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Nexus between Human Talent Attraction and Digital Recruitment: A Signalling Theory Perspective on Anticipatory Psychological Contract

Mehreen Memon* Noman Soomro** Sara Wali Qazi***

Abstract

This study aims to examine the role of the degree of digitalization in the recruitment process on human talent attraction by increasing candidates' intention to engage in and take part in the recruitment process. Using the signaling theory perspective, the study suggests that this relatedness is mediated by organizational attractiveness and the anticipatory psychological contract. The study analyzed data collected from 260 students from both government and private sector universities based in Karachi, Pakistan. The study revealed a positive relationship between the degree of digitalization in the recruitment process and candidates' intention to apply through digital recruitment techniques as a means of talent attraction. The results are acquired using the Partial Least Square Structural Equation Modelling (PLS-SEM) technique through smart PLS software. The results also illustrated that organizational attractiveness and anticipatory psychological contract mediates the relationship between digitalization in the recruitment process and candidates' intention to apply. The study can help the management of organizations to foster the parameters so that human talent would get attracted and apply for a job at an organization. Furthermore, since the study is based on a sample collected from Pakistan, it contributes to the literature thread from developing countries.

Keywords: Digital recruitment; candidates' intention to apply; organizational attractiveness; anticipatory psychological contract.

JEL Classification: J24, O33, M12

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1. Introduction

In the recent competitive and technology-driven era, an organization's cornerstone is digitalizing different functions in all business streams. Sustaining this, the use of digital technology in the human resource department's different processes has also increased in popularity over time (Abdalla Hamza et al., 2021). Amongst all other functions of human resource management, digitalization of the recruitment and selection process has also become a must-have approach for Talent Acquisition Managers (Al-Zagheer & Barakat, 2021). With time, organizations have become more demanding in acquiring talent for vacant jobs and are more focused on candidates' talent (Amirreza & Svetlana, 2021). This challenging facet of organizations has made the labor market much more competitive as organizations demand human talent instead of candidates (Gong et al., 2022).

To meet these ever-changing and competitive requirements, Talent Acquisition Managers use emerging technologies to attract, source, assess and select the best-matched candidates for their organizations (Fernandes & Machado, 2022). Web-based recruitment and e-recruitment tools have transformed job advertisement processes (Dhiman & Arora, 2018). The second phase of digital recruitment streamlined the recruitment stages using several automation techniques (Gilch & Sieweke, 2021; Girisha & Nagendrababu, 2020) such as applicant tracking systems (ATS). The recent recruitment transformation focuses on attracting human talent with digitalization in the recruitment process (Minhas et al., 2022; Paramita, 2020).

The above-cited transformation in the recruitment process has reshaped how candidates apply for available opportunities (Miller & Akdere, 2019). Through the traditional recruitment process, candidates used to apply for jobs by sending their applications through couriers. In contrast, with the digital recruitment process, many organizations evaluate candidates' LinkedIn profiles instead of asking them to send their resumes for the available opportunity. With this, it became a more convenient and effortless task for the candidates to apply for the vacancies (Sasirekha, 2021). As a result, organizations could generate a diverse pool of resumes for their open positions because it increases organizational attractiveness to candidates (Abugre & Boachie-Ansah, 2021).

On one end, digital recruitment expands the diversity of the applicant pool, but on the other end, it makes screening a large volume of resumes more difficult (Abdalla Hamza et al., 2021). A recent study by Bhatt (2022) concluded that organizations receive an average of 144 applications for each entry-level position (Bhatt, 2022). The findings of the study indicate that digitalization in one stage of recruitment can create problems for the other stage, which makes it difficult to find the right candidates with the necessary skills for these positions, so a strategy should be developed for more effective and efficient hiring (Al-Zagheer & Barakat, 2021). Incorporating digitalization in all stages of recruitment can significantly save cost,

effort and time for recruiters in the organizations (Shayrine & Gomathi, 2022). However, another unintended impact of the digital recruitment & selection process would be on the candidates (Qayum, 2022). Digital recruitment impacts the organizations' performance and may influence talent's perception of the organization (Bazian et al., 2022), specifically their understanding of organizational attractiveness. Candidates' perception of organizations can significantly influence their pre-employment beliefs based on which they intend to apply for vacant positions (Basavaraj et al., 2022).

Through the lens of signaling theory, digitalization in the recruitment process is perceived to send signals about the organizations during the pre-employment phase, which helps to develop their anticipatory psychological contract (APC), resulting in increasing attractiveness for the organization as a future employer (Maceira Elvira, 2022). If the candidates negatively perceive these signals, they might lose interest in the organization and opt out of the recruitment process (Alzaid & Dukhaykh, 2023). A recent study on LinkedIn illustrates that 83% of the interviewed candidates changed their minds about the organization they initially liked because of the apprehensions they developed during the recruitment process (Folger et al., 2022).

Considering the above facets of digital recruitment & selection, the current study aims to clarify the impact of the degree of digitalization in the recruitment process on human talent's perceptions of an organization's attractiveness (ORA) via anticipatory psychological contract (APC) as a future employer and its role on candidates' intention (CIP) to apply for the job through the lens of signaling theory.

2. Theoretical Elucidations and Hypothesis Development

2.1.1 Digitalization in Recruitment & Selection Process

Human talent is among the important players in an organization's success and always plays a crucial role in the organization's progress (Hosain, 2020). The quality of the employees represents the quality and strong branding of the organization. Organizations always want a quality workforce and the best talents to distinguish their businesses from their competitors (Ahmed et al., 2021). Hence, it is paramount to select the right candidate for the job. A good hire can positively affect the overall performance of the organization. Employees' recruitment and selection process plays a significant role in hiring quality human talents. Recruiting and selecting candidates is an expensive and effortful process. Therefore, frequently replacing a candidate is costly for the organization (Swadia, 2018). Previous literature argued that organizations spend millions per year on replacing candidates due to employees leaving, and one of the major reasons for employee turnover is that they are not a suitable fit for the job. As such, it is obvious that a quality recruitment and selection process is a dire need.

The recent recruitment and selection processes are heavily influenced by technology in all the phases of the recruitment and selection cycle (Mishra & Kumar, 2019). The internet, networking websites, artificial intelligence-based recruitment tools, gamification and psychometric assessments have strongly influenced the way recruiters do their jobs and candidates search for jobs (Strohmeier, 2020). This changing facet of using technology in recruitment and selection has increased researchers' interest in investigating and exploring different aspects of digitally equipped recruitment and selection methods and their influence on candidates' perceptions (D'Silva, 2020).

However, the degree of digitalization is distinctive based on the usage of digitalization in the recruitment process (Folger et al., 2022). The degree of digitalization in recruitment can be examined in three main stages of the recruitment process. i.e. stage 1: sourcing or application process, stage 2: candidate assessment, and stage 3: candidate selection. For instance, many organizations rely on traditional recruitment methods by applying all the manual techniques in three stages of the recruitment process which will be considered as a low degree of digitalization in the recruitment process (Bhatia & Satija, 2022).

Contrarily, many organizations believed in a high degree of digitalization in recruitment by sourcing candidates through LinkedIn or career portal (Abdalla Hamza et al., 2021) and assessing candidates through gamification or psychometric testing (Frampton et al., 2020) and selecting candidates through online mediums such as zoom or Teams (Darko et al., 2022). Prior research suggests that a high degree of digitalization in the recruitment process creates a positive image of an organization and thus increases candidates' attraction to the organization as a future employer (Gilch, 2022).

2.1.2 Organizational Attractiveness

Prior research elucidated that the candidate aspect of an organization's image during the recruitment process is not just a fact but an indication of what the organization will be like (Bresciani et al., 2021). As a result, candidates can build up an image of an organization based on its technology usage. If an organization uses high-tech procedures and new technology in recruitment, it creates a positive impression on the candidates' psyche and can increase employer branding (Al-Marouf et al., 2023). Prior research studies have discovered that organizations' use of digital recruitment procedures may create a positive image on candidates and thus increase attractiveness to job candidates to engage in the job process (Black & Van Esch, 2020).

Similarly, a disorganized, full of glitches, lengthy and unreliable digitalized recruitment process may build a negative image on candidates and ruin their interest in the job process (D'Silva, 2020). Based on this assertion, which is consistent with the research, it has been assumed that organizational attractiveness can indirectly impact a candidate's psyche

and can significantly compel a candidate either to take part or not in the digital recruitment process.

2.1.3 Anticipatory Psychological Contract

The anticipatory psychological contract can be defined as a candidate's beliefs and expectations in the pre-employment phase about their future employer (Madan & Madan, 2019). Unlike a contract used to demonstrate legal binding, a psychological contract is a binding of mutual expectations and unwritten obligations between the two parties, an employee and an employer (Ruchika & Prasad, 2019). Both employee and employer hold obligations towards each other as the employee expects the employer to provide work-life balance, good salary package, flexibility, growth etc. and as an exchange employer expects that the employee will accomplish all those responsibilities that come within the job role and will also be supportive in performing the functions that are not mentioned in the job description, i.e. late working hours (Pantouvakis & Karakasnaki, 2017). This psychological set of expectations is a dynamic process that starts before joining the organization, known as an Anticipatory Psychological Contract (Lee et al., 2022).

Anticipatory Psychological Contract (APC) is a dynamic process that begins before employment and continues through various career stages. It develops during the period preceding organizational entry and marks the development of an employee's expectations from their employer based on the stimuli they experience from the environment (Madan & Madan, 2019). APC is an employment schema comprising candidates' information and impressions and an individualistic naive schema entirely dependent on an individual's perception (Fernandes & Machado, 2022). Thus, based on these pre-employment perceptions and beliefs, a candidate evaluates and decides which job to apply for.

2.1.4 Candidates' Intention to Engage in and Apply through Digital Recruitment

Even though digital recruitment and selection has gained awareness and is growing rapidly in organizations, its success is based on candidates' engagement and attraction towards the process (Van Esch & Black, 2019). Empirical pieces of evidence show the use of social media and digital recruitment tools has increased over time; with this, we can presume that this increases the chance of candidates getting attracted towards the digital recruitment and selection process (Borges et al., 2021). But research traces of evidence on the factors that increase candidates' likelihood of engaging in the digital recruitment and selection process are still scarce (Van Esch et al., 2021).

During a recruitment and selection process, it is not only organizations that actually select the candidates but on the other side of the table, candidates also decide whether to apply for the job or not, whether to accept the offer or not (Hafeez et al., 2018; Hosain, 2020).

Consequently, it is justifiable for the candidates to focus on the points or factors which attract them. Candidates decide at every step of the recruitment and selection cycle whether to proceed further or stop the process then and there (Van Esch et al., 2021).

Literature related to candidates' perspectives, while attracted towards the digital-friendly recruitment and selection process, sheds light on multiple determinants based on which candidates get attracted to engage in the digital recruitment and selection process (Zafeiriadou, 2021). Empirical piece of research shows that the factors based on which candidate may attract towards an organization can be an organizational brand, user-friendliness of the recruitment process, candidates' experience during the recruitment process, procedural justification and innovativeness of the digital recruitment process (Fernandes & Machado, 2022).

2.1.5 A Signaling Theory Perspective

Signaling theory introduced by Spence (1973) is commonly used to explain how information, or signals, about an organization's characteristics, revealed during recruitment activities, can influence applicant attraction to the recruiting organization (Hahn & Reimsbach, 2021). The current study uses the signaling theory to understand how organizations' usage of digital recruitment and selection process influence candidates' perceptions to get engaged in the digital recruitment process. The Signaling Theory approach in the case of recruitment and selection suggests that when an individual does not have complete information regarding any function and is unsure about the next steps, they may conclude based on cues, and this can demotivate them from participating in the process (Wolff & Burrows, 2021). Regarding candidates' reactions to selection processes, signaling theory articulates that candidates use the information they receive about an organization during recruitment to indicate the organizational attribute (Folger et al., 2022).

A study by Paramita (2020) demonstrated that candidates use attributes of recruitment and selection activities, such as the design or methods used in the selection process, as indicators of overall organizational characteristics (Paramita, 2020). Applicants, who typically know little about the recruiting organization, form an image of the organization as a potential employer based on these signals, which develop anticipatory psychological contracts of candidates (Ruchika & Prasad, 2019). These impressions or inferences are signaling mediums that directly influence signaling outcomes, which is how candidates' intentions towards an organization influence their choices, thus engaging in the recruitment process (Black & Van Esch, 2020).

Hence, the study aims to examine these signaling illustrations that is how the degree of digitalization in the recruitment & selection process (DRS) provide signals to increase the organizational attractiveness (ORA) and develop anticipatory psychological contract (APC)

to influence candidates' intention to engage in the recruitment process and apply for the vacant job (CIP).

2.2 Conceptual Framework

The conceptual model depicts the degree of digitalization in the recruitment process (DRS) at each stage of sourcing, attracting, assessing and selecting stages as an independent variable, whereas candidates' intention to engage in and apply through the digital recruitment process (CIP) as a dependent variable. In the illustrated model, organizational attractiveness (ORA) mediates the relationship between the digital recruitment process and candidates' intention to apply. However, anticipatory psychological contract (APC) has also been taken as a mediator variable. Figure 1 illustrates the conceptual model used in the study.

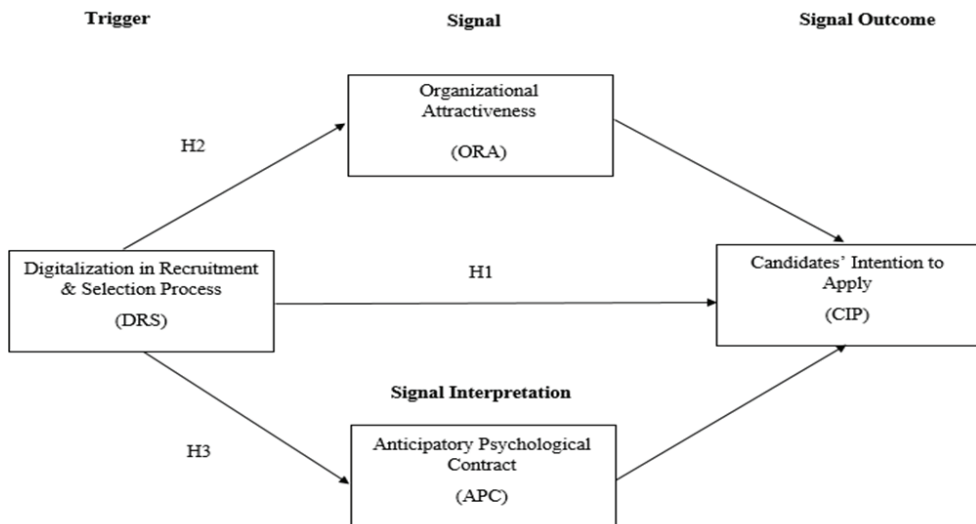


Figure 1: Conceptual Framework

2.3 Hypothesis Development

2.3.1 Degree of Digitalization in Recruitment and Candidates' Intention to Apply

Job searching and applying is a rigorous process of decision-making on the candidates' side (Al-Zagheer & Barakat, 2021). Existent literature suggests that the degree of digitalization in sourcing, attracting, assessing and selecting stages of the recruitment process plays a significant role in moulding candidates' intentions to engage in and apply through the digital recruitment process (Bhatia & Satija, 2022; Bina et al., 2021). The organizations' execution of digitalization in the recruitment process has a significant direct impact on candidates' intention to apply for the opportunities available in that organization (Maceira Elvira,

2022; Madan & Madan, 2019). Therefore, considering this, it has been hypothesized in the current study that a high degree of digitalization in sourcing, attracting, assessing and selecting stages directly affects candidates' intention to engage in and apply through the digital recruitment process in organizations.

H1: High degree of digitalization in the recruitment process positively impacts candidates' intentions to apply for the vacant job.

2.3.2 Mediating Role of Organizational Attractiveness

Existent literature on organizational attractiveness illustrates that candidates develop an organization's image during the recruitment process not just as a fact but as an indication of what the organization will be like (Basavaraj et al., 2022; Bazian et al., 2022). As a result, candidates can build up an impression of an organization based on its technology usage. Suppose an organization uses high-tech procedures and new technology in recruitment, In that case, it creates a positive image for the candidates' psyches and can increase their organizational attractiveness (Alzaid & Dukhaykh, 2023). Therefore, it has been proposed in the current study that organizations' high degree of digitalization in the recruitment process increases organizational attractiveness resulting in increasing candidates' positive intention to apply for open positions in the recruiting organization. Hence, it is hypothesized as follows:

H2: Organizational attractiveness mediates the relationship between the degree of digitalization in the recruitment process and candidates' intentions to apply for the vacant job.

2.3.3 Mediating Role of Anticipatory Psychological Contract

Candidates' career expectations can be comprehended through the prism of an anticipatory psychological contract. Candidates' pre-employment beliefs about their future employer are the promises they wish to make to prospective employers and the inducements they want to offer, defined as the APC (Madan & Madan, 2019). A recent Bruise (2019) study posits that candidates expect salary, status, growth opportunities, and challenging work to meet their needs. In contrast, organizations expect time, energy, skills, competencies, talents, and loyalty from the candidates as an exchange of the relationship (Bruins, 2019). Anticipatory psychological contract (APC) is a vigorous process that begins during the anticipatory socialization phase of a candidate, which is considered the pre-employment period (Lee et al., 2022). Candidates learn about an organization through socialization and develop an impression of it during the period preceding organizational entry (Madan & Madan, 2019). Prior literature suggests that candidates, based on these pre-employment perceptions and beliefs decide whether to apply for the job in the recruiting organization (Pujol-Jover et al., 2023). Candidates' knowledge gained while selecting their employer leads to the perceived employer's image of the employer and also forms an anticipatory psychological contract, which is

the set of beliefs an individual brings to the organization before socialization with the organization begins (Sajid et al., 2022). A candidate's perceptions of an employer are formed due to the individual's familiarity with the organization. As a result of digitalization in recruitment initiatives, candidates' perceptions of the employer may improve (Shayrine & Gomathi, 2022). The APC of a candidate is formed by the organization's implicit and explicit communications through social media platforms when they post job advertisements. The candidate interprets their surroundings and absorbs the information provided by others (Van Esch & Black, 2019). Thus, it is proposed in the study that organizations' high degree of digitalization in the recruitment process supports the development of a positive anticipatory psychological contract (APC) which leads them to intend to apply to that organization. Hence, it is hypothesized as follows:

H3: Anticipatory psychological contract (APC) mediates the relationship between the degree of digitalization in the recruitment process and candidates' intentions to apply for the vacant job.

3. Research Methodology

The current study adopted a deductive approach by using a quantitative research method. For collecting the data, a survey was conducted on the degree of digitalization in recruitment and selection, organizational attractiveness, anticipatory psychological contract and candidates' intention to apply. The questionnaire used a five-point Likert scale ranging from strongly disagree to strongly agree. All questions were given in the English language. The scales used for the variables in the study are given below:

Table 1
Measurement Scales and Items

Variable	Measurement Scale
Degree of digitalization in recruitment	Folger et al. (2022)
Organizational Attractiveness	Polyhart et al. (1999)
Anticipatory Psychological Contract	De Vos et al. (2003)
Candidates' Intention to Apply	High house et al. (2003)

The participants for the study were final semester, undergraduate and graduate level, private and government sector university students in Karachi, Pakistan. The criteria for candidates were those frequently appearing in the career fairs organized by universities and those actively looking for a job. Another criterion for selecting candidates was the experience of applying through digital recruitment and selection so that they could provide relevant information. Non-probability convenience and snowball sampling was used to choose a sample from the population. Using Krejcie and Morgan's (1970) table, the initial sample size was 390 candidates for data collection. However, the response rate was 68%, making 260 respondents the actual sample size. Once the survey collected the data, it was analyzed through structural equation modeling (SEM) using smart PLS software.

4. Findings and Results

4.1 Profiles of Respondents

During the data collection phase, the questionnaire was distributed to 390 university students through google forms and physical sources. As the response rate was 68% therefore, 260 filled questionnaires were received. Amongst the respondents, the majority were males, i.e. 52.3%, compared to the ratio of the female respondents, which was 47.7%. Most respondents were of the age group between 26 to 35 making 58.8% fall into this category. However, most respondents were final-semester undergraduate students from the Business Administration field.

Table 2
Respondents' Demographics

Categories		Frequency	Per cent
Gender	Male	136	52.3
	Female	124	47.7
Age	Below 20	49	18.8
	20-25	53	20.4
	26-35	153	58.8
	Above 35	5	1.9
Total		260	100

4.2 Assessment of Measurement Models

4.2.1 Composite Reliability

Assessment of measurement models determines the relationship between the latent variables and their measures. It comprises the reliability, validity and consistency of the scales that were used for data collection. Structural equation modeling using smart PLS was used to test the latent variables' reliability, validity and consistency. As such, Cronbach Alpha, factor loadings, composite reliability and average variance extracted (AVE) values were examined. The model used in the current study is reflective, which means that all measuring items of a latent variable originate from the same variable (Hair et al., 2011). Therefore, all items are interchangeable, and omitting any item from the construct does not affect its meaning, provided the construct has suitable reliability. The items having less than 0.5 loadings were omitted for better results (Hair et al., 2011). To calculate a reflective construct's convergent validity, outer loadings and average variance extracted (AVE) must be assessed. As a result, the threshold value of 0.7 and above for outer loadings were retained in the study.

However, the loadings less than 0.7 were carefully assessed before removing them so that it should not affect the composite reliability of the construct. The Cronbach Alpha value of all latent variables was more than 0.7 satisfying the threshold criteria. Furthermore, the AVE values of all constructs were also deemed acceptable as they reached the threshold value of more than 0.5. The results of the measurement model were considered acceptable and confirmed the threshold criteria of reliability, consistency and validity of the instrument used in the study. These results led to a further process of analysis. Table 3 depicts the results of the assessment model.

Table 3
Assessment of Measurement Model

Construct	Items	Loadings	Cronbach Alpha	Composite Reliability	AVE
Anticipatory Psychological Contract	APC 1	0.684	0.87	0.91	0.55
	APC 2	0.908			
	APC 3	0.888			
	APC 4	0.905			
	APC 5	0.781			
	APC 6	0.878			
	APC 7	0.623			
Candidates' Intention to Apply	CIP1	0.662	0.88	0.85	0.53
	CIP2	0.823			
	CIP3	0.851			
	CIP4	0.844			
	CIP5	0.649			
Digital Recruitment & Selection	DRS 1	0.866	0.73	0.81	0.51
	DRS 2	0.870			
	DRS 3	0.863			
	DRS 4	0.845			
	DRS 5	0.845			
	DRS 6	0.859			
	DRS 7	0.533			
	DRS 8	0.725			
Organizational Attractiveness	ORA 1	0.760	0.82	0.87	0.57
	ORA 2	0.902			
	ORA 3	0.840			
	ORA 4	0.815			

4.2.2 *Discriminate Validity*

Unlike convergent Validity, discriminant Validity measures the extent to which the constructs in the model are unrelated. The discriminate Validity was measured through Fornell-Larcker criteria and cross-loadings. The results depict that all constructs could gauge the different nature of variables and also show satisfactory results of cross-loadings representing each item loaded on its construct. The results of discriminate Validity through Fornell-Larcker criteria are provided in the table below. Diagonal values in the table represent the square root of AVE.

Table 4
Fornell-Larcker Criteria

	DRS	ORA	APC	CIP
DRS	0.74			
ORA	0.34	0.72		
APC	0.31	0.41	0.72	
CIP	0.33	0.34	0.42	0.75

4.3 Assessment of the Structural Model

After assessing the measurement model to be satisfactory, the next step is to evaluate the structural model. Structural model estimation can be used to analyze and interpret the data. Measurement of the structural model can be examined through the coefficient of determination or R-square, Collinearity through variance inflation factor (VIF) and hypothesis testing through path coefficient (P value).

4.3.1 *Collinearity Diagnosis and Evaluating R-square (R²)*

Examining the variance inflation factor (VIF) is the measure to assess collinearity. If the VIF value equals 1, it means no collinearity amongst variables, whereas VIF greater than 1 indicates that variables are moderately correlated but less than 5. The results eliminated multi-collinearity issues in the data, illustrating the final analysis's next step. Furthermore, the coefficient of determination, also known as R square, is a statistical measure used to explain the proportion of variance in the dependent variable reflected by the independent variable. Scholars have suggested a threshold R² value of 0.67 as substantial, 0.33 as moderate and 0.19 as weak (Falk & Miller, 1992). The below Table shows the results of VIF and R².

Table 5
Results of VIF and R²

	VIF	R²	Relation
DRS	2.19		
ORA	2.63	0.52	Moderate
APC	2.77	0.72	Substantial
CIP	1.92	0.16	Weak

The result illustrated a moderate relationship between the dependent variable organizational attractiveness ORA and the independent variable degree of digitalization in the recruitment process (DRS). The results also depicted a weak association of independent variable DRS with dependent variable candidates' intention to apply CIP. However, when it comes to anticipatory psychological contract (APC) as the dependent variable, it showed a strong and substantial relationship with DRS.

4.3.2 Hypothesis Testing through P value

The hypothesis was tested through structural equation modeling using smart PLS version 4 as a final analysis step. For hypothesis testing, P-values were analyzed to check the significance of the structural model. The significant limit of P-values was analyzed to accept or not accept the hypothesis. As the threshold value of P should be less than 0.05 to get the hypothesis, the result concluded that the degree of digitalization positively correlates with the candidates' intention to apply with a p-value of 0.001.

Moreover, the results also revealed a positive mediating relationship between organizational attractiveness and anticipatory psychological contract with candidates' intention to apply, with a p-value of 0.003 and 0.000, respectively. The result leads to accepting Hypothesis 1 (H1), hypothesis 2(H2) and Hypothesis 3 (H3). The results are given in the table below.

Table 6
Hypothesis Testing

Hypothesis	Relation	P Value	Decision	Literature Support
H1	DRS→CIP	0.001	Accepted	(Bhatia & Satija, 2022; Nikolaou, 2021)
H2	DRS→ORA→ CIP	0.003	Accepted	(Alzaid & Dukhaykh, 2023; Basavaraj et al., 2022)
H3	DRS→APC→ CIP	0.000	Accepted	(Madan & Madan, 2019; Shayrine & Gomathi, 2022)

5. Discussion

One of the major challenges for HR professionals is attracting human talent to their vacant positions (Alzaid & Dukhaykh, 2023). With the growth in digital recruitment and selection process, a significant increase in job applicants has been found (Bhatia & Satija, 2022). The digital recruitment and selection process has also smoothened the recruitment process, resulting in less time to hire (Bina et al., 2021). In today's competitive era, organizations must emphasize their employer brand to potential candidates to increase their chances of hiring the best talent to fill their human resources needs. Digital friendly recruitment process incorporates a process to send a strong, peculiar and direct message to the targeted

candidates to attract them to engage and take part in the recruitment process (Kachouh, 2021).

Prior research elucidated that a candidate develops an organization's image during the recruitment process not just as a fact but as an indication of what the organization will be like (Bresciani et al., 2021). As a result, candidates can build up an image of an organization based on its technology usage. If an organization uses high-tech procedures and new technology in the recruitment process, it creates a positive impression on the candidates' psyche and can increase organizational attractiveness (Al-Marroof et al., 2020). Prior research studies have found that organizations' use of digitalization in the recruitment process may create a positive image on candidates and thus increase attractiveness to engage in the job process (Black & Van Esch, 2020).

Similarly, candidates' knowledge gained while selecting their employer leads to the perceived employer image of the organization and also forms an anticipatory psychological contract, which is the set of beliefs the individual brings to the organization before socialization with the organization begins (Sajid et al., 2022). A candidate's perceptions of an employer are formed due to the individual's familiarity with the organization. As a result of digitalization in recruitment initiatives, candidates' perceptions of the employer may improve (Shayrine & Gomathi, 2022). The APC of a candidate is formed by the organization's implicit and explicit communications through social media platforms when they post job advertisements. The candidate interprets their surroundings and absorbs the information provided by others (Black & Van Esch, 2019).

The current study aimed to examine the role of digital recruitment on candidates' intention to engage and take part in the recruitment process. The study also examined the mediating role of organizational attractiveness and the anticipatory psychological contract between digital recruitment and candidates' intention to apply. Based on the results obtained from several tests done using structural equation modeling, it has been found that there exists a relationship between organizations' use of digitalization in the recruitment process and candidates' intention to apply to that organization. Furthermore, the results also illustrated that organizations' use of digitalization creates a positive image of that organization in front of the candidates, ultimately increasing organizational attractiveness to them. As a result, candidates develop positive pre-employment beliefs in the shape of anticipatory psychological contract and thus influence their intention to engage in the recruitment process of that particular organization.

6. Conclusion and Future Research Directions

The current study aimed to examine the nexus between digital recruitment and talent attraction. The study investigated how digitalization in the recruitment process influences candidates' intention to apply, focusing on organizational attractiveness and the anticipatory

psychological contract. For doing so, the final semester, undergraduate and graduate level, private and government sector university students in Karachi, Pakistan, were selected for data collection. The major objective of the study was to examine the link between digitalization in recruitment and candidates' intention to apply. Results revealed that organizations' use of digitalization in the recruitment process creates a positive exposure for candidates, which ultimately increases their attraction towards the organization; thus, they will be anticipating positive expectations for the organization as future employers. However, the case may be vice versa if the organizations' digital recruitment process could be more user-friendly. Therefore, organizations should ensure that digitalization in the recruitment process avoids a disorganized, full of glitches, lengthy and unreliable mechanism as it may create a negative image on candidates' psyche and can ruin their interest in participating in the job process.

Another objective was to investigate the role of organizational attractiveness and anticipatory psychological contract in strengthening the relationship between the degree of digitalization in recruitment and candidates' intention to apply. The results revealed a strong role of organizational attractiveness and anticipatory psychological contract in moulding a candidate's decision to participate in the recruitment process. Organizational attractiveness works as a positive signal of the triggering mechanism of the digital recruitment process, which ultimately helps to develop a positive pre-employment belief of the candidates. Hence, organizations should highlight their brand image and culture through implicit and explicit job advertisements. Organizations should also increase the use of social media platforms such as LinkedIn, Facebook and career portal to increase their presence and thus leading to a positive organizational image for the candidates.

The current study investigated the candidates' perspectives while developing their anticipatory psychological contract. Future researchers can use the employer-side view in their research. Also, future researchers can use the same framework to investigate corporate employees' intentions while switching jobs.

7. Implications

The recent adoption of digitalization in the workplace compels organizations to incorporate different measures to attract human talent through technological interventions in their various functions. The current study will guide in all these areas. It will be particularly beneficial for talent acquisition managers, HR business partners – talent acquisition and recruiters to introduce digitalization in their recruitment function for successful hiring. The most important practical contribution would be for the TA Managers and HRBP – Talent Acquisition as they can evaluate contextual factors like organizational attractiveness to increase candidates' intention to apply through the digital recruitment process. Furthermore, the organizations would also benefit from understanding the role of organizational attractiveness in increasing candidates' anticipatory psychological contract. A positive anticipatory

psychological contract would help increase positive candidates' intention to apply for open positions in the recruiting organization.

Theoretically, the study adds to the literature on applicants' perspectives towards digitalization in recruitment. The study provides candidates' perspectives on a new form of recruiting methods through the lens of signaling theory and the anticipatory psychological contract. With this, the study adds to the current literature where candidates' intention to apply through digital recruitment is investigated by drawing on signaling theory and broadening the scope of the anticipatory psychological contract.

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Examining the Relationship between Fear of COVID-19 and Absenteeism among Frontline Workers in Pakistan

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Abstract

One of the significant difficulties businesses worldwide have encountered due to the spread of COVID-19 is the absence of essential employees. The major purpose of this research study was to assess the effect that anxiety brought on by the Covid-19 outbreak had on the percentage of workers who were absent from their jobs. In addition, this study aimed to evaluate the role that psychological distress and perceived organization support play as mediators and moderators between the fear of Covid-19 and absenteeism on the part of employees in the exposition of P-E Fit theory. With a quantitative research method and deductive approach, Data was collected using a validated survey instrument, with 239 responses received through an online Google form. The study's focus group consisted of frontline sales representatives. Using Smart-PLS to test the hypotheses revealed that most could be accepted. These findings are consistent with previous research studies in the field. This research adds to the previous literature by addressing the significance of managers' support for front-line staff by supplying them with the required tools and supplies to decrease fear and stress in the face of Covid-19. Overall, the study highlights the significant impact of the pandemic on the workplace and underscores the importance of understanding the factors that influence employee behavior during these unprecedented times.

Keywords: Pandemic; fear; lockdown; psychological distress; disease; front-line worker.

JEL Classification: M52, M54, M12, I31

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1. Introduction

The COVID-19 pandemic caught the world off-guard with its sudden emergence and unprecedented impact, unlike anything experienced in recent history. However, the Spanish flu outbreak in 1918 had a similar global impact, and now, a century later, history has repeated itself with COVID-19. While the Spanish flu caused significant loss of life, COVID-19 has surpassed it in terms of its deadly impact. With the outbreak of the Spanish influenza, industries throughout the world lost millions of workers, which had a huge influence on the global economy. Additionally, 2.1% of the world's population perished due to the disease, which decreased the workforce and made it difficult for survivors to continue working in their previous positions. Similarly, COVID-19 has caused huge global economic downturns due to its widespread and severe effects on the economy (Bishop, 2020).

Even though the United States of America and China were engaged in a serious trade war in 2019, the International Monetary Fund (IMF) predicted that the global economy would grow by 3.4%. However, the outbreak of COVID-19 caught everyone off-guard and resulted in a significant economic blow. Within a week of lockdown from February 24 to February 28, 2020, a record-breaking US\$6 trillion was removed from the market. The global stock markets were in extreme shock, and all sectors, including education, health, industry, and IT, stopped working to ensure social distancing (Ozzi, 2020). The cost of absenteeism due to the pandemic was also a significant indirect cost. However, remote working options decreased the cost of absenteeism for many economic sectors. COVID-19 has been proven to be more severe than H1N1 in 1921, and globalization and advanced technology played a significant role in keeping operations running for many organizations despite the pandemic outbreak, albeit with significant fluctuations in work speed (Vuong & Ho, 2020).

Insurance companies worldwide became active during the pandemic as it was a global health emergency, and people rushed to insure their lives first. There was an increasing demand for insurance coverage to insure people's lives, which presented a dilemma for insurance firms to offer insurance during lockdown periods and the fear of COVID-19. A feeling of uneasiness was created due to this circumstance, and it was the job of the insurance sector to consider their employees' fears and accommodate them accordingly (Islam et al., 2017). In addition, the widespread interest in and focus on The Covid-19 Pandemic among researchers and academics led them to assess the situation and offer advice for calming the public's fears and apprehensions. The present generation's exposure to a pandemic was unprecedented, making research into the phenomenon a fresh adventure. Covid-19 had a terrible effect on businesses worldwide, but those with online strategy plans could weather the storm and continue providing for their employees.

Despite the epidemic, many workers in different industries have continued to do their jobs as usual. Doctors, nurses, other medical professionals, and law enforcement officials fall

under this category. People who are housebound have also been helped by salespeople who operate around the clock. The insurance industry has also proven its loyalty to its customers by helping them through this difficult period. These workers have been dedicated to their support roles while confronting several challenges and hazards. Therefore, there is a need to study the influence that concern over COVID-19 has on absenteeism among workers. This study expands on the findings of previous research that looked into the future (Ozzi, 2020; Vuong & Ho, 2020). This study's major objective is to analyze the relationship between the psychological distress among employees due to COVID-19 and identify the key reason contributing to their absence from work while organizational support is arising.

Furthermore, this research investigates psychological distress's role in mediating the connection between concern over COVID-19 and employee absenteeism. In a sense, this study contributes to investigating the link between employee absenteeism and fear of COVID-19 with a mediating role of psychological distress and the moderating role of perceived organizational support among frontline employees in Pakistan. The purpose of this study is to investigate how fear of COVID-19 influences the attendance patterns of workers and how it influences the quality of their work while they are there.

2. Literature Review

The research hypothesis examines how people in Pakistan responded to the stressful situation caused by the COVID-19 pandemic. The P-E Fit theory applies to the situation, emphasizing the coordination between individuals and their environment in responding to work circumstances and the importance of the fit between the two. The absence of fit can occur in three forms: when the demands of the workplace exceed the worker's capacity, when the employee's needs are not being met, or when both situations occur simultaneously. The psychoanalytic theory of Sigmund Freud is also relevant to the situation, as it proposes that human behavior operates in three dimensions (Freud, 2017) id, ego, and superego. In the context of the research, the superego best fits the situation (McLeod, 2013) as people in the insurance and hospitality industries work for the betterment of others. According to James (1884) and Lang (1994), emotions can cause bodily changes through sensory stimulation. Harlow and Stagner (1933) classified emotions broadly into love and fear, with fear-related feelings often resulting in the desire to retreat. According to (Barlow, 2004), fear-based emotions have the potential to set off anxiety, which is a basic arousal symptom that can lead to secondary trauma (Metzger et al., 2004). Individuals have reported experiencing bodily symptoms, worry, and anxiety due to their dread of COVID-19 (Ahorsu et al., 2020; Satıcı et al., 2020a). To address fear and psychological distress, Freud's psychoanalysis and theory of emotions can be applied, while the P-E Fit theory can be used to tackle employee absenteeism by ensuring that the organization meets its needs.

Between April 2020 and February 2021, Pakistan, a poor nation with a fragile financial position before the COVID-19 pandemic, (Jackson, 2020) During such a catastrophic event, only a select few industries were able to carry out their duties, notably the security forces in charge of preserving law and order, the healthcare personnel who attended to patients, and the banking and insurance companies that oversaw the country's economic system (Prasad, 2020). However, compared to industrialized nations, Pakistan's insurance business is not nearly as established and does not have nearly as many resources. Insurance agents continue to use antiquated methods to sign up new customers, such as making personal appearances at prospective customers' homes to persuade them to purchase insurance policies (Prasad, 2020). In addition, agents continue to register customers over the phone or via email. The low acceptance percentage of insurance plans in Pakistani culture is the root cause of this behavior. A lack of information about the advantages of insurance policies is caused by the cultural norms and some schools of thought in Pakistan that are against insurance policies. Because of this, selling insurance coverage is consistently ranked as one of the most difficult occupations in Pakistan, even when conditions are normal.

Interestingly, during the COVID-19 pandemic, when the number of deaths began to rise in April 2020, there was no increase in the number of people purchasing health insurance coverage. This indicates that workers in the insurance industry had to exert increased effort to bring in business, resulting in their exposure to a greater risk of COVID-19. In addition, the insurance industry suffered setbacks during lockdown conditions, particularly in the general insurance sector, since individuals were less interested in purchasing insurance for their cars or businesses because there was little activity in those specific industries (Alnazly et al., 2021). This was especially true in the general insurance sector. Therefore, the insurance industry in Pakistan must adopt modern and innovative ways to register clients, create awareness among people about the benefits of insurance policies, and introduce policies that cater to the needs of the people during crises such as the COVID-19 pandemic. In addition, it is also necessary for the insurance business in Pakistan to develop cutting-edge and creative strategies for raising awareness among the general public regarding the advantages of purchasing insurance policies.

H1: The fear of COVID-19 is positively related to employee absenteeism.

To prevent the spread of COVID-19, the Pakistani government made various changes to the labor policy in April 2020 (Ahmed, 2020), requiring employees to wear face masks, maintain personal hygiene, keep social distance, and keep the workplace clean. Insurance staff had a difficult working environment due to the epidemic, despite being equipped with safety equipment. The public's fear of the epidemic was exacerbated by continual media coverage and misinformation spread via the grapevine. Insurance professionals faced considerable disruptions in their day-to-day operations due to the lockdown measures enforced in many cities and towns, including Karachi (De Kock et al., 2021). During April, May, and

June of 2020, Karachi, the largest city in Pakistan, was placed under a rigorous lockdown. Roads were blocked using containers and barricades, and the mobility of the general people was severely restricted. As a result of the lockdown scenario, insurance professionals had a tough time traveling to their consumers because the markets were either closed or open for a short time (Malik et al., 2021).

As a result, insurance workers faced significant challenges in performing their duties, which affected their productivity and the progress of their companies. The government needs to take effective measures to facilitate insurance workers and other essential workers during pandemics to ensure that their safety and well-being are adequately taken care of while carrying out their duties. During the prolonged lockdowns imposed throughout the state in response to the COVID-19 pandemic, a notable increase in absenteeism among employees has become a concern. Absenteeism refers to the prolonged absence of employees from their work. Several factors have contributed to this increase in absenteeism, such as employees awaiting COVID-19 test results or isolating themselves after testing positive for the virus.

Moreover, many employees have been forced to stay home to care for their children due to school and daycare closures. Illness, particularly minor illnesses such as cold and flu, has also contributed to absenteeism during the pandemic. The highly contagious nature of the coronavirus has led to a high level of unplanned absenteeism, with sick employees risking the health and safety of their colleagues by coming to work. The cost of such actions to businesses has been estimated to be between 150-250 billion dollars per year, according to a Business Harvard review (Yıldırım, 2021).

H2: The extent to which an organization invests in its facilities is correlated with the likelihood that its personnel will remain in their positions.

Mental illness and psychological distress also significantly contribute to absenteeism during the pandemic. The COVID-19 pandemic has had numerous negative impacts on mental well-being, with 36% experiencing difficulty sleeping and 32% experiencing difficulty eating, according to KFF. The pandemic has particularly hard hit individuals with pre-existing immunocompromised conditions, as their conditions have worsened due to the stress and anxiety caused by the pandemic. One worker suffering from depression takes about 27 more leaves compared to a worker without depression, as per CIPD. Finally, physical impairments have also contributed to absenteeism during the pandemic. There has been a documented increase in the amount of money spent by employers on musculoskeletal problems, with around 20 billion dollars going into diagnostic imaging and physical treatment, according to OSHA. The pandemic has exacerbated these issues, as worker shortages have led to overworking, increasing the risk of musculoskeletal problems (Saleem et al., 2020). Organizations must prioritize employee health and well-being and provide support to minimize absenteeism rates. Based on the literature reviewed, the following hypothesis has been developed.

H3: The psychological distress mediates the relationship between fear of Covid-19 and employee absenteeism.

Organizational support can have a significant impact on reducing the severity of the COVID-19 absence crisis. Reasons for absences from work owing to the pandemic include illness, quarantine, childcare obligations, fear of infection, and movement limitations (Freud, 2017). Organizations may assist workers better and reduce absenteeism's negative effects if they implement this strategy. That's like Remote work, staggered hours, and shortened work-weeks are all examples of flexible work rules that help employees juggle their professional and home lives. Regular sanitization, social distancing practices, and supplying personal protective equipment are all examples of occupational health and safety measures that may assist in lowering the risk of infection and ease employees' fears about going to work. Employees' mental health has suffered due to the epidemic, with rising stress, worry, and burnout. Companies may assist their employees in dealing with mental health difficulties and reduce absenteeism by providing them access to mental health resources, counseling services, and stress management programs (Burns, 2023). These claims, expressed as a hypothesis, characterize the relationship between perceived organizational support and covid19.

H4: The perceived organizational support moderates the relationship between fear of Covid-19 and employee absenteeism.

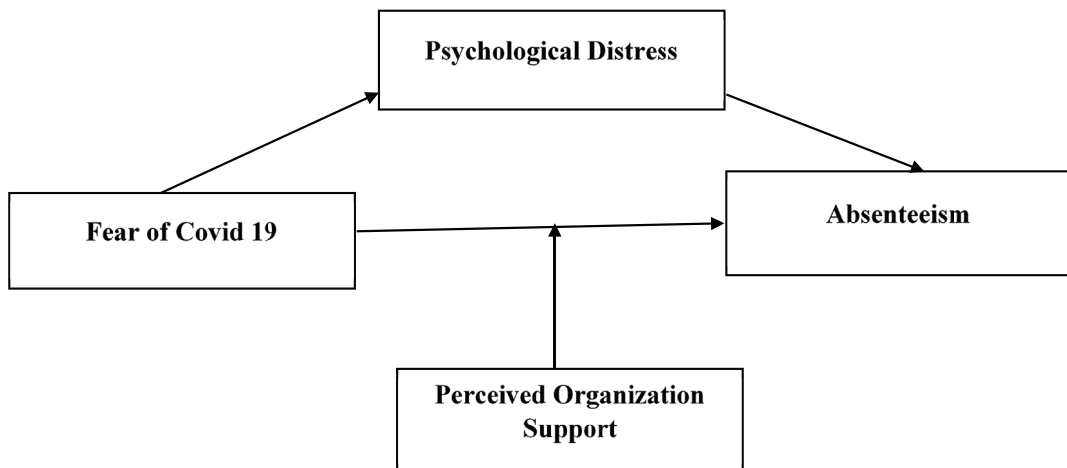


Figure 1 : Research Framework

3. Methodology

3.1 Research Philosophy

The present research study has utilized a quantitative approach to analyze the collected data effectively. This study analysis uses a deductive method, with testable hypotheses

created by misusing accepted theory. However, the study's primary demographic was front-line insurance industry employees. Another researcher (Kline, 2000) simplified these techniques and stated that two or more respondents for each scale in construct. Regression and conformity factor (CFA) to check the structure and measurement model jointly (Hair, 2011). (Podhazur, 1997) discusses an approximate technique to determine the sample size: having fifteen or more respondents for every construct.

3.2 Data Collection

The study's sample consisted of 240 sales workers working actively in an insurance company during the COVID-19 pandemic lockdown. The researcher employed purposive sampling, a non-probability sampling technique, to select the most suitable sample for the research study. The respondents approached for the study were frontline workers, specifically sales officers and salespeople, performing their duties during the lockdown period. The researcher has utilized an e-questionnaire created on Google Forms to collect the data. From this, 239 valid responses were gathered and considered for analysis. Additionally, 20 extra responses were collected if necessary to replace incomplete questionnaires.

3.3 Data Analyze

Specifically, the researcher has implemented PLS smart (Partial Least Squares) to analyze the data collected from the respondents. Based on the study's objectives, the researcher has formulated three hypotheses and selected suitable formulas to analyze the data accordingly. To evaluate the information gathered from the respondents, the researcher specifically used PLS smart (Partial Least Squares). The researcher has developed three hypotheses and chosen appropriate formulae to evaluate the data in light of the study's objectives. Regression analysis, based on the (PLS) optimization approach, is employed in this study. To validate our study model, we used the partial least squares method. (Hair, 2011). Consider structural models using the multivariate Partial Least Squares (PLS) approach. It establishes the model's boundaries, which lower the residual variance of the final product of the entire model construct (Hair, 2011). It eliminates the need for parametric conditions to highlight the distribution of data statistically, which is recommended for small samples. To jointly examine the structure and measurement model, the leading and well-known Partial Least Squares (PLS) technique integrates and combines analysis of regression and conformance factor (CFA) (Hair, 2011). we utilized Smart-PLS version 3.0 for analysis in the current study.

3.4 Data Instrument

Data was collected through a questionnaire that followed the Likert scale. The study used the following instruments for data collection:

Table 1
Data Instrument

S. No	Variables Name	Item	Authors Name
1	Fear of Covid	8	Ahorsu et al. (2020)
2	psychological distress	6	Kessler et al. (2003)
3	Absenteeism	4	Newman, J. E. (1974)
4	Perceived organization support	7	Megan Paul (2009)

4. Data Analysis

Table 2
Reliability and Validity

	Cronbach's Alpha	Rho_A	Composite Reliability	Average Variance Extracted (AVE)
ABS	0.808	0.830	0.873	0.634
FOC	0.890	0.898	0.914	0.606
PDStress	0.883	0.909	0.909	0.627
POS	0.872	0.895	0.936	0.653

The validation of the estimate model through the utilization of the Structural Equation Modeling (SEM) Least Squares (PLS) approach and the evaluation of the effectiveness of the suggested adjustments were the key goals of this research project. PLS is a reliable method that can estimate both the recurring and confirmatory variables at the same time. In order to validate the conventional predilection approach, a unidirectional test devised by Herman was carried out. In order to determine how well the model converges on the data, a statistic known as the Average Variance Extracted, or AVE, was utilized. The threshold for convergent reliability is 0.5 or above, and the AVE value of Fear of Covid (FOC) was found to be greater than 0.5, indicating a high impact and correlation between FOC and absenteeism (as indicated in Table 2). Additionally, discriminant validity was assessed, which measures the extent to which various constructs differ from one another. The Heterotrait-Monotrait Ratio (HTMT) was utilized to determine discriminant validity, and all variables had values less than 0.85, indicating a high level of uniqueness and distinction among all the constructs (as shown in Table 4).

To ensure high consistency in the model, composite reliability was used to determine the reliability and validity of the measurement models, and it was found to be greater than 0.7 for all variables in the table. This demonstrates that the model has a high level of consistency and accuracy. The SEM-PLS method was utilized throughout the research project,

which, as a whole, effectively verified the estimating model and proved the correctness of the alterations that were suggested. The convergent and discriminant validity of the model was examined with the help of AVE and HTMT, respectively. Additionally, the reliability and validity of the model were analyzed with the help of composite reliability.

Table 3
Cross Loadings

	ABS	FOC	STRESS
AB1	0.789	0.361	0.004
AB2	0.867	0.340	-0.100
AB3	0.827	0.356	-0.062
AB4	0.692	0.224	-0.011
FOC1	0.419	0.710	-0.018
FOC2	0.390	0.802	0.076
FOC3	0.368	0.863	0.115
FOC4	0.271	0.857	0.179
FOC5	0.199	0.718	0.292
FOC6	0.380	0.803	0.116
FOC7	0.117	0.673	0.365
PST1	-0.074	0.168	0.842
PST2	-0.151	0.157	0.866
PST3	0.054	0.193	0.757
PST4	0.012	0.142	0.835
PST5	0.000	0.121	0.722
PST6	-0.098	0.057	0.715
POS1	0.386	0.813	0.117
POS2	0.151	0.167	0.866
POS3	0.054	0.193	0.757
POS4	0.827	0.346	-0.062
POS5	0.054	0.193	0.757
POS6	0.271	0.857	0.179
POS7	0.753	0.234	0.098

Table 4
Heterotrait-Monotrait Ratio

	ABS	FOC	P.DSTRESS
ABS			
FOC	0.455		
P.DSTRESS	0.111	0.245	
POS			0.432

The findings show a substantial correlation between employee absenteeism and fear of Covid-19, Validating the proposed hypothesis. Both the beta coefficient and the p-values are significant. Because the p-value is higher than 0.05, which indicates that there is no evidence that is statistically significant to support the hypothesis, the alternative hypothesis, which states that fear of Covid-19 is a predictor of stress, is rejected. This is because the data that supports the alternative hypothesis is not statistically significant. In addition, the data seem to indicate that stress does not mediate between the fear of Covid-19 and absenteeism among employees. In conclusion, the findings imply that the fear of Covid-19 could play a role in the absenteeism experienced by the workforce. However, no evidence supports the assumption that employees who are afraid of Covid-19 are more stressed out than other colleagues. The data also reveal that stress does not play a role in the absenteeism of employees, which suggests that there may be other reasons why people are away from work. During the current epidemic, businesses must consider these results when formulating measures to combat absenteeism and improve the health of their workforce. The underlying variables that lead to absenteeism on the part of workers in the workplace might be the subject of additional study, which can be carried out.

Table 5
Hypothesis Testing

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics ((O/STDEV))	P Values
FOC -> ABS	0.411	0.419	0.053	7.697	0.000
FOC ->PD STRESS	0.187	0.184	0.110	1.703	0.089
PDSTRESS - > ABS	-0.139	-0.149	0.084	1.641	0.101
FOC-> ABS-> POS	0.311	0.412	0.034	7.697	0.000

The previous study found that the level of absenteeism among workers was significantly impacted by the fear of Covid. The significant beta coefficient and p-values obtained lend credence to this result, confirming the hypothesis's validity. Furthermore, the study did not provide sufficient data to support the premise that workers' stress levels are significantly affected by their fear of Covid. The results showed that the hypothesis that a fear of Covid can produce stress was false, with p-values more than .05. The findings of the study came from an examination of the information provided by the participants. According to the data, 239 participants filled out every question in the survey. Since the study's focus was on investigating how frontline employees coped with the epidemic, the vast majority of respondents were salespeople. The null hypothesis was rejected when mean, standard deviation and variance calculations revealed a correlation between Covid-19 anxiety and employee absences.

The study's results showed that stress did not significantly affect employee absenteeism when acting as a mediator. These studies suggest that fear of Covid may contribute to employee absenteeism; however, it does not necessarily lead to increased levels of stress experienced by employees. The results also show that stress is not the main cause of absence; rather, a number of other factors can trigger absenteeism. The research shows that worries about Covid have impacted absenteeism but have not altered people's stress levels. It also implies that absenteeism is a complicated phenomenon that a number of different circumstances may cause, and that further research is necessary in order to fully understand the underlying reasons of absenteeism in the workplace. This was shown to be the case in the study that was conducted. The study shows that POS can affect the relationship between FOS and absenteeism. Its described as when an organization is ready to support its employees, employee wellness takes positive energy towards the organization and maximizes the negative consequences of the job (Islam et al., 2017).

5. Theoretical Implication

The Person-Environment Fit (P-E Fit) hypothesis is a psychological concept that contends that an individual's happiness and job satisfaction rely on how well their personal traits mesh with those of their workplace. According to the P-E Fit theory, having a good fit between a person and their workplace promotes greater job satisfaction, higher engagement, and lower stress levels. Through the prism of P-E Fit theory, supporting workers entails being aware of all employee's special traits and requirements and ensuring that these aspects are compatible with their workplace (Majid, 2018). Organizations may foster a positive and happy work environment that benefits workers and the business by actively considering and supporting the P-E Fit. It results in better employee well-being, productivity, lower turnover, and enhanced work satisfaction.

5.1 Practical Implication

Employees' perceptions of how much their company values their contributions, is concerned for their welfare, and promotes their overall growth (Burns, 2023). In trying times like the COVID-19 outbreak, POS is essential for improving employee attitudes, behavior, and performance. Frontline employees are more likely to be content with their jobs if they feel their employer strongly supports them. This upbeat outlook can result in more drive and dedication to their jobs, ensuring that individuals continue to work well even under trying conditions. Frontline employees are likelier to show devotion to the organization's aims and values if they feel appreciated and supported by their employer. Their dedication to their work may increase, even under trying circumstances, due to their commitment (Yaling Li, 2022). Frontline workers have experienced severe stress due to the COVID-19 epidemic because of the increased workload, health concerns, and emotional toll. Employee stress can be decreased and burnout prevented by a supportive workplace that identifies and deals

with these difficulties. Frontline employees are more likely to collaborate and operate as a team with a positive corporate culture. Employees are more inclined to cooperate efficiently and share resources and information when they feel appreciated by their employer, which improves the organization's performance and workforce.

6. Conclusion and Recommendation

The findings of the empirical study were gathered by an examination of the information obtained from the respondents. According to the findings of the investigation, a total of 239 respondents answered all of the questions in the questionnaire. Since the study aimed to investigate how frontline workers were affected by the epidemic, the vast majority of those who participated in the survey were salesmen. After doing the calculations necessary to determine the mean, standard deviation, and variance of the variables, the null hypothesis was shown to be false, suggesting that there is a connection between the fear of Covid-19 and employee absenteeism. However, the hypothesis that According to the results, the hypothesis that there is no connection between psychological distress and fear of Covid-19 was correct. It was decided to adopt the null hypothesis, which states that there is no connection between workers' satisfaction and their employers' support. The findings suggested that there is no mediation between fear of Covid-19 and employee absenteeism; the p-value was found to be bigger than the significant value of 0.05, which shows that the data support this conclusion. In addition, the p-value was found to be greater than the significant value of 0.05. On addition, the investigation revealed that there is no intervening influence on the connection between fear of Covid-19 and a state of psychological distress. As a result, the hypothesis about the mediating impact was disproved.

The content has not been plagiarized and has proper grammar and language usage. The study conducted by the researcher suggests that organizations should create contingency plans to prepare for any natural or human-made disasters. The COVID-19 pandemic has caused severe damage to some organizations, indicating that not all situations are controllable. Thus, it is crucial for organizations to prioritize their workforce as the most valuable asset, as indicated by existing literature. Research shows that individuals living in countries where the concept of monotheism is not prevalent are more susceptible to fear, which leads to stress and difficulty in coping. However, Muslims' belief in Allah is firm, making them less prone to stress and fear. The COVID-19 pandemic has caused employees to feel anxious about their health and the well-being of their families, leading to stress that can impact their mental health and, in turn, affect the organization's productivity (Majid, 2018). An organization's human resources are critical during challenging times such as lockdowns due to the pandemic. Therefore, it is vital to ensure that employees' mental health is stable to maintain productivity.

After conducting scientific research, the researcher has proposed primary recommendations to help organizations respond to catastrophic pandemics such as the coronavirus outbreak. Businesses need to prioritize the health and safety of their employees during times of crisis, particularly those employees working on the front lines. This is important not only for the company's development but also for the contentment and involvement of the employees in their job. Supporting workers through difficult times is a critical function of effective human resource management (HRM), which plays a significant role. For instance, organizations like Jubilee Insurance Company should consider organizing awareness seminars to help employees understand the situation and react appropriately. This can alleviate fear and uncertainty and help employees perform to their best abilities. The fear of COVID-19 can lead to employees being unable to demonstrate their full potential, which can directly hinder the company's progress. Employee well-being is an essential aspect of any organization, and HRM has a crucial responsibility to propose theories and strategies that satisfy employees' needs, boost motivation, and increase productivity.

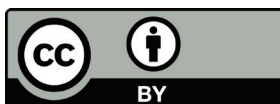
The state authorities need to contemplate the possibility of future pandemics and develop plans and policies to tackle them effectively. The state must ensure that public and private organizations operate under the state's laws and regulations. The state must oversee and ensure that organizations comply with regulations, especially during times of crisis like pandemics. Therefore, it is critical to make and revise policies and implement them effectively to mitigate the impact of future pandemics. In conclusion, the researcher's primary recommendations stress the importance of supporting employees during pandemics, effective HRM, and state authorities' duty to ensure compliance with regulations. By implementing these recommendations, organizations can strengthen their response to pandemics, and employees can feel secure and motivated to perform their duties, leading to increased productivity and progress for the organization.

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Dynamics of Task Conflict for Employees in the Virtual Workplace: Moderating Role of Relationship Conflict and Mediating Role of Team Mindfulness

Muhammad Umar Shahzad*

Abstract

In the modern-day workplace, conflicts among team members are often observed due to multiple reasons. Therefore, it is important to study the different aspects associated with conflict dynamics. For this research study, the sample was selected from organizations enabled by information and communication technology, where employees are virtually connected. As a result, this research becomes particularly relevant in post-COVID-19 scenarios. SPSS version 23 was employed for moderation and mediation analyses using the Process Macro developed by Preacher and Hayes (version 3.3). Additionally, linear regression analysis was conducted. The statistical tests demonstrated a significant direct effect of task conflict on the outcome variables, as well as the indirect effects of moderating and mediating variables. The moderating variable of relationship conflict had a significant impact on both task conflict and team mindfulness. The direct association of task conflict was also assessed using simple linear regression analysis in SPSS. This research explored a novel relationship among variables in virtual and digital organizations, where psychological contract breaches sometimes also contribute to conflict dynamics. Thus, the study has investigated this phenomenon from the overarching theoretical perspective of mindfulness theory. Valuable recommendations have been provided for future researchers based on the insights derived from this research.

Keywords: Relationship conflict; task conflict; team mindfulness; virtual workplace; information and communication technology (ICT).

JEL Classification: M19, J24

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1. Introduction

Conflicts of various kinds among individuals can serve as sources of cognitive stress for workers in a team-based environment. Consequently, it becomes challenging for team members to differentiate between their priorities for emotional well-being and job-related prioritization. These disputes can frequently lead to disagreements over tasks, potentially fracturing relationships among teammates who collaborate within and across teams. (Hilal, 2021; Khan et al., 2022). Such conflicting scenarios at a workplace may lead to negative outcomes such as deviant behavior and organizational politics (Greer et al., 2008; Khan et al., 2022), and occasionally, people see it as a danger for their ability to perform their jobs in a competent manner (Gastón, 2022; Tidd et al., 2004). Consequently, the tension related to tasks experienced by employees, which can lead to strained relationships, has the potential to adversely affect both team-based and individual relationships. Employees who cultivate mindfulness can effectively maintain a neutral perspective when facing the current situation. Such mindfulness entails observing the situation without biases. Moreover, individual instances of deviant behavior can also be attributed to the presence of a toxic interpersonal social network (Adeyemi, 2022). Conflict can stem from interpersonal difficulties at work, consequently, negatively impacting other teamwork-related factors. This can lead to a deterioration in individuals' perceptions of their work-related psychological stress and an escalation in the extent to which social networking is impaired (Hilal, 2021).

Social networking in the workplace can be influenced by various forms of conflict, such as task and relationship conflicts. Consequently, it holds the potential for a correlation with instances of social undermining within the work environment (Adeyemi, 2022; Shaw et al., 2011). Employees' endeavors to sustain meaningful relationships within the group promote the effective resolution of moral issues based on their perceptions. However, when ethical measures are construed as a component of politics, it can complicate matters (Shaw et al., 2011; Van Kleef, 2010). This situation can lead to evident pressure and social disruption among individuals working in a group. Perceived pressure can serve as a catalyst for certain instances of workplace contentment, although not all forms of pressure are anticipated or visible. Previous research has defined stress as a perception arising within a situation or as an event that surpasses an individual's cognitive capacities. Consequently, investigating the dynamics linked to both task and relationship conflicts becomes imperative. However, this research gap is even more pronounced within the context of virtual workplaces, which gains further significance in the aftermath of the COVID-19 pandemic (Lazarus, 1984).

There is an emerging concept of mindfulness in the literature and very little attention has been paid at how it positively or negatively affects workplace behaviors at the individual and team levels. Scholars have also explained the concept of mindfulness as a non-judgmental analysis of a situation faced by an individual, group, or team that focuses on the present scenario without the excessive focus on the past or the uncertainties of the future (Yu &

Zellmer-Bruhn, 2018). Most of the scholars who have written on this concept's application at the workplace are of the view that mindfulness protects against staggered conflict resolution procedures, even though logical academic literature frequently examined mindfulness as a cross-functional perspective at the level of the individual (Sutcliffe et al., 2016; Turner et al., 2016), high-performance practices. At the organizational level, mindfulness can be typically explained through mindfulness theory and social adaptability (Baron et al., 2018), for the social and organizational learning of employees, stimulates greater managerial knowledge (Cacioppe, 2017), enhanced efficiency (Dietz et al., 2017; Sutcliffe et al., 2016), from diverse sources (Turner et al., 2016), helping the organization to retain valuable employees for its survival in this competitive business world (Gastón, 2022; Hafenbrack et al., 2014; Johnson & Avolio, 2019). The practice of mindfulness is such that it can be learned with time and individuals may practice it at the team level as well. There always remains a possibility to observe the application of mindfulness at different levels of a team (Shaw et al., 2011).

Workplace conflict often starts from the task conflict, which may lead the employees and teams towards mindfulness once they are out of the initial aggressive phase (Gastón, 2022; Turner et al., 2016; Yu & Zellmer-Bruhn, 2018); this happens not just at the individual level but at the team level as well which may become a source of perceived stress and social undermining leading to the possibilities of conflict resolution (Gastón, 2022; Good et al., 2016; Hilal, 2021; Xu et al., 2017). Hence, cognitive load at the individual level contributes to the cognitive load at the team level as well. However, team mindfulness acts as a somewhat positive measure for and preventing further conflict (Johnson & Avolio, 2019). At times, when there is task clarity in the teams then task conflict may also take a positive shape for invoking further development (De Wit et al., 2012; Gastón, 2022; Shaw et al., 2011). But it also generates a possibility of relationship conflict which needs further observation at the level of individuals and teams (Gastón, 2022; Gerpott & Kearney, 2017; Hilal, 2021). This research study offers the idea that interpersonal conflict is more challenging since it might induce individuals to engage in deviant behaviors, including social undermining and feeling stressed. Additionally, this study describes the role that mindfulness may play in handling a scenario where there is a relationship and task conflict (Davidson & Kaszniak, 2015; Hilal, 2021). This research had the following six research objectives.

1. To examine the relationship between task conflict and perceived stress.
2. To examine the relationship between task conflict and social undermining.
3. To examine the relationship between relationship conflict and social undermining.
4. To assess the impact of relationship conflict as a moderating variable in the relationship between task conflict and team mindfulness.
5. To examine the role of team mindfulness as a mediator in the relationship between task conflict and perceived stress.
6. To examine the role of team mindfulness as a mediator in the relationship between task conflict and social undermining.

This study has investigated the direct and indirect impacts of task conflict on perceived stress and social undermining within ICT-based organizations in Pakistan. The study has explored how team mindfulness serves as a mediating variable and relationship conflict functions as a moderating variable within this relationship. In today's virtual landscape, organizations frequently adopt a team-based approach. Hence, for the survey of individual respondents, team-based organizations were deliberately chosen. Organizations from both the public and private sectors of Pakistan were selected for this purpose. These virtual organizations, often overlooked in prior research pertaining to the causal relationships between the variables under scrutiny in this study, have been given due consideration in this research, thereby addressing an existing gap in the literature.

2. Literature Review

2.1 Task Conflict

Colleagues with opposing socio-cognitive traits frequently cause conflict inside and between teams, and the intensity of this conflict can be particularly pronounced concerning interpersonal and task-related conflict. The conflict that arises while working includes disagreements about a particular method, structure, and workflow, whereas relational conflict primarily results from differences in personality traits and viewpoints in the workplace (Jehn, 1995; Li et al., 2022). Past research explained that the frequency of conflict may vary in different types of workplaces but it is a natural phenomenon that surely occurs at some level, may it be a micro level or at a team organizational level, especially when there is an unjustified distribution of tasks (De Dreu & Weingart, 2003). It may create relationship barriers, and further complexities are generated for the employees and managers (De Wit et al., 2012; Iskanto et al., 2022). Employees depend upon socialization with peers for accomplishing their difficult tasks. Hence, relationships matter in the workplace. However, a conflict due to a task may lead to relation breach (Greer et al., 2008). Most of the time, such relational and task-orientated conflicts are observed in a team-based environment (Shahzad et al., 2022; Todorova et al., 2014). Frequent relationship conflicts have negative effects and depend more on the individuals' intentions, determination, and actions than their intellectual qualities and interpersonal relationships (De Wit et al., 2012).

The positive or bad effects of a workplace disagreement depend on the emotions that arise from it (Saundry et al., 2021; Weingart et al., 2015). If employees are satisfied at the workplace then they may have greater job satisfaction (Malhotra et al., 2021; Todorova et al., 2014), and this enhances interaction and positive association among team members at the workplace (Malhotra et al., 2021). Individual and team performance are negatively impacted by negative emotions and interpersonal connections are frequently ruined. Hence, employees and managers do realize this factor for greater productivity (Van Kleef, 2010). Otherwise, conflict may escalate at the workplace, which may have detrimental effects on the organization including organizational politics, deviant behavior, and increased turnover intention (Weingart et al., 2015).

Employees need to have emotional intelligence for better conflict handling (Smith & Fredricks-Lowman, 2020). Conflict expression theory states that when people develop negative cognitive bias, harmful sensations are produced when the behavioral outcomes of conflict are depicted (Smith & Fredricks-Lowman, 2020; Todorova et al., 2014). Sometimes, due to task conflicts, employees could take a threatening, confused, or defensive stance. This may be contrary to the goals of the department, team, or organization. However, it needs training, experience, and emotional intelligence to handle such scenarios for mutual gain (Weingart et al., 2015). A person's level of oppositional intensity and sense of conflict may differ from the team's overall viewpoint on the same issue (Bradley et al., 2015). Conflicts can be addressed more skillfully with experience, a present-oriented orientation, and nonjudgmental mindfulness behavior (Good et al., 2016; Smith & Fredricks-Lowman, 2020). So, of various circumstances and business settings, team mindfulness aids in the better elaboration of task conflict.

2.2 *Relationship conflict*

Conflict-related behavior in people is influenced by opposing relationship connections (Malhotra et al., 2021; Smith & Fredricks-Lowman, 2020; Wu et al., 2015). Conflict in group interactions may therefore make social subverting at work even worse. Duffy et al. (2002) Social subverting was defined in the past literature as "a behavior intended to impair a worker's ability to create and sustain positive interpersonal relationships, work-related success, and a favorable reputation". The social environment also affects interpersonal conflict and social manipulation (Duffy et al., 2002; Hershcovis, 2011). Disregarding allures to preserve wonderful relationships demands work, preparing friends with fewer relationships or those having conflicts to understand the other side and cope with ethical issues competently so that they can reply with morally appealing actions (Smith & Fredricks-Lowman, 2020; Van Kleef, 2010). Task conflict and mindfulness at work are associated, which may be explained by relationship conflict.

A balanced application of team mindfulness and task conflict frequently reduces interpersonal conflict (Smith & Fredricks-Lowman, 2020; Yu & Zellmer-Bruhn, 2018). For instance, job conflict raises the intellectual load on employees, making it challenging to distinguish between task conflict enhancement and individual relationship conflict augmentation (Simons & Peterson, 2000). Therefore, groups may interpret task-related interpersonal differences as a person's preference or aversion or as an evaluation of their capacity, moving the emphasis from the task to relational conflict (Greer et al., 2008; Malhotra et al., 2021; Smith & Fredricks-Lowman, 2020; Tidd et al., 2004). The group dynamics shift as a result of increased workplace conflict (Choi & Cho, 2011), which lowers people's views of their sensitivity to unanticipated consequences (Tsai & Bendersky, 2016). Past research has also shown that employees interpret task difficulty at the group level (Weingart et al., 2015).

Because the inexperienced administration undermines instinctive reasoning, relationship conflict cannot always be classified as a dissident (Chaiken, 1980; Iskamto et al., 2022). Contextual management slows down progressively quick recoveries, such as in a marital quarrel, and softens unpleasant reactions that could cause social problems. The present focused thought with intentional mindfulness makes people rapidly conscious of conditions, thereby helping to bring acknowledgment to specific character traits of the individuals. Organizations, team members, and individuals with mindful awareness are more reluctant to relationship-related conflict as a means that partners are purposely constructive (Iskamto et al., 2022; Simons & Peterson, 2000). Overall, mindfulness reduces a person's or a group's propensity for hostility, wrath, and contagious aggressiveness (Good et al., 2016; Krishnakumar & Robinson, 2015; Saundry et al., 2021). But the dynamics of mindfulness in a virtual workplace have not been studied in the prior literature.

2.3 *Team Mindfulness*

Being mindful is frequently a relational, collective, and cognitive oddity that occurs between coworkers in groups and teams (Saundry et al., 2021; Vogus & Sutcliffe, 2012). One typical viewpoint of people working in a group comes from relational connection when colleagues work together for both formal and informal engagement (Bettenhausen & Murnighan, 1991; Iskamto et al., 2022). In team dynamics, cultural pattern defends against harmful relational linkages. Team mindfulness, as explained in the literature depicts a strong agreement among members of the team because teamwork encounters are characterized by awareness and focus on the present event, as well as by experiential, non-judgmental processing of within-team experience (Sutcliffe et al., 2016; Yu & Zellmer-Bruhn, 2018). Rarely does an employee at employment remain connected for job-related communication to the exclusion of some or all of their other coworkers. Coworkers frequently criticize one another to further their positions without taking a closer look at those of their fellow workers. In any event, it is uncommon for the group members to remain close over the long term because the crucial intellectual cycles vehemently increase a group's exhibition and sufficiency. Social as well as team mindfulness significantly contributes to commitment and capacity with mutual consensus and conception to act decisively for the group. Teamwork serves as inspiration for those functioning together, particularly when working on a topic of common interest, due to the supportive comments from coworkers in a particular setting (Saundry et al., 2021; Van Knippenberg et al., 2013; Weick & Roberts, 1993).

Mindfulness enables people to have a better and more insightful perspective on the world, particularly as it relates to a team or group. With a setting with multiple orientations, it aids in decision-making. People remain more aware of and attached to the components of the current point of view and group requirements (Iskamto et al., 2022; Karlin, 2018). Another element of mindfulness in a team is how individuals respond to changes in external stimuli (Baron et al., 2018). People stay drawn during group dynamics of mindfulness because of the

shared effort. Therefore, cognitions serve as a kind of constructive interference for the members' relational communication and individual perception to enhance intellectual abilities that are risky for normal administrative activities. Although it is well known that meditation is an event that takes place on an individual basis, human resource experts frequently focus on how mindfulness functions just at the group and collective level (Hülshager, 2015; Iskanto et al., 2022; Yu & Zellmer-Bruhn, 2018). As a result, a deeper understanding of how team and group mindfulness functions at different levels requires experimental designs and survey-based research, which is one of the research gaps in the literature.

While examining it at the team or group level, working in a team is a process that also takes individual attention into account. In group work, mindfulness rises and creates a shared intellectual state that colleagues establish by engaging in the group (Marks et al., 2001). Since rising events are the outcome of collected correspondence and the perceived resultant influence after its linkages, an individual's cognitive focus is connected to newly independent mental states and strategic tactics (Van Knippenberg et al., 2013). Characteristic of shared experience that sets it apart from personal experiences depicts mindfulness at the team level. The individual and group levels of analysis are both included in common mindfulness-related theoretical frameworks, but their construction is different (Morgeson & Hofmann, 1999). Two main components of mindfulness include present-focused attention and consciousness about what is occurring and current attentiveness and knowledge about potential future events dependent on the current situation (Adeyemi, 2022).

A concept of Buddhist provenance that is finding practical application at work as well is viewed as a type of receptive, open-minded, and self-controlled mindfulness. Yoga and other forms of exercise that are designed to soothe the body and mind have a strong connection to mindfulness. Labeling the events and impulsive reactions are not advised in team mindfulness because when people develop their ability to assess both the current situation and the impulse it is causing in them, this could affect how they make good decisions (Good et al., 2016; Smith & Fredricks-Lowman, 2020). This may also incorporate a variety of other constructive and destructive aspects of the mind (Weick & Putnam, 2006). Individual mindfulness is a type of practice that people must adhere to, whereas interpersonal mindfulness focuses more on interpersonal connections (Brown & Ryan, 2003; Smith & Fredricks-Lowman, 2020). It is a type of meditation in which one believes that one may influence circumstances and events through conscious thought (Good et al., 2016). Individual mindfulness is a phenomenon that can affect people, and it shows itself in people's actions and behaviors. Two components are emphasized by mindfulness theory. These include the cognitive and emotive aspects (Good et al., 2016). It is frequently viewed as a framework that lessens unpleasant feelings.

Workers' adaptability at work is improved by mindfulness in a variety of ways (Hamre et al., 2022). It prevents groups from having vulnerable attribution errors and communications predisposition in the way that participant and task adjustments continue to stay isolated (Hopthrow et al., 2017), cognition about immaterial improvements (Amason, 1997; Khan et al., 2022; Slagter et al., 2011), basic mistakes, and limited experiential handling are more uncertain (Iskamto et al., 2022), and outstanding team skills are much less likely to be seen as subjective. According to Good et al. (2016), mindfulness reduces personalization and response in group situations, which lowers the likelihood of interpersonal conflict at work. Mindfulness also enhances relationships (Amason, 1997). Transparency permits contrast while preventing hostility (De Wit et al., 2012; Jehn, 1995; Li et al., 2022). The relationship between task conflict and the perceived stress that people experience in a teamwork setting may be explained by team mindfulness. It might also explain the social weakening (Khan et al., 2022; Yu & Zellmer-Bruhn, 2018).

2.4 *Perceived Stress*

Many health-related issues are thought to be predicted by stress, both in individuals and teams. Stress is linked to modifications in judgment, behavior, and emotions. Pressure is the awareness that a condition or event outweighs the resources available for adaptation (Richard S. Lazarus, 1984). One's ability can be increased with the support of mindfulness, especially when dealing with relationship stress. Because practicing mindfulness may help people cultivate emotional empathy and foster stronger relationships between individuals (Li et al., 2022; Reb et al., 2014; Shahzad et al., 2022). The scheduling of mindfulness introspection starts with setting goals since it considers the need to remain in the present moment to reduce stress and increase both personal and professional prosperity (Baer et al., 2004; Hamre et al., 2022; Miller et al., 1995).

2.5 *Social Undermining*

Behavior problems at work may be the cause of social isolation for those who are affected. People's morale will suffer if they are treated unfairly at work by their peers or bosses, which would undermine social order. Such social undermining has been seen not only at jobs but also within households, and it may be a possible cause of abnormal conduct (Li et al., 2022; Sarwar et al., 2020). The bottom-line mindset of managers contributes to social undermining among workers at the workplace (Eissa et al., 2020). Additionally, social undermining lowers self-efficacy and may harm employees' creative capacities (Hilal, 2021; Khan et al., 2022). Task and relational conflict both directly and indirectly affect social undermining at work (Tsai & Bendersky, 2016; Van Kleef, 2010; Yu & Zellmer-Bruhn, 2018).

3. Conceptual Framework

Mental and emotional functions are two of the elements of mindfulness theory (Good et al., 2016). These might be used to clarify the events that lead to a task conflict or a relationship conflict. The dispute thus explains valuable issues for task handling at work for various outcomes. This model might also be partially explained by other theories like organizational conflict theory and cognitive models like Ernest and Corral's model. Negative attitudes are triggered when conflict is considered to have an opposing intensity, claims the conflict expression theory. Though the cited literature in this study also highlighted the spillover effects of relationship conflict as it is created from task conflict, much like it was demonstrated in this research model, mindfulness theory does not just explain felt stress concerning task conflict but its associated contingency with the relationship conflict (Todorova et al., 2014).

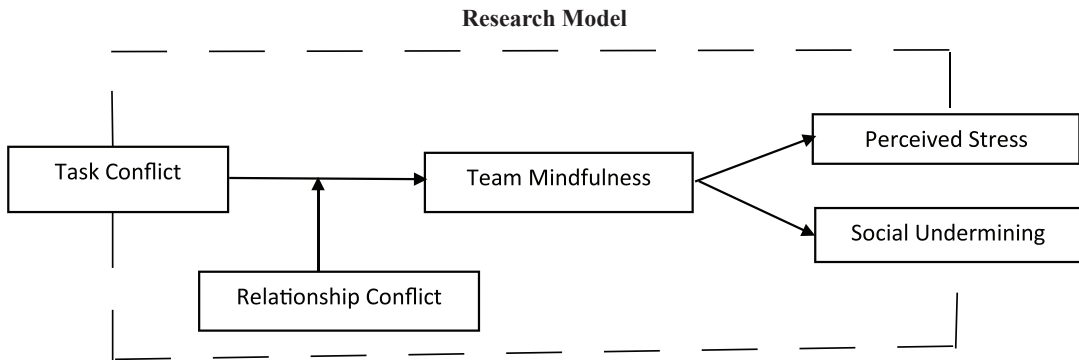


Figure 1: Proposed Research Model of the Study

Using mindfulness theory as the underpinning theory for this conceptual model, the following were the proposed hypotheses of this research study:

H1: Task conflict has a positive association with perceived stress.

H2: Task conflict has a positive association with social undermining.

H3: Relationship conflict acts as moderating effect in the relationship between task conflict and team mindfulness.

H4: Team mindfulness has a positive mediation effect on the relationship between task conflict and perceived stress.

H5: Team mindfulness has a positive mediation effect on the relationship between task conflict and social undermining.

4. Research Methodology

This quantitative investigation employed a hypothetic deductive methodology. In this explanatory study, the researcher used a positivistic research philosophy to try to investigate social factors as they are without any personal involvement. Non-probability purposive sampling was utilized to gather data due to the variety of responses. Members of virtual teams from companies where coworkers primarily communicate and interact with one another via computer-mediated virtual interactions and correspondence were the source of the data. Quantitative data was mostly gathered from software companies and a Pakistani university with an ICT focus. A few more freelance digital businesses were also contacted to gather data. Individual employees who worked in an online or digital environment served as the study unit. The present research was a one-shot study. 230 respondents to a survey were used to acquire quantitative data for this research article.

Surveys and online data collecting were used for data collection. The potential responders were also sent an email with a link, and before that, they received information about the survey. Purposive sampling is still a good choice in situations like this, where the researcher's judgment is crucial, and it was used in this case. The population of virtual workers employed by various businesses and as independent contractors in the digital freelancing industry is vast, hence sampling was done to try and measure demographic characteristics. 326 people were emailed the survey, and 230 of them responded, yielding a response rate of 71%. The gathered data was coded before being entered into SPSS. Through SPSS version 23, Pearson correlation analysis (one-tailed) was done, and the results were then interpreted.

Using the proper criteria, Preacher and Hayes' Process Macro version 3.3 was utilized to examine the impact of mediating and moderating variables. To evaluate the impact of the mediating variable, Model 4 of Process Macro was employed. The conceptual model's moderating variable's impacts were examined using Model 1. The direct effect of variables was measured using simple linear regression analysis in SPSS. Adopted measurement scales were used in this study. The 12 items on the perceived stress measurement scale were taken from previous literature (i.e., Cohen, 1988). Task conflict was measured using a four-item measurement scale adopted from previous literature (Pearson et al., 2002). The 5-item measuring was used to evaluate relationship conflict and it was also adopted from previous literature (Pearson et al., 2002). For team mindfulness, 10-item measure was employed which was adopted from previous literature (Yu & Zellmer-Bruhn, 2018). 13-item measuring instrument to assess social undermining which was also adopted from previous literature (Duffy et al., 2002).

5. Data Analysis

Data were analyzed in SPSS version 23. After data cleaning, the normality of the data was assessed through skewness and kurtosis values. Reliability statistics were found through Cronbach Alpha values as depicted in Table 1.

Table 1
Reliability Analysis

Cronbach's Alpha	N of Items
.765	44

Table 2
Descriptive Statistics of Variable

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness	Kurtosis		
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Std. Error
pStress	230	1.08	4.00	2.3638	.58042	-.083	.160	-.612	.320
tMindfulness	230	1.50	4.00	3.0248	.51474	-.296	.160	-.441	.320
tConflict	230	1.50	4.00	3.0248	.51474	-.296	.160	-.441	.320
rConflict	230	1.20	4.40	3.1608	.57259	-.503	.160	-.059	.320
sUndermining	229	1.15	3.54	2.7459	.42346	-.837	.161	1.138	.320
Valid N (listwise)	229								

Values between +2 and -2 are typically regarded as acceptable. Relationship conflict had one value that was higher than the cutoff level of 2.5 for the Z score of data normality. That case was so dropped.

5.1 Correlation of Variables

Table 3
Pearson Correlation Values of the Variables

		pStress	tMindfulness	tConflict	rConflict	sUndermining
pStress	Pearson Correlation	1				
	Sig. (1-tailed)					
	N	230				
tMindfulness	Pearson Correlation	.053	1			
	Sig. (1-tailed)	.214				
	N	230	230			
tConflict	Pearson Correlation	.053	1.000	1		
	Sig. (1-tailed)	.214	.000			
	N	230	230	230		
rConflict	Pearson Correlation	-.308	.550	.549	1	
	Sig. (1-tailed)	.000	.000	.000		
	N	230	230	230	230	
sUndermining	Pearson Correlation	.030	.337	.337	.441	1
	Sig. (1-tailed)	.326	.000	.000	.000	
	N	229	229	229	229	229

It is evident from the correlation of variables that most of the variables had moderate correlation. However, the strongest correlation was between team mindfulness and perceived stress.

5.2 Use of Hayes Process Macro for Testing Indirect Effects in the Model

Hayes Process Macro version 3.3 was downloaded and plugged into SPSS 21 to be used to examine the significance of the indirect effect of moderating and mediating variables for this model. The following results were obtained.

5.3 Mediating effect of team mindfulness between task conflict and perceived stress

Table 4
Mediation Analysis through Process Macro by Preacher and Hayes (Model 4)

	Effect	SE	LLCI	ULCI
tMindful	.1837	0416	.1076	.2729

Here, the critical values of the upper and lower bound confidence intervals were both positive. Therefore, it is significant evidence that the mediation effect exists between the variables through team mindfulness. This was tested at a 95 % confidence interval with a bootstrapping value of 5000.

5.4 *Moderating effect of relationship conflict between task conflict and team mindfulness*

It was hypothesized that relationship conflict would act as a positive moderating variable between task conflict and relationship conflict.

Table 5

Moderation Analysis through Process Macro by Preacher and (Model 1)

rConf	Effect	se	t	p	LLCI	ULCI
2.7920	.2861	.0405	7.0620	.0000	.2062	.3659
3.2000	.1965	.0337	5.8247	.0000	.1300	.2630
3.8000	.0648	.0492	1.3173	.1891	-.0322	.1618

The interaction term was statistically significant ($p < 0.05$) at 95% confidence interval ($p = .000$, $s.e. = .070620$, $b = .2861$). Therefore, the moderating effect's hypothesis is supported that the relationship conflict has a strong contingent effect on the relationship between task conflict and team mindfulness.

5.5 *Mediation of team mindfulness for task conflict and social undermining*

Table 6

Indirect effect(s) of X on Y

	Effect	SE	LLCI	ULCI
tMindful	.0956	.0214	.0555	.1389

Here, the critical values of the upper and lower bound confidence intervals were both positive. Therefore, it is significant evidence that the mediation effect exists between the variables through team mindfulness. This was tested at a 95% confidence interval with a bootstrapping value of 5000.

5.6 *Testing direct effects through linear regression analysis*

5.6.1 *Linear Regression Analysis Between Task Conflict and Perceived Stress*

The direct effect of task conflict and perceived stress was tested through simple linear regression analysis, and the effect was found significant. The value of R^2 was 0.11, which

depicted an 11% change in perceived stress due to the task conflict in the individuals working in the virtual teams.

Table 7
Model Summary

Model	R	R²	Adjusted R²	Std. Error of the Estimate
1	.333 ^a	.111	.107	.54844

a. Predictors: (Constant), tConflict

b. Dependent Variable: pStress

Table 8
ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	8.567	1	8.567	28.483	.000 ^b
	Residual	68.579	228	.301		
	Total	77.146	229			

a. Dependent Variable: pStress

b. Predictors: (Constant), tConflict

ANOVA table shows a significant positive value of the F statistic. The table of coefficients has shown that the p is significant at < 0.05 , which proves the relevant hypothesis.

Table 9
Coefficients and Significance Value

Model		Unstandardized Coefficients		Standardized	t	Sig.
		B	Std. Error	Coefficients		
1	(Constant)	3.088	.141		21.981	.000
	tConflict	-.213	.040	-.333	-5.337	.000

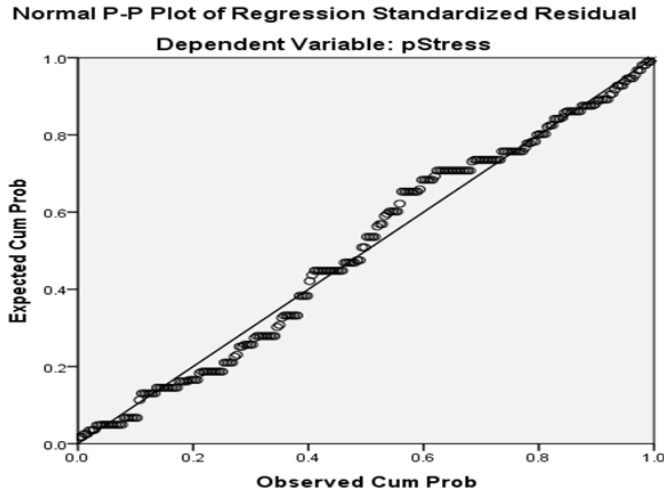


Figure 2: Linear Regression Plot

5.6.2 Linear Regression Analysis between Task Conflict and Social Undermining

The direct effect of task conflict and perceived stress was tested through simple linear regression analysis, and the effect was found significant. The value of R² was 0.01, which depicted a 1% change in perceived stress due to the task conflict in the individuals working in the virtual teams.

Table 10
Model Summary

Model	R	R ²	Adjusted R ²	Std. Error of the Estimate
1	.136 ^a	.018	.014	.42045

ANOVA table shows a significant positive value of the F statistic. The table of coefficients has shown that the p is significant at < 0.05, which proves the relevant hypothesis.

Table 11
ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.755	1	.755	4.271	.040 ^b
	Residual	40.129	227	.177		
	Total	40.884	228			

- a. Dependent Variable: sUndermining
- b. Predictors: (Constant), tConflict

Table 12
Coefficients and Significance Value

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.531	.108		23.468	.000
	tConflict	.063	.031	.136	2.067	.040

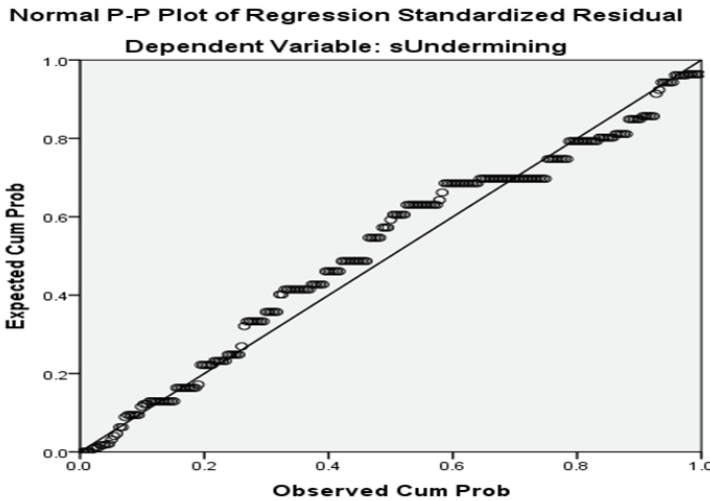


Figure 3: Linear Regression Plot

6. Discussion

The data analysis makes it clear that the constructs of this study adequately explain the model. Conflict over tasks occurs when virtual teams are working together. In virtual teams, task conflict may lead to relationship ambiguities among workers. To test the one-tailed hypothesis on task conflict and interpersonal conflict, more research was required. Similarly, to this, psychological stress and interpersonal conflict have a substantial indirect effect. This leads to the conclusion that interpersonal disagreement may heighten the sense of stress in virtual work teams. However, more research is needed to determine how team mindfulness affects social undermining (Li et al., 2022). Current research has addressed these gaps to a large extent. It is evident that if mindfulness is present at the team level then task conflict leads to perceived stress and social undermining, which are the stimulants to suppress further aggravation of conflict. However, it well also been proved that task conflict directly impacts perceived stress and social undermining. Therefore, practitioners must strategize their priorities to restrict those effects and inculcate a positive association among such factors so that the resultant outcomes are productive for the organization.

Task conflict and team mindfulness have a substantial indirect impact, followed by perceived stress and team mindfulness. Team mindfulness was selected as the mediating variable for this association. Relationship conflict can therefore lead to social undermining in online teams. The pertinent hypotheses are so, supported based on the objectives of this review for examining the interactions between these parameters. It's mostly because workplace conflict in groups is a typical occurrence (De Wit et al., 2012; Shaw et al., 2011; Smith & Fredricks-Lowman, 2020). But it also touches on the complex issues surrounding interpersonal conflict at work (Gerpott & Kearney, 2017). Task struggle, on the other hand, isn't always unpleasant and if people accept it as a challenging trait, it can be a source of enhanced performance. Any relationship disagreement is uncomfortable and leads to helpless outcomes (De Wit et al., 2012).

Table 13

Shows the Results of Hypothesis Testing after Data Analysis

Serial	Hypothesis Statement	Results
1	Task conflict has a positive association with perceived stress.	Supported
2	Task conflict has a positive association with social undermining.	Supported
3	Relationship conflict acts as a moderating effect in the relationship between task conflict and team mindfulness.	Supported
4	Team mindfulness has a positive mediation effect on the relationship between task conflict and perceived stress.	Supported
5	Team mindfulness has a positive mediation effect on the relationship between task conflict and social undermining.	Supported

Mindfulness theory potentially explains this research model as this concept applies not just to individuals but teams in the workplace. However, past research did not elaborate on the cognitive and emotional dimensions of conflict and mindfulness in the virtual workplace. Therefore, this study is an addition to the existing knowledge in the domain of mindfulness theory for its further broader application and validation in the context of the modern-day workplace (Good et al., 2016; Malhotra et al., 2021). These findings might aid in uncovering the mechanisms behind productive workplace behavior. So, team conflicts offer a helpful technique to understand how conflicts arise in the workplace. Therefore, team mindfulness adequately explains the findings in light of the conceptual model for this investigation. Similarly, the constructs investigated in this study contribute to the theoretical and contextual significance of the study, particularly about employees working in the virtual workplace context. There haven't been many studies on workers in virtual workplaces, particularly in growing markets like those in South Asia, like Pakistan, where the study's basic data came from. This work may be helpful for subsequent empirical studies in this area.

This focus is crucial for professionals as well. For instance, the idea of a virtual workplace and essentially associated representations is now a reality with the development

of data innovation. Chiefs may have a better understanding that labor disputes could push employees towards pressure, which could also harm representatives' ability to market themselves. Additionally, relationship problems result from task difficulty, which surprisingly may lead to pressure in the workplace. Such elements might promote fewer professional behaviors in the workplace. Hierarchically relevant variables are important and they ensure the appearance of administrative equality in a good balance for an environment that would have less impact on the outcomes of tasks simultaneously. Initiatives addressing these concerns can help workers in a virtual workplace to find solutions. The management of these firms may use feedback from staff to develop policy measures to deal with workplace issues and improve performance (Shahzad, 2018).

6.1 Limitations and Future Directions

The present study solely included personnel from ICT-based firms and was cross-sectional in design. The concepts of this study are more broadly applicable. Thus, potential researchers may wish to repeat this research in various industries, contexts, and organizational settings. Since this was a cross-sectional study, its generalization was constrained. Potential researchers might want to conduct this kind of study using a time-lagged approach. Moreover, potential researchers should look into the possibility of a direct relationship between these dimensions in addition to the indirect moderating and mediating effects on perceived stress and social undermining.

7. Conclusion

According to the findings of the research, mindfulness completely breaks the link between social pressure and task difficulties. Relationship contention essentially functions as a linkage between the aforementioned predictor of task conflict and outcome factors. Relationship conflict, however, moderate task-related conflict and team mindfulness in the scenario of digital working groups are observed. People occasionally participate in task-related conflicts to meet their demand for professional status and self-worth, which could be predicted. They occasionally disagree that task conflict causes social undermining, despite the contingent influence of interpersonal conflict, which was also looked at in this study. Thus, the characteristics discussed in this review—such as task conflict, interpersonal pressure from relationships, mindfulness in teams, and social undermining—can have mutually reinforcing effects on one another, especially in the context of virtual work teams.

Conflict of Interest

The author declared no conflict of interest.

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Mapping the Causal Connections among Exchange Rate Indicators and Exchange Rate: New Evidence from NARDL Econometric Approach

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Abstract

The aim of the study is to find out the symmetric or asymmetric relationship between the macroeconomic fundamentals and exchange rate of Pakistani Rupee against the US Dollar which has never been analyzed briefly in previous literature. The NARDL approach has been applied with the selected macroeconomic fundamentals i.e., GDP, foreign reserves, inflation rate, interest rate, oil price, gold price, trade balance, and money supply for the data analysis. The data of exchange rate and selected macroeconomic fundamentals have been taken during the time period of 2011 to 2022 from the official IMF IFS database. The findings indicate that foreign reserves and inflation possess an asymmetric relationship with the exchange rate in long run. The increase in productive inflation only helps to stabilize the exchange rate whereas all other significant variables weakens the Pakistani currency either in short -run or long run i.e., decrease in money supply, GDP, inflation and increase in interest rate. The findings will be helpful for the policymakers and economists to implement their policies accordingly to prevent the further depreciation the of Pakistani Rupee against US Dollar.

Keywords: NARDL; bound test; exchange rate; US dollar; Pakistani rupee.

JEL Classification: E37, F27, F47

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1. Introduction

A country's economy is significantly impacted by the exchange rate in a number of ways (Uddin et al., 2021; Asad Ullah, 2017). The price of a nation's exports and imports is influenced by its exchange rate, which in turn determines how competitive its trade is, claim Bahmani et al. (2009). If a nation's currency is much lower, its exports may be more competitive in foreign markets, which could lead to better export earnings and potential economic growth. In contrast, a rising exchange rate may make imports more affordable but may make exports less competitive. The cost of production, profitability, and the repatriation of profits are all impacted by the exchange rate, which has an impact on foreign direct investment, according to Borensztein et al. (1998). A stable and predictable exchange rate is generally preferred by investors, as it reduces the uncertainty associated with exchange rate fluctuations.

A depreciation in the domestic currency can lead to imported inflation by increasing the prices of imported goods and raw materials (Edwards, 1988). This relationship is particularly relevant for countries with a high dependence on imports. In another study, Kaminsky and Reinhart (1999) state that Exchange rate movements can influence capital flows, including foreign portfolio investments and speculative flows. Rapid and large fluctuations in exchange rates can pose challenges for financial stability, as they may lead to instability in asset prices and disrupt the functioning of financial markets.

Pakistan was one of the fastest-growing emerging markets in 2006 during the tenure of the Pakistan Army General Pervez Musharraf (Late). At that time the exchange rate was stable against the United States Dollar from 2001 - 2007 which enabled the economy to boost and compete against other emerging markets. The exchange rate of PKR/USD remained almost constant in above-mentioned tenure i.e., between Rs. 59 to Rs. 61. The GDP of Pakistan touched all-time peak i.e., above 7% annual growth. Unfortunately, after the dismissed of the government in 2007, the Pakistani Rupee has been under pressure due to several reasons. In 16 years, the Pakistani Rupee has been depreciated by almost 400%. Currently, the interbank rate has crossed the benchmark of Rs. 300 per dollar. Due to the excessive depreciation of Pakistani Rupee, traders, individuals, and businessmen indulge in buying US Dollars by selling their domestic currency which also creates a panic in FOREX market and ultimately black market formed where the exchange rate has crossed Rs. 325.

The above-mentioned situation has an adverse impact on the Pakistani economy. In 2023, the policy rate has crossed 21% whereas the inflation is counted as more than 50%. The current economic situation leads towards stagflation rather than hyperinflation because according to most he economists, hyperinflation is phased out which is taken over by the "stagflation". Stagflation refers to the period where inflation increases more than the period of "Hyper Inflation" and simultaneously reduces the employment which create more damage to the economy because on one side, people loses the purchasing power but on the other side

it becomes more severe if they lose their income as well. The economy is also out of foreign reserves i.e., almost 9 Billion Dollars (accumulated from commercial bank and government reserves). Pakistan has to repay the 17 Bn US Dollar loan in next financial year therefore the situation is worst. At this time, this study supports the policymakers to find out the significant drivers of exchange rate because Pakistan has to maintain their exchange rate in emergency otherwise we may have seen the default of nuclear state in financial ground.

The NARDL approach has been applied in this study due to its unique characteristics because ARDL fails to find out the symmetric and asymmetric relationship between the dependent and independent variables. The relationship between macroeconomic fundamentals and exchange rates is a complex and multifaceted topic. With the help of the Bound testing approach, we can find out the three possibilities regarding the existence of co- integration in long run. The three possibilities will provide evidences of existence, non- existence and inconclusive results related to the co-integration. The NARDL was developed the Shin et al. (2014) as it was the extension of ARDL model. While they can provide you with a general overview of the factors that researchers have traditionally considered, it's important to note that opinions can vary among economists, and the specific context of Pakistan may introduce unique dynamics.

1. Interest Rates: Higher interest rates tend to attract foreign investors seeking higher returns, which increases the demand for domestic currency, leading to an appreciation in its value. Conversely, lower interest rates make the domestic currency less attractive and can lead to depreciation.
2. Inflation: High inflation erodes the purchasing power of a currency, making it less attractive to foreign investors. Central banks may respond by raising interest rates to curb inflation, which can strengthen the currency. Conversely, low inflation or deflation can lead to currency depreciation.
3. Current Account Balance: The current account balance, which represents the balance of trade in goods and services, plays a significant role. A trade deficit (imports exceeding exports) can put downward pressure on the currency.
4. Fiscal and Monetary Policies: Sound fiscal policies, such as maintaining a balanced budget or reducing government debt, can positively influence the exchange rate by instilling confidence in the economy. Similarly, prudent monetary policies that ensure stability and control inflation can support the value of the domestic currency.
5. Economic Performance: Political stability and the overall health of the economy can significantly impact exchange rates. Countries with stable political environments, strong institutions, and robust economic growth tend to attract foreign investment, which can strengthen their currency (Yuan, 2011).

Due to above-mentioned discussion related to the exchange rate fluctuation in Pakistan economy and its importance, it is important to find out the determinants' relationship

associated with the exchange rate. The novel approach of NARDL helps us in finding out the valuable results which enable the policy makers to stabilize the exchange rate in future. Rest of the study will be in following sections i.e. Literature review, Methodology, Empirical Results and Discussion with the policy implications.

2. Literature Review

The predictability of exchange rates is the subject of a raging debate that is still going on. Various methodological approaches for forecasting exchange rates (for example, time series analysis, econometrics, or a combination of the two) have been proposed in the literature and are currently being tested in practice. Frankel et al. (1995) and Meese (1990) conducted a review of the empirical literature to determine whether theoretical and econometric models of exchange rate determination provide better descriptions of the exchange rate sequence than empirical models of exchange rate determination. Meese and Rogoff demonstrated in 1983, through ground breaking research, that the random-walk model outperformed all other models in exchange-rate forecasting when conducted outside of a sample of historical data. There is some evidence that exchange rate fluctuations can be predicted over longer time horizons by employing advanced econometric methods for time series, as well as fundamental and technological approaches, as well as fundamental and technological approaches (Osinska, 2010). Since the publication of Meese and Rogoff's seminal work in 1980, foreign economists and policymakers all over the world have taken a keen interest in comparing potential changes in exchange rates with current data to make informed decisions (Groen, 2000).

Canales and Habermeier (2004) provided a concise summary of previous work on evaluating the by focusing on three primary viewpoints on exchange rates and uncertainty. Random walk models perform better than macro-economic based models at least in the short- run where the leverage of macro-economic fundamentals is low (Meese, 1990; Meese & Rogoff, 1983). Second, macroeconomic fundamentals play a crucial role in describing the behaviour of currency rates. Some experts, however, claim that these basics are only relevant in the long run and do not explain short-term fluctuations. Others, on the other hand, feel that macroeconomic fundamentals may explain both long-run and short-run economic performance. The third issue is that the performance of both types of models doesn't perform equally well in all situation therefore the efficiency of them are doubtful therefore NARDL can play a vital role in the determination of the exchange rate by selecting significant macro fundamentals which can affect the exchange rate.

Researchers in the financial literature disagree on the factors that influence exchange rates (Canales-Kriljenko & Habermeier, 2004). Exchange rates, however, are impacted by a number of fundamental factors, including GDP, local investment, trade openness, government consumption, and money supply. According to Uddin (2006), interest rates, inflation

rates, and balances of payments are the most important economic factors in determining the exchange rate between the Bangladeshi taka and the US dollar.

The currency exchange rate reacts fast to any unexpected changes in monetary policy, claim Karim et al. (2007). Yuan (2011) evaluated the US Dollar's bilateral exchange rates against the Canadian Dollar, Australian Dollar, Japanese Yuan, and British Pound using five macroeconomic factors, including the GDP, interest rate, CPI index, money supply, and current account balance. If trade is more open, the exchange rate will drop, claim Carrera and Vuletin (2002). Kim and Mo (1995) used the money supply, interest rate, real GDP, trade balance, and real income to forecast the Dollar/DM exchange rate. Money supply, interest rate, and real income were the three macroeconomic factors used by Islam and Hasan (2006) to assess the USD/JPY monetary model. Hwang (2001) forecasted the exchange rate using the flexible-price model and the sticky-price model. The author looked at four macroeconomic variables as explanatory factors: GDP, inflation, interest rate, and money supply. Groen (2000) investigated the monetary exchange model by incorporating four explanatory variables: the money supply, the price level, real income, and interest rates. The impact of macroeconomic factors on currency exchange rates has also been established. For example, Khan and Qayyum (2007) investigate the long-run link between the Pakistani currency rate and the purchasing power parity (PPP) hypo study. The data show that in the long run, the exchange rate tends to trend towards PPP equilibrium.

The focus of Jaffri (2010) is on the Pakistani exchange rate's impact on consumer costs. It suggests that changes in the exchange rate have a significant impact on inflation and can shift the ranges of domestic prices. Time-series data from 1973 to 2019 are used by Hussain et al. (2019) to analyze the variables affecting the Pakistani exchange rate. The report claims that variables such as inflation, interest rate disparities, trade balance, and foreign direct investment have a substantial impact on the exchange rate.

Butt et al. (2018) examines the microeconomic factors influencing the Pakistani exchange rate. The study finds that variables such as inflation, interest rates, government borrowing, and international reserves significantly affect the exchange rate. Raza and Afshan (2017) re-evaluates the determinants of the Pakistani exchange rate using annual data from 1980 to 2014. The findings indicate that inflation, money supply, interest rates, and government borrowing have a significant impact on the exchange rate. Nazir and Qureshi (2016) applies the monetary model of exchange rate determination to Pakistan using quarterly data from 1990 to 2014. The study concludes that money supply, interest rate differentials, and foreign exchange reserves are important factors influencing the Pakistani exchange rate.

Nazir and Jawad (2017), Hussain and Bashir (2013) and Magee (1973) provide evidence in their studies that the association between the trade balance and the exchange rate of selected economies are asymmetric due to the existence of J-Curve in such economies.

Chin (1991) analysed the relationship between exchange rate and trade balance by using linear and non-linear techniques. The author included the monthly data to test their association via RMSE and MAE. The author concluded that most of the times the trade balances show a non-linear behaviour. Thus, the non-linear model provides better results than linear models in this case. In another study, the author concluded that the exchange rate affects by number of macro-economic fundamentals which include money supply, GDP, investments, and trade openness (Deka & Resatoglu, 2019). Rasheed et al. (2020) analyze the factors or determinants of the PKR/USD by applying ARDL Co-integration model over the time period 2010-2020. Based upon the results, it was stated by the authors that trade surplus appreciates the Pakistani Rupee which means that decrease in imports are beneficial for the strength of local currency. It was also found that the increase in interest rate also leads to strengthen the domestic currency.

The higher interest rate policy by the Central Bank may attract the international investors which increases the inflow of US Dollars within an economy and shattered the demand of foreign currency enhance the value of local currency. Another surprising finding of the study is the higher inflation does not affect the domestic currency which means that the productive inflation is important for the economy. Chroufa and Chtourou (2023) concluded that there is an asymmetric relationship between inflation and exchange rate in the context of Tunisia. Exchange rate is also an important indicator for the price equilibrium of agriculture and food related items in various countries where they have been imported but sometimes the relationship is found asymmetric due to number of reasons (Layani & Mehrjou, 2023). Dukic et al. (2023) tested the asymmetric and symmetric relationship between the exchange rate and inflation in selected countries. They concluded that there are evidences of asymmetric relationship between the inflation and the exchange rate. Hence, the following hypothesis has been concluded from the above literature;

H1: Macroeconomic fundamentals have asymmetric relationship with the exchange rate.

3. Methodology

3.1 Data

The monthly frequency data of exchange rate and explanatory variables i.e., i.e., GDP, foreign reserves, inflation rate, interest rate, oil price, gold price, trade balance, and money supply have been taken from the IFS IMF data base for the time period 2011 to 2022. The data has been extracted from the official database of IMF IFS.

3.2 *Statistical Techniques*

a) NARDL

Before delving into NARDL, it is crucial to review the history of ARDL, which enabled Shin et al. (2014) to develop the NARDL technique. ARDL is a time series analysis- based causal econometric approach. Prior scholars, however, did not place much emphasis on the Auto Regressive Distributed Model (ARDL) in projecting exchange rates. To analyse the relationship between the explanatory and dependent variables, econometric models can be used. Similarly, for exchange rates with their own determinants, an econometric model can help determine the elements influencing exchange rates.

Pesaran and Shin (1995) discussed their innovative idea of ARDL technique with the lags of included variables. Further, ARDL approach has several advantages as below:

- By suitable augmentation, it avoids problems of endogeneity and serial correlation.
- It avoids pre-testing of unit root tests.
- It also provides the information about short run relationship without losing long run data.

It has been noticed that very few researches have applied NARDL model for exchange rate forecasting and most of them were from advanced markets economies (Jamazzi et al., 2015; Asad Ullah et al., 2022; Shamsoddini et al., 2023). Hence this research study will make an added contribution to literature and fulfil the gap by analysing the factors influencing exchange rates of frontier, emerging and standalone markets too.

A simple ARDL model is defined as:

$$y_t = \mu + \varphi Y_{t-1} + \omega_0 X_t + \omega_1 x_{t-1} + e_t \dots\dots\dots (1)$$

Where y_t and X_t are stationary variables.

Non-linear ARDL model developed by Shin et al. (2014) uses positive and negative partial sum decompositions that allow detecting asymmetric effects in long and short-term/run. NARDL model holds some competitive advantages over traditional ARDL therefore it gains more insight from the researchers, first of all, there is no need of large sample in order to find out the results, the small sample is also enough for the analysis.

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To check the asymmetries, separate series should be designed which indicates appreciation and devaluation behaviour of explanatory variables as proposed by Bahamani et al. (2015). In the previous literature the author expects non-linear relationship between exchange rate and trade balance IPI growth and current account balance therefore in this study, the author will analyse the non-linear relationship by using NARDL approach. The author uses the EViews version 9 to find out results of all models in this study.

The Control Variables to be used in the Co-Integration Analyses

Table 1 below discusses the control variables and their assessment criteria.

Table 1

Control Variables

Full Name	Valuation
Money Supply	Money Base
Interest Rate	Central Bank Policy Rate
Inflation	Consumer Price Index
Industrial Production Index	Economic Activity
Trade Balance	Exports – Imports
Foreign Reserves	Official Foreign Reserve's excluding Gold reserves
Oil Price	Crude Oil Price
Gold Price	Gold Price

In this study the author applies two new assessments for the explanatory variables. Firstly, the author employs Industrial production index as a proxy of Gross Domestic Product (GDP). As data for GDP is available on quarterly basis hence if interpolation techniques are integrated to produce univariate time series in monthly frequency then the reliability could be compromised. Due to above reason the author chooses a suitable proxy of GDP that represents Gross Domestic Product at its best. For this Industrial Production Index (IPI) is taken as its extensive application evidenced in previous studies. For example, Beik and Fatmawati (2014) examines the impact of macroeconomic fundamentals on Jakarta Islamic Index the proxy of economic growth was taken as Industrial Production Index (IPI) and considered to be the best representation of any economy growth on monthly basis because of unavailability of monthly frequency data of economic growth or IPI. Forson and Janrattanaagul (2014) analyzed relationship between the macroeconomic fundamentals and SETI. For the purpose of investigation authors have taken the data for twenty years ranging from 1990-2009 on monthly basis.

In this study the author applies two new assessments for the explanatory variables. Firstly, the author employs Industrial production index as a proxy of Gross Domestic Product (GDP). As data for GDP is available on quarterly basis hence if interpolation techniques are integrated to produce univariate time series in monthly frequency then the reliability could be compromised. Due to above reason the author chooses a suitable proxy of GDP that represents Gross Domestic Product at its best. For this Industrial Production Index (IPI) is taken as its extensive application evidenced in previous studies. For example, Beik and Fatmawati (2014) examines the impact of macroeconomic fundamentals on Jakarta Islamic Index the proxy of economic growth was taken as Industrial Production Index (IPI) and considered to be the best representation of any economy growth on monthly basis because of unavailability of monthly frequency data of economic growth or IPI. Forson and Janrattanagul (2014) analyzed relationship between the macroeconomic fundamentals and SETI. For the purpose of investigation authors have taken the data for twenty years ranging from 1990-2009 on monthly basis.

Despite above-mentioned studies there is a list of studies where researchers compliment IPI as a proxy of Gross Domestic Product. Number of researchers indicates that IPI can be taken as a proxy of GDP when the monthly output of IPI is required in any study for the analysis. (Civcir & Akçağlayan, 2010). Number of researchers has tested the relationship between IPI and Industrial Production Index (IPI), the findings concluded that there is significant positive relationship between these two variables as suggested by (Chen,1997).

Thus, in this study, it is decided to use IPI as a proxy of GDP due to two reasons. Firstly, it provides the data on monthly basis and secondly it represents certain portion of annual economic growth of every individual economy. Further justify IPI as a proxy of IPI by the findings of significant relationship between IPI and IPI from previous literature. As evidenced from existing literature ranging from 1986 to 2019 the use of IPI as a proxy of economic growth or Gross Domestic Product, the author decides to use IPI as a proxy of IPI in this study. It will be helpful to create a balanced panel data of the same frequency because all control variables are taken on monthly basis i.e. money stock, inflation rate, interest rate, trade balance, oil price, gold price and foreign reserves of each economy.

Similarly, the data for money supply in monthly frequency is hard to collect and further have observed new dynamics in the calculation of money supply that changed the school of thoughts regarding conventional proxy for certain variables. In a latest research by Funashima (2020) that have been published in Journal of IMF, the author states that money base plays a significant role in determination of exchange rate whereas money supply doesn't connect with exchange rate as money base growth. Considering above and availability of data in monthly frequency the author decides to take money base growth rate as the proxy for money supply in this study.

4. Empirical Analysis

It is mentioned earlier that to avoid biasedness, two-unit root tests have been applied in this study to validate the results. The preliminary assumption of the NARDL technique is to ensure that the selected time series must be stationary at level and first difference. If any time series found stationary at second difference, the respective variable must be dropped from the model and now allowed to include in the analysis.

Table 2
Unit Root of Exchange Rate Time Series

ADF Test		PPP Test	
Level	1 st Diff.	Level	1 st Diff.
-1.1042	-8.8503**	-1.2111	-8.8503**

**significant at 5%

Table 2 depicts the unit root test results for the exchange rate time series of Pakistani Rupee against the US Dollar. In both cases, it is found that the exchange rate time series found stationary at first difference of ADF and PPP tests.

Table 3
Unit Root

Variable	ADF Test		PPP Test	
	Level	1 st Diff.	Level	1 st Diff.
Foreign Reserves	-1.3598	-5.7260**	-1.6088	-10.0556**
Money Supply	-3.0633	-	-5.8793**	-
Inflation Rate	0.8252	12.4576**	0.6505	-9.8490**
Interest Rate	-2.4428	-4.0171	-1.8666	-9.1857
Trade Balance	-1.6268	-	-1.4721	-11.8513**
GDP	-4.852**	11.2737**	-3.6011**	-
Oil Price	-2.6640	-8.5447	-2.2433	-8.3373
Gold Price	-0.0626	-8.7842**	-0.3256	-8.7474**

**significant at 5%

Table 3 illustrates the unit root tests findings of selected independent variables. It is found that the GDP is stationary at level but all other independent variables are found stationary at the 1st difference. The results satisfy the pre-requisites of the NARDL analysis therefore all independent variables are included in NARDL analysis.

Table 4
Long Run Coefficients

Country	Long Run Coefficients				
Pakistan	$FE = 83.954 + 0.002*FR_POS - 0.002*FR_NEG - 0.213*OP_NEG - 0.8396*INF_POS$				
	(-2.172)	(-2.347)	(-2.493)	(-2.064)	
	[0.045]	[0.022]	[0.015]	[0.043]	
	$+ 6.049*INF_NEG + 4.623*IR_POS - 0.001*TB_NEG$				
	(3.915)	(6.499)	(-2.321)		
	[0.000]	[0.000]	[0.023]		
	Bound Test, F Statistic: 4.230				
	I(0) Bound: 3.77, I(1) Bound: 3.23 (10% significance)				

Table 4 describes the results of long run coefficients via NARDL technique. The Bound test F- statistics shows the F-Statistics value of 4.2302 which is higher than the lower and upper bound i.e., 3.77 and 3.23. It indicates that there is a co-integration between the exchange rate and selected significant macroeconomic fundamentals at 10% level of significance.

The foreign reserves have continuous adverse impact on the exchange rate irrespective of increase or decrease in one unit of foreign reserves. Surprisingly, the decrease in oil price also leads to devalue the Pakistani currency. The inflation is one of the significant indicators of the exchange rate in the context of Pakistani Rupee i.e., one unit increase and decrease result into devaluation of currency by 0.839 and 6.049 units respectively. The negative inflation destabilizes the Pakistani Rupee much higher if compare to the tenure of higher inflation. Furthermore, when interest rate increases by one unit, the Pakistani Rupee devalued by 4.623 units. Trade deficit also weakens the Pakistan Rupee against the United States Dollar. All in all, all above-mentioned long-run significant coefficients leads towards devaluation of domestic currency. The results are consistent with the findings of Nazir and Qureshi (2016), Raza and Afshan (2017), Butt et al. (2018), Ali et al. (2019) and Hussain et al. (2019) and inconsistent with the results of Qayyum et al. (2016).

Table 5
Short-Run Coefficients of Pakistan Market

Country	Short Run Coefficients			
Pakistan	$\Delta FE = -0.71615 + 0.2321 * \Delta MS_NEG_{t-2} - 2.5151 * \Delta INF_NEG_{t-2} + 3.343 * \Delta IR_POS_t -$			
	(2.591)	(-3.1767)	(2.769)	
	[0.012]	[0.002]	[0.007]	
	$0.0987 * \Delta GDP_NEG_{t-1}$			
	(-2.173)			
	[0.034]			
	F= 443.732 [0.000]			

Table 5 illustrates the short-run coefficients of Pakistan market. The results conclude that second month decrease in money base growth of one unit leads to strengthen the domestic currency by 0.2321 units. Inflation, like long-run coefficient, also play its part in the devaluation of Pakistani Rupee. The negative inflation difference of second month affects the Pakistani Rupee negatively by 2.5151 units.

The one month increase in interest rate shaken the Pakistani Rupee by 3.343 units as it also affects in a same way in long-run. The monthly cut of domestic product weakens the Pakistani Rupee significantly by 0.0987 units respectively. The decline in money supply is the only indicator which stabilize the Pakistani Rupee whereas all remaining variables devalued the domestic currency against US Dollar. The results are consistent with the findings of Dukic et al. (2023), Chroufa and Chtourou (2023), Nazir and Qureshi (2016), Raza and Afshan (2017), Butt and Rehman (2018), Ali et al. (2019) and Hussain et al. (2019) and inconsistent with the results of Qayyum et al. (2016) and Rasheed et al. (2020).

Table 6
Diagnostic Tests Results

Diagnostic Tests			
Normality	Heteroskedasticity	Serial Correlation	RAMSEY Test
0.2222	0.2297	0.1471	0.0730

It is important to remove any problem related to normality, heteroscedasticity, serial correlation and omission in the provided data set otherwise the results are not supposed to acceptable and declare us invalid or spurious. Table 6 shows the insignificant values of all diagnostic tests which reveals that there isn't any issue of normality, heteroscedasticity, serial correlation and omission. It means that the error terms are random and mean, variance and co variance are constant. The selected model is fit i.e., none of any significant independent

variable has been overlooked by author. In NARDL analysis, like ARDL, it is important to find out the stability of the model via CUSUM and CUSUM of Square as shown in below fig. 1.

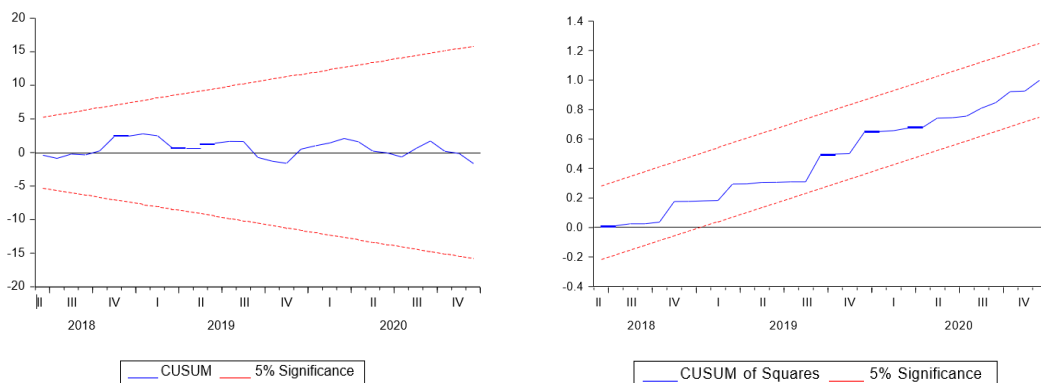


Figure 1: CUSUM and CUSUM of Square

The above figure indicates that the model is super fit for the analysis as the model lies between the upper and lower bound area and does not surpass at any stage therefore the stability of the model is up to the standard.

5. Conclusion & Policy Implications

The aim of this study is to explore the relationship between the exchange rate and selected macroeconomic fundamentals i.e., money supply, GDP, gold price, oil price, foreign reserves, inflation rate, interest rate, and trade balance. It was mentioned earlier that we have included two new proxies i.e., money base growth for the money supply and IPI for the GDP. The motivation of this study is the current economic outlook of Pakistan economy which is near to collapse if preventive measurements have not been taken under consideration in emergency.

Due to characteristic of gauging the symmetric and asymmetric relationship by decomposing a single variable into positive and negative, the NARDL testing approach is applied in this study. The Bound testing approach reveals that the co-integration exists among the exchange rate and macroeconomic fundamentals due to higher F-statistics if compare to upper and lower bounds.

5.1 Policy Implications

The findings are important for the policymakers because the economic vital are somehow in unfavorable conditions and results into adverse conditions in moving any way.

If we look upon long run relationship, the foreign reserves do not play any role in stabilizing the exchange rate even in case of increase in reserves. There is a constant decline in the Pakistani Rupee value against the US Dollar in either case i.e., decline or increase in foreign reserves. It is also noticeable that the decrease in oil price does not strengthen the exchange rate but devalue the domestic currency. The reason may be the oil purchase in deferred payment contract with the KSA. Therefore, Pakistan may purchase oil in low prices from any other market which resulted into decline in Pakistan Rupee value against the Dollar. For the future researchers, it is recommended to validate the above finding related to the oil prices association with the exchange rate because in future, Pakistan will have to repay the debt of deferred payment of gasoline which the economy is enjoying right now. On the other hand, the future researchers will have to analyze the impact of current and future oil prices on the exchange rate because it is possibility that at the time payment of deferred liabilities from Pakistan related to the oil prices, the oil price will may be much higher than the previous agreed price.

It is essentially acceptable that the increase in policy rate by the Central bank attracts the foreign investments which eventually enhance the reserves and stabilize the exchange rate against the major currencies. The Pakistan' economy case is totally reverse i.e.; the higher interest rate does not attract the investors either local or international. It may be the distrust on Pakistan economy by the investors therefore the investors do not rely upon the economic situation of Pakistan and reluctant in getting higher return due to the fare of default. Right now, the Central bank policy rate is 22% point base but the exchange rate has been following an unfavorable trend continuously i.e., the Pakistani Rupee weakens against the US Dollar. Moreover, the interest rate is also used to manage the inflation rate of an economy therefore when interest rate increases, most of the time inflation also increases but the relationship is not straight forward.

In higher inflation, the Pakistan Rupee has lost its value fewer if compare to the depreciation during decrease in inflation. The reason may be the bulk purchases from abroad by the local citizens and businessmen. The trade deficit also depreciates the Pakistani Rupee and enhance the exchange rate against the US Dollar. Trade deficit has been one of the major problems of Pakistani economy because the dependency of local manufacturing heavily relies upon the import of raw material. Overall, none of any significant indicators tends to enhance the value of Pakistani Rupee which is strange for any researcher. It shows the current economic deterioration.

Stabilizing the exchange rate is a complex task that requires a comprehensive approach involving various policy measures. While I can provide some general suggestions, it's important to note that the specific actions needed to stabilize the exchange rate in Pakistan would depend on the country's unique economic circumstances. Here are a few measures that Pakistan could consider;

1. **Monetary Policy:** The central bank can play a crucial role in exchange rate stabilization through appropriate monetary policy. Adjusting interest rates to manage inflation and balance capital flows can help maintain stability in the currency. Additionally, the central bank can intervene in the foreign exchange market by buying or selling foreign currency to influence the exchange rate.
2. **Fiscal Policy:** Sound fiscal policies can contribute to exchange rate stability. Maintaining fiscal discipline, reducing budget deficits, and implementing structural reforms to enhance tax revenues can help reduce reliance on external borrowing and ease pressure on the exchange rate.
3. **Managing Foreign Exchange Reserves:** Having enough foreign exchange reserves provides protection against the volatility of exchange rates. Pakistan can focus on building and maintaining adequate reserves through activities including increasing exports, attracting foreign direct investment, and managing the current account balance.
4. **Structural Reforms:** The exchange rate may gain from structural reforms that increase the economy's overall competitiveness. A variety of measures, including as improving the business climate, supporting export-oriented businesses, diversifying the economy, and investing in infrastructure, can be taken to achieve long-term exchange rate stability.
5. **Exchange Rate Flexibility:** Allowing some exchange rate flexibility can help a country maintain its competitiveness by absorbing shocks from the outside market. Despite the fact that fixed exchange rate systems may provide stability in the medium term, they are vulnerable to speculative attacks. One could argue that by allowing the exchange rate to be managed by market forces with intermittent interventions, a managed floating exchange rate regime strikes a balance between stability and flexibility.
6. **Efforts to increase confidence** Enhancing investor confidence through transparent and consistent economic policies, institutional development, and enhanced governance may attract foreign investment, stabilize the exchange rate, and promote economic stability.

It's important to note that these suggestions are general in nature, and their implementation should be tailored to the specific economic context of Pakistan. Consultation with economists, policymakers, and experts with a deep understanding of Pakistan's economy would be crucial in formulating and implementing an effective exchange rate stabilization strategy.

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Unveiling the Relationship between Talent Development Interventions and Organization Effectiveness: Evidence from the Telecommunication Sector of Pakistan

Atif Hussain Shah* Naveed Iqbal**

Abstract

In recent talent management research, the significance of nurturing talent has been highlighted. However, there remains a lack of sufficient quantitative investigations into the impact of these practices on organizational effectiveness, particularly in developing countries like Pakistan, and specifically within the telecommunications sector. This study seeks to address this gap by examining the relationship between different bundles of talent development practices and overall organizational effectiveness. Data was collected from 196 high-potential employees with diverse roles through online platforms. The results of the study indicate that various bundles of talent development practices, including formal, job-based, relationship-based, and informal approaches, positively influence organizational effectiveness. The findings of the study hold important implications for practitioners, indicating that the implementation of talent development practices can significantly enhance the overall effectiveness of telecommunication firms operating in Pakistan.

Keywords: Management; personnel; business administration; talent development practices; organizational effectiveness.

JEL Classification: JO, JI, J2

1. Introduction

Scholars and practitioners agreed that Talent Management (TM) is a top priority for businesses around the world as it provides a long-term competitive advantage in the highly competitive, dynamic and post-COVID-19 global market scenario (Caligiuri, 2020; Collings et al., 2021). TM is widely recognized as an essential constituent of a firm's capability to outsmart the competition (Barriere et al., 2018). In the broader sense, TM refers to a set of human resource (HR) strategies for the attraction, selection and development of such

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talented human capital (Collings et al., 2019). Talent development is a vital constituent of the TM system (Cappelli, 2009; Rezaei & Beyerlein, 2018). The term “Talent Development” (TD) has gained prominence in contemporary talent management literature (Garavan et al., 2012; Hidayati & Li, 2016). Despite its importance, TD has not received adequate attention in academic discourse on talent management, except for the ongoing “make or buy” debate. Advocates of the “make” approach, such as Pfeffer (2001), emphasize that neglecting talented employees’ development while solely focusing on attracting and retaining them can be detrimental to organizations. Conversely, Garavan et al. (2012) argue that relying solely on external talent acquisition is not a successful long-term strategy. Instead, they recommend that organizations focus on developing their internal talent for successful strategy implementation. Such development approaches that are focused on high-performing or high-potential employees are regarded as a viable approach which ultimately translates to firm-level outcomes (Lepak & Snell, 1999; Garavan et al., 2012). TD is regarded as one of the key TM activities implemented through numerous bundles of talent development practices that may be used to enhance the competencies of exclusive talents (Vaiman et al., 2021). Additionally, Caplan (2014) viewed TD as the process of developing employees for achieving organizational-level outcomes.

According to recent TM reviews, the existing literature overlooked the potential linkage between TD practices and overall organization effectiveness. There is a specific deficiency of studies investigating the micro-level (individual employee) effects of exclusive TM practices (De Boeck et al., 2018). Secondly, the literature on TM suggests that the empirical evidence linking TD practices and business outcomes is limited (Garavan et al., 2012; Meyers, 2020). The contemporary TM literature shows that numerous studies focused on investigating the relationship among TM and employee retention (Ambrosius, 2018), employee innovative behavior (Khaki et al., 2017), employee turnover intention (Rana & Abbasi, 2013) and employee performance (Chegeni & Salavati, 2016; Supraptiningsih et al., 2018). The extant literature shows that little attention has been focused on organization-level outcomes as direct consequences of TD interventions. Therefore, the objective of this study is to fill the gap in the existing TM literature by analyzing the connection between TD practices and firm-level outcomes such as organizational effectiveness (OE).

Pakistan is a lower-middle income developing country with a population of 22.5 million (ESP, 2021) with a high demand for mobile phones and internet services. The telecommunications sector has been established as a leading sector in the context of foreign direct investment, revenue generation coupled with employment creation. As per the 2021 annual report of the Pakistan Telecommunication Authority (PTA), the telecom industry garnered a foreign direct investment (FDI) of \$202 million, and a sum of Rs. 226 billion was contributed to the national exchequer. Secondly, the number of cellular service subscribers has also registered an increase, with approximately 188 million at the end of the financial year 2020-2021, representing a 7% year-on-year expansion. Third, during the fiscal year 2020-21, the

telecommunications industry generated record revenue of Rs. 644 billion, as opposed to Rs. 592 billion in the preceding year. The sector has also been playing a significant role in the country's economic development, contributing to GDP growth and job creation.

This paper makes a significant contribution by expanding the existing knowledge base, as it empirically establishes a connection between exclusive TD practices and their outcomes at the organization level, an area that has been largely overlooked in the field of Talent Management. Additionally, the study explores the moderating effect of gender on the relationship between TD practices and organizational effectiveness. Moreover, this research provides valuable insights for HR decision-makers in the telecommunications sector, as it highlights the importance of offering development opportunities to employees to enhance their skills and expertise in alignment with the organization's short-term and long-term goals. This will ultimately lead to an increase in overall organizational effectiveness. Furthermore, the study addresses a key research gap identified by Meyers (2020), who emphasized the need for exploring the impact of individual development practices on overall organizational outcomes. By doing so, this paper successfully meets the call for future research and advances our understanding of the subject.

The rest of the study is organized in the following manner: The second section examines literature related to TD and TD interventions, organization effectiveness and relationship between TD practices and OE as well as presents hypotheses and a theoretical model. The third section provides details on the research context and methods. The fourth part presents the results of the empirical study. The final section summarizes the theoretical contributions, and limitations, and proposes suggestions for further research.

2. Literature Review

2.1 Talent Development and Talent Development Interventions

One of the primary responsibilities of the HRM function is the development of talent, as highlighted by various researchers such as Kim and McLean (2014) and Mehdiabadi and Li (2016). Talent development is defined as "the process of creating and implementing strategies that foster the growth and development of the talent pool in order to align with the organization's current and future strategic objectives and with the overall Talent Management processes" (Garavan et al., 2012, p.6). Werner (2021) identified that TD practices significantly affect employee-level outcomes as well as organization-level outcomes. The practitioner survey also highlighted that the establishment of talent development programs is one of the most commonly used TM practices in organizations. A global practitioner survey by CIPD (2011) revealed that in-house development programs may be viewed as the top most effective method for talent development. The second top most effective intervention was found to be 'coaching' by line managers and third, on-the-job training is also recognized as an effective

measure for talent development. Joyce and Slocum (2012) discussed that organizations are dedicating a considerable amount of time, in formal and informal programs to develop their talented employees, using mentoring programs, external training programs and job rotation assignments. Sparrow and Makram (2015) found that mentoring and coaching, learning and developmental, team building opportunities, and strategic and operational development programs are considered talent development tools.

2.2 Organizational Effectiveness

Potnuru and Sahoo (2016; p. 05) referred to organization effectiveness as “an organization’s ability to align its goals and objectives with its stakeholders and constituents, as well as its ability to adapt to change, optimize resources, compete with rivals, bring quality products and services to the right market at the right time, attract potential personnel, and make the right decisions at the right time”. Judge (1994) described OE in terms of financial performance, stock returns, operating performance, productivity and product quality. Scholars have used a number of approaches to evaluate OE, such as market share, organization profitability and sales target. The established literature takes up four approaches to define OE that are (i) goal accomplishment, (ii) system resource-oriented, (iii) strategic constituency and (iv) competing values approach. However, in recent studies, scholars have referred to OE as a competing values approach, rather than the traditional approaches. Competing values viewpoint focuses on the well-being and growth of workers which leads to the well-being and growth of the firm. Scholars (Ashraf & Khan, 2013; Raheem & Khan, 2019) argued that to achieve higher organization effectiveness it is preferred to focus on the competing values approach, which constantly addresses the competitive decisions that service sector organizations make in difficult situations to compete with the rivals.

2.3 Talent Development Practices and Organization Effectiveness

Lewis and Heckman’s (2006) noted that TD activities represent a collection of practices that can be used to develop the skills, knowledge, and abilities of their employees including training and education, mentoring, coaching and career development. These activities are designed to help employees to acquire skills and knowledge for their current as well as future roles in the organization. Extant literature (Glaister et al., 2017; Raheem & Khan, 2019; Sonneberg et al., 2014) shows that TD practices are aimed to develop high-potential/high-performing employees. Talent is seen as a critical component of business performance, particularly for such sectors that are characterized as most competitive such as the telecommunications sector. In their study, Otoo and Mishra (2018) explored the correlation between human development practices and OE, with a focus on the significance of employee competencies. They identified that human development practices, such as training and education, positively influence employee skills and capabilities which ultimately improves organizational effectiveness. Lyria et al. (2015) investigated the link between TM and organizational

performance and found that such practices can enhance organizational-level outcomes. Ali and Brandl, (2017) identified that TM strategies increase organizational efficiency in the service sector of Pakistan.

The existing literature recognized that TM and career development can be used to enhance organizational effectiveness (Ali et al., 2019). They examined that talent development programs can improve organizational effectiveness. Garavan et al. (2012) classified TD programs into four categories: (i) “formal talent development practices”, (ii) “relationship-based development practices”, (iii) “job-based development practices”, and (iv) “informal development practices”. Formal development (FD) practices focus on enhancing employee skills, knowledge and capabilities and it results in employee development (Garavan et al., 2012). These include various practices that aim to improve an individual’s skills, knowledge, and personal growth which eventually help the organization to grow. These programs can focus on both conceptual and skill-based development, provide feedback-based and action-oriented support (Ready & Conger, 2010). These programs are mainly geared towards improving and enhancing desired behaviors. Formal talent development programs such as on-the-job training, instructor-led training off the job, formal educational courses, coaching by external practitioners, work groups and external conferences. Thus, the first hypothesis of the study is:

H1a: Formal talent development has a direct effect on organizational effectiveness.

Higgins and Kram (2001), described relationship-based talent development interventions in mentoring and supporting the development activities of high-potential employees. These interventions can take various forms such as in-house development programs, coaching by line managers, internal knowledge-sharing events and shadowing (observing experts at work). Such relationship-based interventions are gaining popularity as an efficient way of developing high-potential talent (CIPD, 2011). The relationship-based practices focus on talent and skill development through solid social interaction among the employees that in turn transpires into increased organizational effectiveness (Garavan et al., 2012).

H1b: Relationship-based talent development has a direct effect on organizational effectiveness.

Job-based developmental practices provide employees with opportunities for development through the job itself. Various aspects of the job are emphasized as a primary source of development. Widely used talent development policies and practices include opportunities for collaboration with highly talented employees (mentoring and counseling); global team and diversity opportunities, leader development programs, increases in job scope, horizontal job moves and developing new practices. Such practices emphasize implementing changes and developing new practices that are adopted by top-performing companies (Schuler, 2015). Job-based development practices are specifically created and carried out to enhance organizational outcomes. Such development practices not only enhance employees’ knowledge of

the specific position but also leads to enhance overall organizational effectiveness. Thus, it is hypothesized that:

H1c: Job-based developmental practices have a direct effect on organizational effectiveness.

Given the unpredictable nature of work within organizations, talent development strategies should not only focus on formal training and development programs but also on informal and non-formal practices which can help employees to develop and advance in their careers (Marsick & Watkins, 2001). Informal development is unplanned, ad-hoc, and often emerges as a result of another activity also known as Implicit development, which refers to learning that takes place without a deliberate intention to learn. Informal talent development programs include collaborative and social learning (such as connecting employees and sharing knowledge via social media) and workshops and events. Anwar and Ghafoor (2017) noted that informal development practices focus on future needs and take place over a longer period of time as compared to formal TD practices that are currently in progress and are related to specific staff responsibilities. Informal development activities can contribute to overall organizational outcomes such as organizational effectiveness (Garavan et al., 2012). Thus, it is hypothesized that:

H1d: Informal and non-formal talent development practices have a direct effect on organizational effectiveness.

Gender equality has been acknowledged as a significant worldwide issue, which is apparent from its inclusion in the UN sustainable development goals (United Nations, 2015). Gender-based discrimination in the workplace, particularly in the private service sector, is a widely recognized global phenomenon. However, in developing countries like Pakistan, the issue is even more pronounced and prevalent (Cheema & Jamal, 2022). Within the patriarchal structure of Pakistani society, men hold a dominant position (Sharif et al., 2021). Consequently, the private service industry in Pakistan reflects this gender disparity, leading to pervasive gender inequality and discrimination against women (Cheema & Jamal, 2022). It requires serious attention and concerted efforts to address and promote gender equality in these contexts. The identification of inequality-preserving mechanisms within organizations is essential for achieving gender equality in the workplace. Therefore, this study attempts to revisit the moderator effect of gender in the relationship between talent development practices i.e. formal development practices, relationship-based development practices, job-based development practices and informal development practices and organization-level outcomes. Thus, it is hypothesized that:

H2a: Gender moderates the relationship between formal talent development interventions and OE.

H2b: Gender moderates the relationship between relationship-based development interventions and OE.

H2c: Gender moderates the relationship between job-based talent development interventions and OE.

H2d: Gender moderates the relationship between informal talent development interventions and OE.

2.4 *Theoretical Foundation*

This research adopts the resource-based view (RBV) framework in which talented employees are viewed as valuable resources. When a business firm identifies a small group of employees and marks them as high-potential/ high-performing employees, this exclusive belief of the organization presumes workforce differentiation to be a vital constituent of organization strategy. Workforce differentiation refers to the unequal allocation of resources to a specific group, with the expectation of receiving disproportionately higher returns (Gelens et al., 2014). This approach involves categorizing employees into distinct groups, aiming to enhance organizational efficiency based on two critical dimensions of human capital: value and uniqueness (Lepak & Snell, 1999). The value represents the potential of talented individuals to bolster an organization's competitive advantage, whereas uniqueness refers to the difficulty of finding a suitable substitute for a particular individual within the labor market context (De Vos & Dries, 2013). The RBV framework, Gallardo-Gallardo et al. (2015) highlighted the importance of employee differentiation for the effectiveness of an organization. To enhance and make the best use of human capital, organizations employ talent management strategies. As mentioned by Huselid and Becker (2011) and King (2016), talent management serves as a means of distinguishing and cultivating the unique abilities and skills of employees. This approach ultimately contributes to the overall growth through optimal utilization of the human resources of the organization.

The dynamic capabilities view seeks to explain how an organization maintains the competitive edge in evolving markets by outstretching the resource-based view. Resultantly, the focus is moved from internal operations to the external environment and the activities needed to reconfigure existing operations to meet constantly changing demands. As such, the development of high-potential employees is seen as a dynamic capability that serves as a mechanism for adapting to evolving needs and securing competitive advantage in the long term.

Theoretical Framework

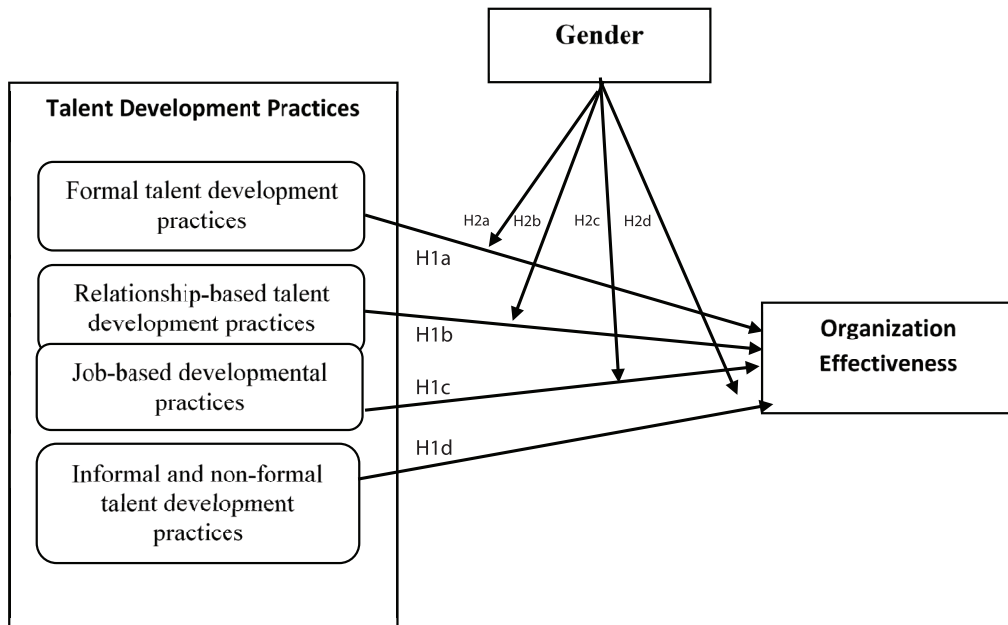


Figure 1: Theoretical Framework

3. Methods

This study used a quantitative research design. The quantitative design is best suited where the researcher develops hypotheses and tests the relationship between exogenous and endogenous variables. The principal objective of this quantitative research was to examine the degree to which TD practices influence OE. Therefore, the study is causal in nature. In quantitative research, a causal relationship is established when a change in the predictor variable is associated with a change in the outcome variable. Quantitative design helps the researcher to investigate causal relationships (Creswell, 2013). The present study is cross-sectional in terms of the time dimension.

3.1 Data Collection and Data Analysis

Data collection was carried out in two steps. In the first step, the HR managers of the telecom organizations were contacted to get the list of those employees who were formally identified as talented employees by their organization. After securing the contact details (email), the questionnaire was shared with the employees through e-mail and the LinkedIn platform. The survey was conducted through Google Forms. A unique URL was created for every respondent. A sum of 196 out of 247 questionnaires were returned from the respondents and were used for data analysis. The overall response rate was 85%.

3.2 *Measures*

The questionnaire of the present study comprised two sections. The first part was related to the demographic information of the respondents. Section two included 20 items for measuring talent management practices and organization effectiveness. This study used the CIPD (2013) talent development scale that entails integrated bundles of talent development practices. Numerous TM studies (e.g. Sonnenberg et al., 2014; Glaister et al., 2017) validated the CIPD (2013) scale for the measurement of TD practices. These practices foster collaboration, empower and motivate employees and provide a stimulating work environment which results in employee development. TD practices were measured with 15 practices on 5 points Likert scale ranging from 1 being 'never used' to 5 being 'used very frequently'. Different scales have been used to measure OE (Tayal et al., 2021). This study used the Ashraf and Khan (2013) scale that was exclusively developed to measure the organizational effectiveness of the telecom organizations operating in Pakistan. The measure entails 5 items and the responses were measured on a 5-point Likert scale ranging from 1 being 'strongly disagree' to 5 being 'strongly agree'.

3.3 *Data Analysis and Results*

The quantitative data analysis was carried out through Statistical Package for Social Sciences version 27 (SPSS-27). The statistical analysis encompassed various procedures, such as measurement scale reliability, descriptive statistics, multicollinearity assessment, and exploration of the common method variance (CMV) pertaining to the study variables were accessed, followed by correlation analysis. Regression analysis was used for hypothesis testing.

3.4 *Demographic and Descriptive Statistics*

Table 1 illustrates the demographic characteristics of the survey participants. A total of 196 individuals participated in the survey, with 77.2% being males and 22.8% being females. The largest proportion of respondents (54.5%) were between the ages of 31 to 40. A significant number of participants (51.5%) had completed 16 years of formal education while 37.1% had completed 18 years of education. A big chunk of respondents (61.4%) were middle-level management employees whereas 10.4% were at executive-level management. A large percentage of respondents (37.6%) had over 12 years of professional experience, whereas, 12.4% had 9 to 11 years of professional experience. A large portion (76.2%) were permanently employed, whereas, 23.8% were contractual employees. Additionally, 19.8% of employees had been serving in the present organization for more than 12 years and 16.3% had 5 to 7 years of experience in the current organization. Table 2 demonstrates descriptive statistics of the study.

Table 1
Respondent's Profile

Demographic Characteristics		Frequency	Percent (%)
Gender	Male	150	76.5 %
	Female	46	22.5 %
Age	21 - 30 years	50	25.5 %
	31 - 40 years	106	54.1 %
	41 - 50 years	37	18.9 %
	51 and Above	3	1.5 %
Qualification	14 years	21	10.7 %
	16 years	100	51.0 %
	18 years	73	37.2 %
	Doctorate	2	1.0 %
Total Professional Experience	Less than one year	2	1.0 %
	1 - 3 years	14	6.9 %
	3 - 5 years	27	13.4 %
	5 - 7 years	45	22.3 %
	7 - 9 years	13	6.4 %
	9 - 11 years	25	12.4 %
	More than 12 years	76	37.6 %
Employment Type	Contractual	47	24.0 %
	Permanent	149	76.0 %
Monthly Income	40,000-80,000	54	27.6 %
	80,000-160,000	70	35.7 %
	160,000-220,000	33	16.8 %
	220,000-440,000	25	12.8 %
	440,000 and Above	14	7.1 %
Duration in Present Org.	Less than 1 year	27	13.8 %
	1 - 3 years	38	19.4 %
	3 - 5 years	39	19.9 %
	5 - 7 years	33	16.3 %
	7 - 9 years	10	5.1 %
	9 - 11 years	10	5.1 %
	More than 12 years	39	19.9 %
Hierarchical Level	Low level	30	15.3 %
	Middle level	120	61.2 %
	Top level	21	10.7 %
	Executive level	21	10.7 %
	Technical Staff	3	1.5 %
	Any other	1	0.5 %

Table 2 provides descriptive statistics of the variables of the study. OE has the highest mean value among all the variables, with a mean of 4.582. This suggests that OE is a relatively high-scoring variable compared to the others. On the other hand, FDP, RDP, JDP, and IDP all have similar means that are noticeably lower than the mean for OE. The standard deviation values for each variable indicate how much the values deviate from the mean. In this case, the standard deviations are relatively small for all variables, which suggests that the data is tightly clustered around the mean values. This is particularly true for FDP, RDP, JDP, and IDP, which all have standard deviations between 0.683 and 0.703. OE has a slightly larger standard deviation of 0.277, indicating that there may be more variability in the scores for this variable.

Table 2
Descriptive Statistics

Variable	Obs.	Mean	Std.Dev	Min	Max
OE	196	4.582	0.277	3	5
FDP	196	3.565	0.677	2	5
RDP	196	3.643	0.686	2	5
JDP	196	3.645	0.683	2	5
IDP	196	3.658	0.703	2	5

Notes: FDP: Formal development practices, RDP: Relationship-based development practices, JDP: Job-based development practices, IDP: In-formal development practices, OE: Organizational effectiveness.

3.5 *Reliability*

One of the most frequently employed methods to assess internal consistency is utilizing the Cronbach- α coefficient (Sekaran & Bougie, 2016). This coefficient can be computed using SPSS, and a higher value indicates stronger internal consistency. According to Malhotra (2004), α values exceeding 0.60 are considered reliable and acceptable. In our study, a reliability test was conducted and the results obtained (table 3) for the constructs ranged from 0.601 to 0.765, indicating that the test instruments met the required criteria.

Table 3
Reliability Statistics

Talent Development Practice	No. of items	Cronbach's Alpha
FDP	5	.765
RDP	4	.705
JDP	3	.601
IDP	3	.643
OE	5	.604

Notes: FDP: Formal development practices, RDP: Relationship-based development practices, JDP: Job-based development practices, IDP: In-formal development practices, OE: Organizational effectiveness.

3.6 *Common Method Bias*

The Harmon single-factor test and analysis show that the percentage of variance is 31.097% which is well below the threshold value (50%) and there is no single factor accounted for substantial variance; therefore, CMV cannot be assumed for the study. Table 4 depicts the Harmon single-factor test for testing common method bias.

Table 4
Total Variance Explained

Factor	Initial Eigen values			Extraction sums of squared loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	9.605	33.122	33.122	9.018	31.097	31.097

3.7 *Correlation*

The Pearson correlation is a statistical measure, that examines the association between variables, was calculated to examine the relationships between the bundles of TD practices (formal development practices, relationship-based development practices, job-based development practices and informal development practices) and OE. The matrix presented in Table 5 shows a strong, positive correlation between bundles of TD practices and dependent variable OE.

Table 5
Correlation Matrix

Construct	FDP	RDP	JDP	IDP	OE
FDP	1				
RDP	.631**	1			
JBD	.587**	.685**	1		
IDP	.202**	.129**	.339**	1	
OE	.157**	.152*	.183*	.229**	1

Notes: FDP: Formal development practices, RDP: Relationship-based development practices, JDP: Job-based development practices, IDP: In-formal development practices, OE: Organizational effectiveness.

The Pearson correlation value between OE and FDP is 0.157, a slightly low value but positive. The sigma value and correlation value demonstrate a positively significant relationship between these two variables, meaning if more FDP is used, it will increase the overall OE. There is a strong positive correlation between OE and relationship-based development practices with a correlation coefficient of 0.631. This indicates that as RDP increases, OE tends to increase as well. Additionally, there is a very weak positive correlation between OE and job-based development practices with a correlation coefficient of 0.587. Lastly, there is a positive correlation between IFD and OE with a correlation coefficient of 0.202. This indicates that as IFD increases, OE tends to increase as well. The correlation matrix (Table 5) depicts that correlation among the variables of this study is statistically significant at the 0.05 level (two-tailed), denoted by *.

3.8 *Multicollinearity*

The variance inflation factor (VIF) serves as a metric to quantify the extent to which the variance of the estimated regression coefficient increases due to correlations among the independent variables. The tolerance, which is the reciprocal of the VIF, helps to assess the presence of multicollinearity among the variables. A lower tolerance indicates a higher likelihood of multicollinearity among the independent variables. According to Shrestha (2019) When VIF equals 1, it suggests that the independent variables are not correlated with each other. For VIF values between 1 and 5, the variables show moderate correlation. The challenging range of VIF lies between 5 and 10, signifying highly correlated variables. If VIF is greater than or equal to 5 to 10, multicollinearity is present among the predictors in the regression model. When VIF exceeds 10, it indicates that the regression coefficients are poorly estimated due to the presence of multicollinearity. Table 6 depicts that all variables of the study have a VIF value less than the threshold, indicating no issue of multicollinearity for this study.

Table 6
Multicollinearity Statistics

Construct	Tolerance	VIF
FDP	.556	1.799
RDP	.460	2.173
JDP	.450	2.221
IDP	.854	1.173

Notes: FDP: Formal development practices, RDP: Relationship-based development practices, JDP: Job-based development practices, IDP: In-formal development practices.

Hypothesis Testing

H1a: Formal talent management practices are directly and positively related to organizational effectiveness.

H1a evaluates whether FDP has a significant impact on the OE. The results reveal that FDP has a significant impact on OE ($\beta = 0.147$, $t = 1.940$, $F = 3.767$). Therefore, H1a was supported.

H1b: Relationship-based talent development practices are directly and positively related to organizational effectiveness.

H1b evaluates whether RDP has a significant impact on OE. The results show that RDP has a significant impact on OE ($\beta = 0.170$, $t = 2.281$, $F = 5.206$). Hence, H1b was supported.

H1c: Job-based talent development practices are directly and positively related to organizational effectiveness.

H1c tests whether JDP has a significant impact on OE. The results show that JDP has a significant impact on OE ($\beta = 0.153$, $t = 1.889$, $F = 3.570$). Therefore, H1c was accepted.

H1d: Informal talent development practices are directly and positively related to organizational effectiveness.

H1d investigates whether IDP has a significant impact on OE. The results show that IFD has a significant impact on OE ($\beta = 0.229$, $t = 2.882$, $F = 9.304$). Hence, H1d was supported.

Table 7
Regression Analysis

Hypotheses	Relationship	β	T value	F value	Adj. R2	Decision
H1a	FDP -> OE	.147*	1.940	3.767	0.018	Accepted
H1b	RDP -> OE	.170**	2.281	5.206	0.027	Accepted
H1c	JDP -> OE	.153*	1.889	3.570	0.017	Accepted
H1d	IDP -> OE	.229*	2.882	9.304	0.005	Accepted

(*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$).

Notes: FDP: Formal development practices, RDP: Relationship-based development practices, JDP: Job-based development practices, IDP: In-formal development practices, OE: Organizational effectiveness.

In summary, the results suggest that all the bundles of TD practices namely FDP, RDP, JDP and IDP are statistically significant predictors of the OE. The results of our study are consistent with previous studies conducted in the service sector organizations in Pakistan (Ali et al., 2019; Rana & Malik, 2017; Hongal & Kinange, 2020). Almaaitah et al. (2020) also found that TM practices positively influence organizational performance.

3.9 Moderation Effect of Gender

Moderation analysis was performed to access the relationship between TD practices and overall OE. The results of the moderation analysis are depicted in Table 8.

Table 8
Moderation Effect

Hypotheses	Relationship	β	T value	F value	P value	LLCI	ULCI
H2a	FDP*Gender -> OE	3.344	4.314	2.335	.0000	1.8124	4.8763
H2b	RDP*Gender -> OE	3.481	4.656	2.209	.0000	2.0042	4.9593
H2c	JDP*Gender -> OE	3.409	4.920	2.682	.0000	2.0398	4.7786
H2d	IDP*Gender -> OE	3.306	3.961	3.309	.0000	1.8574	5.5561

Notes: FDP: Formal development practices, RDP: Relationship-based development practices, JDP: Job-based development practices, IDP: In-formal development practices, OE: Organizational effectiveness.

H2a evaluates whether gender moderates the positive and significant relationship between FDP and OE. The results reveal that gender moderates the relationship ($\beta = 3.344$, $t = 4.314$, $F = 2.335$). Hence, H2a was supported. H2b evaluates whether gender moderates the positive and significant relationship between RDP and OE. The results reveal that gender moderates the relationship ($\beta = 3.481$, $t = 4.656$, $F = 2.209$). Therefore, H2b was supported. H2c evaluates whether gender moderates the positive and significant relationship between JDP and OE. The results reveal that gender moderates the relationship ($\beta = 3.409$, $t = 4.920$, $F = 2.682$). Hence, H2c was supported. H2d evaluates whether gender moderates the positive and significant relationship between IDP and OE. The results reveal that gender moderates the relationship ($\beta = 3.306$, $t = 3.961$, $F = 3.309$). Hence, H2d was supported.

4. Conclusion

The existing literature lacks sufficient empirical research that specifically examines the practical impact of TD practices on organizational effectiveness within the telecommunication sector firms in Pakistan. This study aims to fill this gap by investigating the influence of various bundles of TD practices, including formal development practices, relationship-based practices, job-based development practices, and informal development practices, on the organizational effectiveness of telecom firms operating in Pakistan. The findings reveal that all bundles of TD practices are significant predictors of organizational effectiveness.

Furthermore, the study confirms the significance of all four hypothesized relationships between TD practices and organizational effectiveness, thereby providing robust support for all the proposed hypotheses. Additionally, the findings of this study provide empirical evidence that supports the validity of hypothesis H1, indicating a substantial impact of talent development on organizational effectiveness. This aligns with the theoretical perspectives of (Bayyurt & Rizvi, 2015; Al-aldaea, 2016; Kareem, 2019) who recognized the significance of talent development for enhancing organizational effectiveness. Likewise, the results pertaining to hypothesis H1 present similar outcomes, demonstrating a significant positive correlation between training and development initiatives and organizational effectiveness. This finding is consistent with the assertions made by Lyria et al. (2015) and (Ismael et al., 2021), further supporting the notion that investing in training and development contributes to improved organizational effectiveness.

Our results are in-line with the previous studies. Shoo (2016) conducted a study to analyze how human resource development (HRD) interventions influence organizational effectiveness through the development of employee competencies. The research revealed that HRD interventions have a substantial positive impact on fostering employee competencies, leading to improved organizational effectiveness. Alagaraja et al. (2015) investigated the effects of human resource development contributions on organizational effectiveness. Furthermore, Alagaraja et al. (2015) highlighted the role of HDP for achieving organization-level outcomes.

4.1 Contributions and Implications

This study contributes to TM literature by three folds. First, the majority of TM studies investigated the impact of TD practices on individual-level outcomes such as employee performance (Sopiah et al., 2019), psychological contract (Raheem & Khan, 2019), employee engagement (Meenash, 2016), and Job satisfaction (Luna-Arcos & Marley, 2015). Gallarado and Thunnissen (2016) noted that the empirical evidence about TD practices and organization-level outcomes is very limited. The existing literature overlooked the potential link between TD practices and organization-level outcomes such as organizational effectiveness. This study contributes to TM literature by investigating the direct linkage between TD practices and OE as organization-level outcomes. This study enriches TM literature by evaluating key predictors of OE at organizational level. Second, Garavan et al. (2012) as well as Hiyadati and Li (2016) noted that there is limited literature on the individual effects of TD practices and rarely any study investigated the perception of TD practices of high-potential employees. This study aims to contribute to the literature on TM by unveiling the perceptions of high-potential employees' perception about TD practices and their influence on overall OE. Third, A few studies investigated how gender influence TD-OE causal relationship. This study contributes to the literature by suggesting gender as moderator for analyzing the impact bundles of TD practices on OE.

This study has practical implications for the telecommunications industry. This study highlights the importance of TD practices and their positive relationship with organizational effectiveness. The findings of the study can assist decision-makers in telecommunication organizations to implement TD practices, which can help to develop employees with improved skills, abilities, and competencies, leading to an overall improvement in OE. Furthermore, gender inequality in the telecom sector of Pakistan remains a significant problem (Cheema & Jamal, 2022). Women are underrepresented in leadership and technical roles, facing limited opportunities for career advancement and unequal pay compared to their male counterparts. Societal norms and stereotypes perpetuate this disparity, hindering women's full participation and contribution to the sector's growth. This study bridges this gender gap which is crucial for fostering diversity, increasing firm outcomes and achieving sustainable development in the telecom industry. Organizations and policymakers must implement such policies that promote equal opportunities and challenge prevailing biases to create an inclusive and equitable work environment irrespective of their gender.

4.2 *Limitations and Future Directions*

The study makes notable contributions; however, it also has certain limitations that require attention. Specifically, the study is limited to the telecommunications industry in a developing country's context, which may not be generalizable to other industries. Additionally, the cross-sectional research design used in data collection does not permit a thorough examination of causality in the relationship between TD practices and OE. Furthermore, the study only examines four bundles of TD practices as predictors of organizational effectiveness, while other TD practices may also have an impact on organizational effectiveness. Therefore, future research could consider exploring additional TD practices and attributes of organizational effectiveness as well as examining the potential moderating effect of other variables such as employee behavior on the relationship between TD practices and OE.

Conflict of interest: The authors do not have any conflict of interest.

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