Mediation framework connecting knowledge contract, psychological contract, employee retention, and employee satisfaction: An empirical study

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Abstract
The present research is inclined to study the relationship between two important forms of “Contract” in employment relations, psychological contract and knowledge contract, and job outcomes, i.e. employee retention and employee satisfaction. For this purpose, the data were collected from 268 employees working in the IT sector from North India. The results suggest the mediating impact of the psychological contract in the relationship between knowledge contract and job outcomes. Besides, this study develops a theoretical model that establishes the relationship between knowledge sharing and knowledge integration that plays a major role in employee satisfaction as well as retention of employees in the organization.

Keywords
Psychological contract, knowledge contract, knowledge integration employee retention, employee satisfaction

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Introduction
In today’s dynamic global economy, knowledge “is considered a key strategic and competitive resource by organizations. Now, knowledge is viewed as a key strategic and competitive resource by organizations, and effective management of individual knowledge within the work place has become critical to business success. The knowledge-based view of the organization is one of the most commonly utilized strategic lenses for assessing organizational actions and consequences. Scholars propagating knowledge-based logic indicated that the most important objective facing organizations today is the transfer and exploitation of knowledge in a manner that is more effective and efficient compared to external market structures. As external markets become more open and efficient, organizations experience difficulty to design gradually more efficient knowledge transfer/share strategies,¹ and managers and employees in the organizations serve a critical point in the knowledge management chain. Specifically, the organization’s capacity to transfer knowledge within its boundaries efficiently and effectively hinges on its global network of employees.² Therefore, it became imperative that organizations pay close attention to the mechanisms that govern employees in the knowledge management process inside the organizations. Hence effective management of individual knowledge within the workplace has become critical to business success.³ Contracts are a mainstay in employment relations, establishing inducements and contributions basic to membership in an organization.⁴ Contracts whether written or oral, are promises made in exchange for some compensation and are enforced, or at least recognized, in law.⁵–⁷ Mainly Two forms of

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written and unwritten contracts derive from relations between organizations and their members. Psychological contracts (hereafter PCs) are beliefs that individuals hold regarding terms and conditions of the reciprocal exchange agreement between themselves and their employer. In other words, psychological contracts are individual beliefs in a reciprocal obligation between the individual and the organization. Although it is implicit, unwritten, and informal, the psychological contract may include important expectations that, if left unmet, can adversely affect the employment relationship and its outcomes. For example, argue that perceived violations of international managers’ psychological contract can contribute to high turnover rates. For the expatriate manager, the focus of the psychological contract is on rewards such as continued development, attractive future assignments, and promotion. For the organization, the psychological contract revolves around the significant financial investment that it has made in the individual. Knowledge contract is the governance mechanisms, or rules of the game, by which organizations monitor and reward managers for how they acquire, synthesize, and share local knowledge with the subsidiary, other subsidiaries, or the firm’s headquarters. Organizations looking to capitalize on the knowledge resources of their employees must understand that both the psychological contract and knowledge contract of the employees should be given equal importance. There is a paucity of research on the direct influence between psychological contract and knowledge contract, employee retention, and employee satisfaction, despite the increasing interest of the researchers in the literature of contract. Hence, studies showing such “relationships in the IT sector could be effective contributions to the existing research which the current study is attempting. Hence the research objective of the study is to understand the impact of knowledge contract and psychological contract facilitating knowledge integration within the organizations and the outcomes. The research question that the study attempted to address is “What is the impact of knowledge contract and psychological contract enabling knowledge integration within the organizations and what are the outcomes of this relationship?”

Psychological contract

The nature and implications of employees’ psychological contracts have become a major research focus in the last two decades. Current employment trends, characterized by an increase in short-term employment contracts and a loss of job security, have resulted in a redefinition of career expectations and of the nature of the employment relationship states that the traditional expectation of ‘cradle-to-grave’ employment characterized by life-long employment in exchange for loyalty and commitment is no longer valid. Moreover, Hendry and Jenkins argue that the new era of uncertainty created by organizational restructuring has resulted in middle managers and professionals becoming the ‘new insecure’ (see also in Atkinson and Beaumont and Harris). These changes in the employment relationship have added impetus to the study of the psychological contract. The conceptualization of the Psychological Contract has evolved from its historical roots in Barnard’s theory of equilibrium and theory of reciprocity given by Gouldner and in social exchange theory. According to social exchange theory, Social relationships always consist of unspecified obligations and the distribution of unequal power resources. Concerning organizational analysis, social exchange contracts are evident in the work of Levinson et al. and Schein. To describe the embeddedness of power of perception and the values held by both parties (organization and individual) to the employment relationship used the term ‘psychological work contract’. Some literature also suggests that Employment relations are developed by social exchange and economic exchange which has been further developed by Levinson et al. The psychological contract is a series of mutual expectations of which the parties to the relationship may not themselves be dimly aware but which nonetheless govern their relationship to each other. According to Schein, the psychological contract is ‘a set of unwritten reciprocal expectations between an individual employee and the organization’. Schein’s contribution highlighted the fact that concept like labor unrest, worker dissatisfaction, and worker alienation have their root in violations of the psychological contract which has embedded concepts like conditions of employment, working hours, pay, etc. Application of Psychological contract to the organizations and business emerged during the 1990s with an economic restructuring, intensive international competition, and changing labor market dynamics. Rousseau first coined the concepts like ‘transactional psychology contracts’ (where employees do not expect a long-lasting ‘relational’ process with their organization based on loyalty and job security, but rather perceive their employment as a transaction in which long hours are provided in exchange for high contingent pay and training). During the last several years, there has been a renewed interest in the psychological contract between employee and organization. Though there are numerous kinds of literature available about the psychological contract, there is no one or universally accepted definition. Different authors have tended to different perspectives on what a psychological contract is. Some authors explained it in terms of the implicit obligation of one or more parties; some focused on people’s expectation from employment; while some authors focused on reciprocal mutuality as a core determinant of psychological; some also explained it as subconscious and hidden aspect of employment exchange. Parhankangas and Landstorm viewed that psychological contracts are based on perceived promises defined as any communication of the future intent such as a written document, oral discussion, or organizational practices and policies. Two general types
of psychological contracts tend to be evident in organizations: transactional contracts and relational contracts. Transactional contracts focus primarily on economic issues within a specific time frame. Generally, such contracts are one-time affairs with fairly narrow terms of exchange. Furthermore, the substance of the transaction—for example, money or labor hours—is easily quantifiable.” By contrast, Relational contracts encompass not only economic exchanges but also socio-emotional aspects are there as well. They are more open-ended than transactional contracts, and no specific time frames are imposed. The substance of a relational exchange is generally less measurable, more varied, and more subjectively defined than a transactional exchange.

**Knowledge contract**

Prahalad and Hamel\(^{15}\) suggest that core competence is based on collective learning in the “organization and that firm strategy should be learning-driven”. Competitive success will be based less on how strategically physical and financial resources are allocated and more on how strategically intellectual capital is managed—from capturing, coding, and disseminating information to acquiring new competencies. We may conclude, then, those core competencies are developed from organizational learning. Furthermore, for core competencies to be effective, they must be perpetually evolving via continuous organizational learning.

Knowledge is a broad and abstract notion that has defined epistemological debate in western philosophy since the classical Greek era. In the past, Daniel Bell\(^{36}\) predicted that knowledge and information would become the means not only in the service industry but also in manufacturing for adding value and become the strategic resource and transforming agent for post-industrial society. Today knowledge rather than labor is the new source of added value and growth and a new wealth of nations. Occupations with high knowledge content in their activity became central to economic activity and perhaps a critical source of competitive advantage to the organizations as these employees are the ones to create value in the organizations.\(^{37}\)

**Knowledge contract and psychological contract relationship**

In every organization, managers play a crucial role in the knowledge integration process and are important to efforts undertaken to effectively leverage knowledge resources.\(^{38}\) This process involves both acquiring knowledge and diffusing that knowledge throughout the organization. According to Gupta and Govindarajan,\(^{39}\) “the primary reason why MNCs exist is governing with the knowledge contract because of their ability to transfer and exploit knowledge more effectively and efficiently in the intra-corporate context than through external market mechanisms.” Although knowledge integration may be a major goal in any assignment, there are some reasons why this integration may not be possible and also be successful. Further, it is impossible for the organization to be aware of all the knowledge employees/managers gain during their assignments or to monitor the extent to which they share that information. Knowledge contract can be described as the explicit arrangement between managers and the MNC about integrating locally acquired and developed knowledge.\(^{40}\) Organizations may use the knowledge contract to resolve agency problems that exist between the two parties. Knowledge contract is the governance mechanisms, or rules of the game, by which organizations monitor and reward managers for how they acquire, synthesize, and share local knowledge with the subsidiary, other subsidiaries, or the firm’s headquarters. Knowledge contracts have both explicit (written) and implicit (psychological) forms, focus is here on the written component which can lead to the development of psychological contract as expectations of employees met in terms of knowledge transfer and knowledge integration. stated and implied expectations of the psychological contract. The organizations can employ various governance mechanisms within the knowledge contract to either encourage or enforce knowledge integration.\(^{41}\) Mechanisms for knowledge integration may include incentives such as promotion guarantees, financial rewards, or add-on responsibilities.\(^{42}\) When employee expectations have been met, they are more likely to feel an obligation to contribute to the organization.\(^{37}\) Therefore, we can propose that “knowledge contract that ensures higher” knowledge integration can lead to a higher psychological contract of employees. Thus:

**Hypothesis 1:** Knowledge Contract facilitating better knowledge integration has a positive relationship with the psychological contract level of employees in the organization.

**The mediating role of psychological contract**

A psychological contract emerges when one party believes that a promise of future return has been made and thus an obligation has been created to provide future benefits. These promised future returns lead to the creation of expectations among employees. These expectations may include pay and benefits, training and skill developments, new assignments, etc. When these expectations are fulfilled, they result in increased commitment and intent to remain with the organization.\(^{43}\) This also will affect commitment to the organization and long-term association with the organization. They will, for that always prefer to remain with that organization. Being valued by the organization can also help the organizations to attract the right, competitive, and cultural fit employees.\(^{44}\) Research suggests that when an employee perceives a high degree of internal ambassadorship, it positively
relates with their affective commitment\textsuperscript{45,46} engagement\textsuperscript{47,48} retention\textsuperscript{49} as well as satisfaction.\textsuperscript{50,51} Hence, we can propose that once expectations are met then that will affect obligations to contribute, stay longer in the organization which ultimately will affect employee satisfaction level in the organization.

\textbf{Hypothesis 2:} Higher the psychological contract higher employee retention in the organization.

\textbf{Hypothesis 3:} Higher the psychological contract higher the employee satisfaction level in the organization.

\textit{Knowledge contract leading to employee retention and employee satisfaction}

High employee turnover increases cost in resources, recruiting, and time when replacing open positions. Expense to the organization for recruiting a new employee costs half to 200\% of the former employee’s salary. The increased cost related to recruitment includes advertising and overlapping of salary; making it difficult to maintain positive employee culture and morale. High employee turnover also leads to missed opportunities for meeting production matrices and budgets set within the departments, adding additional cost to the organization. In Zineldin,\textsuperscript{52} author has viewed retention as “an obligation to continue to do business or exchange with a particular company on an ongoing basis.” Cutler\textsuperscript{53} was of the view that one of the most important demands on management today in any organization is keeping the most vital and dynamic human resources motivated and dedicated. It is not important to see who the organization hires but what counts is that who are kept in the firm. Griffeth and Hom,\textsuperscript{54} added to this view that “the fact is often overlooked, but the reasons people stay are not always the same as the reasons people leave.” Researchers such as Taplin\textsuperscript{55} and Gberevbi\textsuperscript{56} have found that if appropriate employee retention strategies are adopted and implemented by organizations employees will surely remain and work for the successful achievement of organizational goals. Fitz-Enz\textsuperscript{57} recognized that employee retention is not influenced by a single factor, but there are hosts of factors which are responsible for retaining employees in an organization. In any organization, Knowledge contract somewhere leads to the capability development of the organization and also by that the organization gains a competitive advantage over others.\textsuperscript{58} Therefore we can propose that a knowledge contract in any organization can lead to employee retention and by that, the organization has a competitive advantage over others also, in turn, this can be one of such factors for which employee does not want to leave the organization.\textsuperscript{59} Through the knowledge contract, the organization may incorporate monitoring and control mechanisms, such as documentation and reporting requirements, or compartmentalizing routines such that complete knowledge does not rest in a single employee.\textsuperscript{40} It may also include structures designed to promote knowledge sharing, such as mentoring or establishing better co-worker relationships.\textsuperscript{40}

According to Osteraker,\textsuperscript{60} the employee satisfaction and retention are the key factors for the success of an organization. Satisfying the human sources is one of the toughest tasks which majority of the organizations faces today. Understanding and knowing what is going on in the human mind is very difficult to understand. Besides there are so many opportunities available for the skilled as well as talented human resources that it is becoming very tough as well as difficult for the employers to satisfy and retain them. There is no single strategy or retention plan which may satisfy each and every employee in an organization.

Managing with the knowledge contract assumes an intentional approach toward understanding knowledge that emerges from employee assignments and incorporating mechanisms back into the individual’s contract to ensure the employees “retention, transfer, and utilization and also higher employee satisfaction”. Thus, we can propose that:

\textbf{Hypothesis 4:} Knowledge Contract facilitating better knowledge integration has a positive relationship with employee retention in the organization.

\textbf{Hypothesis 5:} Knowledge Contract facilitating better knowledge integration has a positive relationship with employee satisfaction in the organization (refer Figure 1 for theoretical framework).

\textbf{Research methodology}

\textit{Sample size and procedure}

To investigate the causal relationships among knowledge contract, psychological contract, employee retention and employee satisfaction in software organizations we surveyed IT/software organizations as the research objects using a list derived from NASSCOM list of IT companies operating in eastern part of India. At the outset, in April 2018, this study adopted purposive sampling to contact by telephone managers of the front office and Human Resource departments to do the data collection. After getting permission from the HR (human resources) department of the organization the employees were contacted and
employees were requested to complete the survey during their regular work hours. The respondents were assured about the anonymity of the responses to get an accurate, free, and true response. We surveyed 380 permanent employees at the project manager level position working in IT organizations located in Kolkata and Bhubaneswar. Approximately 71 percent (N = 268) of the total respondents returned the filled survey questionnaires. Based on results, researchers found that of the 268 participants, 62% were males and 38% were females. 68% employees were unmarried, whereas 32 percent were married. 43% of participants’ ages ranged from 21 to 30 years old, with 31% being 31–40 years old. 79.8% of participants had completed university education, and 20.2% of participants had completed vocational school education with some diploma in IT courses. The mean years of total work experience of the respondents were 8.5 years. Most participants (55.3%) had been working for less than 5 years at their current organizations.

Measures

The measurements used in this study were adopted from prior studies on the research constructs. All questions other than those concerning personal information were answered on a five-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree) by the respondents in the study.

To measure knowledge integration, a five items scale given by Tiwana61 was adapted by the researchers. Each of these items was reflective in design, i.e. if the written contract of the projects ensures higher levels of knowledge integration that had been perceived by the respondents in any given project, they were designed to elicit a higher response on the response scale. The sample item of the scale includes, “We carefully made decisions based on project documents to maximize overall project outcomes,” “We leveraged the project contracts knowledge in many functional areas,” “Many creative ideas came from combining our unique perspectives,” “We ensured a clear understanding of how each business function should be coordinated.” The Cronbach alpha of the scale was found to be 0.741. To measure an individual’s relational psychological contract scale given by Milward and Hopkins42 was used. Examples of items include “I feel part of a team in this organization” and “I feel this company reciprocates the effort put in by its employees.” The Cronbach alpha of the scale was found to be .864. To measure employee satisfaction, three items scale developed by Rossberg et al.93 was used on a five-point scale ranging from 1, not at all, to 5, very much. The reliability coefficient of the scale was found to be 0.786. A sample item is “How satisfied are you with this organization”? To measure employee retention, a scale developed by Dexter et al.64 was used on a 5-point scale. The reliability coefficient of the scale was reported to be 0.881.

Convergent validity, discriminant validity, and common method bias

In this research, the researchers collected data “from the same respondents at some point of time, thus due to the presence of false internal consistency,”65 there may be a chance of common method variance (CMV). Harman’s single-factor test was conducted by the researchers, to address this issue, by loading all items into a single factor, which exhibited less than 50% total variance. Hence, it can be concluded that CMB was not present in the study. Researchers assessed the measurement model by including and excluding an extra orthogonal latent technique factor connected with all statements. Measurement model involving one study variables, i.e. knowledge integration, psychological contract, employee retention and employee satisfaction, exhibited a good fit with the statistics values, $\chi^2 (268) = 583.14; p < .01; \chi^2/df = 2.39; TLI = 0.95; GFI = 0.96; RMSEA = .04; CFI = 0.92$. The measurement model included the study variables with a common method factor exhibited a fit ($\chi^2 (268) = 804.31, p < .01; \chi^2/df = 2.65; TLI = 0.92; GFI = 0.87; CFI = 0.92; RMSEA = 0.07$), showed a significant inferiority as compare to the hypothesized and assumed measurement model with $\Delta \chi^2(1) = 124.84; p < .001$.

Results

Descriptive analysis, intercorrelations, and internal reliabilities in study variables have been shown in Table 1. The results indicate that all the measures have high internal reliabilities, ranging from 0.926 to 0.713. The findings are also in-line with established hypotheses, which replicates, knowledge contract with higher knowledge integration has a statistically positive relationship with the mediating variable, namely, psychological contract, and with the outcome variables of employee retention and employee satisfaction. Additionally, knowledge contract with higher knowledge integration has statistically significant positive relationships with employee retention and employee satisfaction respectively.

Analyses and findings

An examination of the data indicates support for the normal distribution of the data. Table 1 shows the descriptive statistics (mean and standard deviation), reliabilities and zero-order correlations between the variables examined in the present study. All factors were significantly loaded to their intended factors, and the comparison between the hypothesized four-factor model and other alternative models also demonstrated support for the hypothesized model.”

Structural model

Using the procedures recommended by Baron and Kenny56 “for testing mediation, the fully-mediated
model is tested against the proposed partially-mediated and non-mediated model. The chi-square differences test results indicate a non-significant improvement of the fit of the partially-mediated model ($\Delta \chi^2 = 2.4$, p > .01). On the other hand, the partially-mediated model was a significant improvement on the non-mediated model ($\Delta \chi^2 = 118.8$, p < .01). The findings in Table 2, the fully-mediated model was the best among all in explaining the proposed relationships. To summarize, the findings from SEM suggests that the fully mediated model was a satisfactory fit to the sample data with $\chi^2 (30) = 68.3$ at p = 0.00; GFI = 0.92; CFI = 0.96; TLI = 0.94; NFI = .93 (see Table 2). Knowledge integration was positively related to psychological contract (standardized coefficient = .46). Knowledge integration was positively related to employee retention (standardized coefficient = .44) and employee satisfaction (standardized coefficient = .38). Also, psychological contract was positively related to employee retention (standardized coefficient = .37), and psychological contract was positively related to employee satisfaction (standardized coefficient = .53) (See Table 2 and Table 3).

To further measure the impact of the mediating variable, test have been used by the researchers. Results shows that there is a mediating effect of psychological contract on the relationship between knowledge integration and employee retention (standardized indirect effect = .84, Goodman’s t = 15.26; Sobel t = 15.22; Arorian t = 15.24; p < .01), and knowledge integration and employee satisfaction (standardized indirect effect = .78, Goodman t = 13.74; Sobel t = 13.75; Arorian t = 13.74; p < .01), were found to be significant. Hence all hypotheses in this research are fully accepted.

**Discussion**
This study presents several contributions to current literature. Foremost, this research highlights on understanding about the role of knowledge contract facilitating better knowledge integration in enhancing an employee’s psychological contract in organizations. The relationship between knowledge contract facilitating better knowledge integration and, psychological contract and employee retention and employee satisfaction, confirms that psychological

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**Table 1.** Descriptive analysis and inter-variable correlation.

|        | Mean | SD  | 1   | 2   | 3   | 4   | 5   | 6   | 7   | 8   |
|--------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Age    | 2.06 | .54 |     |     |     |     |     |     |     |     |
| Gender | 1.39 | .48 | -5.03** |     |     |     |     |     |     |     |
| Income | 2.02 | .64 |     | .791** | -3.66** |     |     |     |     |     |
| KI     | 39.51| 10.07| .448** | -5.33** | .431** | -2.67** |     |     |     | (.892) |
| PC     | 16.21| 3.76 | .243** | -4.36** | .167** | .016 | .815** |     |     | (.713) |
| ES     | 9.42 | 2.64 | .429** | .289** | .196** | .729** | .843** |     |     | (.747) |
| ER     | 49.16| 14.68| .591** | -3.82** | .489** | -1.385** | .883** | .791** | .806** | (.926) |

Note. N = 268. Coefficient alphas appear on the diagonal. *p < .05, two-tailed. **p < .01, two-tailed. Knowledge integration = KI; Psychological contract = PC; Employee Retention = ER; Employee Satisfaction = ES

**Table 2.** Comparison of alternate models.

| Model | $\chi^2$ | d.f. | A $\chi^2$ | GFI | CFI | TLI | NFI |
|-------|--------|-----|----------|-----|-----|-----|-----|
| Model 1 (hypothesized full mediation) | 68.3 | 30 | .92 | .96 | .94 | .93 |
| Model 2 (partial mediation) Differences (Model 1 − Model 2) | 66.1 | 28 | 2.2 | .93 | .95 | .93 | .92 |
| Model 3 (non-mediation) Differences (Model 3 − Model 2) | 191.3 | 32 | 123.8** | .93 | .95 | .97 | .96 |

**Table 3.** Hypothesis testing results.

| Hypothesis | Standardized coefficient |
|------------|-------------------------|
| H1-Knowledge integration was positively related to psychological contract | .46 (standardized direct effect) |
| H2-Knowledge integration was positively related to employee retention | .44 (standardized direct effect) |
| H3-Knowledge integration was positively related to employee satisfaction | .38 (standardized direct effect) |
| H4-Mediation of Psychological contract in relationship between knowledge integration and employee retention | .84 (standardized indirect effect) |
| H5-Mediation of Psychological contract in relationship between knowledge integration and employee satisfaction | .78 (standardized indirect effect) |
contract is a direct reaction to knowledge contract facilitating better knowledge integration, results in employee retention and satisfaction and also can be perceived as an exploratory variable to study the impact of knowledge contract facilitating better knowledge integration on employee retention and satisfaction. Findings suggest that when an employee feels that his/her organization gives him/her proper understanding, it exhibits a sign of organizational admiration, respect, and achievement of self-actualization need, it enhances their poignant attachment with the organization. The mediating effect of psychological contract on the relationship between knowledge contract and job outcomes enrich the literature by exhibiting that an employee’s positive association with an organization can enhance their responsive, behavioral, and attitudinal reactions, that then leads to their positive job outcomes.\textsuperscript{57,68}

Secondly, the research demonstrates the importance of a knowledge contract measured by knowledge integration, to highlight the effect of knowledge contract and the psychological contract. This justification is consistent with the earlier findings that states about individual’s perception on how they are treated by the organization; whether these parties have been fair, kept their promise and met their obligation, and whether the parties can be trusted to fulfill their promises and obligation in the future.\textsuperscript{69} The strong norm of reciprocity\textsuperscript{70} that resulted in a positive expectation in the employee-employer relationship will assimilate the belief that their contribution and efforts will be reciprocated by the organization. This will act as an incentive for retention and satisfaction on the employee part. Thus, the expectation of the relationship between employee and employer will determine the extent of employee stay’' in the organization as well as employee satisfaction level in the organization.

The current study is among the “few studies to combine social contract theory in the IT/software organization environment. Investigating the suggested relationships from the social exchange theory viewpoint, it can be applied in the present setting as the current IT sector is confronted with a high employee turnover rate, and it is worthwhile to say that an employee’s positive or negative behavior toward their employers is an outcome of reciprocity for the benefits they expect to receive in return.

Besides researching the motivating mechanisms of the IT sector has been a significant research program. Even though there are many inquiries that have been done on the knowledge contract and psychological contract in the other sectors, however, attention is needed to study these research constructs in the IT sector. The results show that knowledge contract has a positive impact on employee psychological contract as well as employee retention and employee satisfaction, and it also focuses on the significance of examining organizational motivational constructs to comprehend the influence of knowledge contract and psychological contract on employee retention and employee satisfaction in the IT sector.

Conclusion
With the prevalence of knowledge workers and knowledge-intensive firms, management knowledge and organizational memory is critical to business success. Two factors often hamper knowledge performance in organizations: turnover and an unwillingness to share knowledge. Where employee turnover is not the issue, an employee’s unwillingness to share knowledge can be equally damaging. Recognizing that knowledge is power, employees may also withhold knowledge in order to enhance their personal value. To successfully thwart the proliferation of such hoarding behaviors, knowledge sharing practices must be integrated into strategic business objectives, human resources practices, and the organization’s culture so as to encourage and support on-going collaborative behavior. Throughout this paper, we suggested that managers must properly maintain both knowledge contract and psychological contracts of knowledge workers. In an ideal knowledge-sharing environment, everyone would have a knowledge contract, high levels of trust in management and co-workers, and knowledge hoarding would be unthinkable. Yet, the reality of most contemporary organizations is such that individual motives for power, control and personal outcome maximization vary as a result of differing perceptions of how well mutual obligations are fulfilled throughout the employment exchange. Admittedly, there are likely to be a variety of differences between employees with varying lengths of tenure, not the least of which is their concern over the changing nature of work. The increased emphasis on managing one’s own career and the explosion of global project work teams are just two obvious changes to the traditional work environment that are likely to influence trust among workers and motives for or against collaboration. Therefore, managing highly portable knowledge resources becomes more challenging and highly contingent on successful knowledge and psychological contracting. Understanding how the changing work environment leads to perceptions of contracts breach can help mitigate threats against the relationship and trust that seasoned workers have developed with management and may help establish stronger relationships among employees. On the other hand managing knowledge contract and psychological contracts are not easy for organizations. The subjectivity of employee and employer perceptions and the difficulties associated with monitoring contracts are the main challenges, but the demonstrated importance of knowledge contract and psychological contracts for the job satisfaction and retention of employees suggests that organizations should address these issues. Suggested strategies for managing these issues include adopting human resource management practices that support open communication with employees, giving managers the training required to enable effective interaction with employees, allowing mutual critical evaluation and shaping organizational culture toward interaction.\textsuperscript{71,72}
Practical implications

This study offers many important managerial implications. A relationship between knowledge integration, psychological contract, employee retention, and employee satisfaction suggest the importance of organizations’ written or unwritten contracts in boosting employee’s behavior and motivation. Generally, it has been seen that organizations fail to convey the written or unwritten details to their employees, subsequently, that results in the feeling of remoteness and weakened attachment among the employees. An absence of favorable conditions and circumstances may be recognized as the potential causes of an employee’s inability to stay longer with the organization. Hence, we suggest that organizations should assess the psychological contract expectations by continually evaluating the needs of the employees. The management must also be supportive in providing a conducive environment that encourages transparency, collaboration, and trust that will lead to higher employee satisfaction and employee retention. Therefore, this study suggests that to be successful in this competitive environment, an appropriate and proper work environment with transparency must be provided to the employees by the organizations to ensure better job performance, higher employee satisfaction, and employee retention.

Organizations must conduct seminars and workshops as an important part to make employees aware of the contracts, responsibilities, and obligations that an organization has promised to deliver to the employees thus directly affecting employee behaviors. In addition to this, organizations should also focus on more employee participation to let the employee know of organization expectations. The organization must ensure transparent feedback mechanisms thus ensure two-way communication of employees and organization that also affect the attitude of an employee toward his/her job.

Limitations and scope for future research

Although the current research substantially contributes to the existing theory and practice, however like other researches current research also has some limitations. Firstly, the study is limited to software professionals working in the IT sector, hence the distinct characteristics of other sectors’ professionals may have been inadvertently overlooked. Thus, the generalization of the finding in other sectors may possibly be challenging. Secondly, the nature of the cross-sectional design does not allow the researchers to describe the exact nature of among the research variables. Finally, as the data collected in the research was been recorded by the employees themselves presence of common method variance cannot be ignored. Hence, future studies should be conducted in other industries especially in the knowledge-based and services industry to extend the generalizability of this research. This research can also be strengthened by incorporating other social capital dimensions such as structural and cognitive in the research framework. To reduce the likelihood of occurrence of common method variance in the research, future researchers should attempt to reproduce the outcomes of the current report, if possible, on after-effects assessed by using other data collection using Internet of Things enable smart devices techniques, building trust management in emerging technology or including different types of samples, to avoid the self-report way of data collection.

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