



How Intrinsic Motivation augments Innovation and Commitment? A Moderated Mediation Model of Employee's Trust and Engagement

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ABSTRACT

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Based on self-determination theory, the study aimed to gauge the impact of intrinsic motivation on employees' engagement which later augments innovation and commitment. It further examined the moderating impact of employee's trust on the relationship between motivation and engagement. The authors collected data through an online survey from 350 respondents from the telecommunications industry in Pakistan using a cross-sectional design through simple random sampling. For analysis, the SEM (structural equation modeling) technique was used to test direct and indirect effects. The results confirmed the initially hypothesized framework of a moderated mediation mechanism between intrinsic motivation, engagement, job innovation, and commitment. Mediation analysis reflects that employee's engagement mediates between both intrinsic motivation and job innovation as well as with commitment. Further, employee's trust was found to be positively moderating between intrinsic motivation and employee's engagement. Unlike traditional approaches to test mediation between intrinsic motivation and commitment and job innovation, the study examines a moderated mediation mechanism of how employee's intrinsic motivation spurs engagement in the presence of employee's trust which can subsequently increase innovative behavior and commitment of the employee. The study explains the self-determination mechanism in the context of telecommunications industry in Pakistan. Theoretical and practical implications are also discussed.

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1. Introduction

Intrinsic motivation is defined as behavior motivated by internal rewards Chen, Ma, Jin, and Fosh (2013). Individual desire to engage in action comes from within (Fishbach & Woolley, 2022; Lee, Reisinger, Kim, & Yoon, 2014). When we behave without any visible external incentives, this is known as intrinsic motivation (Zheng, Janiszewski, & Schreier, 2023). We either like a particular activity or regard it as an opportunity to learn, grow, and realize our full potential. Consider your motivation for reading this essay for a moment. You are acting on intrinsic motivation if you are reading it because you have an interest in psychology and just want to learn more about the topic of motivation (Fishbach & Woolley, 2022; Lee et al., 2014). Exploratory and field-based research inspired by self-determination theory has discovered the inner inspiration for increased learning, performance, creativity, holistic development, and mental health throughout the last four decades (Edward L Deci, Olafsen, & Ryan, 2017; Edward, 2012). Before moving toward the rest of the paper, it is important to understand the nature of the concept of employee engagement. Kahn (1990) was the first researcher that introduced the concept of employee engagement in the workplace. He explained two extremes of a personal engagement level of variability, personal engagement, and disengagement.

Personal engagement refers to the "harnessing of organization members while personal disengagement denotes to uncoupling of selves from work roles (Adisa, Ogbonnaya, & Adekoya, 2023). Bhuvanaiah and Raya (2015) claimed that employee engagement is identified to be inconstant. Individual engagement depends on the working conditions and it varies due to multiple unfavorable conditions at the workplace (Adisa, Ogbonnaya, & Adekoya, 2023; Bhuvanaiah & Raya, 2015). The concept of employee engagement has generated huge interest in practitioner and academic domains (Chaudhary, Mohanty, Malik, Apsara Saleth Mary, Pai Maroor, & Nomani, 2022). It has very popular in the HRM field as well as more recently human resource development (Valentin, Valentin, & Nafukho, 2015). Employee engagement has been investigated to be highly related to intrinsic motivation and greatly influences job innovation and commitment. More importantly, organizations lose approximately \$300 billion per year in productivity due to a lack of individual engagement (Lemon & Boman, 2022). Referring to the Gallup Organization report, more than 20% of all US employees are disengaged while 54% are uncomfortable with their work conditions (Adisa, Ogbonnaya, & Adekoya, 2023). Therefore, employee engagement is a growing concern for HRM, academic, and business leaders and poses many challenges for potential researchers.

In the recent economic era, organizations have faced much more challenges due to radical changes in new products, market demands, ways of working as well as the development of new technologies (Xu, Liu, & Tang, 2022). To resolve these issues, job innovation and the innovative internal process has a necessity for these challenges. Though, job innovation is no longer solely an employee, task specialist, researcher, scientist, or professional (B. J. Thomas & Khalil, 2022). At present, the potential researcher and practitioners ratify that organizations should develop, fasters, and use innovative potential employees as the main purpose of the success of their organizations (Siyal, Xin, Umrani, Fatima, & Pal, 2021). The employees with innovative potential believed that it's a factor that requires continuous improvement to gain competitive advantages in reflected and quality management. Organizational commitment within organizational behavior, industrial and organizational psychology is primarily a psychological association with an organization of a human being (Mustafa, Nordin, Razzaq, & bin Ibrahim, 2020). As researchers documented, "organizational commitment is a bond which is in the form of employee's experience with any organization (Nazir & Islam, 2017; Soltani & Haji, 2016). Broadly speaking, those employees who commit to any organization have a connection with their organization. They understand and meet the goals of the organization. A specialty of these employees is that they perform their work very well. The production capacity of such employees is high and they are more active in helping others (Top, Akdere, & Tarcan, 2015). Most companies focus on the labor's input in determining firms' performance but we are discussing the Employee's trust in the organizations because, without trust, organizations cannot enhance their performance and productivity (Lau & Höyng, 2023). A company that can build a strong feeling of trust in the workplace is better able to withstand the storms of competition and have a clear vision of what it stands for.

Trust issues have grown increasingly important in the study of organizations during the last few years. This growing centrality is thrilling for someone who was involved in early efforts to raise attention to the importance of trust (Top, Akdere, & Tarcan, 2015; Yang, Chen, Ma, & Wei, 2022). The egressing role of trust makes sense given that trust is an ideal focal point for individuals interested in organizational dynamics since employee trust in companies resides at the intersection of psychology and sociology (Baldé, Ferreira, & Maynard, 2018). As a result, political science, policy studies, law, organizational psychology, organizational behavior, and behavioral economics have all turned their attention to the study of employee trust in organizations. The definition of trust is "strong conviction in someone or something's reliability, integrity, or ability" (Dictionary, 1989; Yang et al., 2022). Employee trust in the organization may influence employee conduct, which affects the organization's or firm's performance (Innocenti, Pilati, & Peluso, 2011). Employees' faith in their CEOs and managers, in particular, may determine how much opportunistic conduct they engage (Lemon & Boman, 2022). As a result, employees' faith in their bosses may have an impact on the company's success. Because of a great desire to understand how to build effective cooperation inside organizations or in enterprises, researchers feel that trust is a crucial aspect of any company. Trust is important because it allows people to work together. If employees have faith in their organizations, they will be more productive, have higher morale, and be able to work more efficiently (Hai & Park, 2021; Lemon & Boman, 2022). Actions, not words, are what establish trust. In an organization, a manager or leader establishes trust among the personnel.

2. Theoretical Background, Literature Review, and Hypothesis Development

2.1. Self Determination Theory

Although overall motivation is important, it's important not to lose sight of the distinction between intrinsic and extrinsic motivators (Edward L Deci, Olafsen, & Ryan, 2017). For example, previous studies has confirmed that SDT is correct in its assumption that extrinsic rewards are associated with lower intrinsic motivation, as it is in other contexts (Edward, 2012; Valentin, Valentin, & Nafukho, 2015). Furthermore, there is evidence of a link between a manager's autonomy support and the job outputs of his or her employees (Montani, Courcy, Battistelli, & de Witte, 2021). According to research, a manager's autonomy support leads to higher levels of employee need fulfillment, which improves job innovation (B. J. Thomas & Khalil, 2022) organizational commitment (Soltani & Haji, 2016) employee trust (Top, Akdere, & Tarcan, 2015), and employee engagement (Spell, Eby, & Vandenberg, 2014). Studies demonstrate that there is a link between managerial autonomy and subordinate autonomy, performance, and organizational commitment. In last, for the grounded theory, researchers apply self-determination theory and this theory creates a strong relationship stated variables and intrinsic motivation, therefore, SDT is strongly supportive for this study.

2.2. Job Innovation

Intrinsic motivation is defined as "a sense of challenge or competence resulting from job innovation" for an individual (Dorenbosch, Engen, & Verhagen, 2005; Wirsi & Zona, 2022). Intrinsic motivation should be high for an employee if they highly engage in innovative performance. Those employees who are intrinsically motivated have a considerable beneficial effect on their perceptions of job innovation. This is the reason that several empirical studies have investigated that intrinsic motivation has a positive effect on job. Evidence from previous research backs up the link between intrinsic motivation and work innovation (Dorenbosch, Engen, & Verhagen, 2005; Fishbach & Woolley, 2022). In particular, researchers found that intrinsic desire had a considerable favorable impact on working individuals' workplace innovation (Montani et al., 2021). Employee job performance and job innovation were also favorably connected with intrinsic motivation (Shahid & Paul, 2021). This research implies that high levels of intrinsic motivation lead to increased job innovation among employees. Finally, the findings show that intrinsic motivation reduces emotional weariness while also increasing employee engagement and job innovative performance. (Siyal et al., 2021). As a result of the previous study, there is a link between intrinsic motivation and job innovation.

H₁: Intrinsic motivation has a positive and significant relationship with job innovation

2.3. Organization Commitment

The phrase "commitment" refers to social activists' willingness to invest their time and energy in a social system or emotional attachment to a part of the organization, regardless of the relationship's utility value (Mustafa et al., 2020). Commitment is defined by researchers as a sense of personal belonging and reliance on an organization. Employee loyalty to the organization's goals, as well as gratitude for and acceptance of its principles, is referred to as organizational commitment (Nazir & Islam, 2017). Organizational commitment is the proportionate strength of an individual's affiliation with and involvement in a given organization (Al-Madi, Assal, Shrafat, & Zeglat, 2017; Top, Akdere, & Tarcan, 2015). A person's willingness to perform duties outside of his or her typical job responsibilities demonstrates involvement. When people in an organization "are supported and committed by others, helped and developed, and put to work," they might have a sense of belonging, which leads to organizational commitment (Spell, Eby, & Vandenberg, 2014). So, a person commits to the organization, he or she views the organization to be his or her representation and aspires to join it.

According to Soltani and Haji (2016) the literature on organizational commitment dates back to the 1960s. Most of the past studies documented that there is a significant association between autonomous motivation, intrinsic motivation, affective commitment, and organizational commitment (Muhamad, Bakti, Febriyantoro, Kraugusteeliana, & Almaududi Ausat, 2023). The researcher claimed that it is a prerequisite to enhancing motivation for extending organizational. Therefore, organizational commitment might be introduced as a

powerful source of individual motivation. Previous studies showed in their study and conforming the positive and significant association between intrinsic motivation and organizational commitment (Al-Madi et al., 2017). Besides, he investigated that effective organizational commitment plays a general mediating role in the association between autonomy, intrinsic motivation, and desire to return. Generally, organizational commitment is part of a more intrinsic motivation process that creates a link with other concepts in this sphere (Mustafa et al., 2020). Based on the previous literature, researchers investigated that when people have a feeling towards their work through intrinsic motivation, they will feel greater attachment which links to effective organizational commitment (Al-Madi et al., 2017). Therefore, all of these studies looked into many elements, and the researcher looked into whether intrinsic motivation had a favorable association with organizational commitment.

H₂: Intrinsic motivation has a positive and significant relationship with organizational commitment

2.4. Employee Engagement

Employees regard their managers as trustworthy, which boosts their confidence and improves their learning capacity, resulting in strong employee engagement (K. W. Thomas, 2009; Wirsi & Zona, 2022). Work engagement was first defined by Kahn (1990) as the amount of energy, dedication, and devotion that employees devote to their jobs. Employee engagement, on the other hand, is defined by the Institute of Employment Studies (IES), an independent HR consultancy firm, as an employee's positive attitude toward the organization and its principles (IES, 2016) (Wirsi & Zona, 2022). An engaged employee understands the business environment and collaborates with coworkers to improve job performance for the benefit of the company (Chaudhary et al., 2022; Spell, Eby, & Vandenberg, 2014). Baldé, Ferreira, and Maynard (2018) define employee engagement as the extent to which workers make full use of their cognitive, emotional, and physical resources to do role-related tasks. According to Valentin, Valentin, and Nafukho (2015) SDT is related to employee engagement. However, intrinsic motivation is a self-desire, it searches for novel ideas and different challenges for an employee without any external rewards or incentives (Shahid & Paul, 2021). Researchers investigated those employees are intrinsically motivated to find meaning in their duties, responsibilities, and jobs, while this is the essential component of employee engagement (Xu, Liu, & Tang, 2022). Based on the nature of meaningfulness (sense of self, balance, and work) it may be introduced that intrinsic motivation depend on employee engagement to find work meaningful (Wirsi & Zona, 2022). Hence, employee engagement has a significant impact on intrinsic motivation.

Employee engagement and job innovation have a beneficial association, according to a previous study (Kwon & Kim, 2020). Employee engagement is a professional driver of job innovation, and it can help both the employee's growth and the organization's development (Mustafa et al., 2020; Rao, 2016). Employee engagement is a crucial indicator of an employee's loyalty to the company (Rasool, Wang, Tang, Saeed, & Iqbal, 2021). It is the organization's intellectual commitment, and there is a substantial relationship that could affect the employee's growth (Knox & Marin-Cadavid, 2022). Therefore, researchers claimed that employee engagement has a significant association with job innovation (Gichohi, 2014; Kwon & Kim, 2020; Rao, 2016). Based on the SDT lens, those employees who are highly engaged with their organizations can be a feeling of responsibility and give a better response in the form of good performance (Edward L Deci, Olafsen, & Ryan, 2017). One way to a better response from the employee is to increase effective organizational commitment (Mustafa et al., 2020). However, an employee with a high level is committed to the organization that provides with necessary resources to complete the organizational goals. Therefore, researchers documented that employee engagement has a significant impact on organizational commitment.

H₃: Intrinsic motivation has a significant association with employee engagement

H₄: Employee engagement has a significant association with job innovation

H₅: Employee engagement has a significant association with organizational commitment

2.5. The mediating role of Employee Engagement

Researchers defined employee engagement as "the extent to which individuals make full use of their cognitive, emotional, and organizational commitment to execute the role and accomplished the tasks (Baldé, Ferreira, & Maynard, 2018). Employee engagement is a strong mediator of intrinsic motivation and job innovation that can affect the relationship both positively and negatively when the employees are engaged honestly with their organizations (Rasool et al., 2021). It means, that when employees are highly engaged with their organization, it performs a positive association otherwise negatively associated with job innovation and commitment. It depends on employee engagement, and the organization knew that the senior and middle management were the important drivers in making engagement in the workforce (Ghosh, Sekiguchi, & Fujimoto, 2020). To enhance the employee engagement, managers should focus on promoting sense of meaning, work itself, and a sense of balance through intrinsic motivation, and that leads to high morale, productivity, job innovation, and organizational commitment even in times of hardship. Overall employee engagement has positive consequences for various organizations. However, it ultimately leads to innovation and organizational commitment (Gichohi, 2014). Hence, it is being a subjective and individual-related factor so, the direct impact of employee engagement on innovation and commitment is quite difficult to understand (Nazir & Islam, 2017). Therefore, there is a need to investigate more research for understanding how employee engagement enables the organization's performance with innovation and commitment.

H₆: Employee engagement performs the mediating role for job innovation with intrinsic motivation

H₇: Employee engagement performs the mediating role for organizational commitment with intrinsic motivation

2.6. The moderating role of Employee Trust

Employee trust is not an easy and simple "either/or" matter (Yang et al., 2022). The top reasons for a common attribute like "conditional" and "unconditional" or "strong" and "weak" does not attract it (Innocenti, Pilati, & Peluso, 2011). The payoff has a higher influence on interaction behavior such as trust (Lau & Höyng, 2023). Researchers concluded that trust is influenced by compensation structures and that the impact of reward systems on trust is skewed by employee expectations as well as their colleague's trustworthiness (Men, Yue, & Liu, 2020). Researchers documented that employee trust comes after the engagement of employees and motivation and they claim that intrinsic motivation for giving required knowledge to creates employee trust (Hai & Park, 2021). While employee trust, engagement, and motivation are not mutually exclusive, each can often help to regulate the other (Top, Akdere, & Tarcan, 2015). Conferring to Innocenti, Pilati, and Peluso (2011) high-trust organizations return three times as much to shareholders as low-trust organizations. On the other hand, employees have lost faith in businesses where performance is expected to be poor (Baldé, Ferreira, & Maynard, 2018). Employees who are high trust in an organization, are intrinsically motivated and engaged therefore, they perform a significant role in job innovation and commitment at the workplace, according to conceptual evidence (Men, Yue, & Liu, 2020). In this research paper, employee trust is used as a moderator variable in the relationship between intrinsic motivation and employee engagement. Top, Akdere, and Tarcan (2015) claimed that without employee trust organizations cannot motivate and engage their employees. Finally, on the basis of previous studies researchers propose a hypothesis:

H₈: Employee trust act as a moderator between intrinsic motivation and employee engagement

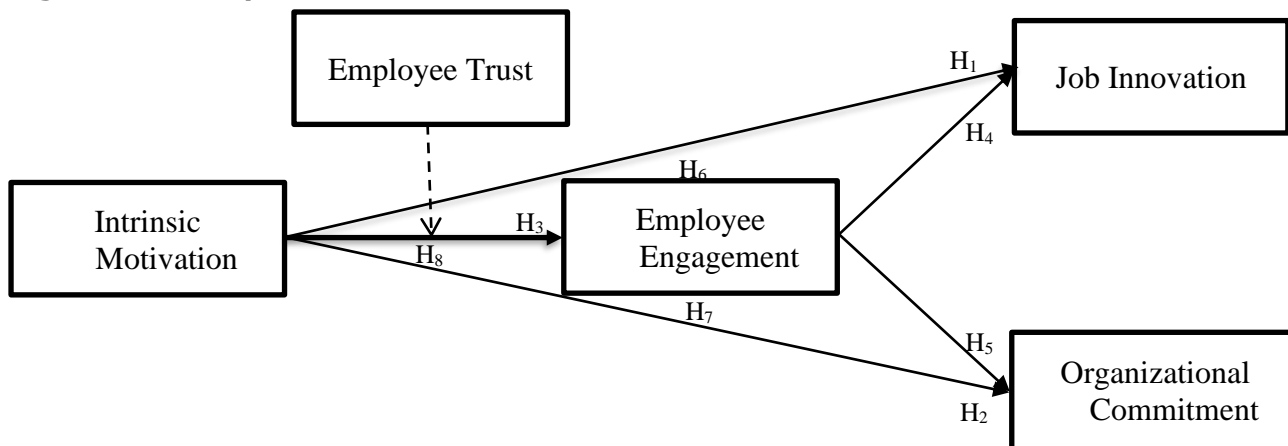
2.7. Research Gap and Contribution

With the bases of self-determination theory, the authors build a research model to contribute the following way. Primarily, the authors investigate the direct relationship between intrinsic motivation, job innovation, and organizational commitment in the Pakistan telecommunications industry. A large number of studies investigate the significant association between different motivation types and their impact on promoting innovation and commitment (Al-Madi et al., 2017). This research paper has chosen intrinsic motivation to investigate the impact on job innovation and commitment because most of the studies have confirmed that intrinsic motivation has more effective as compared to extrinsic motivation when researching commitment and job innovation (B. J. Thomas & Khalil, 2022; Wirsi & Zona, 2022). Secondly, this study uses employee engagement as a mediator and employee trust as a moderator

variable between stated relationships. Since, according to researchers this association is still very limited investigation and does not have a more meaningful understanding and conclusions. Finally, there are several studies conducted in the western context while, a very little research literature has been shown on job innovation and organizational commitment in emerging economies. Therefore, this research paper will add empirical evidence on organizational commitment and job innovation in the context of developing countries like Pakistan. Those are the reasons behind the motivation why this research has been conducted and the researchers added both practical and theoretical contributions.

3. Conceptual Framework

Figure 1: Conceptual Framework



4. Research Methods

4.1. Source of Data

The participants of the study are employees working in various positions in the telecommunications industry of Pakistan (Hinduja, Mohammad, Siddiqui, Noor, & Hussain, 2023; Imtiaz, Khan, & Shakir, 2015). The idea of collecting data is the rationalization of how employees trust their organization which penultimately increases their engagement and subsequently improves commitment and innovation in the workplace (M. Li, Khan, Chughtai, & Le, 2022). Further research suggested collecting the data over a wide range of employees e.g. employees across different departments with different demographic characteristics.

4.2. The Instrument and Measurement of Constructs

In this study, researchers evaluate detailed literature and recognized scales from the preceding studies (Ali, Mujahid, & Umar, 2021). All respondents give the arguments with a seven-point Likert scale (L. Li, Zheng, Sun, & Diaz, 2020) extending from strongly disagree 1 to strongly agree 7 for the scale of intrinsic motivation, job innovation, organizational commitment, employee engagement, and employee trust. *Intrinsic motivation*: Intrinsic motivation is the independent variable and measured using 3 item subscales, the French version of the Multidimensional Work Motivation Scale developed by Gagné, Forest, Gilbert, Aubé, Morin, and Malorni (2010). This measure is widely used to access motivation at work (Baldé, Ferreira, & Maynard, 2018). These items have been applied in many experiments to better understand motivational behavior. The composite reliability of this scale is 0.971 details shown in the blowing table. The sample items included "Because I enjoy this work very much" and "Because I have fun doing my job". *Job innovation*: Job innovation is the dependent variable and is measured by using innovative work behavior (Montani, Dagenais-Desmarais, Giorgi, & Grégoire, 2018). The CR of job innovation is 0.963. The sample items comprised "The more innovative I am, the better my job performance" and "Coming up with innovative ideas helps me do well on my job". *Organizational commitment*: The second dependent variable is an organizational commitment which is measured by six items (Mowday, Steers, & Porter, 1979) with a CR of 0.964 respectively. Sample items included "I really care about the fate of this organization" and "I feel personally attached to my work organization". *Employee engagement*: Employee engagement is used as a mediator variable and measured by nine items (Rich, Lepine, & Crawford, 2010) with a 0.971 CR value. Sample items comprised "At my work, I feel bursting with energy" and "I am enthusiastic about my job". *Employee trust*: Finally, the moderator variable of this study is employee trust in the organization, measured through seven items with CR 0.965 (S. L. Robinson, 1996). Sample items included "I believe

my management has high integrity” and “My management is open and upfront with me” All measures are acceptable and verified by AVE, CR, and Cronbach's alpha, details shown in tables 2 and 3 respectively.

4.3. A Sampling Technique and Data Collection

At the time of data collection, online questionnaires are distributed in the organizations of their employees who are working. Based on simple random sampling, a total of 800 questionnaires were distributed. Due to incomplete/missing responses, the education, and age restriction we were able to collect 343 samples for this study with a response rate of around 43%. Researchers apply seven points Likert scale for data collection 1 represented strongly disagree while 7 represented strongly agree(L. Li et al., 2020). In Pakistan, more than 2000 IT organizations are working and most of them followed quality standards (Imtiaz, Khan, & Shakir, 2015; Shafi, Zoya, Lei, Song, & Sarker, 2020). According to a report by Pakistan Software Export Board (PSEB, 2017), Pakistan's IT industry-generated export including freelancers, are estimated roundabout \$500 million to 52.5 billion rupees (PSEB, 2017). Though, at the present, this industry facing several challenges likewise a lack of innovative ideas, employee demotivation from their jobs and meeting the targets and ever-increasing demands, etc(Nizam et al., 2020). So, due to these reasons researcher selected Pakistan's IT organizations.

5. Empirical Results

5.1. Demographic Characteristics

This study consists of four demographic characteristics like gender, age, education, and experience. Total seven age groups are included; the range of the lowest group is 20-25 and the highest group represented 51-55 respectively. The below table reports the demographic characteristics of participants, in this sample 48.57 percent female and 51.43 percent male participants are included(Nizam et al., 2020). The organizational tenure consists of five groups, (1-5 to 21-above, Years) and shows that group 16-20 years, 103 participants included, it means this data comprised highly experienced participants. The level of education demonstrates five-level and shows 99 participants hold an MPhil degree. These results represent the included sample has diversified, high educated, knowledgeable, and experienced workers. Table 1 provides the demographic characteristics of this sample.

Table 1: Summary of Demographic Characteristics

Gender	N	Percentage	Level of Education	N	Percentage
Female	170	48.57	Matric	42	12.00
Male	180	51.43	Intermediate	90	25.71
Age (in years)	N	Percentage	Level of Education	N	Percentage
20-25	64	18.29	Bachelor	69	19.71
26-30	58	16.57	Master/MS/M. Phil	99	28.29
31-35	52	14.86	PhD	50	14.29
36-40	55	15.71	Tenure/Job Experience	N	Percentage
41-45	42	12.00	1-5	60	17.14
46-50	48	13.71	6-10	60	17.14
51-55	31	8.86	11-15	82	23.43
Total	350	100.00	16-20	103	29.43
			21-Above	45	12.86

5.2. Reliability and Model Measurement

Tables 2 show the reliability and measurement of the model for all variables. To test the hypothesis, SEM (structural equation modeling) was employed besides the study applied Smart PLS 3.0 to analyze the data (Siyal et al., 2021). Tables 2 demonstrate the results that, the recommended value of Cronbach's Alpha is 0.7 which is greater than from threshold value (Rich, Lepine, & Crawford, 2010). The range of Cronbach's Alpha is from 0.875 to 0.976 which means the data is reliable(Ghosh, Sekiguchi, & Fujimoto, 2020). The range of composite reliability from 0.863 to 0.97 and outer loading values are greater than the threshold value of 0.5(Montani et al., 2021) which indicates that the construct reliability meets the acceptable level. To successfully achieve the convergent validity, results show that the average variance extracted (AVE) value is greater than 0.5. Moreover, Table 4 reveals the results of discriminant validity. The Fornell-Larcker fulfilled the square root of the average variance extracted. The results show that diagonally bolded values of constructs are greater than a correlation between

the constructs(Siyal et al., 2021). Hence, all results signify the minimum value of correlation is acceptable levels.

Table 2: Reliability and Model Measurement

Study Variables	Indicators	Outer Loadings	Mean	Std. Deviation	Cronbach's Alpha (a>0.7)	Composite Reliability (CR>0.7)	Average Variance Extracted (AVE >0.5)
Intrinsic Motivation (IM)	IM1	0.915	4.296	0.915	0.904	0.94	0.8398
	IM2	0.917					
	IM3	0.916					
Job Innovation (JI)	JI1	0.884	4.349	0.924	0.954	0.962	0.786
	JI2	0.891					
	JI3	0.892					
	JI4	0.872					
	JI5	0.897					
	JI6	0.893					
	JI7	0.88					
Organizational Commitment (OC)	OT1	0.894	4.319	0.891	0.946	0.957	0.788
	OC2	0.892					
	OC3	0.89					
	OC4	0.876					
	OC5	0.891					
	OC6	0.885					
Employee Engagement (EE)	EE1	0.89	4.409	0.904	0.966	0.97	0.788
	EE2	0.898					
	EE3	0.892					
	EE4	0.88					
	EE5	0.883					
	EE6	0.886					
	EE7	0.886					
	EE8	0.885					
	EE9	0.891					
Employee Trust (ET)	OT1	0.891	4.323	0.985	0.958	0.965	0.801
	OT2	0.897					
	OT3	0.902					
	OT4	0.894					
	OT5	0.897					
	OT6	0.896					
	OT7	0.89					

Table 3: Path Analysis

Hypothesis	Relationship	β	P-value	Decision
H1	IM -> JI	0.366	0	Supported
H2	IM -> OC	0.365	0	Supported
H3	IM -> EE	0.438	0	Supported
H4	EE -> JI	0.508	0	Supported
H5	EE -> OC	0.558	0	Supported
H6	IM -> EE -> JI	0.223	0	Supported
H7	IM -> EE -> OC	0.244	0	Supported
H8	ET*IM -> EE	0.026	0	Supported

Note: IM; intrinsic motivation, JI; job innovation, OC; organizational commitment, EE; employee engagement, ET; employee trust

Table 4: Discriminant Validity (Fornell-Larcker Criterion)

	EE	ET	IM	JI	OC
EE	0.887				
ET	0.702	0.801			
IM	0.601	0.614	0.916		
JI	0.502	0.556	0.673	0.886	
OC	0.751	0.73	0.612	0.71	0.887

Note: All diagonal values are the discriminant validity

Table 5: Model Fitness Summary

Parameters	Saturated Model	Estimated Model
RMSEA Root Mean Squared Error of Approximation	0.021	0.041
GFI Goodness of Fit Index	0.912	0.918
CFI Comparative Fit Index	0.976	0.981
NFI Normed Fit Index	0.951	0.953
Chi-Square	640.7	694.6

5.3. The Issue of Common Method Bias

Previous studies demonstrate that behavior is not the same and it varies from person to person with different time frames (Kock, 2020). While measuring the behavior, opinions, and perception the answer of the respondents can vary based on the situation, context, or understanding of the questioner (Hurtienne, Hurtienne, & Kempen, 2022). The problem of common method bias (CMB) appears when collecting the data using a survey-based questionnaire in a cross-sectional study and respondents give feedback from different perspectives. In this study, researchers collect the data for five different variables with different questionnaires to limit common method bias, researcher applies Harman's Single Factor test using SPSS (Philip M Podsakoff, MacKenzie, Lee, & Podsakoff, 2003) which is widely used to examine CMB variance. Harman's Single Factor specification shows that if the answer of variance should be less than 50% it means there is no issue of common method bias in the data (Philip M Podsakoff et al., 2003; Philip M. Podsakoff & Organ, 1986). The value of variance is 39.106% it should be less than a threshold value (<50%). It means this data is clear about the issue of common method bias.

Table 3 make known the direct relation of MI, JI, OC, and EE variables. The MI shows a significant and positive relationship with JI ($\beta=0.366$, $p<0.00$) OC ($\beta=0.365$, $p<0.00$) and EE ($\beta=0.438$, $p<0.00$). Besides that, EE has also been positive and significantly associated with JI ($\beta=0.508$, $p<0.00$) and OC ($\beta=0.558$, $p<0.00$). Thus, the findings confirm that H1, H2, H3 H4, and H5 are strongly supportive of this study. To analyze the mediation (indirect relations) analysis study applies Preacher and Haye as a rule of thumb to examine the mediation effect of employee engagement in the relationship of intrinsic mediation with job innovation and organizational commitment (Preacher & Hayes, 2004, 2008). As the results show in Table 3 with bootstrapping the positive impact of employee engagement were found for job innovation (Std. Beta =0.223, Std. Error=0.031, $t=7.14$, $p<0.001$) and organizational commitment (Std. Beta =0.244, Std. Error=0.029, $t=8.47$, $p<0.00$). These findings are associated with past studies (Ghosh, Sekiguchi, & Fujimoto, 2020; Kwon & Kim, 2020). These results confirm that employee engagement significantly mediates the relationship between both variables. So, this mediation hypothesis H6, H7is supported for this study. Furthermore, the items of employee trust were unidimensional, (the factor loading is greater than 0.8) and internally consistent (Alpha value 0.958). Therefore, employee trust was hypothesized to moderate the association in the conceptual model stated in figure 1.

The items of employee trust have an averagely synthetic indicator in this study (mean=4.323, SD=0.985). Table 3 was carried out to verify that employee trust is moderate in the relationship between MI and EE, besides Table 5 show the model fitness summary. The above analysis confirms that seven items (S. L. Robinson, 1996) used to access employee trust internally are consistent and reliable (CR= 0.965, $\alpha=0.958$, AVE=0.801) measures (Costigan, Insinga, Berman, Iltter, Kranas, & Kureshov, 2006; Innocenti, Pilati, & Peluso, 2011). Table 3 indicates when the interaction variable was added together with intrinsic motivation and run the moderation, the results indicate a positive and significant association between IM and EE (Costigan et al., 2006; Wirsi & Zona, 2022). Due to rethink and replay the results, researchers demonstrate that employee trust and intrinsic motivation (ET*IM -> EE = 0.026, $p<0.00$, ET*IM -> EE =0.025, $p<0.00$) representing significant support for perform significant moderating role between IM and EE. It is clearly defined that the p-value is less than the threshold value($p<0.05$) (Innocenti, Pilati, & Peluso, 2011; Siyal et al., 2021). Therefore, the outcomes of this investigation indicate that employee trust is significantly associated with IM and EE which satisfies the condition to test the moderation effect. Hence, H8 is supportive of this study.

6. Discussion

The IT sector is considered to play a pivotal role in Pakistan's economy and have great contribution in the country's GDP. The current study examined the conceptualized model with intrinsic motivation as independent construct, job innovation and organizational commitment as dependent construct. The employee engagement as mediating construct and employee trust as moderator construct using verified instrument by applying SDT for the foundation of arguments (Di Maggio, Santilli, Nota, & Ginevra, 2019). Our Study collected the data from telecommunication industry of Pakistan, analyzed using Smart-PLS 3.3. The results confirm the existence of direct as well as indirect association between independent variable (intrinsic

motivation) and dependent constructs (job innovation and organizational commitment) as well as employee engagement mediator and employee trust as moderator variable, respectively. These results are in line with the recent literature and indicate factors namely intrinsic motivation, employee engagement, and employee trust in the organization have a great influence on job innovation and organizational commitment. Some past researchers have also investigated the related relationship e.g. Siyal et al. (2021) claimed that intrinsic motivation influences positive impact on job innovation and promote innovative and creative ideas in the organization. Another study conducted by Ghosh, Sekiguchi, and Fujimoto (2020), concluded the positive and significant association of intrinsic motivation with employee engagement. Similarly, the research of Hai and Park (2021) highlights that intrinsic motivation and employee trust have affected organizational commitment.

However, the present study has investigated this relationship with more in-depth job innovation and organizational commitment (Muhamad et al., 2023). In addition, this research suggests that trust as a multiplier with IM has faster's job innovation and develop innovative environment but individually consideration might not be positively significant factor with JI and OC. Researcher documented that, Pakistan is a collectivist country (Shafi et al., 2020) and this positive and significant association exists in collectivist countries as documented by past researchers. Furthermore, some methodological strengths of this research increase the confidence of the findings. First, to minimize the chance of biases, the study collected the data from different sources (i.e. higher management and employees) (Siyal et al., 2021). Second, the sample of this research was large (N=350) which was appropriate for Smart PLS and give more stable results. Third, the results of CMB (value of variance) were less than 50% which confirms that self-selection biases does not exist in this research, so the audience response rate was favorable for this study (Kock, 2020). Fourth, for most this is the first study to examine the impact of IM on JI and OC directly and employee trust as a moderator variable between IM and EE via employee engagement use as a mediator variable (Chaudhary et al., 2022). Up to the researcher's knowledge, no study has investigated the impact of IM on JI and OC directly and indirectly through EE, besides that using ET as a moderator variable in the context of Pakistan's telecommunications industry.

6.1. Practical Implications

The findings of this study are supported by the positive effect of intrinsic motivation on job innovation and organizational commitment (Wirsi & Zona, 2022). For the reason that every employee cannot integrally interesting their job. Besides that, the employer does not rely exclusively on the intrinsic motivation of their employees. With the intention of job innovation and organizational commitment in a targeted manner to build a better human capital, employee engagement and employee trust should also be considered as some important factors. From a Pakistan perspective, the software industry performs a significant role in the economic growth of the country. Due to increasing competition between software firms, more innovations and creativity are required to meet the targets within the deadline and sustain competitive advantages (R. N. S. Robinson & Beesley, 2010; Shafi et al., 2020). Therefore, leaders are strongly supportive to understand their employee's needs and maintaining organizational targets through effective and efficient HRM practices. In addition, leaders fulfilling their employee's needs, autonomy, relatedness, and competency by internalizing their goals with organizational goals (Edward L. Deci, Koestner, & Ryan, 2001; Montani et al., 2021). In the light of previous studies, this research suggests that HRM practices in the form of performance feedback, public recognition, and individual praise with intrinsic motivation increase job innovation and organizational commitment of knowledge workers. However, it is investigated that each organization consists of different cultures, norms, values, and circumstances with different behaviors and perceptions of its workers. So, based on different cultural norms it might be required local adjustment according to the culture and environment to meet the organizational targets and individual outcomes. Furthermore, it is also included in HRM practices when the rewards tools are given to the individuals, it must be salient for individuals to achieve intended outcomes and job innovations. Moreover, it needs to appreciate the employees and knowledge workers for incentives and give the awareness of how rewards tools can be achieved.

6.2. Theoretical Implications

The study contributes theoretically to the literature on IM, JI, OC, EE, and employee trust in organizations in several ways. First, the finding of this study adds to the literature on intrinsic motivation, JI, OC, ET, and employee engagement in the R&D institutions of Pakistan. Second, this study introduced employee trust as moderating variable in the relationship between intrinsic motivation and employee engagement in the context of JI and OC, which is much different as compared with previous studies(Wirsi & Zona, 2022). This study introduced employee engagement as a mediator variable for job innovation and organizational commitment(Mustafa et al., 2020). By doing so, the finding of this study demonstrates more encompassing results as compared to past studies.

6.3. Research Limitations & Future Research Directions

The findings of this research should be reflected in the light of some limitations for sample selection and target scope. A preliminary consideration favors the nature of the sample. The study consists of an online survey, many questioners are incomplete, so it is difficult to investigate the causal relationship with incomplete data of studied constructs. This research needs to consider other variables like OCB, work engagement, etc. This study consists of quantitative research and the sample was selected through an online survey. This research aimed to investigate the effect of intrinsic motivation in promoting employee engagement and examine the moderating role of employee trust in job innovation and organizational commitment in the Pakistan IT industry(Nizam et al., 2020). These variables' relationship has been investigated by online survey data which was collected from Pakistan's IT organization by using a questionnaire(Hinduja et al., 2023). For achieving the objective of this study, IM, EE, JI, OC, and OT construct the results by CFA (confirmatory factor analysis) and SEM (structural equation modeling) which were briefly explained in the figures and tables. This study finds that intrinsic motivation positively affects job innovation and organizational commitment and validates the self-determination theory(Di Maggio et al., 2019).

Besides, a study documented that intrinsic motivation has positively associated with employee engagement(Wirsi & Zona, 2022). The results of this study demonstrate that employee trust is the key factor to motivate the employee and perform a good role in employee engagement in the organization(Adisa, Ogbonnaya, & Adekoya, 2023). Furthermore, the results of this study indicate that intrinsic motivation is a key factor to engage employees with innovative ideas with dedication and commitment that can improve the competitive advantages of the organization. The results of this study may assist as an essential source for future academic, new potential researchers, and empirical studies in the context of IM, EE, JI, OC, and OT. This study fills the gap by adding significant literature on intrinsic motivation and defining employee trust as a moderator with the stated relationship(Chaudhary et al., 2022). The existing study only emphasized these five scopes and researchers highly suggested investigating more independent variables which might be associated with IM like work engagement, innovative work behavior, organizational citizenship behavior, confidence interval, etc. . These are the most important factors that influence IM, JI, and OC respectively. Finally, the future researcher goes for longitudinal design to find out the casual relationship for stated variables.

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