



## Journal of Global Operations and Strategic Sourcing

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Jatinder Kumar Jha, Jatin Pandey, Biju Varkkey,

### Article information:

To cite this document:

Jatinder Kumar Jha, Jatin Pandey, Biju Varkkey, (2018) "Examining the role of perceived investment in employees' development on work-engagement of liquid knowledge workers: Moderating effects of psychological contract", Journal of Global Operations and Strategic Sourcing, <https://doi.org/10.1108/JGOSS-08-2017-0026>

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# Examining the role of perceived investment in employees' development on work-engagement of liquid knowledge workers

## Moderating effects of psychological contract

Jatinder Kumar Jha

*Human Resources Management Area,  
XLRI- Xavier School of Management, Jamshedpur, India*

Jatin Pandey

*Organizational Behaviour and Human Resources Area,  
Indian Institute of Management Kozhikode, Kozhikode, India, and*

Biju Varkkey

*Human Resources Management Area,  
Indian Institute of Management Ahmedabad, Ahmedabad, India*

Received 26 August 2017  
Revised 5 November 2017  
3 February 2018  
28 June 2018  
Accepted 6 August 2018

### Abstract

**Purpose** – This paper aims to examine the relationship between perceived investments in employees' development (PIED) on work engagement and the moderating effects of psychological capital on this relationship for liquid knowledge workers, employed in the Indian cutting and polishing of diamond industry (CPD).

**Design/methodology/approach** – A questionnaire composed of established scales was administered to 134 liquid knowledge workers. Having established convergent and discriminant validity using structural equation modelling, the model was further analysed using the Process macro to check for direct and moderating effects.

**Findings** – The research findings suggest that the perceived investment in employee development and psychological contract enhancement (relational and transactional) made by CPD units for liquid knowledge workers positively influenced their work engagement level. The study also finds that relational contract (not transactional contract) positively moderates the relationship between perceived investment in employee development and work engagement.

**Research limitations/implications** – This is a cross-sectional single source study; future studies could look at longitudinal and multisource perspective.

**Practical implications** – The study presents a “star matrix of engagement” that guides the application of the two strategies of perceived employee development and psychological contract enhancement for liquid knowledge workers. This has implications for design and implementation of human resource management practices and policies for employee management.

**Originality/value** – The study makes significant contributions to existing literature on antecedents of work engagement of liquid knowledge workers by examining the direct and moderating influences.

**Keywords** Quantitative, Employee management, Indian cutting and polishing of diamond (CPD) industry, Liquid knowledge workers, Liquid workforce, Perceived investment in employee development (PIED), Relational psychological contact, Transactional psychological contract, Work engagement, Highly skilled work force, Training

**Paper type** Research paper



## Introduction

Enhancing employee engagement has remained the key focus area of organizations, as it has the potential to impact numerous individual and organizational outcomes, such as lower turnover intentions (Allen *et al.*, 2003) and greater organizational performance (Whitman *et al.*, 2010). Practices within human resource management (HRM) have been identified to be among the most important factors enhancing work engagement of employees (Bal *et al.*, 2013); however, most of these studies have been conducted with permanent employees. How these practices influence the work engagement of liquid knowledge workers has not been adequately studied so far and thus warrants attention.

“Liquid workers” is an umbrella term defining the category of workers with non-standard work contracts, including part-time workers, freelancers and casual workers (Naik, 2016). Liquid knowledge workers are employed for a job that requires acquisition and application of knowledge as a part-timer, a freelancer or a casual worker (Robbins *et al.*, 2008). The number of liquid workers in Scandinavian and European countries, for instance, has doubled just within the past two decades and developing countries too have witnessed a sharp increase in the number of liquid workers (ILO, 2012). It is this distinct nature of liquid knowledge workers, separating them from conventional workers, which calls for an in-depth analysis in terms of the antecedents and consequences of their work engagement.

Outsourcing to India has been a common trend because of better organizational outcomes (Jain and Natarajan, 2011; Sharda and Chatterjee, 2011). Fontinha *et al.* (2014) recently studied the impact of training on the commitment of the outsourced skilled temporary workers in information technology firms, suggesting that training the outsourced employees influences their commitment to the organization positively in terms of fulfilling relational psychological contract. Studies have suggested that training or investment in employee development is an important HRM practice that influences the commitment level of the employees (Choi and Yoon, 2015); this is because employees reciprocate positively through higher engagement levels and commitment on seeing developmental investments made by the organizations (Bal *et al.*, 2013). However, the direct relationship of this development effort and the moderators for this relationship has not been extensively studied. This provides the motivation to examine the impact of perceived development investment in liquid employees on their work engagement.

Although quite a few studies have been conducted even in the Indian context that explore antecedents and outcomes of work engagement (Agarwal, 2016; Bhatnagar, 2012; Biswas *et al.* 2013; Gupta and Kumar, 2015), none of them have specifically focused on the liquid knowledge workers. These studies however have acknowledged the importance of a development climate within an organization to improve work engagement of employees at the workplace (Chaudhary and Rangnekar, 2017; Kuvaas and Dysvik, 2010). Chaudhary *et al.* (2012) for instance suggested that human resource development (HRD) climate does positively influence the work engagement of the employees as it provides them with opportunities to acquire new skills and practice them at workplace, thus in turn enhancing their work engagement level. In addition to developmental opportunities, fulfilment of psychological contract has emerged as another factor influencing work engagement (Biswas *et al.*, 2013). The organizational support theory states that employees view the actions of its agents such as managers as intentions of their respective organizations (Rhoades and Eisenberger, 2002; Aselage and Eisenberger, 2003). HR practices such as investment in employees’ development reflects an organization’s commitment towards them (Settoon *et al.*, 1996), thereby making them feel wanted and “special” and signalling that their contributions have been noticed and are valued by their organization. Simply put, employees tend to

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perceive their psychological contract as fulfilled; hence, they display a high level of work engagement at the workplace (Biswas *et al.*, 2013).

Not many studies exist, however, that examine the antecedents of work engagement of liquid knowledge workers. However, it has become a necessity in today's time for organizations to engage liquid worker in general and liquid knowledge workers in particular. Many organizations hire them because they require the specific skills that these workers possess to be used for specific periods, and there is a scarcity of such skills in the market. In a study on global employee engagement by White (2011), engagement was reported as being a major factor by the Indian executives in influencing their job satisfaction level; 23 per cent of the Indian executives rated development opportunities and training to be the most important factor in enhancing their performance level.

Our study focuses on liquid knowledge workers (i.e. those possessing tacit knowledge), as their presence is increasingly felt in different sectors/organizations, different ways need to be explored to engage them to use their potential to the fullest and in turn to capitalize on the benefits associated with hiring them. Informed by the existing literature, which states that development of employees brings the desired change in employees' attitude and behaviour (Bal *et al.*, 2013; Fontinha *et al.*, 2014), our study adds to the literature by looking into the impact of investment on employee development on employee engagement in the context of liquid knowledge workers. Generally, most organizations invest less in liquid employees as compared to permanent employees, though the former have been gradually occupying a larger share of the employee strength. It would be interesting, therefore, to investigate how liquid knowledge workers respond to the developmental investments made by the organizations. More specifically, our study targets liquid knowledge workers in the CPD industry of India to examine the relationship.

We examined the moderating effect of psychological contract on the relationship between perceived investments in development of liquid knowledge workers *vis-à-vis* their work engagement. Psychological contract to a large extent dictates the impact of employers' initiatives as regards the attitude and behaviour of the employees; it refers to the employees' belief in mutual obligations between an individual and employer (Rousseau and Tijoriwala, 1998). More often than not, employees have certain "unstated" expectations from the employers which are unwritten in employment contracts; fulfilment of these very expectations has been found to be positively related to affect employee organizational commitment (Fontinha *et al.*, 2014) and work engagement (Bal *et al.*, 2013). Two types of psychological contracts have been widely discussed in existing studies – relational and transactional psychological contract (Rousseau, 1995). Relational psychological contract refers to employees' expectations including stability within the organization and a concern for personal well-being. Transactional psychological contract, on the other hand, has more to do with obligations of settling narrow duties with limited involvement, thereby reflecting the transitory nature of the relationship.

Traditionally, given the nature of employment relationship (i.e. fixed, short term and routine), non-permanent workers have been found to have minimal expectations (they prefer economic exchange) from the employer, which means that the contract is more transactional (Rousseau, 1995), as they possess tacit knowledge and are hired mostly for technical or specialized jobs requiring some degree of skill formation. However, our paper highlights that the contract such workers have with the employer is both transactional and relational and both play an important role in affecting work engagement. We argue and justify that investments made in the development of liquid knowledge workers in effect increases their expectations from the employer, which eventually results in the development of a relational psychological contract. In addition, we also examine the moderating role of psychological

contract on the relationship between investments in development of liquid knowledge workers *vis-à-vis* their work engagement.

### Context of the study

The study was conducted with the Indian CPD units based in Surat, Gujarat, India. The CPD industry is one of the fastest growing industries in India, contributing around 6 to 7 per cent of the country's gross domestic product (India Brand Equity Foundation, n.d.). The diamond industry is highly labour intensive, and the Indian CPD units specifically employ around 850,000 employees in India. The Indian CPD firms are concentrated mainly in Surat (also known as the "Diamond City" of India) in the state of Gujarat. While globally the Indian polished diamonds are in high demand, this industry is currently facing an acute shortage of skilled workforce. The Gems and Jewellery Skill Council of India (GJSCI, which is the nodal entity for skill development for the Indian Gems and Jewellery industry) has aimed to train, skill and up-skill 4.07 million workers by 2022 (*Indian Mirror*, n.d.). Most of the CPD units are owned by the members of the Kathiyawadi community who are known to provide better employment and working conditions to their employees. As a matter of fact, employees working with this community are treated as members of the owners' extended family, irrespective of the nature of employment (temporary vs permanent; Rao, 2009). What distinguishes this industry and community is that despite globalization, this industry has consciously avoided a blind adoption of western managerial principles and has preferred to operate on strong community-based affiliations with workers blended with unique management practices. Most of the CPD entrepreneurs follow a "paternalistic" style to manage the firm, discouraging formalization of working conditions and trade union formations (Varkkey and Kumar, 2013).

The Indian diamond industry comprises of many small and medium CPD units and a few big CPD enterprises. Employment conditions vary with the firm size and capacity. For instance, large CPDs offer workers a better salary and working conditions with elaborate welfare and incentive schemes (Rao, 2009). Small, informal CPDs, on the other hand, engage a few workers who are subcontracted by large players. However, regardless of the size of the CPD, a large number of workers are hired on semi-permanent basis due to the seasonal nature of work (Bremann, 1996). For instance, global demand for finished diamonds is highest during Christmas and delivery to the customers (jewellery manufacturers) need to be finished by September/October; the next batch of customer orders start after New Year. Hence, between delivery and new order receipt for the next season, the CPD units have limited work. As a practice, during the peak season temporary workers are hired to fulfil the demand. So, most CPDs operate at full capacity for about nine months, followed by six to eight weeks of unpaid festival break during Diwali, typically October/November (Vyas, 2007).

As most of the CPD units are small- and medium scale enterprises, they cannot retain (owing to high costs involved) skilled workforce for the whole year, so employing them on temporary basis has in fact become the norm in this industry. Though the workers are not permanently employed, many CPDs treat them as permanent employees and the same worker keeps returning season after season. Of late, owing to the global recession and a fall in demand, a large section of the workers were laid off mid-season, which caused significant hardships and social upheavals; however, a few large firms went against the trend and held on to their employees (Varkkey and Kumar, 2013). Varkkey and Kumar (2013) in their case study of four CPD units found that workers were given social security benefits, that is, employee state insurance (ESI), paid leaves, provident fund and gratuity. In some CPDs, there are workers' representatives in the management through works committee that

discuss work-related problems of the workers with the management and also suggest possible actions. In addition, medical insurance for the workers along with their family members, scholarships to meet the educational expenses of their children, annual bonus, loan facilities and complimentary lunches are provided by the CPDs. Workers can directly interact with the head of the unit to discuss their work-related or personal problems. The paternalistic style of managing human resources prevails even during bad times in CPD units; for instance, during the recession in 2008, despite poor financial conditions of several CPD units, lay-off was the least preferred option to cut and thereby justify costs. [Varkkey and Kumar \(2013\)](#) even found that some of the CPD units used this time for enhancing the skills of their low performing workers through various mentoring and training sessions rather than laying them off. During periods of low demands, the workers were instructed to go slow to master the polishing and cutting skill. Working hours were reduced to four, fringe benefits were suspended with workers' consent, but most importantly, their employment was protected. Unit heads interacted with the workers during these troubled times to reduce their anxiety and to explain the current scenario. All these actions were positive signals sent out to the workers, who in turn responded faithfully by supporting the company sail through bad times by enhancing their technical skills and surrendering fringe benefits. During the field visits, we observed that through the paternalistic style of functioning, the CPD units have managed to develop relational psychological contract with their workers; and through fulfilment of employment conditions, the transactional psychological contract was also fulfilled.

The CPD worker's job is very monotonous; they need to sit long hours to handle the rough diamond for cutting and polishing. At the same time, the work intensity and precision required is very high. CPD owners also believe that the work is artistic in nature, and the human hand in shaping the diamond cannot be substituted by technology. The price of the final polished diamond depends upon the perfection in the cut, which in turn is dependent upon the tacit knowledge and expertise of the "artist" worker ([Varkkey and Kumar, 2013](#)). Therefore, workers employed for cutting and polishing diamonds could be referred to as knowledge workers, who are strategic assets for their respective firms as their knowledge help the CPD charge a premium to the clients; hence, their contribution towards the success of the firm.

### **Theoretical background and development of hypotheses**

#### *Perceived investment in employee development and work engagement: social exchange perspective*

Perceived investments in employee development (PIED) is directly related to the employees' perception of their employers' commitment to their personal and professional growth, by which the employer facilitates their learning as well as development of new skills and competencies ([Lee and Bruvold, 2003](#)). It is only when the employee perceives this commitment from the employer that he/she feels obligated to the organization, motivating him/her to work harder to support the organizational effectiveness ([Lee and Bruvold, 2003](#)). HRM literature suggests that developmental HR practices such as training increases the ability and motivation of employees to perform well ([Kuvaas, 2008](#); [Zaleska and De Menezes, 2007](#)) by enabling them to develop unique, inimitable and non-substitutable competencies, lending a definite and sustained competitive advantage ([Barney, 1991](#); [Dessler and Varkkey, 2015](#)). Further, findings by [Xanthopoulou et al. \(2007\)](#) assert a positive association between HRD practices (training, development and learning opportunities) and work engagement.

Diamond industry works in a highly volatile business environment. Coupled with rapidly evolving technology, it has compelled the CPD units to invest more and more in employee development, albeit the fact that a large chunk of the employee workforce comprises liquid knowledge workers, which is due to the seasonal nature of this industry. Traditionally, liquid workers have been employed for low-wage and low-impact positions (Kalleberg, 2000), but in the Indian CPD industry, these very workers possess specialized knowledge and hold key positions in organizations and thus are often considered as strategic assets critical to the performance of the organization and provide a competitive advantage for the future sustainability of the organization. One could use the social exchange theory (Blau, 1964) here to view this relationship in perspective, that is, between the perceived investments in liquid knowledge workers for their individual development *vis-à-vis* their work engagement levels. The theory suggests “norm of reciprocity” as the heart of any social exchange relationship (Blau, 1964); in other words, people enter into a “give-and-take” relationship when they voluntarily act in favour of another party with the expectation that this favour would be returned. It is thereby that organizations which invest in the development of temporary workers almost compels them to feel obligated to the organization and reciprocate regardless of their tenure and nature of employment (short term vs long term). From the investor (i.e. employer in this case) perspective, these investments are primarily made to create a culture of a dynamic work environment, which subsequently results in the organization making continuous developments, economically and otherwise (Kanter, 2003). This is true and applicable to the diamond industry as well. As stated earlier, the success of CPD units largely depends upon the design (cut) and polish of the diamonds (Varkkey and Kumar, 2013). Liquid knowledge workers thereby have to be equipped with new skills at regular intervals due to evolving technology, gadgetry, etc., just to remain “top notch” and, most importantly, relevant. Thus, drawing on assumptions of the social exchange theory and existing studies, we expect a positive relationship between PIED and work engagement of liquid knowledge workers, leading to the first hypothesis:

- H1. Perceived investment in employees’ development (PIED) is positively related to work engagement of liquid knowledge workers.

#### *Psychological contract*

Psychological contract is the perception of an individual about the exchange relationship between employees and firms (Rousseau, 1995). It is an unwritten contract, which includes behavioural expectations that are not explicitly mentioned in the formal, legal employment contract and which are very important for employee–employer relationship (Millward and Hopkins, 1998; Rousseau, 1990). Generally speaking, an individual forms perceptions, beliefs, expectations and obligations about employee–employer relationship based on the promises made by organizations or someone acting on their behalf such as managers, recruiters or owners, which in turn guide his/her behaviour within the organization (DelCampo, 2007). Being the first and primary point of contact at the initial stages, HR managers play a very important role in forming those expectations, perceptions and beliefs about the employment relationship. Often, to acquire the best talent, HR managers tend to exaggerate the benefits of HRM practices, which in turn increase the employees’ expectations (Grant, 1999).

#### *Psychological contract and work engagement*

Temporary/liquid workers such as contract workers or agency contracts are typically hired for a limited period. Just like the employment relationship between permanent workers and

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their employers, the exchange relationship between temporary workers and their employer is also based on “norm of reciprocity” to create and maintain a balanced relationship (Wu *et al.*, 2006). The workers’ behaviour and attitude regardless of them being permanent or temporary maybe predicted from the norm of reciprocity between the employee and the employer (Blau, 1964). De Jong *et al.* (2009) found that temporary employees form a psychological contract based only on a few mutual promises in comparison to permanent workers. The fulfilment of workers’ promises was higher in temporary workers than in permanent workers. Existing studies have shown that fulfilment of psychological contract may be more strongly related to work-related outcomes than simple promises for the future (Lambert *et al.*, 2003).

As the temporary workers are hired with economic motives such as to meet the seasonal demands and reduce labour cost, they develop transactional psychological contract, while permanent workers hold a more relational psychological contract (Rousseau, 1995). Transactional psychological contracts are based on economic exchanges while relational contract are based on both economic and socio-emotional exchanges. Thus, psychological contract of temporary workers has less promises by the employer *vis-à-vis* that of permanent workers (De Jong *et al.*, 2009).

Our study hinges on the argument that liquid knowledge workers in Indian CPDs hold both relational and transactional psychological contracts. They prefer to encash their skills through mobility of employment, use the window of work available for earning maximization and are more interested in the fulfilment of expectations related to economic exchange. Fulfilment of basic employment conditions such as good salary, clear work instructions and simple employment conditions may be the icing on the cake and thereby would delight them.

Another reason to enter into a transactional psychological contract in a developing nation like India with a larger population is to maximize the economic benefits for one’s contributions; the rest comes later. When the demand for liquid knowledge workers’ skills are high, they encash those skills by working for more than one unit during peak seasons, thereby holding a transactional relationship with their employers as opposed to permanent workers who are tied to only one employer. Due to absence of laws that secure temporary workers, they have fewer expectations when compared to permanent employees, and employers can easily fulfil their wishes or the promises made to them. They in turn feel obligated to reciprocate through enhanced level of work engagement. Thus, drawing on the assumptions of the social exchange theory again, our study does reveal a positive relationship between transactional psychological contract and work engagement of liquid knowledge workers, which leads to the next hypothesis:

*H2.* Transactional psychological contract is positively related to the work engagement of the employees.

Having looked into the relationship of one facet of psychological contract (i.e. transactional psychological contract with work engagement), it is important to look at the other (i.e. relational psychological contract). The argument in support for relational psychological contract for liquid knowledge workers is that due to their knowledge and unique skill set, they are considered as strategic assets for an organization and thus receive better treatment from the employer, which may at times be even at par with received by the permanent employees, unlike liquid knowledge workers, who may be treated differently. Additionally, in Indian organizations, especially in CPD units where employees (both permanent and temporary) are considered as members of an extended family, which increases the expectations liquid knowledge workers have from the employer, and they develop relational

psychological contract with employers. As stated earlier, the diamond industry in India is dominated by family-owned businesses and paternalistic management style is followed. Whether permanent or temporary, all employees are treated well (Varkkey and Kumar, 2013). Despite the effects of globalization, Indians still try to preserve traditions and sense of community (Shah, 2009). Business in India – especially the family-owned enterprises – thus has the features of both transactional and relational psychological contracts. Based on the assumptions of the social exchange theory, our study reveals that liquid knowledge workers have a relational contract to be engaged in the workplace, leading to the next hypothesis:

- H3.* Relational psychological contract is positively related to work engagement of the employees.

#### Moderating role of psychological contract

This paper argues for a hypothesized relationship between perceived investment in employees' development and work engagement (*H1*), which in turn would be moderated by the fulfilment of relational and transactional psychological contract. In general, employees evaluate their contribution *vis-à-vis* the benefits received to assess whether their expectations have been fulfilled. Employment conditions (compensations, training, etc.) do play a critical role in the formation of psychological contract through communication of various benefits and promises to employees (Chambel and Castanheira, 2012). Employees compare what they were promised and have received (which is a subjective evaluation), and any mismatch between the two can lead to perceive a breach of psychological contract, which in turn may have many detrimental consequences for organizational outcomes (Morrison and Robinson, 1997). The concept of psychological contract is grounded in social exchange theory, which argues that different parties enter into a relationship when they both perceive it to be beneficial (Blau, 1964). Reciprocity is the basic tenet of exchanges between two parties (Gouldner, 1960), where both parties contribute to fulfil the expectations of the other (Tsui *et al.*, 1997) and which results in an exchange-based good relationship.

Liquid knowledge workers feel confident about the organization they are working for as they not only fulfil the employment conditions but going beyond to help them to develop and hone their skills through sustained investments. The other big plus, which adds to their "faithfulness" towards the organization, is the opportunity to learn new skills, as well as update their existing skills, which gives them the added leverage. They not only add value and contribute towards the success of the current organization but also give them the chance of greater employability with other organizations in the same industry (Rousseau, 1995). This study therefore accedes to the fact that an investment made for the liquid knowledge workers' development would bring about greater improvements in their work engagement, especially if the transactional psychological contract is fulfilled, which leads to the next hypothesis:

- H4.* Transactional psychological contract moderates the positive relationship between perceived investment in employees' development (PIED) and work engagement of the liquid knowledge workers.

Relational contract, in contrast to transactional contract, includes both economic and socio-emotional elements, where the relationship is long-term, open-ended and primarily aimed at developing the employee (Rousseau and Parks, 1993). Liquid knowledge workers having relational contract would perceive developmental investments as a means towards the fulfilment of their broader expectation, often beyond "documented" employment conditions (Rousseau, 1989) and hence would be motivated to work harder. This would consequentially

would reflect in their enhanced work engagement levels. However, on the contrary, non-fulfilment of such expectations would most certainly result in withdrawal by the liquid knowledge workers (Cropanzano and Mitchell, 2005). By and large, training has been found to be one of the best valuable inducement offered by an organization, as it is an opportunity for the liquid knowledge workers to develop new skills and improve upon the existing ones (José Chambel and Sobral, 2011). However, one needs to also understand the organizational perspective: while it is acknowledged that liquid knowledge workers having relational psychological contract have expectations beyond the fulfilment of employment conditions and fulfilling those expectations can often be challenging for the organization. Therefore, investment in liquid knowledge workers' development reflects the concern and care of the organization towards their career and growth (Chambel and Castanheira, 2012), and they consider this as fulfilment of their expectations (Flood *et al.*, 2001) and, hence, positive impact of perceived investment in employees' development on their work engagement becomes stronger. In other words, fulfilment of relational contract moderates this relationship. Therefore, it is hypothesized that:

- H5. Relational psychological contract moderates the positive relationship between perceived investment in employees' development (PIED) and work engagement of the liquid knowledge workers.

## Method

### *Participants and procedures*

This study was conducted in the city of Surat, India. Surat is also known as the diamond capital of India. The authors of this study approached 223 CPD workers from Surat, out of which 196 workers agreed to be a part of the study. A questionnaire comprising established scales and anchored on seven points was administered out.

Out of the total 196 workers who agreed to take part in the study, 148 workers returned the questionnaire. Out of these, ten were incomplete and four responses were invalid as more than one response to a question were marked. Thus, 134 responses, all of which were from male workers, were used for the study. Out of them, 22 (16.4 per cent) workers had passed 10th standard, 100 (74.6 per cent), 12th standard and 12 (9 per cent) were graduates. The average age of the respondents was 31.9 years with standard deviation of 7.7 years, whereas the average experience was 9.1 years with standard deviation of 8.8 years. Ethical guidelines were followed throughout the conduct of study. The respondents were informed about the purpose of the study and their participation was voluntary. Further, complete anonymity was assured and ensured by not disclosing the individual responses and results to the organizations and/or the supervisors.

### *Measures*

Work engagement was measured through nine items of the Utrecht Work Engagement Scale (UWES-9) developed by Schaufeli *et al.* (2006). Sample item included, among others, "I get carried away when I am working". Transactional and relational contracts were measured through nine items used by Raja *et al.* (2004). Sample items included "My commitment to this organization is defined by my contract" and "I feel part of a team in this organization" for transactional and relational contract respectively. Perceived investment in temporary employee development (PITED) was measured by seven items adapted for temporary workers by Kuvaas *et al.* (2013). The sample item included "The client organization stands out as an organization that is very focused on continuous development of my skills and abilities even though I am a temporary employee".

Controls: age in years, experience in years and education level were used as controls as in previous studies (Bakker *et al.*, 2012).

**Data analyses**

Initially, convergent and discriminant validities were established. Table I shows the relevant statistics and details of the conditions and cut-off values. We used hierarchical regression analysis with bootstrapping with 1,000 samples to test our hypotheses. The process macro developed by Hayes (2013) has been used in the analysis of moderation.

**Results**

Table I shows the mean and standard deviation of the variables and the bivariate correlation values.

The correlations between the four variables, that is, engagement, PITED and transaction and relational contracts, are significant and in expected direction (i.e. positive), whereas age and experience are positively correlated and unrelated to any other variable.

Table II shows the result of regression analyses for our hypotheses. Model 1 shows that the standardized effect of PITED on work engagement ( $\beta = 0.77^{***}$ ) is significant and positive, thus supporting H1. Model 2 shows the standardized effect of relational psychological contract on work engagement ( $\beta = 0.72^{***}$ ) is significant and positive, thus supporting H2. Model 3 shows the standardized effect of transactional psychological contract on work engagement ( $\beta = 0.71^{***}$ ), which is significant and positive, thus supporting H3. Model 4 shows that the standardized effect of the interaction term of standardized variables relational contract and PITED is significant and positive ( $\beta = 0.55^{***}$ ), thus supporting H4. To better understand the result, we applied conventional processes of plotting simple slopes at one standard deviation above and below the mean. Table II shows the conditional effect of PITED on work engagement at values of the relational contract and Figure 1 presents the results graphically. At high levels of relational contract, the relationship between PITED and work engagement is stronger.

Model 5 shows that the standardized effect of the interaction term of standardized variables transactional contract and PITED is not significant ( $\beta = 0.11$ ); thus, H5 is not supported.

**Table I.**  
Mean, standard deviations, correlation, Cronbach's alpha, construct reliability and average variance extracted

	Mean	SD	AVE	MSV	1	2	3	4	5
1. PITED	4.05	1.72	0.863	0.523	(0.829)				
2. Relational	2.72	1.18	0.829	0.624	0.678***	(0.864)			
3. Transactional	4.45	1.47	0.715	0.518	0.605***	0.594***	(0.845)		
4. Engagement	3.5	1.64	0.815	0.624	0.723***	0.79***	0.72***	(0.803)	
5. Age	31.87	7.7			0.022	0.01	-0.078	-0.069	
6. Experience	9.09	8.76			0.041	0.04	0.026	0.01	0.892***

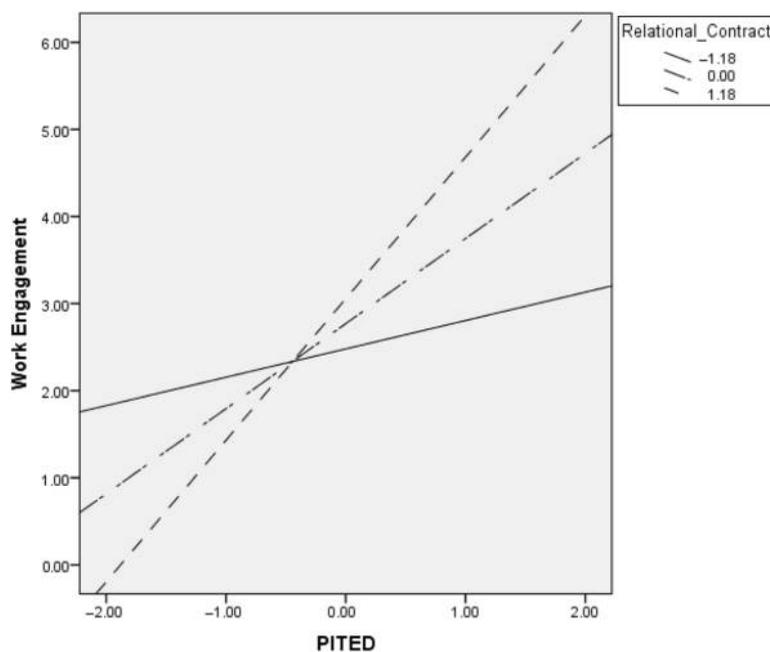
**Notes:**  $N = 134$ . \* $p < 0.05$ ; \*\* $p < 0.01$ ; \*\*\* $p < 0.001$ ; Standard deviation (SD) and construct reliability (CR) are above the desirable cut-off of 0.7 (Hair *et al.*, 2010). *Convergent validity:* Cronbach's alphas in parentheses for multi-item variables are above the desirable cut-off of 0.7 (Nunnally *et al.*, 1967) and average variance extracted (AVE) is above the desirable cut-off of 0.5 (Fornell and Larcker, 1981). *Discriminant validity:* Maximum shared variance (MSV) < AVE and square root of AVE greater than inter-construct correlations (Hair *et al.*, 2010)

Role of perceived investment

	Dependent variable: work engagement				
	Model 1	Model 2	Model 3	Model 4	Model 5
Adjusted R square	0.60	0.49	0.46	0.77	0.71
F	25.50***	16.60***	15.07***	84.34***	139.42***
Control variable					
Age	-0.29#	-0.23	0.031	-0.02	-0.03
Qualification	-0.05	0.08	0.08	0.26	0.12
Experience	0.22	0.19	-0.04	0.01	0.02
Independent variables					
PITED	0.77***			0.88***	0.63***
Relational		0.72***		0.24	
PITED × Relational contract				0.55***	
Transactional			0.71***		0.28
PITED × Transactional contract					0.11
Conditional effects					
Relational contract	Effect	SE	t	LLCI	ULCI
-1.18	0.32***	0.1	3.11	0.12	0.53
0	0.88***	0.22	4.54	0.55	1.14
1.18	1.18***	0.41	3.97	0.81	2.44

**Table II.** Results of hierarchical regressions and conditional effect of PITED on work engagement at values of the relational psychological contract

Notes: \* $p < 0.05$ ; \*\* $p < 0.01$ ; \*\*\* $p < 0.001$



**Figure 1.** Moderation effects

## Discussion

The importance of the context in management studies needs be emphasized especially with Asian countries, which have high level of inter as well as inter country heterogeneity. Porting Western management principles without adjusting for these contextual differences can lead to flawed execution. Past studies have shown the uniqueness of the Indian context (Pandey and Singh, 2015a, 2016; Jha and Pandey, 2015) and working conditions (Pandey *et al.*, 2018) along with the applicability of the Indian knowledge to western settings (Pandey *et al.*, 2016; Pandey and Singh, 2015c) and recommended approaches (Pandey, 2018). The CPD industry operates under volatile business environments and the rate of new skill formation is low. Consequently, this labour-intensive sector faces scarcity of technically skilled workers. Many Indian CPDs, who believe that human intervention is still important, have started developing talent by investing in the development of employees.

Given their strategic contribution to the success of the CPD industry at a macro level, along with the monotony of the work at the micro level (which requires high concentration, long hours on machine for design, cutting and polishing), it is necessary to examine the factors that actually influence their work engagement levels. The results present interesting insights into the work engagement for liquid knowledge workers in the diamond industry. It puts in perspective the perceived investments in liquid knowledge worker's development, invoking two dimensions of psychological contracts (i.e. transactional and relational) as the prime antecedents to their work engagement levels. Investment in their development is seen by these workers as an HRM initiative on the part of CPDs, and hence they reciprocate by demonstrating enhanced engagement levels. From the perspective of the organization, these workers represent mobile human assets that work in a seasonal but high skilled and trust-based industry.

The business model of Indian CPDs is dependent on the availability of enough high-skilled employees to ensure timely delivery and employee-specific skill, as the quality of the "cut" actually determines the value of a finished diamond (Varkkey and Kumar, 2013). Investment in training the liquid knowledge workers not only helps the organization in enriching its human capital but also affects the latter's work engagement level; moreover, the training gives them the chance to learn new and effective way of doing their work making their job meaningful. After training, they try to apply the new learning at work and it makes their job interesting. The advent of technology in the diamond industry has also made training relevant, as earlier cutting and polishing was done manually. CPDs now have to invest in upgrading the technical skills of its employees besides the liquid knowledge workers to reap the full benefits. Furthermore, training helps the liquid knowledge workers gain new skills, which would help them in negotiating better employment conditions in the future (possibly even with the same employer), thus increasing their earning.

Typically, new knowledge acquisition is expected to be the responsibility of employee and/or the liquid knowledge worker many of them who fail to access training opportunities or cannot afford the costs get left out of future employment opportunities or cannot lay stakes for higher pay. Witnessing active investments made by the organizations for their development, they realize that the CPDs are fulfilling their unstated expectations, and thereby influencing their employer-employee psychological contract.

The psychological contract is both transactional and relational in nature and aids in enhancing work engagement too. The transactional psychological contract enables the workers to have a structured relationship with the organization, which is essential for the vulnerable categories of liquid employees who in most cases are not financially strong. Past studies have shown how respondents who are not from the upper strata in terms of monetary and social resources value miniscule resources (Pandey and Roberts, 2012;

Pandey and Singh, 2015b; Ghanshala *et al.*, 2013). The importance of psychological resources has especially been established in the Indian context (Jha and Pandey, 2016; Pandey, 2016; Sinha *et al.*, 2017). Unlike other liquid knowledge workers such as consultants, who charge a premium for their services and often work on retainer basis, these workers rely on the demand and supply of labour in the industry. This adds to the uncertainty, which is greatly reduced by a structured transactional psychological contract. Relational contract also plays a role as a social cohesive force in the industry. A relational contract aids the employees, especially the liquid workforce, in forging close bonds with the organization and thus be more engaged with the work. The nature of the industry, especially in India, operates on the principles of trust among buyers and sellers and forges close ties among the workers and their employers too, which is reflected through relational contracts. The results of the moderation hypotheses show the importance of the relational contract as compared to the transactional contract by showing that in addition to the direct impact on work engagement, it also accentuates the positive impact of perceived investment in employee development on work engagement. The development of relational psychological contract thus gains more significance in these close-knit work settings.

#### *Theoretical contribution*

From the lens of the JD-R model, that is, the job demands–resources model (Bakker and Demerouti, 2007), one could certainly say that the developmental effort provides resources to employees perform their work effectively and be more engaged in their work (Schaufeli and Bakker, 2004). On one hand, transactional contract reduces the uncertainty over the job demands and, on the other, psychological contract helps enhance the psychological resources of the individual, thus affecting their work engagement. The dual nature of psychological contract thus provides interesting insights for the JD-R model. Similarly, the conservation of resources theory (Hobfoll, 1989) also aids in understanding the findings from the resource flow perspective. Transactional psychological contract prevents loss of resources, whereas PIED along with relational psychological contract enhances gain of resources.

Based on these findings, the authors propose a “star matrix” (Figure 2) about the efficacy of psychological contract and PIED on work engagement. The number of stars represents the efficacy of the strategy. The three stars strategy used in both transactional and relational contract with high PIED works best. In this strategy, transactional psychological contract prevents loss of resources, whereas the other two aid in gaining resources. This is followed by either both transactional and relational contracts with low PIED or high PIED with relational contract. The use of only one – relational or transactional or PIED – would lead to lowest benefit as either there will be enhancement of resources with simultaneous loss or no loss of resources with no augmentation.

Psychological Contract Combinations	Stars	
	Low PIED	High PIED
Transactional + Relational	★★	★★★★
Relational	★	★★
Transactional	★	★
	Low PIED	High PIED

**Figure 2.**  
Star matrix of  
engagement

*Implications for practice*

Knowledge requirements dictate many organizational decisions of make or buy nature (Vyankatrao and Jenamani, 2008) especially in software industry (Mishra and Mahanty, 2015) these decisions in turn have an impact on contractual typology (Fink *et al.*, 2018) and thus hiring of permanent or temporary workforce and organizational learning (Yakhlef, 2009). The study stressed how investment in development of the employees influences their work-engagement level which is also important in the HR offshoring context (Kuntz and Roberts, 2014).

The findings of the study have great implication for the CPD industry as success of this industry highly depends upon the cutting and polishing skills of liquid knowledge workers who are employed in large number. Engaging liquid knowledge workers is prerequisite for reaping the long-term benefits. Developmental efforts are necessary for having an engaged workforce, but the results of this study stress that these developmental efforts must also be perceived by the workforce as being effective to actually enhance their work engagement levels. In addition, this industry works on trust between employee and employer. Our findings suggest, investment in development of liquid knowledge workers indicates their contribution in the firm is valued by the way of providing opportunities to upgrade their skills, which in turn, strengthen the trust between employee and employer. Absence of union despite being labour-intensive industry shows how trustful employee–employer relation is appreciated in the industry. This study highlights how psychological contract can be fulfilled by the way of investing in development of its liquid knowledge workers. Other labour-intensive industry in the country like manufacturing, and banking have been struggling to maintain peace between employee and employer. These industries have witnessed bitter taste of industrial relations in past and now, whereas CPD units are managing employee relations effectively. One of the reasons for successful management of employee relations in CPD industry is meeting each other's expectations. Investment in development of liquid knowledge worker is one of the ways to improve trust between employee and employer, which in turn gives assurance to the workers that their other expectations too will be fulfilled; hence, they feel highly engaged at work. Therefore, other labour-intensive industry using liquid knowledge workers can also learn the way CPD units manage its workforce.

In the specific context of the Indian CPD industry, these developmental efforts focus on initial training protocols dealing with in-house training, which in turn is based on the level of trust with the employer. In many companies, the workforce is allowed to work on actual diamonds to enhance their skills. The organization here willingly loses the higher return that could be fetched by giving that work to a master artisan, whereas the same work done by the master artisan would fetch higher returns. The initial investment in terms of forgone monetary value is of importance in these settings for liquid knowledge workers. This investment in training is compounded by the atmosphere in these firms where peer learning is encouraged; moreover, the layout of the workplace is such that they can see each other's work and seek inspiration and feedback. This goes to develop the relational contract of the workforce wherein they develop bonds with the company who, in turn, manifests this through cohesion, helping behaviour and work engagement. They also work with master craftsmen who impart to them the finer nuances of the trade. They also enjoy guidance from their supervisors, sometimes even owners, who themselves have been workers in past and have therefore a keen interest in their development. This is augmented by the certifications that have recently been awarded in the industry to eligible workers, which build up their employability, provide a sense of accomplishment and enhance the social standing of the younger generation. Government programmes like the Pradhan Mantri Kaushal Vikas

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Yojana, dealing with skill development provide impetus to such efforts. The significance of such factors have been shown to reduce turnover in Indian context (Sengupta and Dev, 2013).

As noted earlier, it is of prime importance to reiterate that psychological contracts are as important as the written ones, and development of both transactional and relational contract is essential for an engaged workforce. This relational approach is also essential as the sector deals with high-value goods and thereby relies a lot on trust. Any deviant workplace behaviour or intentional mistakes in the job could in effect lead to high losses for the organization. CPD units have managed “implicit contracts” with their employees effectively, which goes on to shape managerial and workers’ course of action (Ehrenberg and Smith, 2016). Rousseau (1989) had noted that implicit contract was obligations between the parties, shaped by the social structure in which the relationship prevailed. Implied contract involves mutual trust, reciprocity and predictability based on shared norms of behaviour and future expectations (Weick, 1981). The workforce in the CPD industry is considered as extended family members of the entrepreneurs (Varkkey and Kumar, 2013); they are invited for various festival celebrations, for example, where the CPD unit head participates in celebration with workers. Engelshoven (1999) observed that a reason for the absence of mass protests and strikes were largely due to this family image that reinforces the sense of belonging. Employment relationships between employee and employer are based on mutual trust (Rao and Bhatnagar, 2009). Consequently, the employees believe that their owner would support them in their bad times and fulfil the implicit psychological contract.

Liquid knowledge workers have been seen as glamorized educated professionals like consultants or people who use their skill base in socially escalated sectors like IT. An important contribution of this study is to look at liquid knowledge workers from a fresh point of view: employees engaged in professions that require skills not reflected in their educational qualifications. The findings (although specific to the Indian CPD industry) therefore may be generalized with proper discretion to other settings, which rely on application of specialized skills (yet not reflected by academic accomplishments) to execute specialized tasks. This can aid organizations to perform in a competitive market like construction, food processing, tourism and hospitality, to name a few. The CPD industry’s success story has profound implications for a popular and young country like India where government wishes to encourage manufacturing in the country through programmes like “Make in India”.

#### *Limitations, future directions and conclusion*

Our study has drawn the sample from a very specific industry and from a particular region of India. Any generalization to other liquid knowledge workers in other settings and other regions must be taken up with caution. The study relies on a single source of data, which is cross-sectional in nature. Future studies could therefore look at longitudinal studies with multisource data. We studied liquid knowledge workers from a section of the workforce that is not financially and academically strong. However, they do possess the skills to carry out specialized tasks. The demographic dividend of the Indian subcontinent does not rest solely on highly educated and liquid workforce but also on less educated but skilled workforce, which could very well be the building blocks for the “Make in India” campaign.

Our study has found the importance of PIED and psychological contract in enhancing work engagement through different mechanisms. These findings would add to the repertoire of knowledge that is already available about the dynamics of engaging a liquid workforce.

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### About the authors

Jatinder Kumar Jha (Fellow of Indian Institute of Management Ahmedabad) is a faculty member at XLRI-Xavier School of Management, Jamshedpur. He teaches courses related to human resource management in the postgraduate, and executive education programmes at XLRI- Xavier School of Management Jamshedpur and has been actively involved in consulting and managerial development

programmes. He has published research papers widely in reputed peer-reviewed international and national journals like *International Journal of Knowledge Management*, *South Asian Journal of Human Resources Management*, *South Asian Journal of Management* and others. He has presented papers in international and national conferences including the British Academy of Management (UK). His research and teaching interests include compensation management, performance management, strategic human resources management, knowledge management, leadership, ethics and HR analytics.

Jatin Pandey (Fellow of Indian Institute of Management Ahmedabad) is a faculty member in organizational behaviour and human resources area at Indian Institute of Management Kozhikode. He was awarded the Junior Research Fellowship by Government of India and has been awarded the Best Thesis for his doctoral work by Indian Institute of Management Ahmedabad. His research interests focus on religion and management, Indian management thought, Management for rural and difficult geographies, job performance and emotions at workplace. He is a life member of All India Management Association and Academy of Human Resource Development. His articles have appeared in such journals as *Business & Society*, *Psychology of Religion and Spirituality*, *Health Policy and Planning*, *International Journal of Knowledge Management*, *Indian Journal of Industrial Relations*, *South Asian Journal of Management* and *Current Psychology* to name a few. He is also guest editor of special issues in *International Journal of Knowledge Management* and *Australasian Journal of Information Systems*. Jatin Pandey is the corresponding author and can be contacted at: [pandey.jatin@gmail.com](mailto:pandey.jatin@gmail.com)

Biju Varkkey (Fellow of National Institute of Bank Management Pune) is a faculty in human resources management area at Indian Institute of Management Ahmedabad. He has professional experience spanning industry, consulting and leading Indian management schools. He has consulted extensively, as well as conducted executive education programs for government, public, private and non-government organizations. Currently, he is an Independent Director on the boards of four public limited companies and two charitable trusts. Previously, he served as nominated member in the Core Committee of National HRD Network – Delhi Chapter (1998-1999), member of the founding governing body of Strategic Management Forum of India, committees/task forces of government and Industry/Professional Associations, and on advisory boards of campus startups. He along with others including Jatin Pandey and Jatinder Jha have worked on studies for comparing salaries/emoluments in the government sector vis-à-vis central public sector undertakings/private sector in India. The study was commissioned by the Seventh Central Pay Commission, Government of India.

He has authored around 40 teaching cases, including award winning ones, best seller HRM text book, research monographs and published in national and international journals. He is also the lead national researcher and project coordinator for Paycheck India ([www.paycheck.in](http://www.paycheck.in)), and has also executed projects for ILO, IOM and UNDP. His areas of interests are strategic human resource management, performance management, reward management, management of professional service firms, employment relations, HRM in government and public sector, change management and transformation, Workplace democracy, collectives and democratic institutions and corporate governance.

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