research, we add the constructs *relationship with supervisor* and *relationship with my team members* to account for the social context. The chosen factors correspond to five of nine dimensions identified by Spector (1985) as determinants of job satisfaction. Based on our discussions with managers in the pre-test phase, we do not include the dimension *fringe benefits* as these were rarely offered to our respondents. *Communication* is not included because the managers considered it as tightly connected to the construct *relationship with supervisor*.

We did not consider adding 'proximity to family' (suggested by Lacity et al., 2008) or a similar variable because we conducted our survey in one metropolitan area (like many other studies reported above). As explained below, the majority of people working there come from the same geographic area.

While distal factors are mediated by proximal factors, they also may directly influence the intention to stay. We formulate a partially mediated model as done by Joseph et al. (2007). Following previous research and the formulation of the variables, we assume that contentment with each of the five variables has a positive impact on job satisfaction and the intention to stay in the job.

H3 Satisfaction with job content has a positive impact on job satisfaction (H3a) and intention to stay (H3b).

H4 Good relationships with team members have a positive impact on job satisfaction (H4a) and intention to stay (H4b).

H5 Good relationships with superiors have a positive impact on job satisfaction (H5a) and intention to stay (H5b).

H6 Good career opportunities within the company have a positive impact on job satisfaction (H6a) and intention to stay (H6b).

H7 Satisfaction with compensation has a positive impact on job satisfaction (H7a) and intention to stay (H7b).

Compensation and career opportunities may also have an influence on perceived job alternatives. Based on job embeddedness theory (Mitchell et al., 2001), perceived high levels of compensation and career opportunities negatively influence perceived job alternatives and have a positive impact on the intention to stay in the job. The latter aspect is already covered by hypotheses H6b and H7b. The remaining propositions are formulated as these:

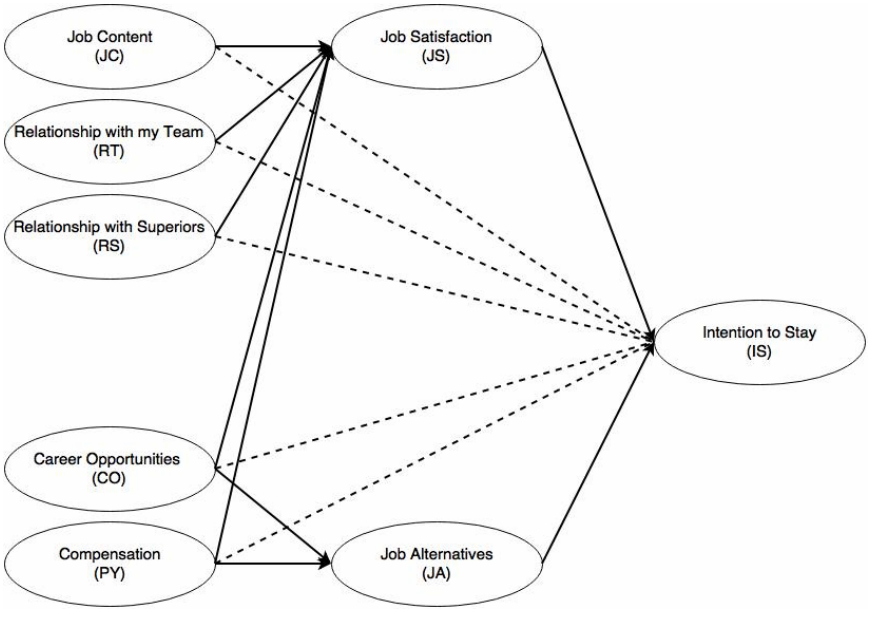
H8 Good career opportunities have a negative impact on perceived job alternatives.

H9 Satisfaction with compensation has a negative impact on perceived job alternatives.

Individual attributes such as age, gender, or organisation tenure also often enter models of TOI. We intentionally did not try to collect these attributes so the respondents would not fear that they could be identified through a combination of individual attributes. This perhaps could have been possible given the small size of some of the companies. Because of the relatively high power distance in Vietnam, we did not want the respondents to fear that unfavourable answers might become known to the superiors and be interpreted as a negative attitude towards them. We wanted the respondents to answer the questions without any fear or thoughts of what might be expected from them. The inclusion of demographic variables is also not promising from a statistical point of view in this case because there is too little variation in them. This will be explained in the section on data.

The resulting research model is shown in Figure 1.

Figure 1 Research model (full lines indicate mediated relationships)



All constructs are measured through perceived items. The constructs *satisfaction with job content* and *perceived job alternatives* are defined as formative (items covered different aspects of the constructs), while all other constructs are reflective. The global construct *job satisfaction* was taken directly from previous research (van Dick et al., 2004). Items for other constructs were also taken from previous research, but the number of items or their wording was changed. Four items belonging to four different constructs were defined negatively as an additional check of reliability of answers (e.g., one of the items for *intention to stay* was phrased 'the company is not a good employer to work for'). Agreement with any of the items could be expressed on a scale ranging from 1 (strongly disagree) to 7 (strongly agree). The instrument was translated into Vietnamese. The questionnaire was first administered to employees of one small target firm to test the

reliability of constructs. Thirteen IT people answered it. The constructs already showed sufficient reliability (composite reliability > 0.7); only the item wording was adapted in one case, based on the pre-test answers, before the questionnaire was administered to other companies. The survey was administered through a website.

The structure of our research model follows the meta-analytic model by Joseph et al. (2007) because it represents an excellent summary of current research on IT employee turnover and has a sound theoretical basis. Differences exist in the selected constructs. The construct *relationship with superiors* relates to power distance, which is much higher in Vietnam than in Western countries, while *relationship with team members* relates to individualism, which is much lower than in Western countries. These variables have been used before in research on turnover of IT professionals but often not as part of a comprehensive model as shown above. Social context variables have often been used in studies of other workers' TOI in Asian countries, but IT professionals are considered more individualistic and less social than other workers (Couger and O'Callaghan, 1994). A systematic study of IT workers is, therefore, still necessary. With our research design, we attempt to determine what contributes to TOI of IT employees in ITO firms in Vietnam. This is valuable for managers who can control some of the variables and for clients who select ITO destinations. For research, the comparison with results in other countries is of interest because studies of job satisfaction (which influences turnover) among all workers have shown that cultural differences can moderate the relationship between job satisfaction and its antecedents (Hauff et al., 2015).

4 Data

Many Asian countries have one or a few major centres of IT business activity. Many previous surveys have been conducted in one such area (e.g., Bangkok, Delhi, Bangalore). In our case, the survey took place in HCMC. HCMC is the major economic hub of Vietnam with about nine million people living in its metropolitan area. Due to the geography and history of Vietnam, the mobility of people between the south (mainly HCMC) and the north (mainly Hanoi) is still limited. Therefore, the majority of people working in HCMC have family members in metropolitan HCMC or southern Vietnam. An invitation to participate in the survey was sent to managers of ITO companies. This 'gate opener' approach has also been used in other related research (e.g., HR departments for Chalil and Prasad (2014) and Sukriket (2014). The approach always entails the danger of bias by the gate person. In this case, however, there was no incentive for the person to pick potential respondents because the results could not be traced back to the person or firm. If a manager agreed to participate, he or she forwarded a short invitation to the ITO workers in the firm (not clerical or 'simple' BPO workers, if they exist at all in the firm) along with the link to the survey on a university website. The managers were contacted either through the European Chamber of Commerce in HCMC or directly by a contact person in Vietnam. The respondents are employees of SMEs offering various kinds of outsourcing services. We concentrate on foreign-owned SMEs because these firms are often specifically founded to serve foreign markets while having access to the local talent pool with (relatively) low wages. Unlike in China, these firms do not have to be joint ventures with local citizens.

Nine managers (firms) agreed to take part in the survey. However, we cannot know whether any of their employees accepted the invitation to participate. Their companies are involved in all types of ITO. On average, their sales came from application development and maintenance (67.5%), BPO (10%), and infrastructure outsourcing (5%). The remaining sales were realised with non-outsourcing activities (17.5%), e.g., sales of own software products. While the firms still vary by size (up to 400 people), we did not approach the few big firms because they are a different type of organisation and face different challenges. For example, the company FPT is an information and communication technology concern that is also the biggest ITO company in Vietnam. It offers telecommunication services and it is involved in manufacturing and retail of IT hardware and in IT education. It has many offices inside and outside of the country. Finally, a big part of FPT's sales is not generated through ITO.

We received 92 answers, of which seven were eliminated from the analysis for one or more of the following reasons:

1 there were too many missing answers to individual items

2 the questionnaire completion time was so short that proper reading of items was not probable (and sufficient reflection was even less probable)

3 reversed items were answered as if they were not reversed, indicating a lack of serious reflection on the questions.

To have an idea about the demographics of employees in the surveyed ITO firms, we queried the managers of the pre-test company for some basic employee demographics. The typical employee in the observed firm is male (>70%), between 25 and 35 years old (>80%), and has a bachelor's degree (>60%). These figures need not be representative for our sample, but they are actually close to the demographics of the interviewees in other surveys in Vietnam and other Asian countries reported above. For example, 66% of respondents were male in Vietnam (Nguyen, 2014); 63% male in Pakistan (Rahman et al., 2008); 63.6% male, 68.7% between 25 and 35 years old, and 61.6% having a bachelor's degree in Thailand (Sangroengrob and Techachaicherdchoo, 2010); and 80% male with an average age of 29.8 in India (Chalil and Prasad, 2014). The relationship between male and female workers is (still) an indication of the type of work accomplished by respondents. In all previous surveys where it was stated that respondents develop, maintain, or test software or do other IT technical work, the clear majority of respondents have been male. In surveys of BPO employees where the type of work was directly or indirectly described as simple and repetitive, the majority of respondents have been female.

5 Results

The method of partial least squares (PLS) was used to analyse the data because it is able to simultaneously model formative and reflective constructs and it is generally recommended for sample sizes lower than 250 (Chin, 1998; Reinartz et al., 2009). The answers to items containing a negative formulation were reversed before calculations. In the following, the measurement model is assessed first, and then the relationships between the constructs are evaluated.

5.1 Measurement model

Composite reliability, indicator reliability, and convergent and discriminant validity were assessed to evaluate the quality of the reflective constructs, following the recommendations of Hair et al. (2013). Internal consistency reliability (ICR) was used to assess composite reliability, which offers a better alternative to Cronbach's alpha in PLS studies (Chin and Gopal, 1995). As can be seen in Table 3, all constructs surpass the minimum value of 0.7, recommended by Nunnally and Bernstein (1994). Indicator loadings above the threshold of 0.7 indicate sufficient indicator reliability. All indicators fulfil this criterion, with the lowest indicator loading at 0.735 for item 4 of the construct career opportunities. Furthermore, convergent validity was checked using the average variance extracted (AVE). AVE scores above 0.5 can be considered sufficient, which is the case for all reflective constructs. Discriminant validity is achieved when the square root of the AVE is larger than the correlations of the construct with any other construct in the research model (Fornell and Larcker, 1981). The results confirm discriminant validity in the data.

The indicators of the formatively modelled constructs JA and JC show a low multicollinearity indicated by variance inflation factor (VIF) values of 1.077 and 2.360. They lie below the upper limit of 10 (Reinartz et al., 2009). All but one indicator weight show effects in the theorised direction. Item 2 of JA has a negative sign. Items with a negative sign should be kept in the model if the bivariate correlation with the construct is high and the construct is defined by the items (items cover different aspects of the construct) (Cenfetelli and Bassellier, 2009). Because both criteria apply in this case, item 2 within JA is being kept in the model. Table 3 gives the exact figures for the measurement model.

Table 3 Measurement model evaluation (*JA* and *JC* are formative constructs)

	Indicator loadings/weights				*AVE*	*ICR/VIF*
	Item 1	*Item 2*	*Item 3*	*Item 4*		
CO	0.889	0.923	0.869	0.735	0.734	0.916
IS	0.875	0.926	0.843	0.773	0.733	0.916
JA	*1.122*	*–0.321*				*1.077*
JC	*0.355*	*0.075*	*0.555*	*0.317*		*2.360*
JS	0.862	0.894			0.771	0.871
PY	0.943	0.897	0.864		0.814	0.929
RS	0.903	0.954	0.923	0.936	0.863	0.962
RT	0.858	0.869	0.759		0.690	0.869

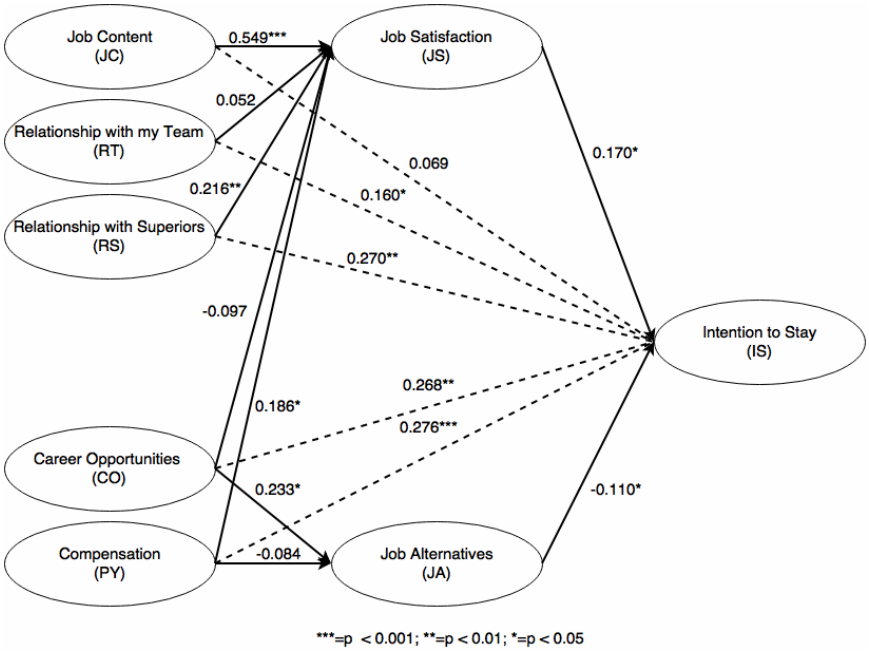
5.2 Structural model

Table 4 shows all path coefficients, their significances, and whether the hypothesis is confirmed (using $p \leq 0.05$ as the threshold).

Table 4 Results of the structural model

Hypothesis	*Path*	*Path coefficient*	*T-value*	*P-value*	*Hypothesis confirmed?*
H1	JS → IS	0.170	1.973	0.025	Yes
H2	JA → IS	-0.110	1.753	0.040	Yes
H3a	JC → JS	0.549	5.114	0.000	Yes
H3b	JC → IS	0.069	1.073	0.142	No
H4a	RT → JS	0.052	0.653	0.257	No
H4b	RT → IS	0.160	2.690	0.004	Yes
H5a	RS → JS	0.216	2.081	0.019	Yes
H5b	RS → IS	0.270	2.681	0.004	Yes
H6a	CO → JS	-0.097	1.295	0.098	No
H6b	CO → IS	0.268	2.780	0.003	Yes
H8	CO → JA	0.233	1.916	0.028	No
H7a	PY → JS	0.186	1.804	0.036	Yes
H7b	PY → IS	0.276	3.286	0.001	Yes
H9	PY → JA	-0.084	0.874	0.191	No

Figure 2 Research model with the results of the structural model (full lines indicate mediated relationships)



The overall explanation (adjusted R^2) of intention to stay achieves a high level of 76.7%, explanation of job satisfaction is still strong at 56.4%, while the explanation of perceived job alternatives only reaches a very low level, at 4.5%.

Job satisfaction and perceived job alternatives have a significant influence on the intention to stay, with expected signs (H1 and H2). Job content strongly influences job satisfaction (only). Relationship with team members is only significant as a direct effect (H4b). Relationship with superiors has a strong impact on intention to stay, both directly and via job satisfaction (H5a and H5b), making it one of the most important factors of turnover. This is also true for compensation (H7a and H7b). Career opportunities have a significant impact on the intention to stay (H6b) and perceived job alternatives (H8). However, the path from career opportunities to job alternatives has the wrong sign; interestingly, this was also the case in Joseph et al. (2007). Because the path from compensation is non-significant, neither of the hypotheses on the factors of perceived job alternatives (H8 and H9) is confirmed. Together with the low adjusted R^2 of this construct, this means that other factors influence it more substantially.

The results of the structural model are summarised in Figure 2.

6 Discussion

The two constructs with the strongest overall influence (direct and mediated) on the intention to stay in the job are compensation and relationship with superiors. High compensation means high costs for the firms, but maintaining a good relationship with subordinates (from managers' point of view) does not necessarily create high costs. Concrete suggestions cannot be made based on this research, but it can be assumed that respect toward subordinates and inclusion in decision processes may help to boost respondents' positive perception of the relationship.

Career opportunities have a mixed influence on the intention to stay. Good (perceived) opportunities directly increase the intention to stay, but they also decrease it via mediation by perceived job alternatives. Opposite to expectations of job embeddedness theory (Mitchell et al., 2001), respondents who perceive their career opportunities to be good within their company assume that they also have good job opportunities at other companies, thus decreasing their intention to stay. The results also have theoretical consequences. They confirm the outcomes on the effect of career opportunities on job alternatives in Joseph et al. (2007). Together, the results give rise to a doubt that embeddedness theory has explanatory power in the context of turnover in IT firms. Obviously, good (perceived) career opportunities raise the self-confidence of workers, which makes them look at available job alternatives more positively. Our research does not indicate whether the same effect applies to compensation, but outcomes in Joseph et al. (2007) do suggest so. The results create challenges for coping with this mixed influence. Managers need to make the career opportunities appear as firm-specific as possible to contain the negative indirect impact. For example, managers may want to increase (perceived) career opportunities by creating a ladder of positions and titles without additional people responsibility, especially without creating additional decision levels. Otherwise, these hierarchical levels could prolong decision processes and harm the company.

Relationships with team members do not influence job satisfaction, but they do influence the intention to stay. This indicates that they are less important in daily work

but that they do influence employees' well-being in the company. It is also possible that team communication is easier and team frictions are smaller in surveyed companies because project teams in SMEs are small. Thus, relationships with peers mainly influence the 'atmosphere' in the firm.

Job content has a strong impact on job satisfaction, as could be assumed, and only a mediated effect on intentions to stay through job satisfaction. Here there is probably not much that managers can do, especially in SMEs. For example, a company that mainly offers software maintenance services cannot give its employees jobs to develop software, nor can a data centre provider give its employees tasks in business process management. Switching of jobs from time to time would perhaps increase the curiosity of employees but would decrease their efficiency.

Finally, job satisfaction has a stronger effect on the intention to stay than do perceived job alternatives. This is good news for companies, because the former proximal factor is easier to control than the second one. How this could be done was discussed in the context of distal factors. The factor of perceived job alternatives is not well explained by embeddedness theory, as explained above. Nowadays, it is actually possible that this variable is mainly formed on the basis of external information (e.g., visits to job portals or learning about average IT salary figures from news media). Given the abundance of easily found and relevant information on the Internet, the personal perception bias of this variable may be small, making it an exogenously given parameter unrelated to internal company developments. Of course, job market data often correlate with internal personnel data (e.g., open positions, personnel reductions, or salaries).

7 Limitations

Our model assumes that the assessment of antecedents takes place before the intention to stay (or leave) is formed. It would, however, actually require a longitudinal study or at least a measurement at two different points in time to determine this causality. This is, unfortunately, very difficult, because the respondents usually remain anonymous. Therefore, it is not possible without special procedures to track their answers over two or more waves. All referenced studies also conducted a cross-sectional survey, as done in this research.

The survey was run in one country with employees from foreign-owned SMEs dedicated to ITO. Therefore, the results cannot be generalised to IT employees in other countries, nor to large and/or nationally owned companies or to non-ITO work. This, however, points to possible extensions of the research. Presbitero et al. (2016) observe for simple BPO work in the Philippines that employee retention in US-owned BPO firms is lower than in nationally owned BPOs. They assume that this is due to lower fit of organisational and employee values in US-owned firms. Due to a lack of figures by government or professional organisations, we cannot say whether the turnover of IT employees who are not working on outsourcing jobs or in large companies is lower than in this survey or how other variables observed in this research compare. We managed to receive a few answers from IT employees of one large local company. These employees had a higher intention to stay, and perceived their career opportunities to be better and the job alternatives to be worse, but they were less satisfied with their jobs. The few answers

do not enable us to test statistically whether these differences are significant, but they indicate that it may be worthwhile to research the possible differences.

Top managers forwarded the link to the survey to their employees. It is possible that managers did so only if they expected favourable responses or only if they felt that retention problems exist. That is, we cannot know whether the managers who agreed to participate were biased in some way. As mentioned above, we used absolute anonymity, also with respect to demographic variables, to make such behaviour useless.

Future research could also attempt to add constructs that reflect other cultural dimensions, for example, uncertainty avoidance or dimensions not shown in Table 2. Although our model already explains more than 75% of variance in intention to stay in the job, it is conceivable that lower values on uncertainty avoidance in some of the Asian countries (compared to Western countries) also partly explain higher turnover (intentions) in these countries.

8 Conclusions and future research

Previous research has shown that compensation and career opportunities have a strong impact on TOI. Based on high power distance in Vietnam and previous research, we added relationship with superiors as an antecedent and identified that it has a high impact on job satisfaction and intention to stay in the job for employees of ITO companies in Vietnam. This seems to constitute one important difference when the research model for TOI is transferred from Western countries to countries where the cultural dimension of power distance takes on much higher values. Relationship with team members also has an impact on intentions to stay. This construct reflects in our context the cultural dimension of individualism (or collectivism as the opposite). These variables have appeared before in research on TOI of IT professionals, but as a recent comprehensive review of 72 papers on the topic (Ghapanchi and Aurum, 2011) shows, social context variables did not yet make it to the 'top list' of factors (those that appeared in four or more studies). This is despite the fact that the review included 11 papers relating to different Asian countries (including highly developed economies). A number of implications of our findings for managers are given in the discussion.

The importance of social context, i.e., relational constructs as determinants of the intention to stay, indicates that culture seems to weigh more than profession. IT professionals are considered individualistic and not very social (Couger and O'Callaghan, 1994), but in a culture where relations still play a very important role, IT professionals resemble more other workers from their own culture than workers in Western countries in the same profession.

A further implication for research is that a new theoretical explanation of the antecedents of perceived job alternatives is needed.

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